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Fundamentals of Educational Psychology Fundamentals of Educational Psychology MA Education

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Fundamentals of Educational Psychology

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Introduction
Psychology is the study of human behavior. The basis of the study of Psychology is the micro study of the inner mental incidents that takes place within a human mind. Human behavior is both natural and acquired thus
the two are studied in the scientific ways
within the fold of Psychology. Animal behavior is studied as well so that a comparison can be drawn between the human and the animal behavior, and the inferences drawn are conclusive. Various fields and techniques have been developed to study human behavior.
Educational psychology involves the
study of how people learn, including concepts such as student outcomes, instructional process, and individual differences in learning and learning disabilities.
Educational psychology is one of the many branches of psychology dealing mainly with the problems, processes and products of education. It is an attempt to apply the knowledge of psychology in the field of education. Here we try to study human behavior, particularly
the behavior of the learner in relation to his educational environment.

This branch of psychology involves not just the learning process of early childhood and adolescence, but also 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 development in psychology, behavioral psychology and cognitive psychology.

In other words, educational psychology may be defined as that branch

of psychology which studies the behavior of the learner in relation to his

educational needs and his environment. Educational psychology has been defined by various psychologists and scholars. For the sake of understanding what educational psychology is, let us analyze a few important definitions. B. F.

Skinner (1958): Educational psychology is that branch of psychology, which deals with teaching and learning. Crow and Crow (1973): Educational psychology describes and explains

the learning experiences of an individual from birth through old age.

E. A. Peel (1956): Educational psychology is the science of education.

The definition given by Skinner considers educational psychology to be the psychology of teaching and learning, i.ePsychology applied in the field of education for improving the methods and products of the teaching−learning, and it is this which helps the teacher and the learner. The definition given by L. D. Crow and Alice Crow describes educational psychology as that subject area of the curriculum through which one can study the development of an individual in terms of his learning achievement during his life-span. How one goes on learning as a result of interaction with the environment and how one can learn effectively is covered by educational psychology. Learning, however, on account of its close association with experience, often said to be a great teacher, is never independent of teaching. Therefore, what we find in the process of development is nothing but a planned spontaneous scheme of teaching and learning. All our efforts and energies in the field of education are directed to planning and devising the appropriate means of better teaching and effective learning. Educational psychology is mainly meant for solving the practical problems related to the field of education, especially the process of teaching and learning.
It is these considerations that led E. A. Peel to define and describe educational psychology as the science of education, i.e., a discipline that can be used to improve the process and products of education in a scientific way. 1.1 Unit Objective This unit intends to introduce the learners with
the: ● Meaning and Definition of Educational
Psychology ● The Scope and Methods of Psychology ● Psychology is a Science ● Branches of
Psychology 1.2
Meaning and Definition
of Educational
Psychology
The word Psychology has been derived
from two Greek words—'Psyche' which means soul and 'logos' which means
study.
According to the literal meaning of Psychology is
a subject that studies
about the soul. The ancient famous philosophers like Aristotle and Plato considered Psychology a subject that studies about the soul by keeping its literal meaning. The definition given by these ancient thinkers and philosophers is now considered obsolete as a historical definition. The philosophers of the 17 th and 18 th centuries like Leibnitz, Hobbes, Locke, Kant, Hume etc. are worth mentioning. These philosophers said that the word 'Psyche' is mind and the object of study of Psychology is 'Mind'. Therefore, Psychology was accepted as the study of mental science, in other words study of mind. Until 1870 the definition given by these philosophers was accepted and psychology was studied as a branch of Philosophy and the object of study was the mind. There were primarily two defects found in the definition given by these Philosophers. First, 'Soul'
and 'Mind'.
Mind is an abstract object that can neither be seen nor heard. Therefore, the study through scientific techniques is not possible nor any kind of
practical application can be applied to it. Second, after accepting psychology as

the

study of mind or soul its object remains unclear as these words are used in different meanings and it is difficult to say in which context it is used in Psychology.

As mentioned earlier psychology was a branch of philosophy. In 1879 Wilhelm Wundt set up a first laboratory of philosophy in the Lipzing University (later the name changed to Karl Marx University) in Germany. Gradually psychology came to be a different subject, different from Philosophy.

As a result the subject matter of psychology ceased to be not mind or the soul but 'mental activities' or the Conscious Experience. The Psychologists who advocated this theory of

Psychologists

are called Structuralists.

Wilhelm Wundt and Titchener are the standing pioneers of this theory. According to them Psychology is the study of the Conscious Experience and the Immediate Experience.

Here the meaning of conscious experience or immediate experience is related to sensation, imagination, image, feeling and other mental activities. According to Wundt, sensation was called the objective element of conscious experience whereas feeling, the subjective element of conscious experience. But there were many defects found in this definition of structuralists. The major defect was that, because the conscious experience cannot be studied through an objective method, hence this definition of psychology is not able to explain the practical nature

of

psychology. This definition only emphasizes the study of conscious experience, however all experiences of humans are not conscious but they are mainly

conscious. So this definition does give a clear picture that psychology studies all the aspects of

the

human mind or not.

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Since there were many defects in the definition of structuralists, another definition of psychology was introduced by behaviorists, J. B. Watson is important among the behaviorists. They accepted psychology as a positive science of behavior. This definition clarifies that conscious experience was diversified from the object of psychology and behavior replaced it, which was more objective because that can be seen and heard, Running, crying, smiling, thinking etc are the few main examples of behavior. In this definition, Psychology was accepted as positive science, because it studies all three aspects such as what, why, and how related to behavior. In this definition the main defect was described that the behavior alone is meaningless. The fact is that the explanation of any kind of behavior is based on the basis of our own experiences then only we get the real meaning. The meaning of Psychology introduced by the Modern Psychologists seems to be the juncture of both the definitions mentioned above. Atkinson, Smith and Hilgard have said describing Psychology— "Psychology is the scientific study of behavior and mental processes." This definition clarifies that Psychology is not only the study of behavior but also studies about those mental processes that cannot be seen but only assumed on the basis of the behavior. Morgan, King, Weisz and Schopler have also clarified that psychology is the science of study of human and animal behavior. They have further clarified that while calling Psychology a science of behavior, mind or internal mental events are not being differentiated but it is also included in the same. In the words of Morgan, King, Weisz and Scoplar – "When we define psychology as a science of behavior we do not differentiate mind we only say that whatever human does means his behavior is the avenue through which the study of internal mental events is being done." Thus, we can say that in the modern era Psychology means a science in which both behavior and mental processes are studied. 1.3

The Scope and Methods of Psychology The Nature of Psychology To understand the importance of the subject Psychology it is necessary to understand its nature. To understand nature we have to find out what Psychology

is all about, what kind of science it is, its branches, what are its purposes and problems? What is human according to psychology and what is the contribution of psychology to mankind? By studying these aspects the nature of psychology can be understood properly. In the beginning

for centuries Psychology was considered as a part of Philosophy. In the past fifty years psychologists introduced

psychology

as

an

independent subject and gave it a nature of science.

For this reason,

the

Independent department of psychology has been segmented in various universities and is taught

as an independent subject. The nature of psychology that we have now was different in the beginning. It was considered as a science of soul initially. The purpose

of this subject that time was investigation and thinking of the

soul. Thus, psychology was related to spiritualism and was part of philosophy. Till sixteenth

century psychology was considered as science of the soul. People could neither see the soul nor define it. Therefore, they became hesitant to accept it as science of

the

soul. In order to bring out the change people started calling it 'Science of mind'. But the nature of mind is also not certain like soul and so

could not

be defined. That is why Psychology was not accepted as the science of mind and till now psychology could not get the place as Pure science.

After studying minutely psychologists observed the influence

of consciousness on human behavior. Therefore, psychology was also accepted as science of consciousness, but few psychologists observed the behavior of human is not overpowered by consciousness always but sometimes unconsciousness takes place in his behavior. Thus psychology was accepted as the science of unconsciousness, but further this definition

was not accepted by

the people and nature of psychology kept on changing. Now psychology is considered as the science of human and animal behavior. In psychology the goal is to study human behavior, but the basis of this study includes animal behavior too. Initially with the help of psychology the experimental study of animal behavior takes place and then the comparison between human and animal behavior brings success in the study of humans. There are two kinds of human behavior, natural and acquired or learned. The study of both behaviors consists in modern Psychology.

Thus, the nature of psychology centralized on animal behavior instead of Spiritualism. 1.4

Psychology is a Science Psychology is a science of the study of human and animal behavior. It

is now considered as a complete science. As in pure science certain principles and rules are being set on the basis of experiments. Likewise in psychology too the principles and rules are determined related to behavior.

The study of human behavior is being done on the basis of these rules and principles. These bases conclude the discovery of the reason for behavior and the possibilities of past and future behavior are also discovered. Psychology is not the subject of mere thinking but

this evidence is

collected by using experimental kinds of scientific techniques. Whatever responses humans reflect towards its

own environmental stimuli, psychology studies the same. Therefore, we can say "Psychology is the science of human behavior or is the study of the science of its own reflection of response towards the stimulants based in the environment."

In fact, Psychology

is the science of human behavior. It cannot be considered as material science. We can also call it Natural Science. There is a specific and fundamental difference between Psychology and material

science. In material science we can keep control over the substance and attain success by doing desirable experiments in the laboratory. Opposite to that Psychology taken as subject is human instead of substance is not controllable as substance. Speed of mind is not controllable. One moment you think of New York and the next Peiking. If someone is busy hearing, something else instantly revolves around the thought of mind. Thus it is not possible to control the human mind like substance.

Second, the

difference between psychology and material science is that

Universality is found in material science, while individualism and individual differences are always there in psychology. For example, when a psychologist studies human behavior in the laboratory his subject would be the mind of a particular human through which his behavior would be conducted.

If any other subject would be tested instead of this subject, the study being done at present and the study done earlier will not be the same. Same way if a scientist does an experiment on an elephant, he will observe the reaction of all humans towards the elephant and will set a general rule but when a psychologist will study the reaction of humans towards elephants he has to study the reaction of every individual. On the basis of their reaction he cannot set a general rule. Psychology accepts the

three main techniques of natural science – Observation, Experimentation, and Description. This is why it is called natural science. It uses scientific techniques when it studies human or particular subjects. Psychology does not merely discuss doctrine of ideology like philosophy ethics or aesthetics. 1.5

Branches of Psychology Keeping objects in mind we can divide psychology into two main branches— (1) Normal or General Psychology (2) Abnormal Psychology

Normal or general

psychology is the scientific study of the entire behavior of humans. But abnormal psychology is the study of the

sick or abnormal state of humans. These two branches are further divided into other sub-branches like general or normal psychology is divided into individual,

group, social, applied and other sub-branches. Abnormal psychology is divided into only two sub-branches: individual and group. There are a few more sub-branches other than these

sub-branches but that will not be described here.

Applied psychology influences only these scopes like educational psychology, Industrial Psychology, religious Psychology are the other sub-branches of applied psychology.

Here we will study educational psychology. Schools of Psychology Education and Psychology are closely related, this topic has been enlightened in the previous chapters too. Through psychology we gain knowledge about

the

human mind. Therefore, its relationship with education is mandatory. In the field of psychology, Psychologists have explained behavior through different means. Educational Psychology is an applied branch of psychology. To study the behavior of people from different points of views an instructor needs to have a thorough knowledge of serial development of psychology. So that he brings change in the behavior of his pupil by influencing him in order to attain the desirable result. Differences in the ideas of psychologists in the development of psychology and the explanation of behavior resulted in the origin of different schools. These schools explained not only the nature of behavior but also brought changes in the ideas of educational psychology,

studies methods and scope. Meaning of the Schools of Psychology—Here the meaning of school indicates the method of thinking and ideas of organized groups of the people working in the field of psychology.

Psychologist Woodworth's opinion is—"For us a 'School' is a group of Psychologists who put forward a certain system of ideas designed to point the way that all must follow if Psychology is ever to be made a genuine productive service of both theoretical and practical value." —R.S. Woodworth This statement clarifies that the school of psychology is such a group of people who do theoretical determination in the field of psychology and gives it a nature of scientific research. In the 20th century psychologists experimented on the behavior of the living things and gave explanations through different means. That is why in psychology many schools of different ideas originated. These schools gave the solution to the same problem through different points of views. Each group has

a

different scope and thinking system. In educational psychology coordination between different ideologies to solve the education related problem is not required.

These schools can be helpful in the process of education by giving contributions in their own

specific field.

The main motto of educational psychology is to help in the holistic development of a child. The different schools of psychology try to understand

the

human mind through their own point of views. Each school has studied the mental problems minutely. In the field of education a few schools have researched on the subjects related to learning process, mental development, personality development etc. and influenced the process of education.

A few important schools of psychology will be briefly described here. Schools that have directly influenced the field of education and educational psychology are as follows: 1. Structuralism 2. Functionalism 3. Behaviorism 4. Psychoanalysis 5. Gestalt School 6. Field Theory 7. Holistic Psychology 8. Purposivism

1)

Structuralism In psychology Wundt and Titchener are the founders of the ideology of structuralism. In 1879 they founded the very first psychological laboratory in Leipzig, Germany. In this laboratory the experimental study started of mental structure and activities. According to the structuralists consciousness of humans is the combination of different mental abilities and activities. In this ideology they have tried to explain the nature of the structure of mind, consciousness and experience. School of structuralism is such a thinking system of psychology whose subject scope and objective are the nature of the conscious experience of a living thing. Its main motto is to study the conscious experience through scientific methods. Psychology surveys the internal experiences. Due to this idea a few psychologists have called this school inter philosophical. This is based on the method of internal philosophy. Through this method the different aspects and experiences of consciousness can be studied properly. Characteristics of School of Structuralism 1. They consider

the

nervous system the basis of experience that helps to gain experience. According to Titchner the unit of

human experiences is

the

mental element.Experience is the conscious internal structure of a human. 2. In this the information of mind and consciousness is gained through disintegration. The three elements of consciousness are—sense, talent and feeling. Sense is related to tangibility, talent is related to ideas, and feeling is related to emotions. 3. Mind and body both have independent existence and they collectively make arrangements to

make

mental processes happen. Contribution of Structuralism in the Field of Education— This ideology has not only influenced psychology but education too. 1. This ideology considered education as mental action and growth of experiences as

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motto of education. 2. They emphasized scientific study in the field of education and educational psychology. 3. Emphasized on the serial inspection of the nature and structure of mental actions. 4. This ideology has historical importance

in

the development of psychology through scientific method.

Limitations of Structuralism— 1. Because of accepting the method of inter philosophy this school has worked in a limited field of psychology. 2. They did not work in the direction of

the

entire mind. 3. They did not pay attention towards the problems related to the subjects, Motivation and Personality. This school was badly criticized in the beginning of 20 th century. William James was the main critique. According to his view it is useless to analyze or study the elements of consciousness. We should rather concentrate on how consciousness affects the various parts of our body. It resulted

in

the origin of a new ideology that is called Functionalism. 2). Functionalism This ideology was developed in America (In 1842–1910). It was developed as a reaction

to the

school of structuralism. This ideology is influenced by Durven's theory of development. John D. V. and Ronelds Angel gave functionalism a true nature. Its philosophical background is Pragmatism. Why? and What? Are the basis of this sect, according to Woodworth—"A Psychology that gives a correct and arranged answer to the question, what humans do? And also the further

questions: how do they

do that? And why do they do it? Is called the school of functionalism. Due to functionalism, knowing, willingness and feeling were incorporated in psychology. This ideology emphasizes on the motion of the strength of mind. Functionalism was embraced by different psychologists of various countries. Its main three schools are as follows: Chicago Community—In this John D.V., James Roneld Angel and Harberker are worth mentioning. John D.V. has specially emphasized on the utility of mind and brain the field of psychology, they enlightened that how the process of thinking works to solve the problem. John D.V. has emphasized in one of his write-ups, "The reflex is a concept of psychology", that mental function is a continuous process. It keeps on happening without the break of a moment. He discovered the relation between action and excitement.

Human's entire mental work has some motive or purpose. He did not accept that mind and consciousness are the combination

of

mental elements like structuralism, but emphasized the functions of the mental elements. He has emphasized mental function. James Roneld Angel—He has given a clear theory of functionalism. According to him where structuralism is related to element or substance, functionalism is related to the function or process. According to this he emphasizes on the information of the nature of mental processes and how it works. Mental functions are edited according to the circumstances. Mind and body collectively work and help the individual to cooperate with his environment. All mental activities or functions are based on the combination of the collective effort of mind and body. Functionalism does not accept mind and body as two different things. Harvekar has called psychology the science of mental activities. The subjects of psychology of functionalism are why? and How? Colombia Community—

The founders

of the school were James Kettle, Edward Thirndike and Robert Woodworth of

the

University of Colombia. Kettle worked on association, tangible knowledge and mental physics. Thirndike worked on wisdom and

the

learning process. Robert Woodworth earned name by writing the book "Contemporary schools of Psychology". He has also written a book on 'Experimental Psychology' on the basis of various experiments he did. Due to emphasis on co-operation in functionalism, dynamic psychology developed, he gave importance to motivation in behavior. Functionalism studied

the mind and behavior of humans and animals. This resulted in

the origin of behaviorism. Contribution of Functionalism in the field of Education—In the field of education contributions of this school are as follows— 1. This school emphasized on

the environment and co-operation in the learning process. 2. Followers of this school did a

lot of research on individual differences, learning, wisdom, co-operation, examination and evaluation that influenced education. 3. This ideology considered a child important in the process of education and contributed to the development of child psychology. 4. They emphasized understanding the needs of a child on different levels of age during the process of education.

5. They discovered the theory of Utility. They considered only those subjects important in

the

syllabus that are useful for man and society. 6. They emphasized on the collective activeness of mind and body. According to their idea,

the

mind without body and body without mind are incomplete. Mind and body worked together. That is why they emphasized the following on three rules as study techniques. (a) Physical Rule—In this they have tried to study the physical base of every action. (b) Study Technique in Different Situations—In this life is observed in different situations. (c) IntrospectionTechnique. 3) Behaviorism

In the beginning of 20 th century behaviorism was founded due to the criticism of structuralism and functionalism. Before this the emphasis was on the study of the element of consciousness. But a few psychologists considered it useless and said that the study that tells us about the effect of consciousness on our body is useful. Therefore the work of consciousness was more emphasized instead of its construction. But after some time the inter philosophical method that studied consciousness was badly criticized. William James was the main critique among the critiques. Father of behaviorism was J. B. Watson. The object of behaviorism is to study behavior. Watson did not accept consciousness by considering it unclear. According to him, to understand a living thing, it is important to observe and understand

the workings of his body. Examination of the entire personality of humans happens through behavior and activity. Thus only the study of consciousness is not useful but instead of emotions, feeling, talent, and memories. Attention should be paid towards his efforts and behavior that is tangible. These efforts and behavior are both natural and acquired that are studied by the psychologists. School of behaviorism is a group of psychologists who study both natural and acquired behavior of a living that is tangible. Max Mayor, P. Bis, Hull and Tallman and B. F. Skinner

is

among the main behaviorists.

In the year of 1912−14 when the movement of behaviorism was going on in America the Psychologists Weshref and Pavlov (1857−1936) were experimenting on associated reflex action, conditioned reflex action and motor reflexes. They experimented both on humans and animals. According to the view of Behaviorism a living thing responds due to the incitement present in the atmosphere. This discourse thought over the action of the living thing and studied the actions of muscles and glands. In this the'' Theory of Stimulus-Response" has been given an important place,

resulting in

human behavior in order to cope up or become friendly with circumstances and atmosphere. In the origin of behaviorism Sir Thorndike's contribution in the field of animal psychology is worthwhile. He did many experiments on fish, cats and hen. These experiments proved that because of lack of wisdom they learn many things through trial and error. An animal attains success to complete the work by trying again and again. These experiments are fully described in the chapter learning. Contribution of Behaviorism in Education: (1) Experiments done by behaviorist psychologists on animals demonstrated the rules and theories of learning. Method of trial and error was implemented in learning. (2) Study of child psychology got encouragement. (3) Effect of the atmosphere was emphasized in the development and improvement of humans. (4)

Psychologists belong to the school of behaviorism: enlightened methods of learning, rules and theories of learning, sensational behavior and habits related to root instinct that causes the progress of educational psychology. (5) Education is related to human behavior. Behavior has both personal and social aspects. This sect believes that the entire human behavior is fulfilled because of a continuous interaction of human behavior with

the

atmosphere. (6) "Pre-decided learning" developed as an educational method. (7) This school emphasized inspection and measurement.

(8) Behaviorists made the study of child personality easy and objective. After studying

a

child's behavior in different circumstances and atmosphere, they introduced many useful methods to evaluate personality. (9) Theory of Stimulus −Response resulted

in the emphasis on sense teaching in the

child education system. 4). Psychoanalysis Sigmund Freud (1856−1939) of Vienna was one of the main founders of Psychoanalysis. This school mainly studies the trials of

the

unknown mind. Dr. Freud used the method Hypnotism to cure

disorders like unconsciousness and Ligament. In this technique he used to ask questions from patients in the state of unconsciousness. Due to hypnotism the patient used to pour out all his emotional problems because of the unconsciousness that he was not able to express in conscious state due to shame, fright and hesitation. Freud used to observe the reason of disease through what the patient used to say in the state of hypnotism and unconsciousness. But this method was not successful on a few patients. For the treatment of these kinds of patients Freud used the method of 'Independent association'. Freud discovered many techniques to analyze

the human mind. After the deep study of the

human mind, a theory was designed on the basis of collected data, this theory is called Psychoanalysis. In this context Earnest Jones has said—The word Psychoanalysis is used to describe these three things: (1) Psychoanalysis indicates a special medical technique that was used by Prof. Freud of Vienna to cure the patients of a special group of Ligament. This way for the very first time it was used as

a

controlled meaning. (2) It indicates a special sub technique of discovery of deep levels of mind. (3) In the end this word is also used for one of the fields of knowledge that is gained through this method in this means in an applied way it is 'The Science of Subconscious Mind'. Thus we can say that the school of psychoanalysis studies the extraordinary behavior of humans with the characteristics of

the

subconscious mind. Freud, Adler and Yug are three main psychologists of this school who have given different explanations of

the

subconscious mind. The views of these respected personalities can be described in short:

Freud—Freud is the first psychologist of psychoanalysis school. He has defined three levels of

mind-conscious, sub-conscious and unconscious. Conscious mind is smaller than the unknown or unconscious mind. Human behavior is widely controlled by the unconscious mind. Conscious mind is always

influenced by the unconscious mind. Emotion and anger, a kind of unsatisfied feelings are always there in the

unconscious mind. Freud has compared mind with an iceberg floating in the ocean whose most of the part is under the surface of water. Thus, the conscious mind is very small while

the

unconscious mind is more powerful. But both the parts of mind are active. The unsatisfied emotions and desires of humans get collected in the unknown conscious that are not dead. Humans stop these feelings and emotions from coming into the conscious mind due to social and other reasons. Thus a continuous conflict between conscious and unconscious mind goes on. These depressed feelings when not expressed or illuminated, they take the shape of an entanglement that are called emotional glands. These glands influence personality. Freud has defined three powers that rule over mind—Id, Ego and Superego. Here is the brief description of it: Id—It is related to heredity. It is full of human's inherit qualities. The thoughts and consciousness of

an

object is not his own but this is the source of his mental power. This is the base of neglected desires and propensity. It is not under the control of

the brain. Its nature is unconscious and not related to reality. It is

related to the cupid tendency that is called 'Libido' by Freud. Ego—This is the part of id that develops in the external environment. It is related to the reality of environment. It is conscious and keeps control over the impure desires of

the unconscious mind. This is the 'ordinary conscience' of humans.

In this, both good and bad feelings of humans are present. There is no boundation on good desires but to control bad desires our 'superego' is always

awakened.

Super-Ego—It stops bad desires from entering the conscious mind. Its work is to rule over ego. It acts as a guard between conscious and unconscious mind. Our common conscience wants to fulfill all kinds of desires. But man learns about the rules and customs of society from childhood, this causes the formation of super-ego or common conscience. According to Freud,

the

base of the id is pleasure and reality is the base of ego. According to him,

the

entire mental actions of humans are inspired from the theory of pleasure or happiness. Sukh Siddhant Man succeeds in taking correct and desirable decisions if his ego is properly developed,

but if his ego is weak then mainly his id dominated desires will be fulfilled. But as man grows in age and experiences, his ego emphasizes on working according to the reality of liberal thinking. Alfred Edler—The other psychologist of psycho analysis, Edler, worked with Frued for many days. Edler and Frued principles were different, that is why Edler was not ready to accept the conclusions of Frued. Frued has considered cubit feeling as motivation or main power as the basis of all actions. While Edler thinks life is a struggle and a man has to face different circumstances by living in the society. He wants to defend and properly develop his personality. Therefore, keeping these things in mind, Edler has considered wish to gain power, base of life work and given importance to it. He has emphasized method learning in every field of life

and behavior becomes extraordinary due to emotional glands. According to Edler the reason for the

disorder of mental patience is not any crime but inferiority complex. According to him he adopts a strange lifestyle in order to escape from an inferiority complex. This feeling is in

an unknown consciousness and the same feeling reflects a

superiority complex in consciousness. Thus man wants to conceal his weaknesses and adopts a strange lifestyle to show his

greatness. Known and unknown both consciousnesses help a man to behave socially. This view of Edler is called 'Individuality' and 'Psychology". Study of man's lifestyle helps psychoanalyze a lot. Carl Jueng—Carl Jueng is the 3rd psychologist of this school. His theory is different from Freud and Edler. Jeung inspected and analyzed

the

association. Through these tests we can get the idea of the mental glands of humans. He had two kinds of differences from Freud— 1. Frued considered the emotional glands that developed during childhood

as

the reason for mental disorder. While Jeung emphasized on the current circumstances as well as

the

past. 2. Jeung has elaborated meaning of Libido. This is the main strength of life and can be seen in two different ways—Cubit related instinct and instinct to gain strength of life.

Jueng has considered unknown consciousness more important than known

consciousness and accepted unknown consciousness as a

loss

maker of known consciousness. Like man who seems brave in known consciousness are coward in unknown consciousness. There are both good and bad thoughts in

an unknown consciousness; the views of Jueng are the combination of the ideas of Frued and Edler.

Contribution of Psycho-analysis in the Field of Education—This school has influenced education a lot. Child's personality is related to education. The brief influence of this sect: 1. Heredity and Environment are the main elements to develop a man. They are related to

the

unconscious mind. 2. Psycho-analysis affected both theoretical and applied aspects of education. Unknown consciousness or unconscious mind keeps an important place in

the

process of learning. 3. Child's experiences and values of early life are very important in the process of education. These emotional glands developed in childhood affect the future and behavior of

a

child. 4. It has enlightened the importance of emotions in education. 5. With help of psycho-analysis the reasons for non-cooperation can be found in children. This sect has proved very important to understand the process of co-operation. 6. Psycho-analysis has also emphasized like naturalists on theory of independence in the personality development of a child. 7. Research of root instincts is an important purpose of education; psycho-analysis helps in the same. 8. Education is related to the socialization of a child. Mr Jeung is the follower of these kinds of ideas. According to his view group feeling and unconscious mind are deeply related. In fact socialization and culturalization are the combination of individual unconsciousness and group consciousness. It is clear now how education is influenced

by psycho-analysis. 9. This sect helps to understand the inner conflict. 5.) Gestalt School Along with behaviorism, near about in the year of 1912, Gestalt school originated. In German Language Gestalt School is called Gestalt psychology. The meanings of Gestalt are shape, form, whole or pattern. In the concordance of education and psychology it is called the entire shape.

The psychologists of this school did not get satisfaction by analyzing only behavior consciousness and unconscious mind. According to them only analysis of behavior and experiences cannot describe the personality of a man properly, they have emphasized on the theory of association and enactment in mental study. They concentrate on main characteristics of behavioral action and consciousness and also pay attention towards the entire shape of all the parts and characteristics. For example, the

entire shape of the face of a man can be seen by watching the various Gestalt like eyes, nose, ears etc. Same way by keeping all the body parts together whatever look or pattern we will get that will be called a human being not by keeping it separate. If the study of parts is related to the

whole then only it makes some sense. Same way knowledge should be understood by keeping the entire nature of feelings and actions in mind. Gestaltists have emphasized on moving from whole to parts in order to understand something, which means it is easy to first get the knowledge of a complete thing as a whole. School of Gestalt is a group of the psychologists that make the whole of behavior, action, incident, man and thing, the base of their study. M. Wertheimer, K. Koffka and W. Kohler are the main psychologist of this school. Contribution of School of Gestalt in the field of Education—Here is the brief description of how Gestalt school has influenced the field of education— 1. This school has emphasized tangible knowledge in the process of learning. An instructor should introduce the entire content first. We can get the knowledge of an object or incident only after understanding the entire situation. Mr. Kohler's theory of vision proves the same. This is described fully in the chapter 'Learning'. There are many processes incorporated under the process of learning such as emotions, tangibility, inspection, concentration, memory, thinking, imagination and reasoning etc. therefore this school has influenced the process of learning a lot. 2. This school has done many important works in the field of Child Psychology and Social Psychology. 3. They have enlightened the importance of environment and personality development. 4. Explanation of

wisdom given by this school is more clear and skilful than other schools. Wisdom is the base of vision or perception. Adjustment with the

environment is done by

wisdom only. This is why in education it is important to pay attention towards the environment of the child. 5. They have introduced the new ideology to solve the problem and thinking in learning. They keep more progressive thinking than other schools. 6. They have also given an important conclusion on hyper activeness. To understand behavior this school does not study its different parts separately but they study surroundings, because behavior is the result of entire circumstances. 7. Learning is an intentional and objective action. An instructor should keep a problem in front of the student. Problem increases tension in his mind that becomes the reason for the growth of capacity to work. To remove tension he completes the work quickly. This theory is used in Project and Heuristic Systems. 6.) Field Theory Kurt Levin was the founder of field theory in psychology. He was the first socialistic psychologist, but he also worked with Wertheimer, Koffka and Kohler. Therefore he was

influenced by the

School of Gestalt. His two books "Principles of Topological Psychology" and" Comitial Representation and Measurement of Psychological Forces" are very famous. Kurt presented a different Ideology of psychology than the school of Gestalt. His psychological thoughts are based on Typology and vectors. According to him behavior does not depend upon

the past or future but on the present. He explained behavior on the basis of the field

that is why his theory is called the Field Theory. Here the meaning of field is place of life, that is the psychological world of a man. Psychological world that is also considered as

a physic-social environment, its psychological tangibility becomes the reason for man'

s behavior. He has divided his field theory into two parts—Structure and Dynamic. According to Lewin, building of the field happens through man and his psychologist. In the construction of the field, elements related to regions, boundaries, its scope and foreign hull are incorporated. Through this man gains emotions, tangibility or stimulus and in return he expresses his reaction.

Lewin has said about mobile that mobility makes a place of life mobile or movable, meaning it creates energy in man to move. Three kinds of this energy are— (a) Valence, through whether a man does something or not, valence can be either positive or negative, that motivates a man to work or not work. (b) Vector is related to mechanical science. According to this there are two qualities of force (1) direction (2) energy. Vector is the combination of these two qualities. Valence decides the nature of direction, meaning if valence is positive it will take the man to the place of life where he is supposed to show behavior but if he fails to work due to any obstacle, he becomes the victim of hopelessness and falls in the situation of conflict. (c) Locomotion, actions that decrease tension that occurs due to the situation of conflict are called locomotion, that are done intentionally to get relief. The above theory of Lewin gives important information about desirable and best construction of learning, motivation, organized and reorganized behavior of man and also about bringing mobility. Contribution of Field Theory in Education—What is the contribution of field psychology in education, brief points related to same are as follows— 1. Lewin's field theory related to learning is very important because learning is influenced by valence. Teacher should create such

a surrounding that activates the positive valence of the child. 2. Field psychology has made an important contribution in a

child's genuine educational surroundings. 3. In Field Psychology, expressed views related to level of aspiration encouraged motivation in education. The higher education level of aspiration for more children would be interesting. 4. Lewin's Group Dynamism is very important in order to make group education

influential. 5. Lewin's views reflect the

theory of individual difference and it emphasizes its use in education. 6. Lewin has given his contribution in the field of education by defining hopelessness. Conflict, tension and relief etc in the field of psychology, because these things influence the completion

of a child a lot.

7. According to the views of Lewin better arrangement of education can be done by recognizing energy, needs of educational surroundings, teaching techniques and goal of the

child. 7)

Holistic Psychology The idea of Holistic Psychology developed in Germany and America. According to Holistic Psychologists man is an unitary organism and human is a whole person. Psychologists that believe in this theory can be divided into two groups—(1) Organismic Psychologists and (2) Personalistic Psychologists, First's idea is more biological while other's is more social. Brief description of these two ideas is as follows— (1) Organismic Psychologists—Adolf Meyer, G. E. Coghill, and Kurt Goldstein are famous among organismic psychologists. Main points according to these psychologists are as follows— (i) Psycho-biological knowledge is necessary for psychophysical health, so that the diagnosis and prevention of disease can be done. (ii) Human body develops from whole to parts and the learning process moves from ordinary to extraordinary. (iii) Energy is equally spread in the creature or physical organs of

the

human body. This idea introduced the theory of Equalization of Energy in psychology. (iv) A creature faces two circumstances in order to adjust with

the environment – first, the

real environment, that is in front of him and second probable environment, originated from

an

unreal environment for that creature brings changes in his behavior. (2) Personalistic Psychologists—G. W. Allport's name is specially known to develop

the

science of personality among personalistic psychologists. Though Stern Introduced the ideology of personalistic psychology to the world (1906). A stern personality has unity, value and purpose. Man is unitas multiplex. In medical psychology Stern made applied use of personalistic psychology. Allport emphasizes on the completion of an individual. According to him the individual is an unique organized whole. According to him the definition of personality is—

Contribution of Holistic Psychology in Education—Here is the contribution of holistic psychology in education— (1) Holistic psychology revealed this fact for the very first time that the development of a child happens from whole to parts and knowledge from ordinary to extraordinary. Two educational maxims developed through this theory – 'from whole to parts', and 'from ordinary to extraordinary'. (2) Main contribution of holistic psychology is to develop 'Personalistic Psychology', through this the techniques of knowledge and measurement of personality could develop. (3) Due to the influence of holistic psychology, educationists understood the importance of adjustment. And child - nasty adjustment and well-adjustment reduce the emphasis on efforts to adopt. (4) If the contribution of the

school of gestalt in education is accepted, then the contribution of holistic psychology is also very important in education because the

ideology of holistic psychology created the background for the development of Gestalt Psychology. (5) Development of psychobiology

by Holistic Psychology is also very important because this ideology has contributed

to

the diagnosis and treatment of mental disorders in children. 8) Purposivism Purposivism is also known as Hormic. In psychology the founder of this ideology is William Mc. Dougall of England. The word hormic is derived from

the

Greek word horme , its meaning is motivator. Therefore psychologists who believe that motivation, motivator and purpose are important parts of psychology are called Hormic or Purposivism Psychologists. This ideology believes that behavior begins through motivation. Motivational behavior is like achievement of

a

goal in which two components- willpower and far sight are mixed. Purpose motivates an individual to behave. Therefore, psychology emphasizes studying those facts that motivates some work to start and end or behave. According to Mc. Dougall man and animal behave like 'a machine' and behavior is a quality of living thing. Under this ideology Mc. Dougall founded the theory of root instinct. Theory of Root Instinct—According to this theory of Mc.Dougall root instincts are by birth but it can be improved by practise of learning. According to Mc. Dougall on the primary level root

instinct is a complete process that can be divided into three parts—(1) On the receptive side. (2) On the execution side. (3) Emotional pulse or striving. According to Mc. Dougall there are total fourteen kind of root instinct and emotions related to that.that is listed below—

Watson, Bernard and Thorndike criticized this theory of root instinct and its related emotions of Mc. Dougall did not accept it as a theory of motivation, then too it has educational importance.

Contribution of Purposivism in the Field of Education—Though purposivism specially theory of root instinct is not accepted now as motivator of behavior, yet a few points of it are still important in the field of education, that proves the importance of purposivism in the field of education: (1) Motivation is important for learning. Instructors can motivate children for influential learning by taking advantage of root instinct. (2) Teachers can motivate and help children for co-operation by moderating their root instinct and giving guidance in the right path.

(3) A few root instincts given by Mc.Dougall are important in the education such as- curiosity, self respect and construction. In education learning and teaching can be more influential by using these

tactics. 1.6 Unit Summary ● Psychology was accepted as a science that studies the

mind. This definition of psychology was accepted till 1870 and mind remained the subject scope of psychology that was a branch of philosophy. ● From 1879 BC William Wundt founded the very first laboratory of psychology in Leipzig university of Germany (its name is now changed to Karl Marx University) psychology's relation with philosophy gradually decreased and its nature became more applied. Therefore its object changed to mental activities or conscious experiences from mind or soul. ● Psychologists observed after a deep study that human behavior is influenced by consciousness. Therefore psychology was accepted as science of consciousness but a few psychologists observed that all behavior of humans is not influenced by consciousness, but

that

he behaves unconsciously too. ● In fact psychology is the science of human behavior. It cannot be accepted as material science. Now it is called natural science. There is a specific and fundamental difference between psychology and material science. In material science substance can be controlled by all means and success can be achieved after doing desired practical

work

in the laboratory. Opposite to this in psychology a human being is a subject instead of a substance that cannot be controlled like a substance. ● Education and psychology are deeply related, this topic is enlightened in previous chapters too. Through Psychology

the

human brain achieves knowledge, therefore its deep relation with education is mandatory. ● In

the 20

th Century the experiments that psychologists did give different explanations of behavior of living things. That is why different schools and

different ideologies originated in psychology. ● The motive

of educational psychology is to help in the holistic development of a child. Schools of psychology try to understand

the

human mind from their own point of view. Each school has deeply studied mental problems. Some schools have influenced the education process in field education by analyzing the subjects related to learning process, mental development and personality development etc. 1.7 Key Terms Hopelessness: Frustration Valence: To attract Exert traction 1.8

Check Your Progress 1.

How does Psychology differentiate from Philosophy and Science? Describe. 2. What is Structuralism? How is it different from functionalism? 3. Present as analysis of behaviorism under the study of psychology? 4. Write an essay on critical "Psychoanalysis" of the principle of Freud? 5. Write your thoughts on the "Principle of Scope"?

Unit 2: Educational Psychology: Nature & Scope 2.0 Introduction 2.1 Unit Objective 2.2

Meaning and Definition

of Educational Psychology 2.3 Educational Psychology: A Science

of Education 2.4

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Educational Psychology: Nature and Scope 2.4.1 Nature of Educational Psychology 2.4.2 Scope of Educational Psychology 2.5 Educational Psychology:

An Independent Discipline 2.6 Unit Summary 2.7 Key Terms 2.8 Check Your Progress 2.0 Introduction

Educational Psychology studies those processes that affect human behavior. Psychology not only expounds its principles, but it

also tells us how life could be made healthier and prosperous using its principles. Psychological principles are used in dealing with the various problems and situations of daily life. An educational subject is important in this specific field. Since the different principles and the rules of psychology are applied in Educational situations therefore the Educational Psychology is also called the behavioral Psychology. What is Educational Psychology? What does it mean? It will be clearer with its description related to various definitions, objectives and scope. 2.0

Unit Objective This Unit intends to introduce the learners with: ● Meaning and Definition of Educational Psychology ● Educational Psychology: A Science of Education ● Educational Psychology: Nature and Scope ● Educational Psychology: An Independent Discipline

2.2

Meaning and Definition of Educational Psychology It is evident after

understanding the meaning of Education and Psychology that Education is a social process, whose objective is to transform human behavior

and Psychology is such a science that is related to the study of behavioral changes. This is the behavioral form of general Psychology. Educational Psychology studies the various aspects, related to the action of the learner and learning, and teacher.

Educational Psychology is an important branch of Psychology. This is made of two words- 'Education' and 'Psychology'. It means Education related to Psychology i.e. it is scientific study of human behavior in the process of Education and it uses Psychological principles in solving the Educational problems. In the words of Skinner-"Educational Psychology takes its meaning from Education, a social process and from Psychology, a behavioral science." The behavior of man is changed by Education and Psychology is such a science that studies all the aspects of human behavior. In this view,

Education and Psychology, both are related to the development of human personality. The basis of Educational Psychology, Psychology deals with the rules and facts of human conduct. In

the same way Educational Psychology deals with the specific kind of people, the behavior and conduct of students either getting education in school or outside school. Its scope is extremely narrow and specific. Educational Psychology utilizes procedures of General Psychology for the study of its subject. It deals with the qualities of children, nature and their behavior in educational situations and represents the solution, analysis and explanation of education related problems.

In the words of

Skinner, ''Educational Psychology utilizes those findings that deal specifically with the experiences and behavior of human beings in educational situations.

Educational Psychology

studies those processes that affect human behavior. Psychology not only expounds its principles, but

it

also tells us how life could be made healthier and prosperous using its principles. Psychological principles are used in dealing with the various problems and situations of daily life. An educational subject is important in this specific field. Since the different principles and the rules of psychology are applied in Educational situations therefore the Educational Psychology is also called the behavioral Psychology. What is Educational Psychology? What does it mean? It will be clearer with its description related to various definitions, objectives and scope.

Psychologist and Educationalist have defined the Educational Psychology in different ways: (1) Skinner—"Educational Psychology deals with the behavior of human being in educational situation.'' (2) Crow and Crow—"

Educational Psychology describes and explains the experiences of an individual from birth

to old age." (3)

Knall and Others—"

Educational Psychology is concerned primarily with the study of human behavior as it is changed and directed under the social process of education." (4)

Swear and Telford—"The major concern

of educational psychology is learning. It is that field of psychology which is primarily concerned with the scientific investigation of the psychological aspects of education." (5) Alice Crow—"Educational Psychology represents the application of scientifically derived principles of human reactions that affects teaching and learning.'' (6) Kalasnik—"Educational psychology is the application of the finding and theories of psychology in the field of education." (7) Stephan—"Educational psychology is a systematic study of educational growth." According to J.M. Stephens—"Educational Psychology is psychological study of the surroundings of Educational growth. In this view under the psychological study, not only the uses of Psychological theories are told but also it proves to be a specific branch of psychology. This branch tries to explain the educational movement in the same way as that of the branch of Social Psychology tries to explain the social events.

On the basis of the

above description we can say that educational psychology is the psychological study of students' problems and their solutions that arise in the educational environment along with the responses toward the educational environment. It has been widely explained in "Encyclopedia of Educational Psychology", that learning is related

to the

human element. This is such a field in which the concepts are applied in the field of education that are gained after experimental work done in laboratories. However this is such a field as well, in which, the

experimental work is done to determine the procedures of studying

the behavior of such concepts and special interest in education. It studies the various sections of learning that are directed to prevent a student from adapting to the society with the optimum security and satisfaction.

Nature of Educational Psychology—

On the basis of the above definitions, the nature and structure of Educational Psychology could be discussed. The nature of Educational Psychology is considered to be scientific.

It becomes clear from the study of Educational Psychology that the principles of psychology are applied in the field of education. Today Psychology has proved valuable in educational processes. With the help of psychology, the scientific principles pertaining to the rules of learning, concentration, tiredness, ways of memorizing, the principles of syllabus structuring, learning and its evaluation are studied. Therefore, from the angle

of Educational Systems, the nature of Educational Psychology, like Psychology, could be considered scientific. Educational Psychology establishes its general principle by the scientific study of its problems and their solutions and

predicts the person's behavior related to the subject of learning. The various methods of Educational Psychology shall be described further. Nowadays there are many researches being done in the field of Educational Psychology for the teachers, counselors and all the procedures of schools, as well as to understand human nature. Educational Psychology is considered to be a behavioral science because it describes the process of education on the basis of fundamental principles of human behavior. In this way Educational Psychology presents the description, analysis and solutions related to the problems of learning. The structure of Educational Psychology becomes clear from the principles of psychology. In brief, we can say, that: (1)

Educational Psychology is also a major behavioral science. It also studies the 'what', 'why', and 'how'

of human behavior. It explains the process of learning in its surroundings scientifically. The thoughts of psychologist Crow and Crow are, "Psychology

explains '

how' of human development as related to learning education attempts

to

provide the 'what' of learning educational psychology is concerned with the 'why' and 'when' of learning." Thus, as per Crow and Crow, Educational Psychology can be considered a behavioral science. Because it attempts to explain the processes of learning established by scientific methods related to human behavior in the context of learning. Swear and Telford—"Educational Psychology uses the method of science in the form of its findings." (2) Educational Psychology is of scientific nature. Even under this, a scientific and systematic study is done for students and their behavior in context of the learning environment.

(3) The focus of Educational Psychology has been the learning in educational surroundings. In order to understand Educational Psychology we should consider Skinner's thoughts, "

Educational Psychology utilizes those findings that deal specifically with the experiences and behavior of human beings in educational situations."

At last we can say, Educational Psychology is the science that studies education according to the principles of psychology. Although Educational Psychology is a branch of Psychology, it delivers its principles independently by resolving

the educational problems on an experimental basis and on the basis of these principles, studies the human behavior in the educational situation. This procedure also affects the learning process. 2.3 Educational Psychology:

A Science of Education Science and technology have made it possible for us to carry out all our tasks efficiently, effectively and speedily. With the help of minimum input in terms of labor, energy and time, science helps us to derive maximum output in terms of the quality and quantity of the finished products or outcomes. Science and technology have, thus, made our life quite comfortable. Let us try to evaluate educational psychology against this criterion. What role can it play in the field of education? Does it help the persons connected with the task of arranging and providing education or getting the fruits of education in the same way as science and technology help those connected with other tasks in our day-to-day life? Surely it does. It helps in realizing the objectives of education in a better way. Education aims at shaping the behavior of the students in a desirable way and bringing about all-round development in their personality. The task is carried out through the process of formal or informal teaching and learning. Educational psychology comes in here for planning the process of teaching and learning by adopting the scientific principle of minimum input for maximum output. As a result, with the help of educational psychology, a teacher can teach effectively by making minimum use of his energy in terms of time and labor. Similarly, the students can learn effectively by spending less time and effort. Educational psychology, thus, helps to carry out the process and produce the results of education. It supplies the necessary knowledge and skills, especially for the teacher, to realize the objectives

of education. It equips the teacher by supplying the essential scientific skills, technological expertise, and advice in molding and shaping the behavior of his or her students for the desirable all-round development of their personality much in the same way as the persons connected with the actual construction of a bridge are helped by an engineer or mechanic equipped with the essential civil, mechanical or electrical technology. Educational psychology, therefore, plays the same role as other sciences or technology in helping the teachers and other persons connected with the building of the future of the youngsters in their change. Thus, we are justified in describing educational psychology as the science and technology of education. 2.4 Educational Psychology: Nature and Scope In the foregoing discussion, we have substantiated Peel's definition of educational psychology as a science of education and established that

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the nature of educational psychology is scientific. 2.4.1 Nature of Educational Psychology In discussing the nature of psychology,

we have clearly shown that the basic nature of the subject is scientific. Since educational psychology is an offshoot, and part and parcel of psychology, its nature cannot be different from the main subject.

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The following points further confirm the nature of educational psychology as scientific: Educational psychology possesses a well-organized, systematic and universally accepted body of facts supported by the relevant psychological laws and principles.

It is constantly in search of the truth, i.e., studying the behavior of the learner in relation to his educational environment. Moreover,

Scope of Educational Psychology

a particular subject in the field of its operation (what is to be included in it or what subject matter it contains comes under its scope). Educational psychology is the science of education, and it helps the teacher to mainly deal with the problems of teaching and learning. It is the task of modifying the learner's behavior and bringing about an all-round development in his personality. Therefore, in psychology, the scope of study and the field of operation are extended to cover the behavior of all living organisms related to all their life activities. The psychologist who deals with the problems of education are concerned with what to teach, when to teach and how to teach. In educational psychology, the scope of such behavioral study has to be limited within the confines of the teaching–learning process, i.e., studying the behavior 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, the subject matter of educational psychology must be centered on the process of teaching and learning, enabling the teacher and learners to do their jobs as satisfactorily as possible. Henry Clay Lindgren, an emeritus professor of psychology at San Francisco State University, points out that educational psychology is concerned with understanding the learner, the learning process and the learning situation.

points: Who is being taught or educated? By whom is he or she 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 it is purely the concern of educational philosophy, a matter to be decided by society or the government.
Educational psychology states that the development of the human brain can be traced and classified into four stages, which are levels of the child's relationship with the surroundings. In these four stages, a child develops cognitive abilities and social understanding. These four stages also determine the abilities of creativity, intelligence, morality and motivation in a child. Educational psychology also studies the much-debated heredity versus environment aspect of a child's mental and behavioral development. There are instances when children of the same class have varied levels of understanding regarding a concept; in this case, educational psychology aims to analyze the reason for the difference. 2.5
Educational Psychology: An Independent Discipline Regarding Educational Psychology, most of the educationists think that it has now become an Independent Discipline. As it is evident from the following excerpt. "Today's Educational Psychology
does now apply the general principle of Psychology as it is, but it also applies it into day-to-day activity to testify and after the experiments it presents its principles separately. Therefore, modern Educational Psychology has its own scope, programs, problems and methods. All of these activities show a relationship with general psychology however they are not dependent on psychology." It is related to Psychology on one hand and to Education on the other. Education discipline has close relation with Educational Psychology as it is compulsory to study Educational Psychology with it. Hence, we can say that Educational Psychology is a social science of Education Discipline. Educational Psychology is now considered an educational discipline. Educationists and psychologists have expressed the following thoughts in this regard— 1. Educational Psychology focuses itself on human behavior. 2. It is a body of facts and information which are found as a result of Investigations and Observations. 3. This body of knowledge can be generalized in the
form of principles and rules. 4. Educational Psychology has developed a new system in which knowledge is searched, hypotheses are testified and principles are expounded. 5. This system is helpful in solving the problem that arises by them.

6. These information, knowledge, principles, and systems all make up Educational Psychology and provide the basis for Educational Theory and educational conduct. Educational Psychology as an Occupational Subject—The teacher is a major factor in Teaching and learning process. Hence it is important for one who would become a teacher and adopt teaching profession, to study Educational Psychology. In this way, Educational Psychology can also be addressed as a professional subject. This is described in detail in 'The Scope of Educational Psychology'. 2.6

Unit

Summary ● Psychology is such a science that is related to the study of behavioral changes. ● The behavior of man is changed by education. Psychology is such a science that studies all the aspects of human behavior. In this view,

Education and Psychology, both are related to the development of human personality. ● Since the

different principles and the rules of psychology are applied in Educational situations ● Therefore, Educational Psychology is also called behavioral Psychology. ● From the angle

of Educational Systems, the nature of Educational Psychology, like Psychology, could be considered scientific. Educational Psychology establishes its general principle by the scientific study of its problems and their solutions and

predicts the person's behavior related to the subject of learning. ● Situation and Environment plays a very important role in Education. The production of Educational situations is well planned for Education. Education attempts could not

be successful

without the proper Environment. Environment is also studied in psychology. The elements that develop behavior are included in the Environment.

Therefore in educational psychology, a teacher's personality, training, his physical and mental health etc, are widely studied. 2.7

Key Terms Creative Tendency: the quality of creation.

2.8 Check Your Progress 1) Define and explain the meaning of educational psychology. 2) Discuss how educational psychology is considered as a science of education. 3) Discuss the nature and scope of education psychology. 4) Is education psychology an independent discipline? Discuss.

Module II: Development & Growth

Unit 3: Meaning of Growth & Development 3.0 Introduction 3.1 Unit Objectives 3.2 Meaning of Growth and Development 3.3 Maturity 3.4 Principles of Development 3.5 Unit Summary 3.6 Key Terms 3.7 Check Your Progress 3.0

Introduction The phenomenon of development of the child begins while he

is

in the mother's womb and continues through his infancy, childhood, adolescence, adulthood and maturity. Thus he passes through the various stages of growth and the development takes place. Psychologist Hurlock has said "Development results in new characteristics and new abilities." Development is a multi-faceted process. It includes many aspects. In the study of educational psychology, not only the child's intelligence but, for his wholesome development, physical, mental, social, emotional stages are also necessary. All these aspects of development are mutually related. While describing the development of

a

child, the meaning of development, stages of development, structure, principle, and various aspects of development shall be considered briefly, and it will be appropriate. 3.1

Unit Objective This Unit intends to cover the following topics: ● Meaning of Growth and Development ● Maturity ● Principles of Development

3.2

Meaning of Growth and Development The natural development of a human is called Growth. The changes that happen after the creation of an embryo in the womb until his birth, is growth. Apart from this all the changes that happen after the birth till old age, which are not affected by learning and training and are progressive, is also

growth. The nature of growth is like development but there is

a

difference between both the thoughts. Development includes the abilities that are earned by learning and training; however growth has no importance of these factors. Liking, coming out of teeth is a growth however acquired abilities have no role to play in it. Growth has its own direction and time limit. Educational Psychology studies human behavior in the educational situation and its objective is to bring about the desired changes in the behavior of the child. Hence it is important for the teacher to know the changes that take place in a child as a result of growth and development. Often both these terms are thought to be synonymous as they both point towards progress. However, the psychologists have suggested some difference between the two and hence it is important to understand this difference. The general meaning of growth is the increment in shape and size of the organs, weight, and height. The meaning of development is more general. From infancy to childhood, adolescence to adulthood, the growth that is observed in the limbs of the child we say that he is growing. It is obvious from this that the growth can be weighed and measured. But sometimes we see that in spite of the growth of the limbs in the child, their ability has not increased properly then we say that there had been no development. Development of organs work - and indicates the capabilities. As it has been said that growth can be measured, however the development can only be noticed through the changes in human behavior. Hence development is the qualitative changes of a person, due to which he progresses or regresses. In the field of psychology the meaning of development is not only growth, i.e. the height and weight increment, but it is the growth of new abilities in a human being which keep going on in a human being beginning from the early stage till maturity. In Hurlock words, "Development is

not limited to growing larger, instead, it consists of the progressive series of changes towards the goal of maturity. Development results in new characteristics and new abilities on part of the individual." Three things become clear by Hurlock's definition— (1) Development point to change. (2) Development takes place in a definite order. (3) Development has a definite direction and aim. According to Hurlock, the process of development continues throughout life in a definite order, and every stage affects the next one. Gesell has described the meaning of development in this fashion—"Development is more than a concept. It can be observed, appraised, and to some extent even measured in the three major manifestations (a) anatomic (b) physiologic, (c) Behavioral…. behavior signs, however, constitute the most comprehensive index of developmental status and development potentials. According to Meredith —"Some writers reserve the use of 'Growth' to designate increments in size and of 'development' of mean differentiation." Therefore we will study growth and development in the same way. The growth and development mean the stages from pregnancy till maturity. All the changes that a man goes through from the pregnancy till maturity, all come under development, as a result of development a man gets maturity. Maturity means getting growth and development. Maturity, development and growth are closely related. The meaning of maturity, growth and development has been discussed further. 3.3

Maturity The phenomenon of development begins with the embryo creation in pregnancy and it is very rapid in the early stages. Within the pregnancy a child takes birth after maturing till a certain limit. After the birth he ends in maturity finally. In development, the changes take place in an

order that only points to maturity. One stage of maturity helps a living being

to develop normally.

The maturity affects the development of a child majorly before birth. Every stage of growth and development is majorly affected by maturity, for example when an infant's muscle becomes strong enough to walk, he begins walking. Therefore maturity helps growth and development. In fact the objective of growth and development is to get maturity only.

The

speed of growth and development becomes slower later this is the reason why the speed of growth and development is highest in the mother 's womb, which is the first stage of development. And later adolescence which is the last stage of the development of the human being, it is least. Maturity is the aim of natural growth. The process of maturity goes on till the certain age of the human being. In the last stages of adolescence, which means the age of 21, this process finishes. There are two aspects of the personality of a human being, physical and mental. The natural and complete stage development and growth is called complete maturity. The stage at which these are obtained, is called old age. Hence the objective of all the stages of development is to get old age. The maturity and old age has an effect on learning and environment. This is why maturity shows up

in

different age groups among the people living in different geographical and social conditions. Maturity is mainly the reason for development. Development becomes possible only by the mutual reactions of both. Learning is not possible in the absence of maturity. A certain stage of maturity is needed for learning. Therefore learning and development, both depend on maturity. In spite of huge correlation among maturity, development and learning, all these three differ from one another. Maturity means natural development. When the development of a man's abilities happen naturally without the aid of learning and training we call it maturing, whereas the development is obtained via desired and progressive changes.

The effect of maturity on the development was tested by Gesell and Thompson in 1929. This method used

the

Co-Twin Control method. In this experiment two twin baby girls were taken. One of them was trained to climb the staircase from the age of 46 weeks till 52 weeks. The other girl was just controlled

and

watched without any training. As a result of development with the help of training, the first girl took 26 seconds to climb the staircase; whereas the other girl took 45 seconds without any training in 52 nd week.

The 53-

week old girl has been practicing moves from step 2 weeks. After this the two weeks training was given to the girls who were controlled, it took only 7 seconds after the training of just 2 weeks for the controlled girl to climb the staircase in the 55 th week. Therefore we can say that due to maturity, the second girl succeeded in climbing the staircase in a very less time in spite of less training compared to the first girl. 3.4 Principles of Development What is the principle of growth, this too is important to be known. According to Garrison and others, "When a child enters into one stage of development from another, then we observe some changes in him.

Studies have proved that these changes have a tendency to follow certain principles. These principles are called the 'Principles of Development'." Following are the principles of development which control the process of development— (1) Principle of Developmental Direction—As per this principle the development of the child happens from head to feet. Psychologists have called it Cephalocaudal direction according to which, the head, body and limbs develop sequentially in a child. (2) The Principle of Continuous Growth—According to Skinner, "The principle of continuous growth only focuses on the fact that there are no sudden changes." The development does not happen with the same speed, however it continues without halt. It can sometimes be slower or faster. (3) The

principle of individual difference in the rate of Growth—It has been proved with the help of scientific studies that

the

rate of development of two different people is different. The man who is taller at the time of birth will be taller as he grows. Two different children of the same age may have two different physical, mental and social

development.

(4)

The principle of development sequences—According to this system the development of a child happens in a sequence. The motor and linguistic development of a child happens in fixed sequence. He makes a special sound from the third month, he begins to laugh heartily, and from the seventh month he begins to make sounds like "Pa", "Ba", "Ma" or "Da". (5) Principle of Interrelation—There is relation in the physical, mental and emotional sides of a child. With the physical growth, his interest, voice and concentration also changes and this makes their motor progress possible. Physical growth affects mental growth. According to Garrison and others, "The attitude related to

the

body focuses on the equilibrium of various organs and development." (6) Principle of Uniform Pattern—According to this principle, the measurement of the babies in the entire human is just one, and it is, that there is no difference. Hurlock has defined this principle in this way, "Every species whether animal or human, follows a pattern of development peculiar to that species." (7) Principle of General to Specific Responses—In all the aspects of development, whether they are motor or they are mental, a child first gives a general response and then moves to a specific response. Hence a child moves from general responses towards specific responses. An infant first moves his entire body then he begins to move the specific organ, in order to get something, the infant not only moves his hands but his entire body, and gradually he begins to move the specific organ 'the

hands'. Hurlock has said, "In all the stages of development, a child's responses are general before they become specific." (8) Principle of Interaction of Heredity and Environment—The development of a child

happens due to the interaction between the heredity and environment. Hence, "Heredity defines the limits beyond which the child cannot develop, in the same way it has been proved that

a

bad environment and illness at the time of birth, may harm the abilities with which a child is born." Skinner has passed the above thoughts. 3.5 Unit Summary ● The phenomenon of development of the child begins while he

is

in the mother's womb and continues through his infancy, childhood, adolescence, adulthood and maturity.

● Development is a multi-faceted process. It includes many aspects. In the study of educational psychology, not only the child's intelligence but, for his wholesome development, physical, mental, social, emotional stages are also necessary. ● The natural development of a human is called Growth. The changes that happen after the creation of

an

embryo in the womb until his birth, is growth. ● Educational Psychology studies human behavior in the educational situation and its objective is to bring about the desired changes in the behavior of the child. Hence it is important for the teacher to know the changes that take place in a child as a result of growth and development. ● Development is the qualitative changes of a person, due to which he progresses or regresses. ● Changes are sequential in development which point towards maturity. ● Every stage of growth and development is majorly affected by maturity, for example when an infant's muscle becomes strong enough to walk, he begins walking. Therefore maturity helps growth and development. In fact the objective of growth and development is to get maturity only. ● Maturity means natural development. When the development of a man's abilities happen naturally without the aid of learning and training we call it maturing, whereas the development is obtained via desired and progressive changes. 3.6 Key Terms Growth: Specific development, success and progress. Heredity: family lineage. 3.7 Check Your Progress 1. What do you understand about

growth and development? Explain the difference between them. 2. What do you understand by maturity? Explain with examples.

Unit 4: Growth Development Process 4.0 Introduction 4.1 Unit Objectives 4.2 Process of Growth and Development 4.2.1 Physical Development 4.2.2 Social Development 4.2.3 Emotional Development 4.2.4 Motor Development 4.3 Concept Formation 4.3.1 Process of Concept Formation 4.3.2 Concept Development 4.4 Unit Summary 4.5 Key Terms 4.6 Check Your Progress 4.0 Introduction Everyone would like to know how to bring up children in the best possible way, such that they grow up to be healthy, happy and productive individuals. Developmental psychology focuses more specifically on this domain. Infancy, in general, is the term used for the first two-and-a-half years of life. Neonatal period comprises the starting two months of infancy. This is the period wherein the primary priority of life is to satisfy one's basic needs: sufficient milk (preferably mother's milk), being warm and dry, and of course, toilet needs to be taken care of. More specifically, the infant needs to be protected from harm and infection. Infection is the biggest hazard during this period of life. In a way, the neonate (newborn) is a fetus out of its element. The fetus undergoes a great deal of neurological development. In view of the fact that the neurons are still replicating and multiplying their axons, the neonate's nervous system maintains an extensive amount of agility, which means that there is a fairly diminutive specialty of function. If injury were to occur to a division of the brain, for instance, a different part of the brain could still make up for it.

Infants have eyesight when they are born. However, they are very near-sighted and their eye movements are not well coordinated. Their hearing sense, on the other hand, already begins to function when they are in the womb, by the 20th week approximately. They have a good sense of smell and taste when they are born. This is the reason that infants prefer sweets, which does not coincidentally comprise mother's milk. It is evident that the neonate has some fundamental actions and reactions, which are in the form of reflexes, such as rooting (searching for its mother's milk) and the startle reflex. We can also see certain instinctive patterns: The orientation of infants seems to be in the direction of faces and voices, particularly feminine ones and they have an instinct to recognize their mother's voice and scent. All infants are different, yet they exhibit similar developmental aspects. The cognitive development of infants is a domain of developmental psychology that investigates the internal psychological state of infants and toddlers. In infants, since they do not understand the importance of words, language development is in the form of gestures, voice tones and non-verbal sounds.

with a focus on the physical, social, emotional and cognitive aspects. The unit will also discuss the development of concept, logical reasoning, problem solving and the importance of language. Finally, you will learn the role of heredity, environment and educational implications on individual differences. 4.1 Unit Objective This Unit intends to cover the following topics: ● Process of Growth and Development: Physical Development, Social Development, Emotional Development, Motor Development ● Concept Formation: Process of Concept Formation

4.2 Process of Growth and

Development 'Healthy mind lies only in a healthy body' is an old adage and is true to the core. The physical, social, emotional and cognitive development of a child is very important for a number of reasons. In this section, we will discuss each of these categories in detail. 4.2.1 Physical Development Appropriate

physical development gives an invaluable contribution to the all-round development of an individual. When a child is busy in some physical activity, he is emotionally as well mentally involved in it. Physical development of the individual is important both for the individual and social development. It is also important for ethical, moral and spiritual development. A physically unhealthy person, other things being assumed equal, is unable to perform his duties to himself, to the community and to God. He cannot offer his prayers effectively. By not giving proper attention and care to the physical development of the child, we may be guilty of causing serious handicaps to his total development, including his emotional, intellectual, social, ethical and even spiritual development. A knowledge

of the process of the physical growth of the child and development will enable the teacher to equip him for setting his/her programmes according to the needs of the children. Physical growth and development refer to processes which bring about bodily and physiological changes—which are internal as well as external—in an organism from conception till his death. Generally, these changes take place in the following dimensions: Gross physical structure or physique: It involves changes in height, weight, body proportions and the general physical appearance. Internal organs: It involves changes in the functioning of glands, nervous system and other body systems—circulatory, respiratory, digestive, muscular, lymphatic and reproductive. General Pattern of Growth and Development Although there are wide individual differences among children, physical growth and development seem to follow to some extent a general pattern. This general pattern of growth and development may be summarized as follows:

(i) Increase in height and weight:

Table 2.1 illustrates increase in height and weight at different ages. Table 4.1 Mean Height and Weight of Male and Female Children (All India)

There are differences of weight and height at all ages for all species. On an average, a human baby is about 56 cm in height, and between 4 and 5 kg at birth. In weight, boys can be slightly taller and heavier. During the first two years, there is a rapid increase in both height and weight. There is a steady and slower growth from the third year till the on-set of puberty. By the age of five years, the height of the child approximately increases by 80 per cent and he acquires almost 3½ times his birth weight. During the period of adolescence, we find a sudden increase in both height and weight. Girls reach puberty about a year or two earlier than boys. Therefore, at the age of twelve, they are found slightly taller and heavier than boys. However, they are again surpassed by the boys at the age of fourteen. By the end of adolescence, the young men are generally higher and heavier than the young women. Generally, both men and women get their maximum height and weight

up to

the end of adolescence. There can be variations in weight as it is more susceptible to environmental influences. Therefore, it is no surprise to note the sudden increase or decrease in weight in later years after attaining maturity. The weight of the brain increases rapidly in the early years of life. By the time the child completes four years, his brain gains almost 80 per cent of its final weight, another 10 per cent is added by the time he completes his eight years. By the twentieth year, the brain gains almost all its weight. Changes in body proportions: There are changes not only in the size of the body of the child but also marked changes in the proportion of the different parts of the body. For instance,

the head constitutes about one-fourth of the height of the body at birth. The size of the head

is relatively much larger than the arms and legs.

As the child grows older, the proportion of the head decreases. By the end of adolescence,

the head becomes one-eighth of the body. The other parts of the body, legs, arms, and so on, also change in proportion. Anatomical Growth and Development Anatomical growth and development are essential to understand for the purpose of understanding development as a whole. The various parts of the body, and their growth and development process are listed below: ● Bones: Most of the bones are soft at birth. The child's bones contain relatively a great amount of water and smaller quantity of mineral matter than those of an adult. More blood flows through the bones of a child than through the bones of an adult. Children are, therefore, more pliable. ● Teeth: Teeth begin to appear in a systematic order after the age of six months. On an average, at around seven months of age, the first two front teeth in the lower jaw erupt and are followed by four molars, one on both sides of the front teeth on both jaws. By the time the baby is between two to two and half years old, he/she will have twenty teeth.

Girls show more advanced growth of teeth than boys, except in the wisdom teeth, where boys are usually ahead of girls. Growth and Development of Internal Organs Internally, the body undergoes a wide range of changes during the growth phases. Each organ multiplies and grows within itself, and performs its functions simultaneously. The growth pattern of the internal organs is outlined below: ● Nervous System: There is a marked growth in the nervous system during the prenatal period and the first four years after birth. Before birth, the development primarily consists of increase in the number and size of nerves. After the age of four years, the growth of the nervous system proceeds at a relatively slow rate. ● Muscular System: Muscles at the time of birth are more delicate and less firmly attached to the bones than those of adult muscles. The movements of the muscles are random and uncoordinated. Gradually, muscles get themselves changed in shape, size and composition, and become firmer and stronger. ● Circulatory and Respiratory System: During early childhood, both the lungs as well as the heart are very small but gradually they grow in volume and height. The veins and arteries do not follow the same growth pattern as that of the heart and lungs. They grow rapidly prior to adolescence but show little growth during adolescence. ● Digestive System: The young child has a small tabular-shaped stomach as compared with the bag-like shaped stomach of the adult. A young child needs more feeding in the earlier years. ● Lymphatic System: It is concerned with the elimination of waste and destruction of bacteria in the body. From birth onwards, this system shows the sign of rapid development until it reaches its maximum between the age of eleven and twelve years. After twelve years of age, it decreases rapidly. ● Reproductive System: The development of sex organs is very slow during early childhood but pick up its speed as the child advances towards adolescence. American psychologist

and educator

G. Stanley Hall has given the following description of children from eight to twelve years of age in his book Adolescence:

'The age from 8 to 12 years constitutes the unique period of human life.... the brain has acquired nearly its adult size and weight, health is almost at its best, activity is greater and more varied than ever before or it will ever be again and there is peculiar endurance, vitality and resistance to fatigue. The child develops a life of his own outside the home circle and its natural interests are never so independent of adult influence.' Another American psychologist George G. Thompson (1979) has described the physical development in childhood in these words: 'Neither shoulder breadth nor pelvic breadth increases as rapidly as trunk length, but the pelvis broadens, more rapidly than the shoulders. The total configurational change is a longer-legged, longer-bodied and more rectilinear and flatter-bodied child.' Table

given below shows the physical development characteristics of males and females. Table 4.2 Development of Males and Females Special needs of both the sexes require different treatment. Table

given below shows the physical characteristics and needs of children from 5 to 8 years and 9 to 11 years of age.

Table 4.3 Physical Characteristics and Needs

of Children Important General Characteristics of Child's Development ● Development is very rapid during infancy (from birth to three years). ● Period of pre-childhood (four to six years) is the period of fixation, i.e., what is acquired in infancy is fixed or stabilized. ● Period of early childhood (seven to nine years) again shows a period of growth and development but the speed is slow in comparison to infancy. ● Later childhood (ten to twelve years) is again a period of fixation. ● The first three years of adolescence are marked as the years of rapid growth and development. ● This is followed by a period of slow growth.

● All the sensory and motor organs of the child's body are in the process of Growth. ● The urge for motor activities like walking, running, jumping, catching, throwing,

and so on, is at its peak. ● Muscular development takes place rapidly. ●

Children take delight in strenuous physical activities. ● Children enjoy movement. ●

In the middle and later stages of childhood, coordination of hands and fingers becomes possible.

Common Causes of Delayed Motor and Physical Development ●

Poor physical conditions caused by illness, malnutrition, and so on. ● Lack of opportunities to develop manual skills. ● Nagging, scolding and ridiculing of the child by parents and teachers when he does not succeed in an activity. Factors Affecting Physical Growth and Development ● Traits and characteristics inherited at the time of conception ● Physical as well as mental health of the mother during pregnancy ● Nutrition received by the embryo within the womb of the mother ● Conditions and care at the time of delivery ● Normal or abnormal delivery ● Single birth or multiple births ● Care of the baby and its mother ● Presence or absence of physical defects ● Presence or absence of illness and disease ● Proper or improper medical care ● Nutrition received by the child after birth ● Living conditions of the child—physical, social and cultural ● Opportunities for recreation, self-expression, play and exercise ● Adequate or inadequate rest and sleep ● Emotional and social adjustment of the child

Suggestions for the Guidance of Parents and Teachers It has been observed by American educator and experimental psychologist W. F. Dearborn that, 'There is an organic need for strenuous, physical activity. Skeletal muscles are developing and require exercise. Nine to eleven years old dash breathlessly from place to place, never walk when they can run, never run when they can jump or do something more strenuous.' Some of the important activities which facilitate physical development are as follows: ● Provision of nutritious diet ● Regular medical check-up and follow-up ● Provision of a healthy environment ● Free and guided play activities ● Activities involving handling of tools and materials ● Exercise and morning walk ● Yogic exercises ● Preparing charts and models ● Proper postures ● Games and sports ● Opportunities for skipping, hoping, jumping, throwing, grasping, and so on ● Excursions ● Community cleanliness programmes 4.2.2 Social Development

Social development implies the development of an individual in a way in which he becomes a useful member of society or the group to which he belongs. He conforms to the norms of the group or the society to which he belongs. An individual becomes a human being only as a member of the society. By nature, he cannot live alone in isolation. He is compelled by biological, psychological and social needs to live in a group or society. Each of us is largely a social product. The process of the development of such qualities which bring desirable changes in the social behavior is referred to as social development or socialization of the child.

Various thinkers have tried to define social development in the following ways: 1. Freeman and Shovel (1940) wrote, 'Social development is the process of learning to conform to group standards.' 2. L. D. Crow and A Crow (1944) wrote, 'Social development means acquisition or the ability to behave in accordance with social expectations.' 3. Herbart Sorenson (1948) thought, 'By social growth and development we mean increasing

the

ability to get along well with oneself and others.' 4. James Drever (1952) stated, 'Socialization (social development) is a process by which the individual is adapted to his social environment (by attaining social conformity), and becomes a recognized, cooperating and efficient member of it.' 5. E. B. Hurlock (1956) noted, 'Social development means the attaining of maturity in social setting'. 6. H. E. Garret (1968) was of the view that, 'Socialization or social development is

the process whereby the biological individual is converted into a human person.'

Characteristics of Social Development From the

above-mentioned definitions, we derive the following characteristics of social development: ●

Social development begins with the infant's first contact with other people. ● Social development continues throughout life. ● Social development is the net result of the child's constant interaction with his social environment. ● Social development helps in learning and acquiring social qualities of character. ● Social development enables the child to adjust himself to his social environment and to maintain social relationships. According to Gessel, bright children accelerate in social development while dull children are retarded in their progress towards social maturity. Social Behavior of the Pre-School Child The child at this stage is ready to expand his social contacts. By the age of two years, he can obey certain commands given to him. He

calls attention to

other persons to objects he feels interested

in. He is more or less self-centered. The pre-school child is active. A preschool child usually has one or two friends. He plays through only for short intervals. Race, caste, colour or sex or social and economic status have no effect in the selection of friends at this stage. Nursery school experiences contribute

to

acquiring acceptable social habits. Social Behavior of the Elementary School Child By the time a child enters school, he wants to have many friends. At this stage, he is not just satisfied by the company of his parents. He is interested in the play activities of his group, of the same age and sex. However, quarrels are also common among friends. Boys of this stage tend to be more aggressive. Girls are more

frequently engaged in bickering.

Bullying and teasing are more common. Children are interested in group activities and team work. Team games become more interesting than individual work. The social behavior of the child is greatly influenced by the social environment in which he lives. Social Development of the Child during the Early Stages of Schooling ● The period is marked by a greater degree of social awareness. ● There is a great expansion of

the

child's social world. ● A child tries to be independent of his parents and other elders. ● A child becomes an active member of a peer group. ● There is a sort of segregation among boys and girls of the same age. ● Up to the end of the stage of childhood, i.e., 11th or 12th year, the child enters ● the peak of 'gang age'. There is increasing loyalty towards his own gang and conflict with other gangs. The gang life develops many good as well as bad social qualities in the child. Sequences in the Development of Social Behavior of the Child

General sequence in the development of social behavior in the first two years is as under:

Hindrances in the Social Development of the Child ● Social evils like untouchability and caste prejudices, and so on

● Coeducation ● Language barriers ● Miscellaneous factors like income, occupations and religion of the family Factors Affecting Social Development of the Child 1.

Family: Among the various social groups,

the family makes the first and the most significant influence on the social development of the child. It provides the hereditary transmission of basic potential for his development.

It also provides environmental conditions and personal relationships. Parent-child relations have various dimensions of interaction. As such, they remain basic for the social development of the child. Parent- child relationships determine behavioral adjustment of the child in the family as well as outside. 2. Religion: Like home, religion has long been regarded as a primary social institution. Religion plays a dominant role in the social development of the child. 3. Peer Groups: The child is introduced to the social world outside his family, mainly for play purposes.

The peer groups satisfy various needs of the children like acceptance, achievement, affection, approval, belongingness, fame, recognition, expression of

thoughts and opinions, and so on. According to eminent psychologist AT Jershid (1947), peer association is a meaningful process through which the child changes with his age group into youth and adulthood. 4. School: School life plays an important role in the social development of the child. Its curriculum, co-curricular activities and teacher's influence have a great bearing on the social development of the child. 5. Community and Neighbourhood: The environment prevailing in the community has a great influence on the social development of the child. 6. Mass Media: Agencies like cinema, newspapers, radio and television,

and so on,

also play a vital role in bringing about social changes in children. 7. Bodily Structure and Health: A healthy child has more ability and strength to make himself adjust in the challenging social settings. A child with poor health or any physical deformity or defect develops feelings of inferiority as well as insecurity in social settings. 8. Intelligence: The more intelligent a person is, the more chances of his social adjustment.

9. Emotional Development: Emotional development of the child bears a positive correlation with his social development. Emotional adjustability is one of the very important elements of social adjustment. Influence of Culture on Social Development A child's social behavior is regulated and influenced by the culture of the society he lives in. The ways of behaving by the people of one generation, pass on from generation to generation. Our samskaras shape our outlook, and finally, personality. There are two ways in which the behavior patterns of culture are transmitted to the next generation: (a) Directly and formally as in educational programmes at various stages of education. (b) Informally through interactions between parents and their children which occur in the course of bringing up children. These interactions include the parent's expression of attitudes, beliefs, interests and values, and so on.

Some of the informal social development takes place through interactions with relatives, neighbors, peer groups and teachers. Educational Implications in Social Development A noted French sociologist Emile Durkheim defines education as a socialization of the younger generation. According to her: 'Education is the influence exercised by adult generations on those that are not yet ready for social life. Its object is to arouse and to develop in the child a certain number of physical, intellectual and moral traits that are demanded of him by both the political society as a whole and the special milieu for which he is specially destined, more briefly, education is a socialization of the young generation. Education is the means by which every society prepares, within their children, the essential conditions of its very existence. It is idle to think that we can rear our children as we wish. There are customs which we are bound to conform: if we float them too severely, they take their vengeance on our children.' Functions of Educational Institutions in Social Development The function of the school has considerably changed in the rapidly changing civilizations. The traditional function of imparting the basic skills of the three Rs is now no longer considered to be adequate to meet the present challenge. The present day school also has to perform some of

the functions of the family. It must develop certain desirable moral attitudes and good social habits. It is through co-curricular and extra-curricular activities that the task of socialization can be achieved more successfully. In India, we find that the number of first generation learners in schools and colleges are increasing. However, they are not all sophisticated. They do not know the decorum and the dignified behavior expected of them. It is only the sympathetic understanding and sincere desire of the teacher to act positively in an unprejudiced manner that can help in these situations. Role of Classroom in the process of Social Development The class provides innumerable opportunities to the children to move and mix with an egalitarian group. This is the beginning of the socialization of the child for his future life. Here children get many chances to mix without any distinction of caste, color or creed. The children who are selfish or self-centered learn to adjust their behavior in terms of class norms. The teachers are expected to be vigilant to ensure that the students do not think in terms of untouchability, caste distinctions and other prejudices. In a nursery school: Instruction imparted in a nursery school is very informal. The greatest accent is put on developing good manners and etiquettes, and so on. There is a major emphasis on training the children to become less dependent on their parents and siblings. Children are trained to imbibe and practise equality by sharing toys, play materials, and so on. In an elementary school: Efforts are made to turn students into responsible citizens of the school community. Work habits are inculcated among students. They are trained to cooperate with fellow students as well as to take orders ungrudgingly from the teacher. The school provides experience of relationships with the senior generation as well as with equals. In the middle school: As against the elementary school, greater emphasis is placed on academic achievement in the middle school. It is a stage at which many students terminate their education. In middle school, too much emphasis is placed on socialization. At this level, the peer group's relationships are more meaningful. At higher secondary school: At this stage, the greatest premium is put on achievement—both scholastic and co-curricular. Students develop various skills and aptitudes which may enable

them to chart their future life. An ideal peer group relationship is much needed at this stage. Development of adaptive skill is emphasized in group work. Role of the Teacher in the Social Development of the Child A teacher can play a vital role in the social development of the child under his charge. A teacher exerts a great influence upon the development of the personality of the child. Durkheim pointed out that teachers as well as parents must be for the child, duly incarnate and personified. Following are the important suggestions for the social development of the child: ● Teachers and parents should encourage the children to mix in inter-caste rather than intra-caste and inter-regional rather than intra-regional groups. ● The teachers and the parents should respect the personality of children. ● The mechanism of praise and blame, reward and punishment should be carefully used to socialize the children. ● Proper social education may be provided to parents so that they understand the significance of the socialization of the children. ● The teachers should demonstrate a democratic outlook. ● The teacher should refrain from projecting their class images on students. They should not show any discrimination. They must ensure a safe and healthy social environment in which the children may imbibe desirable values of freedom, equality, integrity, honesty, patriotism, and so on. ● Community activities like camps, common meals, social service, and so on, should be frequently organized. ● There should be a close cooperation between the teachers and parents on matters relating to the proper socialization of the children. ● Various aspects of socialization, anxiety of children and juvenile delinquency should be discussed by the heads of schools, inspecting officers, teacher-educators and professional organizations in seminars or small forums. ● Adequate stress must be laid on group activities. ● Exhibitions on 'Know Our Country' should be organized from time to time.

● Stories depicting self-sacrifices made by great men for the cause of general good should be told to children so that they are motivated to rise above petty gains and work for the betterment of humanity. ● With proper guidance and responsibilities, the students' council can build up a sense of shared responsibility among children. ● A proper socialization of children very much necessitates that the ideology of the common school system is allowed to function in letter and spirit in India. ● Children should be taken from time to time to public places like museums, courts, places of historical importance, and so on. ● People engaged in different economic activities or vocations may be invited to school for giving a faithful description of what they do and how useful their work is to the nation. This will enable the children to be acquainted with those around them in the society. This will also develop vocational socialization in children. ● Work experience should be introduced in schools. This will enable the children to have first-hand experiences of the activities pursued in farms and factories. ● Children should be acquainted with the social events like the celebration of the birthdays of leaders. ● The school or college programme should be full of numerous co-curricular and curricular activities in which children meet, cooperate and learn from each other's personalities. ● Children should be told about socially accepted institutions in their society. ● The introduction of common school dress, common lunch, and so on, in the schools and colleges will prevent children of poor and lower middle classes from suffering due to the superiority sometimes felt by the children of the well-to-do families. Concluding Remarks—Complex Task of Social Development of the Child In traditional societies, the process was very simple as there were only a few well-established roles. An individual was usually required to learn and play one or more of the roles about which he knew at least something in the course of his upbringing in the family and the community. He did not face many stresses and strains as the socio-psychological demands made upon him were not many.

The situation has become very complex and difficult in the modern industrial society wherein an individual is expected to learn diverse roles. The family cannot help him at all times. The schools, colleges and other educational institutions also have the responsibility of socializing the child by inculcating in him appropriate values, behavior patterns and the knowledge so that he adapts himself to a democratic, secular and egalitarian society. Lastly, the task of social development of the child is not an easy one. The educational thinkers point out very emphatically that certain conditions in the learning-teaching situation must be created and made available in the school so that it may become an effective instrument of socialization. These conditions are as follows: ● A democratic social climate in the school ● Effective interpersonal relationships ● Motivated learning situations ● Group methods of teaching ● Social discipline ● School-community interrelationships ● Student participation and involvement in the school administration ● A rich programme of co-curricular activities 4.2.3 Emotional Development

The development of emotions is extremely important for the harmonious development of the personality of an individual. Emotions influence all the aspects of an individual's personality. Proper training and education will go a long way to enable the young people to control their emotions and obtain mental balance and stability. Emotions are the prime motive forces of thought and conduct and their control is very important. It has been rightly said, 'to keep one's emotions under control and be able to conceal them is considered a mark of strong character.'

Meaning of Emotions Etymologically,
the word 'emotion' is
derived from the Latin word Emovere
which means to
stir up, to
agitate or to
excite.
Eminent psychologist Woodworth (1945), by making use of this explanation, has defined emotion in this way: '
Emotion is a moved or stirred up stale of an organism. It is a stirred up state of feeling that is the way it appears to the individual himself. It is
a
disturbed muscular and glandular activity—that is the way it appears to an external observer.'
According to
Crow and Crow (1973), an emotion 'is an effective experience that accompanies generalized inner adjustment and mental and psychological stirred up states in the individual, and that shows itself in his
own behavior.' Another well-known psychologist McDougall (1949) says: 'An instinct is an inherited or innate psycho-physical disposition which determines its possessor to perceive and to pay attention to, objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object, and to act in regard to it in a particular manner, or, at least, to experience an impulse to such an action.' This statement gives us the nature of emotions as well. According to McDougall, instinctive behavior has three aspects.
These are as follows:
Cognitive or knowing or perceptual aspect Affection or feeling or emotional effect Conative or doing or striving or executive, active or behavioral aspect Let us take an example. A child sees a bull coming towards him. He experiences an instinctive fear and undergoes the above three processes. Firstly, he perceives the bull, secondly, he experiences an emotion of fear and thirdly, he tries to run away. It is, therefore concluded that an emotion is an affective experience that one undergoes during an instinctive excitement. McDougall discovered 14 basic instincts, and pointed out that each and every emotion, whatever may be, is the product of some instinctive behavior.
Kimball Young notes, 'Emotion is the aroused psychological state of the organism marked by increased bodily activity and strong feelings directed to some subject.' Characteristics of Emotions
The chief characteristics of emotions are as follows: ● The
emotional experiences are associated with some instincts or biological drives.

● Emotions, in general, are the product of perception. ● The core of an emotion is feeling which is essentially linked with some sort of urge or impulsive act to do. There is only a difference of degree between feeling and emotion. ● Every emotional experience involves several physical and psychological changes in the organism. Some of these changes like the bulge of the

eyes, the flush of the face, the flow of tears, the pulse rate, and so on can be easily observed. There are also internal physiological changes like circulation of blood, the impact on the digestive system and the changes in the functioning of some glands, and so on. ● Emotions are frequent. ● Emotions are expressed in relation to concrete objects or situations. ● Emotions are temporary. ● Emotional expressions in early childhood are intense irrespective of the intensity of the stimulus. ● Small children fail to hide their emotions and express them indirectly through different activities like crying, nail-biting, thumb-sucking and speech difficulties. ● Emotions are prevalent in every living organism. ● Emotions are present at all stages of development and can be aroused in young as well as in old. ● Emotions differ from person to person. ● Same emotion can be aroused by a number of different stimuli objects or situations. ● Emotions rise abruptly but die slowly. ● Emotions are subject to displacement. ● The anger aroused on account of one stimulus gets transferred to other situations. The anger caused by the rebuking of the officer to his/her subordinate may be transferred to beating the

children at home. ● One emotion may give rise to a number of likewise emotions.

Simple and Complex Emotions Grief and joy are examples of simple types of emotions, while love and hate are complex types of emotions.

Grief is an emotional state that you find yourself in when your desires are not fulfilled. Contraction of the chest, tears, crying, fainting, and sobbing are some of the expressions of the emotional state of grief. Joy is the opposite of grief. Joy is reflected by the expansion of the chest, lighting up of the face, dancing, clapping, and so on. It is the state caused by the fulfillment of your desires. Success after conflict brings joy. Love is a complex emotional state. It is a combination of sympathy, affection and sexual feelings. It is sometimes manifested as a permanent emotional tendency as in the case of a mother's love for her child. It is also transformed into a sentiment. Hate is also a complex emotional state. It includes anger, fear and apathy. You become angry when you see a person you hate. Sometimes, you are afraid of them and want to stay away from them. Internal Bodily Changes During strong emotions, many changes occur in the body. These changes are interesting and help to explain many of the varied reactions that the emotionally aroused person displays. Change in heartbeat: The heartbeat increases when we are agitated and also when we are excited. Generally, the heart beats faster or slower if the individual is disturbed. The face is flushed or the blood shoots up in anger, because the alternate contraction and expansion of the blood vessels sends an excess of blood to that part of the body. Blood pressure changes: Blood pressure increases because of emotions. In some cases of shock, fear, and excitement, the blood pressure may also go down. The volume of blood, in case of extreme situations, also goes up as the large arteries contract driving blood towards the skin. The resulting flush is one of the signs of emotion. Change in galvanic skin response: There are significant changes in the electrical or galvanic skin responses. The hair tends to stand on end causing goose flesh. The sweat glands of the skin secrete excessive amounts of perspiration or the well-known cold sweat. The additional acid changes the galvanic or electric response of the skin. Unlike the sweat glands, the salivary glands are inhibited by emotion. The saliva is not secreted which results in a dry mouth feeling when a person is emotionally disturbed. Chemical changes in the blood: Due to a change in emotional state, the secretion of adrenaline takes place from the adrenal gland, which puts more sugar in the blood. There is more sugar in the urine also. Adrenalin makes the heart beat faster, makes the liver release sugar into the blood for muscular energy and increases the ability of the blood to clot quickly. Thus, it actually reinforces all of the other effects. Changes in respiration rate: We all must have experienced that when we are extremely excited, we run out of breath. When a person is very sad, he or she cries and after some time, starts feeling breathless. Thus, emotions cause changes in the rate of respiration. Metabolic changes: Digestion process also changes because of emotions. Many studies have proved that under the current of emotions, our stomach and intestine work quite slowly and sometimes even become inactive. The secretion of the digestive glands, including saliva, is also decreased resulting in the malfunctioning and inactivity on the part of the digestive system. That is why extremely emotionally charged individuals are mostly found to suffer from the malfunctioning of their digestive system. External Physical Changes The emotions can be assessed on the basis of external physical changes. When we are extremely happy, our face lights up but when we are in grief, our eyes are filled with tears. Facial expression: When under the influence of emotion, the facial expression of a person is the first to be altered. Crying, smiling, compressing the lips, wrinkling the nose, shaking head from one side to another are emotional responses which actually reveal the presence of particular feelings in a person. It is commonly said that every emotion has its own particular facial expression. While the way of expressing emotions may vary from culture to culture, some expressions remain common throughout. For example, we frown when we are angry and smile when we are happy. Vocal expression: Emotions are also expressed through voice. If a person is angry, his or her voice is different from the person who is expressing his or her love. Thus, emotions can be

distinguished by hearing one's voice. Laughing, weeping, whistling, murmuring, hesitation, and talking in a sweet and loving manner actually reflect various types of emotions a person is experiencing. However, it is not always a reliable method of assessing emotions. Postural expression: When a person is emotionally aroused, the facial expressions and voice change. Also, when a person is afraid or frightened of something, he or she trembles, hides or runs away. Rubbing hands, standing erect, sitting with head down are all indicative of some emotional state. Effects of Emotions Emotions have a profound effect on the life of an individual. They can make or mar one's life. There are two types of effects of emotions which are described below. A. Good effects of emotions 1. Source of motivation: Emotions work as motives which drive the organism for an action. Love, fear, anger and curiosity may help us to achieve our goal. Classical stories are evidence when young men sacrificed their lives for their beloved. Fear of failure motivates one to study hard for the examination. Emotions prove a motivating agent to further our action towards goal. 2. Source of enjoyment: Pent-up emotional feelings and routine activities create monotony in the individual. Emotions, particularly positive, add enjoyment in our life. They add excitement. Adolescents read novels, see movies, theaters and TV, and so on, which overcome the deficiency of emotional excitement. 3. Source of strength and endurance to body: Emotions give strength to our body. An individual can do unusual work under emotional excitement which appears difficult in normal conditions. As an illustration: An individual chased by a dog can jump a 5 feet high wall which he cannot jump in normal conditions. Emotions give strength and endurance to our body. Fatigue does not set in during the emotional state. If a child loves his subject, he can work hours together without any sign of fatigue. 4. Media of communication: Emotions serve as an effective media of communication between individuals.

B. Bad effects of emotions The most damaging effect of emotions is on the physique of the individual. Constant emotional tension may cause lack of sleep, restlessness, headache, chronic fatigue, insomnia and lack of appetite. Well-known psychologist Kuhlen in 1952 conducted research on the effects of continuous emotional tension. It also affects the memory. Forgetfulness increases in emotional state. The individual cannot reason, think and concentrate on a problem. Constant emotional pressure disturbs learning ability. Fear and anger, and so on cause the most powerful effect on the thought process—moodiness and irritability, and so on. They bring change in our attitudes towards life. Negative emotional experiences for a long period disturb the total personality of an individual and may lead to neuroticism. Theories of Emotions Important theories advanced to explain the nature and origins of emotions are as follows: 1. McDougall's Theory of Emotions: This theory of emotions tries to relate the stimulus situation to the state of the organism and the bodily situations. An instinct is an innate disposition which determines the organism to perceive a certain emotional excitement of behaviour in relation to that object. The instinctive tendencies determine the end of all activities. According to 20th century psychologist William McDougall, in the operation of an instinct, the first step is cognition, that is, perception which is followed by emotion and it is the emotion which gives rise to certain organic changes in the body. 2. James-Lange's Theory of Emotions: This theory was developed by 19th- century scholars, William James and Carl Lange. James-Lange reverses the process described above. According to this theory, the experience of emotion is merely a mental reverberation of the massive bodily changes that take place during an organism's response to the situation. Bodily changes follow directly upon the perception of an exciting fact (stimulation) and our feeling of these changes as they occur in emotions. The sequence, according to traditional theory is situation—mental state—bodily expression. James Lange's theory rejects this sequence and states this sequence: situation— bodily disturbance—mental state. In other words, we should not say 'we meet a bear, are

frightened and then run' rather we should say 'we meet a bear, we run, and we are frightened'. Therefore, James Lange's theory may be said to insist on two propositions: Emotion is nothing but an organic sensation Bodily expressions and organic disturbances which are said to be effects of emotions are really their causes 3. Sherrington's Theory of Emotions: English neurophysiologist, histologist, bacteriologist, and a pathologist C. S. Sherrington performed certain nerve- cutting operations on his laboratory dog and came to the conclusion that animals gave evidence of emotional character and showed anger, disgust, fear and joy. These experiments indicated that the emotions were not the results of some organic changes in the body. Organic changes can even be produced artificially without the presence of emotions. 4. Cannon-Bard's Theory of Emotions: Eminent psychologists W. B. Cannon and Philip Bard conducted physiological experiments on a cat. Cannon cut off the sympathetic nerves of the cat making impossible the organic state of anger dependent on those nerves. He concluded that the bodily changes are neither consequences nor antecedents of conscious states: they are simply the accompaniments. Physiologists Walter Cannon (1927) and Philip Bard (1934) theorized that the emotion and the physiological arousal occur more or less at the same time. Cannon, an expert in sympathetic arousal mechanisms, did not feel that the physical changes caused by different emotions were distinct enough to allow them to be perceived as different emotions. Bard expanded on this idea by stating that the sensory information that comes into the brain is sent simultaneously (by the thalamus) to both cortex and organ of the sympathetic nervous system. The fear and the bodily reactions are, therefore, experienced at the same time—not one after the other; for example, a person is afraid and running and aroused. This theory, known as the Cannon-Bard theory of emotion, also had its critics. Well- known psychologist and behaviorist K. S. Lashley (1938) stated that the thalamus would have to be pretty sophisticated to make sense of all the possible human emotions and relay them to the proper areas of the cortex and body. It would seem that other areas of the brain must be involved in processing emotional reactions. The studies of people with spinal cord injuries, which seemed to suggest that emotions can be experienced without feedback from the sympathetic organs to the cortex and cited as a criticism of the James-

Lange theory, seemed at first to support the Cannon-Bard version of emotions. People do not need feedback from those organs to experience emotion. However, there is an alternate pathway that carries information from these organs to the cortex; this is the vagus nerve—one of the cranial nerves (LeDoux, 1994). This makes the case for Cannon- Bard a little less convincing. 5. Schachter and Singer Theory: This theory postulates that arousal produced by emotion provoking events, makes an individual to search for the cues outside in the environment. Thus, an individual labels the emotion that one is experiencing. According to the Two-Factor Theory of Emotion, developed by famous psychologists Stanley Schachter and Jerome Singer (1962), emotion is determined by physiological arousal and cognitive labeling. They argued that we look at the external world to find an explanation as to why we are aroused; for instance, if we feel good at someone's pleasant comment, we may call the emotion 'happy'. If we feel bad after doing something wrong, we may call the feeling 'guilty'. To test their theory, epinephrine was injected into the volunteer participants by Singer and Schachter (1962). Epinephrine is a drug that produces high arousal. Then the volunteers were made to observe others behave in either an angry way (stomping out of the room) or a euphoric way (shooting papers at a wastebasket). As predicted, the volunteers' cognitive interpretation of their own arousal was influenced by the angry and euphoric behaviors. They said that they were happy when they were with a happy person, and angry when they were with an angry person. However, this effect only occurred when the volunteers were not aware of the injection's true effects. When they were informed that the drug would make them jittery and increase their heart rate, they said that the other person's behaviour was the reason for their own arousal. Psychologists have faced difficulty replicating Schachter and Singer's experiment, but in general, research supports the belief that misinterpreted arousal intensifies emotional experiences (Leventhal and Tomarken, 1986). 6. Opponent-Processing Theory: Emotional reaction to any incident is followed by an opposite reaction. Repeated exposure to the same incident would weaken the initial reaction and strengthen the opposite reaction.

Factors Influencing Emotional Development Emotional development of an individual is influenced by a number of factors. They are health and physical development, intelligence, family environment, school environment, peer groups' environment, neighborhood, community and society's environment. ● Health and physical development of an individual: There is a positive correlation between health and physical development and emotional development. Any deficiency in health and physical development—internal or external—leads to emotional disturbance. Children who are weak in structure or who suffer occasional illness are more emotionally upset and unstable than children whose health is better. Any abnormal increase or decrease in the normal functioning of the glands creates obstacles in the proper emotional development. ● Intelligence and emotional development: Meltzer (1937) as quoted by Hurlock has observed, 'There is less emotional control, on the average, among those of the lower intellectual level than among children of the same group who are bright.' An intelligent person, with his/her thinking and reasoning powers, is in a better position to exercise control over his/her emotions. ● Family environment and emotional development: A cordial environment, i.e., healthy relationship between the parents is very conducive to the emotional development of the child. The treatment meted out to the child by the parents and other members of the family influences his emotional development. The order of birth (whether the first or the younger child), sex (son or daughter), size of the family, socio-economic status of the family, discipline in the family, the parental attitude towards the child (pampered, overprotected or neglected), are all are important factors in the emotional development of the child. ● School environment: The attitude of the teachers, school discipline, academic facilities available, physical facilities, methods of teaching, co-curricular activities, and so on, all influence the emotional development of children. Peer group relations and emotional development: The influence of the classmates and other members of the group affects emotional development. ● Neighbourhood, community and society's environment and emotional development: A child lives in the society and he/she picks up so many traits of his/her emotional behavior from his/her surroundings.

Emotional Development at Different Stages The development of emotions begins right from birth. There is a development of emotions at each stage of one's life; the expression of the emotions change with the developmental stages. C. T. Morgan emphasizing the importance of emotions in life writes that emotions are basic, primeval forces of great power and influence designed by nature to enable the organism to cope with circumstances which demand the utmost effort for survival or success or to add color and spice to our living. If there had been no emotion in life of the organism, life would have been without any aspiration. In absence of emotions, social and family life would have ceased and progress would have been checked. P. T. Young offers the definition of emotion as: 'An emotion is disturbed state of an organism: an emotion includes Visceral changes due to increased activity of the autonomic nervous system and an emotion originates within the psychological situation.' It is expressed in love, fear, anger, laughter and tears, and so on. It involves feelings of jubilation or depression and impulse to action and awareness of perception. Basically human beings are creatures of feelings or emotions. Our emotions control our behavior. Emotion in the organism is a dynamic internal adjustment that operates for the satisfaction and welfare of the individual. Heightened emotionality is evident from nail biting tension, conflicts, quarrels with parents, siblings and classmates, and so on. Here, we will discuss the emotional development in the infant stage and early childhood. 1. Emotional Development in Infants: Emotional development in infants can be divided into two sub-stages—first, from birth to six months and second, from six to twelve months. At birth, most of the body movements are reflexes. The nervous system is not fully developed till the fifth month; hence a baby's vision is not clear. By six months, the vision of an infant further develops. A baby begins to develop trust in its parents/caregivers who take care of its basic requirements like feeding, changing the diapers, or cuddling when it cries. When frightened, an infant cries. It usually cries to express hunger, pain or even anger. Crying, therefore, is a way of communicating for a baby. Babies are very sensitive—they can be upset or excited instantly if their needs are not met on time. For instance, a baby sleeps at some particular hour of the day, say at noon after bath and feeding. But one day, this time schedule gets changed and the baby is not only hungry but also sleepy. The baby will instantly turn cranky.

Infants need to be cradled and comforted. They smile in response to a pleasant sound or a full stomach. At about six weeks, the responses of infants are well-developed, like they smile at a particular sound. By four months, they smile broadly, laugh when pleased, and learn to recognize faces and voices of parents/caregivers. Infants babble and chuckle. They study their hands and feet, and turn to locate the source of sounds. Gradually, the babies can focus on and follow moving objects with their eyes. They explore objects with their mouths. The memorizing power being underdeveloped, the babies easily forget about objects out of their sight. By the time an infant completes six months; its time schedule for any and every activity is regularized. For instance, I take a nap in the morning and afternoon. The feeding and sleeping time gets fixed. By the eighth month, an infant can reach for and hold objects. It can pick up a light object with its thumb and forefinger and then drop it. It turns out to be a playful act for babies to start throwing things. They respond when their names are called out and fear being with strangers or being left alone (especially when they wake up and find themselves alone in the room). The expression of anger is quite strong with the growing age when their requirements are not met in a reasonable time. Infants start talking (babbling) to their reflection in front of a mirror. Eye contact begins to replace some of the physical contact like touch that younger infants seek. Infants start making gestures when taught, like waving goodbye or playing pat-a-cake. They respond to simple directions and even look for things not in sight. Infants make sounds like 'mama', 'papa', 'nana' or 'dada'. They try to imitate the activities they are familiar with. Growing infants make peculiar sounds to grab the attention of the people who know them. By the 12th month, most of the infants speak their first comprehensible words and even phrases.

As the nervous system keeps on growing before and after the birth, the process of mental development

continues accordingly. 2. Emotional Development in Childhood:

Every emotional experience involves several physical and psychological changes in

growing years.

Small children fail to hide their emotions and express them indirectly through different activities like crying, nail-biting, thumb-sucking and speech difficulties.

Children's emotions are more frequent and of brief duration when compared to the emotions of adults. For instance, a child can have bouts

of anger and happiness within a single day. A child's emotions are transitory and there is a shift in his/her emotions. Moreover, children's emotions are relatively intense. If children are to weep, they weep aloud. It is also observed that children usually express their emotions, while adults may try to conceal their emotions. A cordial environment, i.e., healthy relationship between the parents is very conducive to the emotional development of the child. The treatment meted out to the child by the parents and other members of the family influences his/her emotional development. The order of birth (whether the first or the younger child), gender (son or daughter), size of the family, socio-economic status of the family, discipline in the family, the parental attitude towards the child (pampered, overprotected or neglected)—all are important factors in the emotional development of the child. During the preschool age (about 3–6

years), the mental abilities of children develop very rapidly. Their perceptual powers increase and their curiosity gets aroused to a great extent.

In early childhood,

the sensory powers increase rapidly and children become more accurate in their observations. From a make-believe type of imagination, they now start thinking on creative lines. During this period, the likes and dislikes of children, their interests, thoughts and plans begin to shape themselves. They begin to imagine things. Children's power of deductive and inductive reasoning increases, and they are able to generalize from data given to them. For instance, they develop the concepts of length, time and distance; and learn to express themselves in various ways.

The main aim of education is to modify and direct the behavior of children so that in future they become contributing members of the society. In this task, instincts and their potential allies i.e..the emotions have to be refined by training. The attitude of the teachers, school discipline, academic facilities available, physical facilities, methods of teaching, co-curricular activities, and so on—all influence the emotional development of a child. Children pick up many traits of their emotional behavior from their surroundings. It is common to note that children experience too many unpleasant emotions like anger, fear and jealousy than positive emotions of affection, joy and pleasure. Here, it may be stressed that it is the experience of positive emotions in life. However, it is also true that the experience of only positive emotions in life is not always possible for everyone. One does

come across a number of both pleasant and unpleasant situations. This means that a child must learn to accept unpleasant emotional experiences in such a way as he/she does not show undue concern and disturbance. The child must learn to adjust to such experiences, situations, events, ideas and persons that cause annoyance. As much as possible, the home and the school should create more and more situations in which pleasant experiences predominate for emotional development in childhood. 3. Emotional Development in Adulthood: The emotions become stable during this stage. The individual becomes mature and has control over his or her emotions and feelings. Sudden outburst of emotions becomes rare. An adult mostly makes decisions based on facts and experience rather than emotions. Effects of Emotions on the Developing Individual: Following are

the important effects of emotions on the developing individual: ● Emotions provide energy to an individual to face a particular situation ● Emotions work as motivators of our behavior ● Emotions influence our adjustment in the society ● Highly emotional conditions disturb the mental equilibrium of an individual ● Highly emotional conditions disturb the reasoning and thinking of an individual Interrelation of Physical and Emotional Factors: There is a close relationship between the physical and emotional factors. An imbalance or disturbance in the child's physical growth

is most likely to

be reflected in his/her intellectual functioning and personality adjustment. An unhealthy emotional climate is likely to affect the physical health of the child and it may hinder his/her normal physical growth. A child under emotional strain is likely to be physically unhealthy and show signs of physical ailments.

Kinds of Emotions: Positive and Negative: Emotions, in general, can be categorized into two kinds: positive emotions and negative emotions. Emotions like affection (love), amusement, curiosity, happiness and joy which are very helpful and essential to normal behavior are termed as positive emotions. Unpleasant emotions like anger, fear and jealousy which are harmful to the individual's development are termed as

negative emotions. It should be borne in mind that it is not to be assumed that all the positive emotions are always good and the negative emotions are bad. The excess of everything is bad. Whether an emotion will prove to be helpful or harmful to an individual depends upon the following factors: ● The frequency and intensity of emotional experience. ● The situation, occasion and the nature of stimulus which arouses the emotion. ● The kind of emotional experience. Emotions that have too much intensity and frequency whether positive or negative bring harmful effects. Signs of Emotions: Emotions may be external or physiological and internal or psychological. Important signs of emotions in an individual are: increase in heart rate, rise in blood pressure, occurrence of changes in blood composition, increase in respiration, hair standing on end, dilution of eye-pupil, increase in muscle tension, increase in perspiration, and so on. Techniques of Modifying Emotions Emotions can be modified through the following devices: 1. Redirection: An emotion is dynamic in nature and cannot be suppressed totally. It cannot be destroyed. It is just like a tumultuous stream which cannot be obstructed permanently without giving some outlet. But as we can harness a wild stream by building a dam against it and giving new channels to the powerful waters, quite in the same way, emotional waves can also be re-channelled for the advantage of the organism itself and for the whole society to which he/she belongs. Let us take the example of anger. It is a furious emotion. It exists in its wild form in every organism. We have simply to tame and redirect it to broader and beneficial channels for the benefit of the person and the society. 2. Sublimation: Sublimation is also a sort of redirection with this difference only that in the former case the emotion does not lose its original form, while in the latter case it is so much elevated that it changes its form. It takes up a much nobler and higher form. Lust is transformed into love for fine arts or social services or devotion to some deity. Anger turns to zeal and enthusiasm. Fear takes the form of anxiety for the betterment of mankind. 3. Catharsis: Intensity of emotions is dangerous for health especially when they do not find expression. Even their expression in its original form is very costly for the mind and the

body. Therefore, catharsis of pent-up emotions is necessary for the well-being of the organism. Play and extracurricular activities are very useful devices for this purpose. 4. Inhibition: Human life is very complex in the present civilization. We need to control our emotions at every step. Redirection, sublimation and catharsis are not possible always and at every moment. Often we have to suppress our emotions for a short time or for a long time. It can be done with the help of strong will. But we should know that inhibition should not be permanent and we should give some outlet to the pent-up emotions as soon as possible. 5. Mental Occupation: Empty mind is a devil's workshop. If a child is busy in some mental or even physical activity, other stimuli cannot disturb his/her emotions. Moreover, he/she is already undergoing the process of catharsis. Even if his/her emotions are stirred up when he/she is quite exhausted after enough mental activity, the stimulation will not be too intense for him/her. 6. Positive Suggestions: Suggestions may be used as an effective tool by the teacher for the formation of positive sentiments in pupils. Negative suggestions should be avoided. 7. Affectionate Environment: For healthy emotional development, a child should be given a feeling of belongingness and security by sympathetic behavior and affectionate attitude. 8. Example is better than Precept: The parents and teachers should reflect maturity in expression of emotions. Whatever form of behavior is expected from the students, the teacher should adopt the same in his/her own dealings. Control and Training of Emotions: Guidelines for Teachers and Parents Developing proper emotions and controlling them is a very essential objective of education during adolescence. Meeting social demands as well as to eliminate the damaging effects of the emotions on attitudes, habits, and physical well-being, control of emotions is essential. Control does not mean repression but learning to approach a social situation with rational attitude and repression of those emotions which are socially unacceptable. The teacher can play an important role to reduce pressures that interfere with the child's emotional development: 1. Proper training: Parents, teachers and social workers may use devices and methods to control fears of inadequacy in various situations by developing competencies and skills in some activity in which adolescents are interested to create self-confidence which helps to

meet different situations of life boldly. The teacher should emphasize the interpersonal relationship for the facilitation of learning. 2. Development of resistance: Adolescents should be encouraged to examine critically the causes of their failures and frustration, and so on, and teachers should develop resistance to counseling. Thwarting should be properly rationalized. 3. Guidance and Counseling: Adolescence is a period when an individual is overwhelmed by a number of simultaneous developments, therefore, to meet this situation proper guidance is needed in this period. 4. Proper understanding: Parents and teachers should change their attitude towards adolescents. They should provide a proper environment for the expression of pent-up feelings. Fair treatment, sympathy, cooperation and freedom of action within a reasonable limit should be given to adolescents and unnecessary restrictions should not be imposed. A variety of interests should be developed to avoid frustration. Teach adolescents to relax by providing opportunities for hobbies, curricular activities, catharsis through play, free discussion, and dramas, and so on. The teacher and the school can encourage the development of affective maturity in adolescents by providing: ● Skills that will enable the child to deal effectively with the threatening aspects of his/her environment. ● An atmosphere that permits the adolescent to admit the feelings he/she is experiencing. ● Identification of proper models and constructive ways of expressing feelings. Adolescents should be trained in self-control of emotions. They should be provided with a variety of opportunities to participate in activities leading toward the acceptance of responsibility. This participation by adolescents will foster a spirit of tolerance, cooperation, habits of confidence and spirit of fair play. An important method which a classroom teacher can encourage is to help the students to express their emotions in constructive ways. Students should be trained to express their emotions to others in whom they have full confidence. Verbalization of pent-up emotional feelings releases mental tension and as emotions are put into words, they become diffused, less intense and manageable. The teacher must develop a clear recognition of the desirability of achieving free and more constructive expressions of emotions which will result in progress toward the desired goal.

● Picnics, excursions and tours for students to provide them opportunities to understand each other and come closer. Adolescents should be encouraged to examine critically and rationally the causes of failure and frustration and resistance to frustration should be developed. Unnecessary restrictions should not be imposed on the students. Schools should provide identification of proper models and constructive ways of expressing feelings. Adolescents should be trained in self-control of emotions. Students should be given opportunities to participate in activities leading to the acceptance of responsibility. This will foster the spirit of tolerance, cooperation, confidence and fair play. This will resolve many problems of adolescents which are created by lack of communication among the members of the class and school. 4.2.4 Motor Development Motor development may be defined as the development of strength, speed and accuracy in the use of muscular parts of the body such as arms, eyes, legs and neck muscles. Motor abilities involve bodily movements of various organs and coordinated functions of nerves and muscles. Skill in motor activity depends not so much on cross body movements but fine coordination of the smaller muscles. Motor development is closely related with emotional, mental, physical and social development. Process of Motor Development Motor development starts in the prenatal period. Adequate motor development during the prenatal period provides the neonate (newborn baby), great potentiality to be active. Movements of the fetus are reported during the third month and these are considered fundamental to later development. The world of the infant expands and the stimulation increases greatly when it learns to move about by the end of the first year. One of the most important responses shown by a newborn is called Moro reflex. When there is a sudden change in the head position of the infant, it throws its arms out to the side and then brings them back, as if it were embracing someone. Any sudden change in stimulation, like hitting the sides of the pillow elicits the Moro reflex. It vanishes when the infant is three or four months of age. As the infant matures, it is able to exercise control over its various parts and coordinate

functioning of nerves and muscles. Studies done by Skinner and Harriman (1941), and Shirley (1960) report the developmental sequences of sitting up, standing and walking. Motor Development Characteristics Three years: A child: ● Manipulates play materials ● Alternates feet going upstairs ● Rides a tricycle ● Counts to three ● Feeds self with little spilling ● Throws objects overhead ● Fashions objects with clay ● Stands on one foot ● Jumps upward Four years: ● Skips on one foot ● Laces shoes ● Dresses and undresses ● Cuts on lines with scissors ● Runs broad jump ● Saws with handsaw ● Throws overhead with less body participation Five years: ● Ties shoelaces ● Skips on alternate feet ● Draws recognizable figures ● Picks up small items skilfully ● Draws alphabet letters Six years ● Engages in all five-year activities but with more skill and feeling

● Throws and catches ball ● Climbs up rope, swings ● Builds blocks shoulder height with lighter touch ● Cuts, pastes, models and colours skilfully ● Builds crude items in workshop Principles of Motor Development 1. Development takes place from head to tail: This principle explains that the head starts developing first and other parts of the body in the direction of legs mature later. 2. Development takes place from near to far: This principle states that parts near the brain or spinal cord will develop earlier to which are those away from the spinal cord such as arms and fine muscles of the fingers. 3. Development of specific movements proceeds from mass activity: The newborn babies tend to move away their whole body later on. As they develop, they are able to move a specific body part. Both motor coordination and strength increase with age. The development of motor skills depends not only on neuro-muscular maturity, but also on environmental opportunities, particularly the availability of equipment, the opportunity to observe and imitate other children and the opportunity to experiment. Six difference in motor development: The development level for doing or performing a task increases with age. However, a wide variation in the motor ability of children of the same age is noticed after infancy. This variation is more pronounced if there is difference in the sex of children. The average boy is superior to the average girl in tests of strength, speed and in many motor skills. These differences are aggravated with the increase in age. Girls further reach their maximum at about the age of 14 in the ability to perform motor acts, while the boys continue to improve even up to 18 years. Boys are found to be superior to girls in activities that require brute force and speed. Girls surpass boys in activities requiring greater concentration, accuracy and precision and delicate coordination. In activities like badminton, tennis, table tennis, folk dance, dramas, and so on, both girls and boys can participate on almost equal footing.

Educational Implications of Motor Development Pointing out the educative value of motor skills in education, Gates and his associates, (1948) express the view: 'The acquisition of motor skills is of value not only from the point of view of the personal satisfactions that accrue from competence in self-help and independence of adult aid, but also from the point of view of good social and emotional relations with others.' Children grow up well if they have a motor development environment that makes it possible for them to run about, jump, climb, and so on. Motor development is of great significance at the pre-school stage. At the middle and secondary stages of education, we need to organize varied types of activities in the form of handicrafts, woodcraft, gardening and various types of outdoor programmes and experiences. Guiding motor control and development: It must be remembered that development of motor skills depends largely on environmental opportunities, particularly the availability of equipment, and the opportunity to observe and experiment. Some important principles of guidance of motor control are given below: ● Children should be encouraged to manipulate, handle and use different objects and implements to provide sensory activity and eye-hand coordination. At the earlier stages, activities like clay work, coloring, tearing, cutting, painting, threading and sewing, and so on, should be planned. ● Through play activities, children learn motor skills by assembling and constructing and so on. ● Proficiency of motor control depends on regular practice. ● Demonstrations in motor skills are very valuable for beginners. Manual guidance is more effective than verbal lessons. ● A correct start in motor control is essential. ● Independent activity accompanied by strong motivation leads to speedy motor development. ● Supervision should be moderate. Early Cognitive Foundations: Sensation, Perception The stages of processing of the senses of human beings and other animals like pain senses, vestibular, auditory and vision are known as sensation and perception. Sensations are the first

stages in the functioning of senses to represent stimuli from the environment, and perception is a higher brain function for interpreting events and objects in the world. Sensation occurs when any stimuli interact with the sensory receptors. It includes hearing, touching, tasting and smelling. Perception is how we put the impulses received from our senses together so that they make sense. Although a person may see perfectly, if they cannot perceive or correctly process the impulses it will not make sense. For example: sensing a touch is a sensation and being able to judge if it is a bad touch, is perception. Ecological View: According to Gibson, all objects have affordance. It is the opportunity of interaction offered by the objects which are necessary for any activity to be performed by them. He has proposed that people perceive information directly from the environment. Perception is a process which brings people in contact with the environment in order to interact with it and adapt to it. Early Controversies: Sensory and Perceptual Development Some of the early controversies on sensory and perceptual development are discussed in this section. A. Nature vs Nurture ● Empiricist philosophers believed that an infant was a tabula rasa (blank slate) who must learn to interpret sensations. ● Nativists argue that many basic perceptual abilities are innate. B. Enrichment vs Differentiation ● Enrichment theory claims that sensory stimulation is often fragmented or confusing. To interpret such ambiguous input, we must use our available cognitive schemes to add to or 'enrich' it. ● Differentiation theory argues that perception involves detecting distinctive features or cues that are contained in the sensory stimulation we receive. Infant Sensory Capabilities A. Vision is the least mature of the newborn's sensory capabilities:

● Newborns are more likely to track faces (or face-like stimuli) than other patterns although this preference for faces disappears within a month or two. ● Using the habituation method, researchers have found that neonates see the world in colour, although they do have trouble discriminating blues from greens and reds from yellows. ● Rapid development of the visual brain centers and sensory pathways allows their color vision to improve quickly. Young infants do not resolve fine detail very well. Studies of visual acuity suggest that a neonate's distance vision is about 20/600, which means that she sees at 20 feet what an adult with excellent vision sees at about 600 feet. B. Hearing: Using the evoked potential procedure, researchers have found that soft sounds that adults hear must be made noticeably louder before a neonate can detect them. Habituation studies indicate that neonates are capable of discriminating sounds that differ in loudness, duration, and frequency (Bower, 1992). 1. Reactions to voices ● Young infants are particularly attentive to voices, especially high-pitched feminine voices. ● Research by Anthony DeCasper (University of North Carolina at Greensboro) and his associates reveals that newborns suck faster on a nipple to hear a recording of their mother's voice than a recording of another woman. 2. Reactions of language ● Not only do babies attend closely to voices, but they are also able to discriminate basic speech sounds—called phonemes—very early in life. ● Infants 2 to 3 months old can distinguish consonant sounds that are very similar (i.e., 'ba' and 'pa'). ● Infants less than one week old can tell the difference between the vowels A and I and can even segment words into discrete syllables. 3. Consequences of hearing loss ● Otitis media, a bacterial infection of the middle ear, is the most frequently diagnosed among infants and preschool children.

● Antibiotics can eliminate the bacteria that cause this disease but will do nothing to reduce the build-up of fluid in the middle ear, which often persists without any symptoms of pain or discomfort. ● This fluid may produce mild to moderate hearing loss that can last for months after an infection has been detected and treated. ● Otitis media strikes hardest between 6-months and 3-years of age. C. Taste and Smell: Infants are born with some very definite taste preferences. Different tastes elicit different facial expressions from newborns: ● Sweets reduce crying and produce smiles and smacking of the lips. ● Sour substances cause infants to wrinkle their noses and press their lips. ● Bitter substances often elicit expressions of disgust —a down-turning of the corners of the mouth, tongue protrusions, and even spitting. D. Touch, Temperature and Pain ● Receptors in the skin are sensitive to touch, temperature and pain. ● Even while sleeping, neonates habituate to stroking at one locale but respond again if the tactile stimulation shifts to a new spot (i.e., from the ear to the chin). ● Later in the first year, babies begin to use their sense of touch to explore objects first with their lips and mouths, and later with their hands. So touch is a primary means by which infants acquire knowledge about their environment, which contributes so critically to their early cognitive development . 4.3 Concept Formation Concept is a dense form of prior experience. We see many kinds of animals moving around. They generally move on four legs. Their movement on four legs is a general trait on the basis of their prior experiences. It is a concept. We see birds flying. Flying is a common trait of birds. It is a dense generalization of prior experience. Thus, flying is a concept with respect to birds. Abraham Spelling has defined concept as: 'Concept is an idea formed by dissociating a quality from the various other qualities with which it is associated in objects of environments.' According to Woodworth, concepts are those thoughts that mention things, incidents, qualities, and so on. Bowring and others have described a concept as a mental image of a seen thing.

4.3.1 Process of Concept Formation How is a concept formed? Its process proceeds from the following mental processes: 1. Observation: A child observes a thing or situation at first. He/she perceives a few things directly by making images. A concept of things is also formed by him/her. 2. Analysis: Analysis of the qualities that direct things is the second step. After analyzing the qualities of a cow, horse, camel, buffalo, and so on, a child proceeds with the formation of concepts. 3. Comparison: Having passed through the first two stages, a child finds out during the comparison of a dog and a cat that the qualities found in a cat are missing in a dog. He/she gets the concept of 'cat' by comparing it with other animals. 4. Differentiation of abstraction: In this step, the child differentiates similar and dissimilar things. Through differentiation, he/she comes to know about the contrast between a horse and a cow. In the same way, he/she knows the difference between an animal and a human. One walks on four legs and the other uses two legs. One speaks, laughs and the other speaks differently but does not laugh. He/she conceives it by differentiation. The general quality found in various things alongside differentiation and classification is called abstraction. 5. Generalization: After observation, analysis, comparison, differentiation and abstraction, a student comes to know about the quality of a certain class. 4.3.2 Concept Development Concept development constitutes of four steps that are as follows: Concrete level: Picturization of a thing by the medium of a sense organ Identity level: Knowledge of differences in unity and general quality Classification level: To understand the differences correctly Formal level: To know a thing or concept by name Ross has explained the process of concept formation, with reference to thoughts and logic in an interesting way. He states that, 'The debate between factualism and nomenclatures is in fact for philosophy and not for a psychologist; the latter is concerned with the condition of conceptualization.' There may or may not be the existence of real objects of extensive characteristics, yet there is no doubt that our minds have the power to interact with the samples of extensive qualities and things and with the things themselves. In doing so, they function at the highest level of a thought process. Until now, we have been explaining the extensive things as mind-based, but thought of such forms points towards ordered cognitive situations in our minds that are a part of the high order. We can use the word 'concept' for such instincts in an extremely beneficial way. From this viewpoint, cognitive patterns, samples and mental forms are the base by which we can analyze the subjects of our thinking, whether they are cognitive or imaginary. We should take them for active cognitive attitudes, which direct our knowledge. For example, when we see something, the arousal of a thought depends on the sample or pattern. It proves the edict 'you see what our mind sees'. It all depends on the concept or pattern of the mind, which is put to analyze the sense organ's tools, which are common to all. Take an example, when a pattern is seen on a wall or floor, the untrained mind sees only that pattern, while a mathematician sees in it some universal truth. The English poet Wordsworth has drawn a picture of unimaginative Peter Bell for us: A Primrose by a river's brim, a yellow primrose was to him, and it was nothing more, but, for the poet himself: The meaning of the flower that blows can give thoughts that do often lie too deep for tears. A mind has real concepts which are related to the general things. How do we get such images? The general description relates to the analysis and synthesis of experienced things. The mind analyses things that are common to all, synthesizes it, which is specific to it and overlooks it. Thus, for example, the concept of the 'cat-family' seems to have been made on the basis of the commonality in cat, lion, cheetah, leopard, puma, and so on, which is the synthesized common factor of the concept. We can see the example of such mental synthesis and analysis in a general law of mathematics. We illustrate several numeral examples, such as calculating simple interest on a given capital. The result is calculated by the student by applying the general rules and he/she learns to pay attention to the activity and not on any specific numerical details. The analysis-synthesis method, as mentioned above, is very important in making concepts, but the description is very immature. From a logical point of view, a concept is a produced thing in

the mind that is only a dry model, which lacks all details that can prove to be valuable to it. It is, in fact, doubtful if the result of this activity can be called a concept, because the general facts are too different in their specific illustrations. 4.4 Unit Summary ●
Physical development of the individual is important both for the individual and social development. It is also important for ethical, moral and spiritual development. ● Physical growth and development refer to processes which bring about bodily and physiological changes—which are internal as well as external—in an organism from conception till his

death. ● Social development implies the development of an individual in a way in which he becomes a useful member of society or the group to which he

belongs. ●
A child's social behavior is regulated and influenced by the culture of the society he lives in. The ways of behaving by the people of one generation, pass on from generation to generation. ●
A teacher can play a vital role in the social development of the child under his charge. He exerts a great influence upon the development of the personality of the child. ●
The development of emotions is extremely important for the harmonious development of the personality of an individual. Emotions influence all the aspects of an individual's personality. ●

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Reasoning plays a significant role in one's adjustment to one's environment. It controls not only one's cognitive activities but

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also influence the total behavior and personality by proper or improper development of one's reasoning ability. 4.5

Key Terms ● Cognitive development: It is the development of the ability to think and reason. ●

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Depth perception: It is the visual ability to perceive the world in three dimensions. ●

Infancy: It refers to very early childhood, usually the period before being able to walk. ● Intellect: It is a series of mental operations, which occur to manufacture the perception of an image ● Motor development: It is the development of strength, speed and accuracy in the use of muscular parts of the body such as arms, eyes, legs and neck muscles.
● Perception: It is the process by which information is interpreted in order to give some sensible meaning to the world. ● Schemas: It refers to the cognitive structures or the patterns of behavior that children and adults use in dealing with objects in their environment. ● Sensation: It refers to the feelings like hearing, touching, tasting and smelling that occur when any stimulus interacts with the sensory receptors. ● Senses: It refers to the elementary impressions gathered by sense organs. 4.6 Check Your Progress 1. What are the dimensions of physical growth and development that take place in an organism? 2. What are the three aspects of instinctive behavior, according to McDougall? 3. What are the good and bad effects of emotion? 4. What are the factors that influence emotional development? 5. Differentiate between children's and adult emotions. 6. What are the major characteristics of motor development? 7. Define the 'principles of motor development'. 8. How does a baby's exposure to experiences affect his/her development? 9. Discuss the various theories of emotions in detail. 10. What guidelines should teachers and parents follow to control and train emotions?
Unit 5: Local Reasoning & Problem Solving 5.0 Introduction 5.1 Unit Objectives 5.2 Logical Reasoning 5.2.1 Types of Reasoning 5.2.2 Steps of Reasoning 5.2.3 Training in Rational Thinking 5.3 Problem Solving 5.3.1 Approaches to Problem-Solving 5.3.2 Steps in Effective Problem-Solving Behavior 5.3.3 Phases of Problem-Solving 5.3.4 Problem-Solving and Role of the Teacher 5.3.5 Thinking and Problem Solving 5.4 Unit Summary 5.5 Key Terms 5.6 Check Your Progress 5.0 Introduction

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Reasoning plays a significant role in one's adjustment to one's environment. It controls not only one's cognitive activities but

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also influence the total behavior and personality by proper or improper development of one's reasoning ability.

Henry Kaiser stated, 'Problems are only opportunities in work clothes.'

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From birth onwards, everybody in this world is beset with some problem or the other. There are needs and motives that are to be satisfied. For this purpose, definite goals or aims are set. In an attempt for their realization, one experiences obstacles and interferences in one's attempt to achieve them. This creates problems and serious as well as deliberate efforts have to be made to overcome these impediments. The productive work involved in the evaluation of the situation and the strategy worked out to reach one's set goals is collectively termed as problem-solving. This is an essential exercise for individual advancement

and advancement of society. 5.1 Unit Objective This Unit shall introduce the learners with the logical reasoning and problem solving elements concerned to growth and development. 5.2 Logical

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Reasoning Reasoning plays a significant role in one's adjustment to one's environment. It controls not only one's cognitive activities but

it may

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also influence the total behavior and personality by proper or improper development of one's reasoning ability. It is essentially a cognitive ability and is

akin to thinking in many aspects like the following: ● It has a definite purpose or goal. ● It is also an implicit act and involves problem-solving behavior. ● It involves the use of one's previous knowledge and experiences. ● It involves mental exploration of the reason or cause of an event or happening ● instead of motor exploration. ● It is a highly symbolic function. The ability to interpret various symbols, development of concepts and language aids reasoning. In view of the foregoing points of similarity, it is not easy to clearly distinguish between thinking and reasoning as separate functions. Reasoning is said to be a productive and advanced stage in the complex process of thinking. In comparison to thinking, it may be seen as a more serious and complex mental process that needs a well-organized brain and deliberate effort. The following definitions given by some eminent scholars can throw more light on the meaning and nature of the process of reasoning: ●

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Reasoning is step wise thinking with a purpose or goal in mind. — Garrett ● Reasoning is the term applied to highly purposeful controlled selective thinking. —

Gates
● In reasoning, items (facts or

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principles) furnished by recall, present observation or both; are combined and examined to see what conclusion can be drawn from the combination. — Woodworth ● Reasoning is the word used to describe the mental recognition of cause and effect relationships. It may be

the

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prediction of an event from an observed cause or the inference of a cause from an observed event. —Skinner ● Reasoning is

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combining past experiences in order to solve a problem which cannot be solved by mere reproduction of earlier

solutions. —
Munn A close analysis of the foregoing definitions may reveal that reasoning depicts a higher type of thinking, which is a very careful, systematic and organized function. It may follow some logical systematic steps like the following: ● Identification of the goal or purposes to which the reasoning is to be directed. ● Mental exploration or search for the various possibilities, cause and effect relationships or solutions for realizing the set goal or purposes based on the previous learning or experiences and present observations or attempts. ●

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Selection of the most appropriate possibility or solution by careful mental analysis of all the available alternatives. ● Testing the

validity of the selected possibility or solution, purely through mental exercise and, thus, finally accepting or rejecting it for the actual solution of the problem. Reasoning may, thus, be termed as

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highly specialized thinking, which helps an individual to explore mentally the cause and effect

a relationship of an event or solution of

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a problem by adopting some well-organized systematic steps based on previous experiences combined with present observation. 5.2.1

Types of Reasoning Reasoning

may be classified into two broad types– inductive reasoning and deductive reasoning. 1. Inductive reasoning:

In this type of reasoning, we usually follow the process of induction. Induction is a way of proving a statement or generalizing a rule or principle by proving or showing that if a statement or

a rule is true in one particular case, it will be true in all

cases in the same serial order and it may thus be applied generally to all such
cases. Therefore, in inductive reasoning one can formulate generalized principles and conclusions on the basis of certain facts and specific examples. For instance: ● Mohan is mortal, Radha is mortal, Karim is mortal and Edward is mortal. Therefore, all human beings are mortal. ● Iron expands when heated, water expands when heated and air also expands when heated. Therefore, all matter – solid, liquid and gas – expands when heated. Inductive reasoning may thus be considered to be a type of

specialized thinking aimed at the discovery or construction of a

rule or

generalized principle, by making use of particular cases, special examples and identity of elements or relations. 2.

Deductive Reasoning: Deductive reasoning is the exact opposite of inductive reasoning. It may be defined as

the ability to draw logical conclusions from known statements or evidence. Here, one starts with

some

already known or established generalized statement or principle and applies it to specific cases.

Henry L. Roediger and others (1987), in their book, Psychology, have mentioned three types of deductive reasoning—conditioned reasoning, categorical reasoning and linear reasoning. Let us see what they mean. 3. Conditioned

Reasoning: Conditioned reasoning is the reasoning tied down by some specific conditions, for example, if there is a solar eclipse, the street will be dark. There is a solar eclipse. Therefore, the streets are dark. 4. Categorical Reasoning: This type of reasoning is based on some categorical statements like: All robins are birds. All birds lay eggs.

Therefore,

all robins lay eggs. 5. Linear reasoning: This type of reasoning involves straightforward relationships among elements, for example: ● If Ram is taller than Mohan and Mohan is taller than Sohan, Ram is the tallest. ●

If Sita is taller than Gita and Gita is not as short as Rita, then Rita is the shortest. Man's life is an endless stream of problems, for which the individual has no readymade formula or solution. Being unequipped with the proper solution, he requires to think and reason before he can solve the problem. Reasoning is the highest form of thinking that needs a well-organized brain.

In the process of reasoning, the individual reasons from the past known circumstances to the present or future unknown conditions,

on the basis of past experience. In this manner, reasoning helps to reach a certain conclusion concerning the future without anything having been achieved in actual practice. Evidently, such an application needs some imagination as an essential part. To see an object lying on the table is to perceive it, when we think of it we are thinking, but if we try to know how that particular object came to be on the table at all, we fall into the process of reasoning. Evolution of Reasoning Power In different individuals, the extent of reasoning ability is different. Consequently, some individuals find it easier to solve difficult problems than others. Generally, the person who is a specialist in a particular sphere has greater facility in reasoning about problems relating to it than one who is a novice to it. The power of reasoning gradually develops in human beings. Children embark on reasoning out solutions to their problems even before they begin going to school. As they develop, their ability to reason grows and becomes stronger. Knowledge of a particular subject also makes it easier to reason out problems relating to it. 5.2.2 Steps of Reasoning American philosopher and psychologist

John Dewey described reasoning as speculative thinking and analyzed it, describing the following steps in it: A felt difficulty: An individual starts

reasoning only when he/she is confronted by some specific problem. Hence, it is essential that he/she should experience the presence of some particular difficulty that requires a solution. It may be a theoretical or a practical problem. Locate and define difficulty: The second step in reasoning, after the presence of a difficulty has been established, is the location and defining of it. For this one is required to analyze the problem of difficulty and track it down to a specific position, besides defining or elaborating it. Experience and ability of a student are called into play in this effort. Before the individual embarks on reasoning upon a problem, it is only natural for him to require all possible information concerning it and for this he/she must collect such data. It is not an uncommon occurrence for well-reasoned solutions to prove wrong because they were formulated on insufficient data. It is for this reason that in solving problems in many spheres, the reasoning of specialists is accepted without question by others who accept their results. Before looking for the solution of a problem, it is necessary to see whether one is in a position to gather all relevant data. Once information has been gathered, it is essential that it be evaluated because some pieces of information are more valuable than others. In the investigation of a crime, for instance,

one bit of information may help to clear the whole picture for an individual if

the reasons are substantial. Hence, the evaluation of all available information is an important part of solving problems. After information has been evaluated, it should be organized and classified. The classes into which specific information is to be divided depend upon the insight of the examiner. Evaluation of hypothesis: Classification of concepts help to bring to light the patterns concealed in the information, on the basis of which an individual can evaluate any hypothesis that he/she has formed in solving the problem. In solving problems an individual proceeds by first forming some hypothesis and as new information continues to pour in, his first hypothesis is strengthened or is contradicted, in which case it has to be discarded in favor of a more appropriate hypothesis. After the pattern of concepts is precisely known, one's preconceptions of hypotheses can be evaluated and the correct one decided upon.

Apply the solution: The next step is the application of solution or inference to solving the problem,

since it can only validate the inference. 5.2.3 Training in Rational Thinking The steps in the process of reasoning that Dewey has pointed out can be utilized in the solution of problems concerning education. For this, it is required for the thinker to possess a scientific attitude, self-confidence and patience. The teacher himself must be capable of scientific and unbiased reasoning, as he/she cannot otherwise teach his/her students to reason with clarity. In training the children to think rationally in school, it is necessary to keep following things in mind.

1. Acquaintance with problems of daily life: In order to acquaint the child with the problems, the subject that he/she is taught should be related to real life. It is only when illustrative examples in study are taken from daily life that the child can think of the problems with any facility. 2. Development of necessary qualities: Rational thinking requires experience, intellect, firm determination and other qualities, such as persistence and application. Out of these, with the exception of intelligence, all the others can be developed through effort. Hence, efforts should be made to develop these in the child. 3. Solution of problems of practical utility: Children should be asked to solve problems of practical utility. One such problem could be the following: Draw nine posts in such a manner as to create three lines, each of which contains three spots and, without lifting the pencil from the chart draw lines that connect all the spots. The ability to solve such problems can be developed through practice. In addition to this, children should be made cognizant of the problems that occur in daily life and inspired to solve them. 4. Knowledge of special subjects: Solution of specific kinds of problems inevitably requires skill in the appropriate subjects. Hence, the teacher should pose problems before the students only after they have gained adequate knowledge of the subject. 5. Acquaintance with environment: Problems on which the student is required to cogitate should bear relation to his life. For this, it is essential that he/she be acquainted with his/her environment. Knowledge of the individual, associations, institutions and processes that occur around him/her will make it possible for the child to comprehend their problems and he/she will be inclined to reason out a solution. The mistakes that they make in such reasoning should be concerned in a debate to prove their point. Sensible means, when concerned in a debate to prove a point, can be used by a sensible teacher after the debate is over. These may be used individually or collectively and brought to the notice of the student to explain the fallacies of their reasoning. 6. Knowledge of logic: A study of the general principles of logic will be especially beneficial to training in reasoning. The teacher should be well acquainted with the general rules of logic and should impart them to the student.

Thus, knowledge of the subject is concerned with the problem and knowledge of the rules of logic. In addition to this, when students get adequate opportunities of reasoning and arguing, they develop good reasoning ability. 5.3 Problem Solving Henry Kaiser stated, 'Problems are only opportunities in work clothes.'

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From birth onwards, everybody in this world is beset with some problem or the other. There are needs and motives that are to be satisfied. For this purpose, definite goals or aims are set. In an attempt for their realization, one experiences obstacles and interferences in one's attempt to achieve them. This creates problems and serious as well as deliberate efforts have to be made to overcome these impediments. The productive work involved in the evaluation of the situation and the strategy worked out to reach one's set goals is collectively termed as problem-solving. This is an essential exercise for individual advancement

and

advancement of society. The meaning and nature of problem-solving is further clarified by the following definitions:

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Woodworth and Marquis (1948) Problem-solving behavior occurs in novel or difficult situations in which a solution is not obtainable by the habitual methods of applying concepts and principles derived from past experience in very similar situations. Skinner (1968) Problem-solving is a process of overcoming difficulties that appear to interfere with the attainment of a goal. It is a procedure of making adjustments in spite of interferences.

An analysis of

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the above definitions highlights the following observations about the meaning and nature of

problem-solving behavior: ● In the satisfaction of one's needs and realization of the set goals, problem-solving behavior arises only when the goal is purposeful and essential for the individual. There is serious interference in the realization of this goal and this interference of obstacles cannot be overcome by simple habitual acts or mechanical trial and error methods. ● One has to utilize one's thinking and reasoning powers and engage in serious mental work by systematically following some well-organized steps for the removal of the difficulties and obstacles. ● The problem-solving behavior involves

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quite deliberate, conscious and serious efforts on the part of the problem-solver. ● Problem-solving

behavior helps in the removal of or adjustment with, interferences and ultimately helps an individual to reach his goal and satisfy his motives. ● Problem-solving behavior helps an individual in the growth and development of his personality, making his life happier by appropriate adjustment. It also contributes significantly to the progress and development of society.

proposed by Robert Gagne, which depends on the mastery of the next lower types of learning. It involves the application of principles and facts to explain and solve new phenomena or predict consequences from known conditions. Problem-solving is a key skill and can make a huge difference in their career. At work, problems are at the center of what many people do every day. It is either solving a problem for a client (internal or external), supporting those who are solving problems, or discovering new problems to solve. The task of problem-solving requires prediction, analysis of facts and principles to develop cause-effect relationships in the physical phenomena of the environment. Generally, our daily life activities are followed in routine and we do not face any problem to perform our routine duties. However, it is not always so, sometimes we are not confronted with a problem situation and we have to think as well as identify an appropriate solution to reach the goal. A problem situation is basically any obstacle that may be physical, social and economic, or in any other form, which may hinder the progress of the individual or person to reach the goal. There are a number of different obstacles that can interfere with our ability to solve a problem quickly and efficiently. For example, problem-solving can be impaired by biases of personal beliefs, a misunderstanding of information relevant to solving problems and overconfidence.

When dealing with a problem, people often make assumptions about the constraints and obstacles that prevent certain solutions and create obstacles in the progress of a problem; sometimes a mental set also creates an obstacle in problem-solving like the tendency to approach a new problem with the same approach that worked previously for different problems. People have to only use solutions that have worked in the past rather than looking for alternative ideas. It can often work as a heuristic, making it a useful problem-solving tool. However, it can also lead to inflexibility, making it more difficult to find effective solutions. While part of learning is developing effective strategies for dealing with problems, the automatic or rote Application of a strategy to a problem can lead a person down the wrong path and impede problem-solving. Much of effective problem-solving lies in knowing which approach to use to solve the problem. Functional fixedness is the tendency to view physical objects in terms of their traditional uses. By doing so, we greatly limit the possibilities for creative uses of objects in non-traditional ways. It prevents people from seeing all of the different options that might be available to find a solution. It helps to view a problem only in their customary manner For example, a hammer not only can be used for driving or removing nails, but also serves as an effective paperweight, nutcracker or a pendulum weight. The problems you face can be large or small, simple or complex and easy or difficult to solve. Regardless of the nature of the problems, a fundamental part of every manager's role is finding ways to solve them. Thus, being a confident problem solver is important to your success. Much of that confidence comes from having a good process to use when approaching a problem. With a good process, you can solve problems quickly and effectively, contrary to which your solutions may be ineffective, or you will get stuck and do nothing, with sometimes painful consequences. Problem-solving is basically a mental process that people go through to discover, analyze and solve problems. This involves all of the steps in the problem process, including the discovery of the problem, the decision to tackle the issue, understanding the problem, researching the available options and taking actions to achieve your goals. Before problem-solving can occur, it is important to first understand the exact nature of the problem itself. If your understanding of the issue is faulty, your attempts to resolve the problem will also be incorrect or flawed.

5.3.1 Approaches to Problem-Solving Traditionally, two different approaches have been mentioned by psychologists, adhering to two families of learning theories: (i) Cognitive field theory and (ii) Stimulus-response theory. Cognitive field theory emphasized the importance of the perception of total situation and relationship among its components and restructuring the cognitive field. Kohler conducted his classical experiments on Sultan to study the process of problem- solving in animals. He, from his study on problem-solving, proposed that the solution of a problem is arrived at, all of a sudden, after some initial efforts by the individual. Many studies have been conducted on children and adults to confirm that a solution of a problem is reached, all of a sudden through insight into the situation. The second point of view has been advanced by stimulus-response theorists who emphasize the importance of trial and error. They hold that a problem is solved through a gradual process of elimination of error and putting together correct responses. There has been considerable controversy as regards the superiority of one approach over the other as an interpretation of problem-solving. Some psychologists are of the opinion that the cognitive field theorists approach is most effective for solving problems that require higher mental processes. The stimulus- response approach is effective for solving simple problems. To do away with the controversy of cognitive and stimulus response approach, eminent psychologist Harlow proposed a third explanation. His approach is more realistic and rational in nature. He conducted a series of experiments on monkeys and human subjects of low mental abilities. He presented his human subject with simple problems of discrimination. He observed that in the beginning his subjects showed trial and error behaviour to solve a series of problems but he noticed that when similar problems were presented to the subjects in future for the first time they made correct discrimination. The later stage appears to be insightful learning, i.e., suddenly getting the problem solved. According to Harlow, the underlying assumption is that in the Previous trial and error learning, the subjects have learned 'how to learn'. They acquired what he called a learning set. They acquired a method of learning that transferred positively to other problem situations of similar type.

Harlow says, 'Generalizing broadly to human behavior, we hold that original learning within an area is difficult and frustrating, but after mastery of the basic facts, learning with the same area becomes simple and effortless.' 5.3.2 Steps in Effective Problem-Solving Behavior Psychologists have tried to study the behavior involved in the process of problem-solving in animals as well as in human beings. They have suggested different steps involved in the process of problem-solving according to their respective findings and viewpoints. John Bransford and Barry Stein (1984) advocated five steps that are basically associated with the task of problem-solving. They referred to these steps as 'IDEAL' thinking and arranged them in the following order: I = Identifying the problem D = Defining and representing the problem E = Exploring possible strategies A = Acting on the strategies L = Looking back and evaluating the effects of one's activities Bourne, Dominowski and Loftus (1979), on the other hand, enumerated the following three steps or stages in problem-solving: preparation, production and evaluation, by proclaiming 'we prepare, we produce and we evaluate in the task of problem-solving.' Problem-solving is an individual phenomenon and involves the exercise of cognitive abilities of a high order and continuous and persistent struggling on the conscious as well as unconscious levels. Often, there is a considerable movement back and forth as one moves from one step to another in the task of problem-solving. In general, the following steps may be followed in the task of problem-solving. 1. Problem-awareness: The first step in the problem-solving behavior of an individual is concerned with his awareness of the difficulty or problem that needs to be solved. He/she must face some obstacle or interference in the path of the realization of his/her goals, needs or motives and consequently he/she must be conscious of the difficulty or problem.
2. Problem-understanding: The difficulty or problem encountered by the individual should next be properly identified and analyzed so that its exact nature becomes clear. This should be followed by relating the problem to specific goals and objectives. Thus, all the difficulties and obstacles in the path of the goal or solution must be properly named and identified and what is to be achieved through the problem-solving effort should be clearly known in very specific terms. 3. Collection of the relevant information: In this step, the individual is required to collect all the relevant information about the problem by all possible means. He may consult experienced persons, read the available literature, recall his own experiences, think of the numerous possible solutions and put in all possible efforts to collect comprehensive data and knowledge concerning the problem. 4. Formulation of hypotheses or hunch for possible solutions: After understanding the nature of the problem and collecting all relevant information, one may start some cognitive activities to think out the various solutions to the problem. 5. Selection of the correct solution: In this important step, all the possible solutions, thought out in the previous step, are closely analyzed and evaluated. Gates and others (1946) have suggested the following activities in the evaluation of the assumed hypotheses or solutions: ● Identify the conclusion that completely satisfies all the demands of the problem. ● Find out whether the solution is consistent with other well-established or accepted facts and principles. ● Make a deliberate search for negative aspects, which might cast any doubt upon the conclusion. The above suggestions will help the individual select the proper solution of the problem out of the numerous solutions that may be available. In the final analysis, however, he/she has to use his/her own discretion by utilizing higher cognitive abilities to properly identify the appropriate hypothesis or solution by rejecting all other hypotheses. Verification of the concluded solution or hypothesis: The solution arrived at or conclusion drawn must be further verified by applying it in the solution of various similar problems and only if the derived solution helps in the solution of these problems, should one consider the solution

to be acceptable. Such a verified solution may then become a useful product of one's problem- solving behavior and be utilized in solving other future problems. 5.3.3 Phases of Problem-Solving Psychologists and educators who worked on problem-solving have distinguished several phases in the process of problem-solving. It is not necessary to pass through all the phases in every problem. Table 2.4 shows the steps which have been given by different research workers on problem-solving. Table 5.1 Problem-Solving Confrontation with a problem: The process of problem solution is mutated by the felt need or problem in the environment, which calls for a solution. The confrontation of the problem may be due to two reasons, i.eSomeone else has created a problem for the individual or the individual himself has experienced a problematic situation. Search for the solution: When the individual feels motivated to solve a problem, he/she starts analyzing the situation, identifying the problem in definite terms. He/she formulates certain hypotheses that guide him/her to reach the goal. He/she collects relevant information from

different sources that have bearing on the problem. Appropriate tools are gathered, books and magazines are collected. After collecting information from various sources, the individual analyses the data and attempts to find out the solution of the problem. Solution of the problem: Finally, the endeavor is crowned with success, that is, the obstacle is removed and a state of satisfaction is attained. Sometimes it has been experienced that final solution occurs in a flash of inspiration, yet the foregoing trials, though not immediately successful, must have paved the way for it. Verification: The routine checking of hypotheses is the search for the solution. In many cases, however, the need arises for final testing of the solution, or for the elaboration of detail, as for instance, in case of designs for new machinery. The final testing may sometimes lead to the introduction of certain changes in the original device. The process of problem-solving in each case depends upon the type of the problem, the circumstance of the research for the solution and on the individual's personality. 5.3.4 Problem-Solving and Role of the Teacher How can a teacher help the students in problem-solving? This is an important question, which every class-room teacher faces. No universal law can be formulated for solving each and every type of problem. Problem-solving in an individual process that requires various strategies to tackle. A classroom teacher can develop a scientific approach to solve problems, which the students are expected to face in social life. Tentative suggestions are provided for teachers that can prove useful in developing the right attitude to approach a problem. Some of these are discussed as follows: ● Moderate motivation: It has been pointed out by experimental studies that extreme motivation or excessive emotional involvement in a problem hinders productive thinking. The teacher should create moderate motivation in the students. If he/she finds that students show high motivation, he/she should drop the problem and return to it when he/she finds the students in a calmer state but on the other hand motivation should be sufficient to sustain the interest of the class. The teacher can create motivation by utilizing various techniques. ● Encourage divergent thinking: The teacher should not emphasize confirmatory behavior in students. He/she should encourage divergent thinking in students. Students should be encouraged to tackle problems in a variety of ways. The teacher should allow

flexibility and encourage original approach to problems. Reasoning should be developed through guided discussions in the class. ● Problem should be presented as a whole: The teacher should present problems in the class as a whole so that students may have the perception of the total situation for the solution. ● Level of difficulty: The teacher should see that the problems are not too difficult for the class. The maturation level and the level of developmental tasks to create motivation in the students should be kept in mind. The problem should be neither too difficult nor too easy for the class. The problem should create a moderate level of anxiety in the students. ● Active manipulation: The teacher should present a problem in a planned way. He/she should try towards an active involvement of the class in the process of solving a problem. Use of diagrams, figures and manipulation of concrete material should be made to conceptualize the abstract problems. The teacher can shift the functional properties of the process and then evaluate the environment in these terms. ● Practice: The teacher should provide a variety of problems for practice in order to develop mental skills in students aiding them to solve similar types of problems in future. ● Incomplete solution: It has been proved that incomplete tasks are retained more than complete. The implication of this is that the teacher should never provide complete solutions to problems. Some unanswered questions should be left for the students to solve. The teacher can develop the spirit of formulating tentative conclusions of the problem. He/she should make an effort to develop a scientific attitude in students. 5.3.5 Thinking and Problem Solving Thinking is very significant in problem-solving. A problem stimulates a thinker. A thinker thinks about the solution when faced with a problem. Words have great significance in the thinking process. The names and concepts of things have a great role in thinking, analyzing the importance of words in thinking. Some scholars conclude that thinking is always verbal, but sometimes children can resort to mental patterns and physical postures. However, symbolic thinking is often verbal. Thinking, no doubt, solves a problem, but all kinds of problems do not arouse thinking. If a problem is not experienced, it is possible that the thinking might not begin at all and the problem

would remain in the same form. For example, experiencing hardship and being acquainted with the extensiveness of a difficulty helps to find the symbolic means of conquering a problem. When a means to problem solving is found, it is tested. All kinds of problems do not lead to thinking and all kinds of thinking is not the solution to problems. When thinking inclines towards problem-solving, it adopts the scientific approach. From the scientific and logical viewpoint, problem-solving has the following stages: Experience of difficulty: When a need is felt or a hurdle is faced, the person concerned is perplexed, troubled and restless. He/she wants to achieve, wants to adopt a thought or ideal, or wants to possess something. However, if he/she has no means to get what he/she wants or he/she is not able to recognize the thing, ideal or tool, or is not able to clarify an incident, he/she experiences difficulty. When he/she sees that his need is not being fulfilled by the available means and his/her present knowledge is not able to reduce his/her restlessness, then he/she reaches the threshold of thinking. This problem can arise any time in our daily life, such as expenses being more than income, car accidents, sickness, rising prices, and so on. Such problems are not solved by present knowledge or means, giving rise to complexities. Explanation and definition of problem: When a difficulty arises, it is very unclear in its initial form. A difficulty gives rise to tension, anxiety, perplexity and restlessness, but keeps itself under wraps. A difficulty resides behind veils and cannot be seen without unveiling. Common people experience its presence, but commit errors in recognizing it or do not attempt to recognize it at all. Recognizing a problem means to mark its extent or limit and define it. If a person wants to solve a problem, he/she has to understand and clarify it. If a difficulty does not resolve, the means employed to solve it can prove misleading. A person cannot conquer a difficulty in the absence of its definition. Suggestions for problem-solving: Facts, information and other related aspects present suggestions for problem solving. An attempt is made to guess from the observation of the facts and go beyond the present facts. The thinker guesses with the help of facts, imagines, or in scientific language forms a concept. Conceptualization is a task of great courage. Carefulness is observed in its formation. The thinker decides the presented suggestions for problem-solving, determines the objective of each suggestion and then adopts one of the suggestions as a

conclusion. If a suggestion does not seem appropriate, the thinker rejects it and evaluates another. Thus, testing various suggestions, the thinker accepts one such suggestion, which presents the correct solution to the problem, or the person sits down dejected and the flow of thinking interrupts. An able thinker can present several suggestions and can recognize a good suggestion by testing it. He/she can recognize a good suggestion from a bad one. Solution of the problem: When a suggestion is accepted, it is used for problem-solving. Experiments are conducted in some problems while in others the solution is found without any experiment. The use of experiments constitute the fifth stage of thinking; if the problem is not experimented, the solution may be found out by inner vision, the solution representing the fifth stage. Testing the solution: When a solution to a problem is found, it is used for remedying the problem and validating its appropriateness. When discussions on problem-solving were carried out, many suggestions were considered and the best solution was accepted as a temporary solution. This temporary solution is used to experiment. In Gestalt Psychology, it is in this stage that a person is able to find a solution by the similarity of a situation. John Dewey has described these stages of discussion on thinking in this book How We Think as: (i) Experience of difficulty (ii) Definition of difficulty (iii) Suggestion or concepts for problem-solving (iv) Consideration of suggestions (v) Testing the concepts by activity These five steps of problem-solving recommend both methods of inclusion and exclusion. Inclusion is used to prepare the base of the imagination, but exclusion considers the suggestions facilitated by which the thinker reaches logical conclusions from imagination and once again takes refuge of inclusion to prove other cognitive solutions.

The development of discussion thinking cannot happen all of a sudden. It is related to learning. Children learn by thinking and develop their ability to think by learning. An inexperienced child learns by trial and error. He/she uses more of his intellect when grown and takes the help of prior experiences. The ability to think logically develops gradually. Students can be trained for logical thinking in problem-solving. 5.4 Unit Summary

it may

also influence the total behavior and personality by proper or improper development of one's reasoning ability.

Reasoning may be classified into two broad types– inductive reasoning and deductive reasoning. Henry Kaiser stated, 'Problems are only opportunities in work clothes.'

From birth onwards, everybody in this world is beset with some problem or the other. There are needs and motives that are to be satisfied. For this purpose, definite goals or aims are set. In an attempt for their realization, one experiences obstacles and interferences in one's attempt to achieve them. This creates problems and serious as well as deliberate efforts have to be made to overcome these impediments. 5.5

Key Terms ● Cognitive development: It is the development of the ability to think and reason. ●

Depth perception: It is the visual ability to perceive the world in three dimensions. ●

Infancy: It refers to very early childhood, usually the period before being able to walk. ● Intellect: It is a series of mental operations, which occur to manufacture the perception of an image. ● Motor development: It is the development of strength, speed and accuracy in the use of muscular parts of the body such as arms, eyes, legs and neck muscles. ● Perception: It is the process by which information is interpreted in order to give some sensible meaning to the world. ● Schemas: It refers to the cognitive structures or the patterns of behavior that children and adults use in dealing with objects in their environment. ● Sensation: It refers to the feelings like hearing, touching, tasting and smelling that occur when any stimulus interacts with the sensory receptors. ● Senses: It refers to the elementary impressions gathered by sense organs. 5.6 Check Your Progress 1. What did you understand by the term "Logical Reasoning"? What are types of Reasoning? 2. Discuss the steps of reasoning? 3. What did you understand by "Problem Solving" 4. What are different approaches to Problem-solving? 5. What are steps in effective problem solving behavior? 6. What are phases of problem solving? 7. Discuss the role of a teacher in problem solving. 8. Thinking is very significant in problem-solving.

Unit 6: Cognitive & Language Development 6.0 Introduction 6.1 Unit Objectives 6.2 Cognitive And Language Development 6.2.1 Theories of Cognitive Development 6.2.2 Language Acquisition and Speech Development 6.2.3 Development and Levels of Language 6.2.4 Roots of Language and its Use 6.2.5 Factors Influencing Language Development 6.2.6 Perspectives of Language Development 6.3 Individual Differences 6.3.1 Factors Affecting Individual Differences 6.3.2 Educational Implications in Individual Differences 6.3.3 General Guidelines for Meeting the Needs of Individual Differences 6.3.4 Role of Heredity 6.3.5 Role of Environment 6.4 Unit Summary 6.5 Key Terms 6.6 Check Your Progress 6.7 Unit Summary 6.8 Key Terms 6.9 Check Your Progress 6.0 Introduction Jean Piaget is regarded as one of the pioneers in psychological investigation of children, although he neither undertook formal study nor passed any examination in psychology. He was a biologist by training. At the age of 22, he obtained his Doctorate Degree in Zoology on Mollusks of Valias. He worked on child development for more than 50 years and produced enormous literature on developmental psychology. We have seen how children differ in various aspects. It is quite clear that the same curriculum, same methods of teaching and same discipline, and in some cases, even the same educational institution will not serve the individual needs of children. Ideally speaking, each student needs a particular setting and individual instruction with a lot of group interaction. This, however, is not feasible in normal life. At the same time, individual differences of children must be catered to. 6.1 Unit Objective This section discusses cognitive and language development and Individual difference in detail. 6.2 Cognitive And Language Development Our cognitive skills help us organize what we know and generalize that knowledge into other areas. Language Development is learning and processing language through reading, writing and speaking (oral). 6.2.1 Theories of Cognitive Development In this section, we will discuss Jean Piaget's theory of cognitive development and Vygotsky's socio-cultural theory. Jean Piaget's Theory of Cognitive Development: Jean Piaget is regarded as one of the pioneers in psychological investigation of children, although he neither undertook formal study nor passed any examination in psychology. He was a biologist by training. At the age of 22, he obtained his Doctorate Degree in Zoology on Mollusks of Valias. He worked on child development for more than 50 years and produced enormous literature on developmental psychology. He read philosophy, psychology and sociology, and so on Piaget pursued clinical research at the Alfred Binet Laboratory at Paris. By observing and working with children, he developed his educational theory regarding cognitive development or learning by children. Piaget's work as a Professor of child psychology at the University of Geneva (Switzerland) made him famous throughout the world. Basic Concepts of Piaget's Theory Piaget introduced four concepts in the building of his theory. They are as follows:

1. Schemas: Piaget called 'schemas' as cognitive structures or the patterns of behavior that children and adults use in dealing with objects in their environment. These patterns can be simple as well as complex. As the development proceeds, each pattern enlarges and changes. It is coordinated with other patterns to form more complex patterns. The infant sucks the breast of its mother, it looks at the objects of its environment, listens to different voices in its environment; and finally it tries to comprehend, conceptualize the articles, animals, space and many other behavior patterns or structures. 2. Assimilation: Assimilation implies incorporation of something from the environment. New ideas, concepts and stimuli are taken in and incorporated into one's existing set of schema. A scheme is the organized pattern of behavior which the child develops when he/she is engaged in any activity. For example, when a child is engaged in sucking, there is a certain pattern of movements of the cheeks, lips and hands. When a child is confronted with a new object, he/she will try to understand the new object by applying his/her old schema to it. He/She grasps and adapts himself/herself to a new object by assimilating it. His/Her old schema does not change in the process. 3. Accommodation: Accommodation involves modification or change of some elements of an old schema or learning a new schema which is more appropriate for the new object. A baby who has already got a schema of sucking the mother's breast accommodates to the object placed in the mouth—finger, nipple, pencil, a toy—depending on its shape, form and the size. The baby develops a new schema or a modified schema. This is called accommodation. Thus a baby assimilates when it understands and perceives the new in the light of its old perceptions. A baby forms a new schema and modifies or changes its old perception to suit the new. This implies adjusting or accommodating. In this way/her a baby forms new structures or new schemes, and consequently develops cognitivity. 4. Equilibration: The structures or the schemes change from one stage to another by the process of equilibration—maintaining balance between the child and his/her changing environment. According to Piaget, when by the existing scheme, the new situation is not fully handled, then a state of disequilibrium or an imbalance between what is understood and what is encountered is created. In such a case, the individual tries to reduce such imbalances. This is done by him/her by focusing his/her attention on the stimuli that has caused the disequilibrium and by developing new schemas or adapting old ones until

equilibrium is restored. This process of restoring balance is called equilibration. Piaget believes that learning depends on this process. Stages of Cognitive Development Jean Piaget divided the stages of cognitive development in the following categories: 1. The period of sensorimotor adaptation (since birth to 2 years): The period from birth to two years is marked by an extraordinary development of the mind. The infant starts from reflex domination and reaches the stage of sensorimotor schemas in a means to end a relationship. The development of this period is very important for future life. The intellectual development at this age is marked by the following four fundamental characteristics: ● Object concept formation ● Coordinated space ● Objectified causality ● Objectification of time The objects exist in the psychological world of an adult irrespective of their physical presence before the adult but in the world of the child, they only exist when they are physically present and the child looks at them, grasps them and acts with them. As soon as they move out of his/her range of acting, grasping and listening, they stop existing for the child. In the first year of life, the child develops the concept of permanence of objects. He/She then attempts to retrieve an object that disappears from his/her range of action. When the child acquires the scheme of object permanence, he/she is likely to exercise it at every opportunity; he/she will drop objects of his/her play and then try to find them. The second characteristic of coordinated space is integrated with the formation of the object concept. The

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spatial world at first is totally uncoordinated. Each sensory modality has its own space

and is centered on the child's current activities.

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By the end of two years, the child develops the concept which is characterized by relationship among objects and between objects and his/her own body. The concept of causality depends on the activity of the child. Any action of the child which brings about an effect is taken as the cause of that event.

The child, by a number of activities, develops the concept of causality by the end of two years of age.

The infant does not have any real sense of duration at the beginning of life. By the middle of the first year of life, a rudimentary sense of duration is present, but it is entirely a subjective phenomenon. By the end of the first year, the infant frees itself from this personal concept of time and the beginning of objective existence of time takes place. The infant can establish temporal relations between events in which it does not directly participate. Appearance of representations during its second year of life gives a considerable boost to the time concept. The infant can now recall events of long ago as well as those that occurred in the immediate past. Time is conceived as a dimension in which events occur, not just as a by-product of behavior. 2. The development of symbolic and pre-conceptual thought (2 to 4 years): At the end of the sensorimotor period, the child starts dealing with the world by means of ideational representations. By imitation and other forms of behavior, he/she demonstrates that he/she is capable of extending his/her world beyond the here and now. These actions of the child indicate the use of symbols. By the age of 4, the child develops a way of representing the environment in the absence of perceptual cues and will build a set of symbolic schemes. 3. The period of intuitive thought (4 to 8 years): At this stage, the child is able to use concepts as stable generalization of his past and present experiences. His/Her reasoning is not logical and is based on intuition rather than on systematic logic. The intuitive thought of the child is mainly concerned with stages or static configurations and neglects transformation. The child talks about this or that momentary static conditions, but he/she cannot adequately link a whole set of successive conditions into an integrated totality by taking into account the transformations which unify them and render them logically coherent. 4. The period of concrete operations (8 to 12 years): Concrete operation means that stage of cognitive development when

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the child is able to direct his attention away from the static conditions

and can focus on the whole set of successive changes that occur in the process of transformation. At this stage, the child can reason well. Transformation could return to its starting point. Piaget has given a long list of operations which make possible the handling of numbers in various relations to each other, the arrangement of objects into classes and subclasses and the ordering of objects according to one or more

attributes. He has coined a term 'grouping' to describe a set of operations. The starting point of concrete operations is always the real father than potential. The child of 7–11 years acts as though the primary task were to organize and order what is immediately present. During the period of concrete operations, there are some logical inconsistencies in the child's thinking. Piaget calls this efficiency 'Syncretism'. 5. The period of formal operations (from 12 years to adolescence): At this stage the child's thought process becomes quite systematic and reasonably well-integrated. These qualities of the child's thought process are evident when events are present. Reality guides his contemplation of possibility. He starts a form of hypothetico-deductive reasoning. The use of formal operations is what is called the 'controlling aspects of comprehending'. The child at this stage in his/her formal thinking can free himself/herself of the here and now in a lawful and systematic way. His/Her wisdom lies in the masterful administration of the unforeseen. When an adolescent is faced with a problem, he/she uses formal operations to identify the variables that seem relevant to the solutions, and then considers all the possible combinations of these variables. The formal thought of adolescence is of propositional nature. The adolescent using formal operations views the concrete data as inducing a set of propositions and he/she then applies operations to these propositions which are themselves primary operations. Formal thinking is, thus, inter-propositional and inter-operational and entails working out propositions on propositions or applying second-order operations to primary ones. The

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development of formal operations enables the adolescent to transfer understanding from one situation to another.

The adolescent shows a particular orientation to problem solving. He/She analyses and organizes his/her approach before attempting a specific empirical test. The hallmark of formal operations period is the development of the ability to think in symbolic terms and comprehend content meaningfully without requiring physical objects or even visual or other imagery based on past experience with such objects. Formal operations are the logical and mathematical concepts which are used in advanced conceptualization and reasoning, and so on, that are difficult to represent concretely.

Piaget's: Aspects of Learning 1. Meaning of learning: Learning includes a wide range of activities. Rigid distinctions like classroom for instruction, laboratory for practicals, recess for amusement, mathematics for developing computational ability, athletics for strengthening the body muscles, and so on, are unnecessary. Piaget's approach helps to tie together what have been treated as separate subjects. 2. Role of learner's actions: Action stresses the role of active exploration. A child is active when he stares at objects. A child is active when he stares at an organism. A child is active when he/she studies his/her body parts. A child is active when he lifts something. A child is active when he/her carries things. A child is active when he/her arranges things. Children are usually active for most of their time. There is no doubt that some of these activities may be rather aimless or unnecessary. However, most of these activities are purposeful. 3. Role of practice: An important part of Piagetian model is repetition of an act by a child. The role of practice varies with development. Concepts are the products of a long history of action. A child may take three or more days to complete a puzzle. Each day he/she appears to go through the same sequence. A child's actions upon the environment are repeated again and again with slight modifications each time. Piaget depicts the child as somewhat slower and methodical and systematic in acquisition of new ideas. 4. Motivation: According to Piaget, a learner desires to reduce his/her internal conflicts by keeping his/her thoughts harmonious and in equilibrium. It is only through playing, imitating, exploring and questioning that a child gradually comes to distinguish the achievable from non-achievable, and logical from the illogical. To Piaget, the progress towards this end is inherent, a property of cognitive style as are eating, drinking and breathing in the physiological field. 5. Memory: Memory is a symbolic representation of how the child has schematized what he/she sees. Experiments conducted by Piaget reveal that after six months, 61 per cent of the children from 4−8 years of age regressed in their memory ability if tested by recall or evocation. A reconstruction test involving the child with some material showed regression in 4−5 years olds but 48 per cent progression among 6−7 year olds. Piaget holds that recognition is perceptual and reconstruction is internalized imitation. Each experiment reveals that the pattern of accuracy, improvement and regression (gradual

loss of memory) is determined by initial conceptual understanding and is altered by new understandings. 6. Interest: According to Piaget, the interest of the child at any given movement depends upon the system of ideas he/she has acquired plus his affective perception. A child tends to fulfill his/her interests in the direction of greater equilibrium. According to Piaget, equilibrium is development and the ability to think in a logical and natural manner. Educational Implications of Piaget's Cognitive Theory of Development ● It provides a broad development perspective to the educator for building a curriculum for the children. ● The description of developmental stages and qualitative aspects of intellectual growth is very useful in providing suitable educational practices. ● The cognitive theory states that the child is to be actively involved in the teaching− learning process for his intellectual growth. ● Piaget-based curriculum requires that children should not skip any stage. ● The preschool child is at the preoperational level. The educational programme at this stage should provide concrete operations. ● An educational programme should enable the child to integrate the information. ● A child should be helped to develop internal consistency of the system. ● Most of the activities of the Piaget type require simple equipment and material. ● Drilling in skills is to be avoided. ● Teaching−learning situations should be geared to a point where the child is neither too familiar nor too unfamiliar with the objects and ideas. ● Variety of cognitive activities like storytelling, rhymes, singing, and so on, are included in the programme in a systematic manner. There is a deliberate attention to developing cognitive growth. ● A child's development is retarded if he/she is not allowed a fairly wide sensory and motor experience in his/her early years. ● Real events and concrete objects play an important role in learning. ● In science and mathematics, learning from the physical environment is more important than what is learnt from people, books or television.

● A teacher should arouse curiosity of the child through planned activities. ● Children like to find out by themselves by their own spontaneous activity. ● Children learn speedily if we provide concrete material to them. Criticism of Piaget's Theory of Development Several psychologists do not agree with Piaget's theory of cognitive development. According to Gagne (1968), stages described by Piaget are not necessarily the inevitable result of an inborn time-table. Instead they are a consequence of children having learned sets of rules that are progressively more complex, and these rules are taught by their physical and social environment. Gagne thinks that Piaget was indifferent to the role of learning in developmental changes. Some psychologists do not agree with the view of Piaget that infants are born with some elementary mental structures that are starting points for their attempts to deal with their environment. Piaget's views are not new to educational thought. What is new is that they have been stated in the context of the classroom situations. Instruction in the classroom would serve the function of setting into motion the processes of assimilation and accommodation for a particular area of exploration. Vygotsky's Socio-Cultural Theory Vygotsky (1962) believed that children are active seekers of knowledge, but emphasized that rich social and cultural contexts profoundly affect their thinking. The main points of Vygotsky's theory were: ● Rapid growth of language leads to profound change in thinking. ● It broadens preschoolers' participation in social dialogues with more knowledgeable individuals, who encourage them to master culturally important tasks. ● Young children start to communicate with themselves in the same way as they converse with others. Hence, basic mental capacities are transformed into uniquely human, higher cognitive processes.

6.2.2 Language Acquisition and Speech Development A major feature that distinguishes human beings from animals is their ability to use vocal speech as a means of communication. Sometimes the words 'speech' and 'communication' are used as if they mean the same thing. Speech is the most important form of communication. Communication has these forms: Speech Facial and bodily movements that show different emotions Touch Sign language used by the deaf Arts such as music, dance and painting Written symbols of words Broadly speaking, the tools of communication may be categorized under two heads—signs and symbols. Symbols are unique to human beings. Language permits the communication of information from one generation to the other. It makes available the wisdom as well as the errors of the past to the present generation. Also, language performs the following functions: Language helps to communicate ideas to others Language helps in the formation of concepts Language helps in the analysis of complex wholes Language helps us to focus attention on ideas which would otherwise be difficult to keep in mind A psychologist takes interest in the structure of a language because in it he/she finds some aspects of human structure of thinking. Sequence of language development The sounds, words and sentences are the stages in language development. The first cry or sound uttered by a child is its cry of birth. Crying, babbling and gestures are all important forms of pre- speech communication. The mother starts talking to the child right from the moment of birth. She converses when she changes the clothes of the infant. She converses when she feeds the infant. She converses when she gives both to her infant. In this way, the sound making behavior
is reinforced. It is pleasant for the parents to listen to the sounds made by the infant. It becomes a rewarding experience for the child. Crow and Crow (1962) pointed out the sequential steps of progress in language development: Feeble gestures and sounds Babbling Use of simple spoken vocabulary One word sentence Combination of words into sentences Development of skill in reading Improved mastery of the tools of communication Gessel and Thompson (1934) reported about language growth that most babies observe Kooing when they are 12–16 weeks old. They are able to combine some vowels and consonants and repeat them in succession when they are five to six months old. They can speak one word or more when they are one-year old. Lynip (1951) recorded voice samples of an infant for 56 weeks beginning with its birth cry. With a sound spectrograph, he analyzed these records and noted that the infant did not produce a single vowel or consonant sound comparable to adult vowels or consonants until about the age of one year. Thorndike and Lorge (1944) spent a number of years counting the words which were used in popular magazines and children's books, and so on, in America. It was found that the word 'I' was used most often. 6.2.3 Development and Levels of Language Language use has two aspects—production and comprehension. In the production of language, we start with a thought, somehow translate it into a sentence, and end up with sounds that express the sentence. In the comprehension of language, we start by hearing sounds, attach meanings to the sounds in the form of words, combine the words to create a sentence, and then somehow extract meaning from it. Language use seems to involve moving through various levels. At the highest level are sentence units, including sentences and phrases. The next level is that of words and parts of words that carry meaning (the prefix or the suffixes, for example). The lowest level contains speech sounds; the adjacent levels are closely related. The phrases of a sentence are built from words and prefixes and suffixes, which in turn are constructed from speech sounds. Language is therefore a multilevel system for relating thoughts to speech by means of word and sentence units (Chomsky, 1975). The following are the levels of language: Speech sounds: We do not perceive the person's speech as a continuous stream of sound but rather as a sequence of phonemes, or discrete speech categories. For example, the sound corresponding to the first letter in 'boy' is an instance of a phoneme symbolized as 'b'. Every language has a different set of phonemes. When phonemes are combined in the right way, we perceive them as words. Each language has its own rules about which phonemes can follow others. Word units: Unlike phonemes, words carry meaning. However, they are not the only small linguistic units that convey meaning. Suffixes such as 'ly' or prefixes such as 'un' also carry meaning. They can be added to words to form more complex words with different meanings. The term 'morpheme' is used to refer to any small linguistic unit that carries meaning. The most an important aspect of a word is its meaning. Some words are ambiguous because they name more than one concept. Sentence units: As listeners, we usually combine words into sentence units, which include sentences as well as phrases. An important property of these units is that they can correspond to parts of a thought, or proposition. Such correspondences allow a listener to extract propositions from sentences. Phrases and prepositions: Analyzing a sentence into noun and verb phrases, and then dividing these phrases into smaller units like nouns, an adjective, and verbs, is syntactic analysis. Syntax deals with the relationships between words in phrases and sentences. Syntax primarily serves to structure the parts of a sentence. 6.2.4 Roots of Language and its Use Development occurs at all three levels of language. It starts at the level of phonemes, proceeds to the level of words and other morphemes, and then moves on to the level of sentence units, or syntax. Phonemes and Combinations of Phonemes: Although children learn which phonemes are relevant during their first year of life, it takes several years for them to learn how phonemes can be combined to form words. When children first begin to talk, they occasionally produce difficult words like dumber for lumber. By age four, however, children have learned most of what they need to know about phoneme combinations. Words and Concepts: When they are a year old, children begin to speak. One-year-olds already have concepts for many things (including family members, household pets, food, toys, and body parts), and when they begin to speak, they are mapping these concepts onto words that adults use. The beginning vocabulary is roughly the same for all children. Children who are 1 to 2 years old talk mainly about people (dada, mama, baby, and so on). Thereafter, the child's vocabulary development virtually explodes. At a year and a half, a child might have a vocabulary of 25 words, at six years, the child's vocabulary grows; children have to learn new words at the rate of almost ten per day (Miller and Gildea, 1987). Children seem to be attuned to learning new words. From Primitive to Complex Sentences Between the ages of 11/2−21/2 years, the acquisition of phrase and sentence units, or syntax begins. Children start to combine single words into two-word utterances. Children progress rapidly from two-word utterances to more complex sentences that express propositions more precisely. Learning Process Innate factors must also play a role. That is why children raised in English-speaking households learn English, whereas children raised in French-speaking households learn French.

Imitation and Conditioning One possibility is that children learn language by imitating adults. Although imitation plays some role in the learning of words (a parent points to a telephone, says, 'phone' and the child tries to repeat the word), it cannot be the principal means by which children learn to produce and understand sentences. A second possibility is that children acquire language through conditioning. Adults may reward children when they produce a grammatical sentence and correct them when children make mistakes. For this to work, parents would have to respond to every detail in a child's speech. However, psychologists Brown, Cazden, and Bellugi (1969) found that parents do not pay attention to how the child says something, as long as the statement is comprehensible. Also, attempts to correct a child (and, hence, apply conditioning) are often futile. Hypothesis Testing The problem with imitation and conditioning is that they focus on specific utterances. However, children often learn something general as a rule. They seem to form a hypothesis about a rule of language, test it, and retain it if it works. Innate Factors Some of our knowledge about language is inborn or innate. If our innate knowledge is very rich or detailed, the process of language acquisition should be similar for different languages, even if the opportunities for learning differ among cultures unique to the human species. Richness of Innate Knowledge All children, regardless of their culture and language, seem to go through the same sequence of language development, which is as follows: When children are one, they speak a few isolated words At about two years of age, they speak two- and three-word sentences At three years, sentences become more grammatical At four years, the children's speech sounds much like that of an adult Cultures differ markedly in the opportunities they provide for children to learn from adults. In some cultures, parents are constantly speaking to their children, whereas in others parents verbally ignore their children. The fact is that this sequence is so consistent across cultures which

indicate that our innate knowledge about language is very rich. Indeed, our innate knowledge of language seems to be so rich that children can go through the normal course of language acquisition even when there are no language users around them to serve as models or teachers. Critical Periods More recent research indicates that there is also a critical period for learning syntax. With respect to understanding and producing words with multiple morphemes, such as 'untimely', which consists of the morphemes 'un;, 'time', and 'ly', native signers did better than those who learned ASL when entering school, who in turn did better than those who learned ASL after age twelve (Meier, 1991; Newport, 1990). 6.2.5

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Factors Influencing Language Development Following are the important factors affecting the development of language: o Imitation of the language of parents, other adults and teachers o Cultural factors

o Environmental factors o Degree of maturity o

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Level of intelligence o Physical conditions o Number of children in the family o Socio-economic status of the family

o Child's emotional development o Teacher's language competence McCarthy (1920) noted consistent differences in favor of upper social class children in language maturity. Deutsch (1963) found that the home of the lower class child had few objects to provide a variety of stimulation. Hess and Shipman (1966) taped samples of the mother's language. It was found that middle-class mothers used more complex sentences than used by the low-class mothers.
In India, a study on language development of children was conducted in 1971 by Kuppuswamy. The responses of 480 children studying in Kindergarten, first, third and fifth grades using Kannad were considered. The rural children were found to be definitely inferior to urban children. The child in the village or in the slum in the urban areas in India has few things to observe and play with. Moreover, he/she lacks facilities like television, and so on. This provides an opportunity for the child from the middle-class home to learn more words and have a good vocabulary by the time he/she goes to school. 6.2.6 Perspectives of Language Development The various perspectives of language development are as follows: 1. The Behaviorist Perspective: This perspective considers language development to be entirely a result of environmental influences. Through operant conditioning, parents reinforce their baby's sounds that mostly sound like words. Imitation combines with reinforcement to promote language development. 2. The Nativist Perspective: This view states that children are born with a biological based system—called the language acquisition device (LAD)—for mastering language. Chomsky maintained that the LAD contains a set of rules common to all languages; thus, children speak in a rule-oriented way from the beginning. Children all over the world tend to master language milestones in a similar sequence—evidence that fits with Chomsky's ideas. 3. Perspective of Interactionists: This view postulates that the language achievements happen due to the interaction of innate abilities and environmental influences. Native capacity, a strong desire to interact with others, and a rich linguistic and social environment contribute to promoting a child's language capacities. 6.3 Individual Differences We have seen how children differ in various aspects. It is quite clear that the same curriculum, same methods of teaching and same discipline, and in some cases, even the same educational institution will not serve the individual needs of children. Ideally speaking, each student needs a

particular setting and individual instruction with a lot of group interaction. This, however, is not feasible in normal life. At the same time, individual differences of children must be catered to. 6.3.1 Factors Affecting Individual Differences These may be classified under two heads: ● Hereditary factors ● Environmental factors Heredity of an individual is contained in the seed while the environment comprises factors like sunlight, soil, temperature and traditions, customs, rites, a code of ethics, philosophy, literature, contact with other individuals, etc. Parents, teachers, community and society are expected to play a significant role in providing a rich social environment for a balanced development of its members. All human beings need help. The same is true with all students. Of course, the degree of guidance needed differs from student to student in view of individual differences. Dimensions of Individual Differences Broadly speaking, there are two dimensions of individual differences—psychological differences and physical differences. Psychological Differences • These include: • Emotional differences • Intelligence • Readiness • Curiosity and eagerness to learn • Experience of success • Attention span • Academic performance • Difference in abilities, attitudes and traits
• Difference in achievement • Difference in social behavior • Sex difference Psychological differences are being discussed in detail below: 1. Emotional differences: Some children are calm most of the time. Some are generally irritable. Some are very peaceful and some become angry very easily. Anger is common to all people but its intensity and depiction differs in different people. Differences in personality characteristics among children also range from very slight to extreme. They are also found to behave differently in different situations. One child may be bold and talkative at home, but may be very quiet and subdued in the school. We also note different children reacting differently in similar situations. For example, when two children are scolded by the teacher for not doing their homework; one child may take it in his stride and decide to be regular in future, whereas the other may cry and refuse to go to school the next day. 2. Intelligence: Children differ immensely in intelligence as well. Intelligence refers to (i) capacity to learn with speed and accuracy (ii) capacity to solve problems, (iii) capacity to adjust in society. Terman has classified mental ability on the basis of intelligence quotient (IQ) as under: Performance of the individual as a teacher, as a person, as a citizen, as a worker and as a student largely depends upon the intelligence he possesses. Testing of intellectual abilities led to the discovery that intelligence continues to increase from birth till it reaches a peak about the middle of adolescence. According to some studies, 50 percent of that development (which is realized at age of seventeen), takes place between conception

and the age of four, about 30 per cent between ages four and eight and about 20 per cent between ages eight and seventeen. An example of a test that shows the growth of intelligence is the number of digits a child is able to repeat. The number increases as follows: 3. Readiness: Readiness for learning is different in different children; not all children are at the same stage of readiness for learning when they enter school or when they are promoted to the next class or even when a new topic or unit is to be introduced in a subject. This makes a difference in the new situation. 4. Curiosity and eagerness to learn: Considerable differences can be detected in the degree of curiosity and eagerness that the students display. These differences may be partly due to their early upbringing and experiences at home and the family influences. 5. Experience of success: It is observed that children with a history of early success persist in their efforts to succeed further. 6. Attention span: Difference in the attention span, or the length of time for which a child can pay attention continuously to one activity is also responsible for the difference in the level of academic and other performances. 7. Academic performance: Even though all the children are taught by the same teachers and by the same methods in a particular class, they show different levels of performance. All children do not learn at the same speed. Some learn slowly, some with average speed and some learn very fast. 8. Difference in abilities, attitudes and traits: Wide variations have been observed among children in the field of creative abilities, special aptitudes and personality traits. 9. Difference in achievements: Through achievement tests, it has been found that children differ in their achievement abilities. This difference is more pronounced in learning

mathematics and in reading. Difference in achievement is also seen between those children who are at the same level of intelligence. 10. Differences in social behavior: Differences in social behavior are observed in children in the same class because they come from different socio-economic backgrounds, from different communities, from different regions, from different localities, etc. These differences are seen in the way children walk, the way they talk, the way they dress, the way they behave and so on. These differences are reflected in their motivation, readiness and achievement. 11. Sex differences: There is a general belief that motor skills requiring great endurance, muscular strength and persistence, can be better tackled by men than women.Women are supposed to excel in skills involving close coordination of small muscles and attention to detail. Bergen (1943) found that differences in sex are not significant in pre-school and primary grade children. Sex differences as observed in various fields are reported as under: ● Sex differences in intelligence have not been found. ● Girls are found higher in word fluency, memory and fine motor coordination. ● Boys are found superior in numerical reasoning and spatial ability. ● Girls have higher interest in aesthetics, social service, domestic science and literary fields. ● Boys have higher scientific, mechanical and theoretical interests. ● Girls are more emotional and social. ● Girls are more jealous. ● Boys are more aggressive and dominant. ● Boys are more ambitious and independent. ● Girls show better performance in language, speech, art and music. ● Boys are better in social sciences and mathematics. All the above factors influence learning behavior of boys and girls. G Fifer (1962) made several studies on grade placement of pupils in relation to age and ability and found that at elementary levels, the girls score higher than boys on achievement tests. F R Pauly (1958) concluded that the boys' education should begin after six months from the beginning of the education of the girls. R. S. Carter's (1953) studies show that the teachers tend to give higher marks to the girls

on their own tests as compared to the scores which they obtain on a standardized test. The boys are awarded lesser marks than the girls on the teacher-made tests. According to F. S. Sobel (1956), girls are given higher marks than boys at elementary level. At secondary level, the Lady teachers tend to give more marks to girl students. Physical Differences Among the physical differences, important differences are: ● Differences in chronological age ● Differences in physical maturity ● Differences in health status ● Physical fitness and fatigue ● Differences in appearances 1. Differences in chronological age: There is a general belief that children learn better than adults. Many studies have been made on the relation between age and learning. The results indicate that the ability to learn new material increases until about 16 years. Thereafter, it remains constant till 20's. After that there is a slight drop. Around 50 years, the drop becomes sharper. A result of an experiment to test the retention of items at different intervals of time after viewing a motion picture is given below. Difference in the speed of learning and retention does not depend upon age but more on the mental age or levels of intelligence. Variation in methods and motivation may make it possible for children to learn a given task even at an earlier or later age. 2. Difference in physical maturity: It is noted that even though the children may be more or less of the same age they may not necessarily have the same level of mental and emotional maturity for learning. This may be on account of different levels of physical

maturity. The capacity to learn is vitally connected with the growth and maturity of the nervous system, the development of muscles, body proportions and the functioning of the sensory organs. Physical maturity, thus, affects readiness to learn. It is also one of the underlying reasons for differences in interests in early and late maturers. It must be remembered that adequate physical development is essential for satisfactory mental functioning. 3. Health status: The teacher must realize how a child's general health status affects his behaviour including learning and academic work. Undernourishment or malnourishment of the child may affect learning efficiency. 4. Physical fitness and fatigue: It is often seen that some children look rather tired when they reach school. Naturally their response in learning situations will be different in quality from those who arrive feeling fresh. Some children are required to travel long distances either by foot or by bus to reach school. They are tired and fatigued by the time they arrive. They have to put in more effort. There are children who come from underprivileged households and they may have to do many tasks at home to help their parents in different ways. Thus they may not find enough time to devote to their studies. 5. Difference in appearance: Body-built may influence the self-concept of an individual on account of the expectations of adults and other children. Usually, a tall boy may be chosen as leader by classmates. In the class, some children are outstanding in their looks which are perceived to be good, others are ordinary, a few are plain and one or two border on ugliness. These differences in looks do affect interrelationships among the pupils as well as between pupils and teachers, as they determine to some extent how others react. These interpersonal relationships, in turn, affect the child's self-concept, attitude to life and interest in school work. Teachers must highlight other strong points of children to build their confidence and to lay the foundation of a healthy life. 6.3.2 Educational Implications in Individual Differences There are five broad areas in which a lot of work could be done to take into consideration educational implications in the individual differences. These are as follows: 1. Streaming or Grouping of Children: Many methods are adopted to group children. Some schools divide students of the same age into classes and each class is further divided into different sections so that the number of students taught together is reasonably

manageable. Many schools, while adhering to age, divide students into different sections as homogenous groupings. Usually this grouping is based on intellectual attainments or on intelligence tests, and so on. In homogenous groups, the children of high ability, of medium ability and of low ability are kept together in separate sections. Different methods of teaching-learning are followed in different sections. Some psychologists oppose homogenous groupings and favor the division of children in heterogeneous groupings. The gifted as well as the low achieving students are taught together in such groupings. Usually, following arguments are cited by the protagonists of this type of grouping: ● The dullards can get incentives and motivation from the normal children. ● Normal children can get motivation and incentives from the gifted. ● The gifted get opportunities to lead other children. ● In homogenous groupings, some sections take the position of privileged groups and others as unprivileged groups. There is rivalry among the teachers as all teachers tend to prefer to teach intellectually normal or superior children and avoid teaching weak students. This does not happen in heterogeneous grouping. 2. Curriculum Planning and Individual Differences: In progressive schools, teachers provide a rich and flexible curriculum. Efforts are made to take into consideration the three As, i.e., age, ability and aptitude of the children. Some schools make provision for advanced and ordinary courses in some subjects. They also provide a variety of curricular activities. \ Often it is noted that some children are weak in science and mathematics but good at language, art and music. It is not a wise policy to prepare such children for engineering or medical courses. The result would be disastrous both for the children as well as the society. Some students tend to go faster than others. Such students may be given double promotion or separate streams can be formed. Some additional work can be given to them so that their progress is not stunted due to the slow learners. Similarly, steps will have to be taken to ensure that the slow learners also make satisfactory progress commensurate with their capacity and ability to work. A deaf, dumb, or blind child would need guidance in the selection of such a vocation where his physical defect may not be a handicap and he can be made able to earn his living in an

honourable manner. Such students need special educational courses. Ordinary schools fail to do justice to them. 3. Disciplinary treatment: Circumstances pave the way for different individuals. As each person goes through the journey of life, their background and ethics may infer that they demand or need disciplinary treatment. There are some students whose parents are very dominating with the result that their children develop an inferiority complex. Too lenient parents allow their children to be free-lancers and such children suffer from other complexes and develop bad habits. Children of the rich and the poor have altogether different situations to be faced with. 4. Methods of teaching: The learning and other experiences of children who come from backward homes are usually limited. Hence, methods of teaching should be adopted which may broaden their outlook. Gifted children learn very rapidly. Therefore, they need to be provided with more opportunities to explore. Remedial teaching should be adopted in the case of weak students. The Dalton Plan of Helen Parkhurst and Winnetka Plan of Carleton Washburne are various attempts to individualize instruction. Project method is the middle way of individual instruction and group instruction. 5. Guidance: The programme of proper guidance is not confined to the selection of subjects, schools, vocations, and so on. All children need guidance in every aspect for their harmonious development. They need guidance in fields such as recreational, moral and religious, social adjustments, cultural pursuits, physical development, and so on. ● Educational Guidance: Educational guidance should begin as soon as a child enters the school and should continue till he leaves and even after that. In the words of Jacobson, 'Neglect of guidance service at any stage in the progress of pupils may result in serious complications at a subsequent stage. As a result, a pupil may experience mal-adjustment not only difficult to resolve but also costly to the school system.' Any attempt to separate different aspects of guidance would result in one-sided point of view and prove to be unwise and ineffective guidance. However, for the sake of convenience, we take up various areas of guidance for meeting the needs of individual differences. These are closely related to the educational development of the child.

● Health Guidance: Parents adopt an indifferent attitude towards the health of their children. As a general rule, the responsibility of looking after the health of the child falls upon the teacher. Need for health guidance is apparent as soon as the child enters the school. It lasts throughout the stay of his life in the school. The teacher or the counselor should distinguish a child with good health from one with bad health. Children suffering from physical ailments should at once be referred to the school doctor or nurse as the case may be. It is not very difficult for the teacher to locate eye defects, ear defects and cases of abnormal speech. ● Social Guidance: Schools must train students to participate effectively and harmoniously in the affairs of the social group to which they belong. Situations have to be provided in the school whereby children learn the 'art of living together'. ● Recreational Guidance: A rich programme of the school's co-curricular activities provides opportunities to the students to use their leisure profitably. The school magazine, school farm, school clubs, playground, and so on, are the various means to provide suitable outlets for the energies of the students. Such programmes should be conducted under the guidance of those teachers who have the capacity to guide the students in accordance with their interest and abilities. ● Ethical Guidance: Lack of guidance at home necessitates that the schools should cultivate moral and spiritual values among the students. The best way of doing this is to provide opportunities to the students through which they practise the various virtues that are required to be cultivated in them. No amount of sermons from the elders will be of much help. Ethical values must be learnt through practical situations. Of course the teachers are required to set a high standard of ethical code before their wards. ● Gender related Guidance: Individual needs of different sexes should be properly attended to. Students should be helped to select appropriate courses suiting their sex. 6.3.3 General Guidelines for Meeting the Needs of Individual Differences The general guidelines for meeting the needs of individual differences are as follows: ● The school programme, administration and management should be made flexible enough to allow for adjustment to individual differences.

● A wide range of experiences to pupils should be provided in the school. ● Courses should be selective to meet the needs of individual students. ● School programmes should take into account the needs of those students who are not likely to go to college as well as those who would join college. ● Opportunities for acquiring manual and mechanical skills should be provided to students. ● Remedial instruction should be made available to students who need it. ● Counseling should be provided to students. ● Courses should be organized in such a way that bright students can learn at their own speed and slow students follow their own speed. ● Guidance regarding co-curricular activities should be provided. ● Outlets for the release of children's tensions through provisions of plays in the form of dramatics, games, sports and a variety of other self-expressive and creative activities should be provided. ● Assignment should be adapted to the needs of students. ● Special care should be taken to accept the under-achieving child as a unique individual. His particular needs should be immediately attended to. ● Efforts should be made to re-establish a child's confidence in himself/herself. ● The teacher should seek the cooperation of other teachers and the parents of the under-achievers. ● In case of deep-rooted emotional problems which lie at the root of under-achievement, referral may be made to a child guidance clinic after taking the parents into confidence. ● Students should be taught to recognize their handicaps, and can be counseled through methods to overcome or compensate for them. ● Some programmes of parents' education may be taken up as many problems of the students result from unsatisfactory home conditions. ● It is very important to observe absolute honesty and frankness in dealing with parents about their children's problems. ● Good working relations should be established by the school with community agencies like the juvenile court and youth council. ● Much responsibility may be given to the students for organizing their programmes. ● Undue reliance should not be placed on tests and measurements.

● School marks should not be accepted as the sole evidence of successful student development. ● Case histories of each child from kindergarten through higher secondary school must be made available to concerned persons and kept up-to-date. ● Small classes may be organized. ● Time for home visits or conferences with parents should be provided. ● Opportunity to secure advice from specialists in diagnosis of difficulties should be provided. ● A good system of accessible cumulative records must be developed. ● Time table should be arranged in a way that the teachers may compile and use them (cumulative records). ● School personnel and parents should accept the statement that honest labor performed to the best of one's ability is worthy of commendation, whether the work be in the shops or offices, factories or farms. ● Professional service to aid teachers in developing the attitudes, skills, and techniques necessary for successful counseling should be provided. ● Necessary material for testing and recording data necessary to understand the individual child's needs, aptitudes and interests be provided. 6.3.4 Role of Heredity Scholars have viewed the influence of heredity and environment on the development of an individual differently. There are extreme views also. However, the fact remains that the functioning of heredity and environment is similar to that of two eyes, two hands, two feet, two legs, and so on, on the development of a person. Each one is complementary and supplementary to the other. Sometimes one plays a more dominant role and the other a relatively less dominant role. For the balanced and harmonious development of an individual, a balanced and harmonious interaction between heredity and environment is very essential. Of course, each has its limitations. Each can influence the development of the individual to a limit. The role of the home and the school is to ensure that optimum use is made of these limits. Some basic principles of heredity are as follows:

1. Like tends to beget like: Black-coloured parents generally have black children, tall parents tall children, bright parents bright children, and so on. This holds good species or genus breeds true to type, save where there are laws governing occasional deviations.'
2. Principle of variance: Only certain traits follow hereditary laws. Common observation shows that although like tends to beget like, yet the resemblances of parents and their offsprings are never perfect. Black-eyed children may be born to brown-eyed parents. Even the two twins are not exactly alike. 3. Principle of convergence of two-life streams: A portion of inheritance comes from the maternal side and the remaining portion is contributed by the paternal side, i.e. the child's maternal and paternal lines, both contribute about 50 per cent each of his inheritance. More specifically, it is generally assumed that 1/2 comes from parents, 1/4 from his grand-parents, ⅛ from his great grand-parents and so on from all the other more remote ancestors. 4. Principle of chance: Chance plays an important role, making any absolute prediction almost impossible. This is on account of several reasons: • The pairing of the chromosomes in the state of flux. • Cell to which the set of maternal or paternal chromosomes goes during the reduction division. • The particular cell which unites with another in the maternal and paternal lines. • The pattern of genes in any chromosome. • Genes carried in any particular chromosome. • Crossing over genes from one paired chromosome to another. • How dominant and recessive traits will be distributed according to the three to one ratio, according to Gregor Mendel's Law (1866), especially if there are less than four children in the family. • Determination of sex. 5. Principle of dominant and recessive traits: Some traits are dominant while others are recessive causing apparent exceptions to the principle of like produces like. The union of the best traits of the father with the best traits of the mother produces talented children. Therefore, a talented father or mother must be the offspring of the best combination of the determiners in the germ cells of his or her parents. But such gifted parents may carry on the determiners of genes which are average. There are many chances that when they produce a child, their average traits combine and a child of average caliber may be the result. The reasons for variation are still a mystery. All that can be said about variations is that it is a fact. Hereditary Traits Hereditary traits may be divided into two categories: physical traits and mental traits. Physical traits include eye-color, white forelock of hair, color-blindness, blood type, skin color, height and several other bodily features. Mental traits include intelligence and musical talents, and so on. It must be remembered that each parent is the inheritor in equal parts from both parents who in turn, inherit equally from their parents. The stream of life flows on and the child inherits his capital not from his parents but through his parents. This fact explains why a child has the chin of his mother, the forehead of his father, the blue color of eyes from his grandfather, the hair from his uncle, the nose from his aunt and so on. Why no two individuals of the same family are perfectly identical! A good number of observations have shown the presence of some sort of determiner in the human life-producing cell, which determine, even before birth, certain traits of the individual. It, however, does not mean that a child must always be exactly like his parents—father or mother. Actually, we often observe that the children do not inherit some of the most distinguishing traits of their parents. For example, the parents are of black color while the child is white. The parents are extraordinary geniuses while the child is an idiot. The child does not resemble his brothers and sisters. Why is it so? The answer according to one view is that the characteristics of the child depend not only upon the parents alone but also grandparents and even great grandparents. Variations are also on account of the chance factor.

It is purely by chance that a particular sperm fuses with a particular ovum to form a zygote. Moreover, in zygote, there are 23 pairs of chromosomes, 23 of which are contributed by the sperm of the father and 23 by the ovum of the mother. Which chromosomes from the ovum will pair with which chromosomes from sperm is a sheer chance. Millions of permutations and combinations are possible for the union of chromosomes, which contain genes. That explains why no two individuals are perfectly identical. The traits of the ancestors besides those of immediate parents are also transmitted to the offspring through these genes. Therefore, it is possible that the child will possess certain traits that are traceable to one or more of the ancestors, even though they may not be found in either of the parents. Recent Researches Revolutionary discoveries in genetics have been made in recent years. Even artificial or synthetic genes have been produced under laboratory conditions. After the test tube baby, there has occurred a phenomenal advancement in genetic surgery. The task of controlling production of future human beings involves the control of two genetic chemicals—DNA (Deoxyribonucleic acid which is the throbbing center of life) and the RNA. DNA molecules govern our past, our present and our future and control all aspects of body formation. It is like a computer containing in its arrangement of atoms, the key to heredity, aging, disease, mind and memory. Any control of the genetic material in DNA will involve the synthesis in the laboratory of artificial DNA with the atoms arranged in a specific order to produce a particular type of individual, the new man. 6.3.5 Role of Environment In simple terms, environment means the society, the fields of society and even the whole world. However, in this case, the word 'environment' refers to the environment within a mother's womb and a newborn, as well as the environment around the individual.

Like heredity, the environment also plays a very significant role in influencing the behavior and personality development of an individual. The environmental influences are those which act upon the organism at the earlier stages of development, i.e., before and after birth. Environment includes

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all the external powers, effects and circumstances which affect the life, nature, behavior, growth and development of a living

organism. Therefore, it can be said that environment refers to all of that which is found around the individual. The zygote is surrounded by a jelly-like substance known as 'cytoplasm'. The cytoplasm is an intracellular environment which influences the development. Though life begins with a single cell, in the process of cell division, many new cells are formed and a new internal environment comes into existence. The endocrine glands are formed as the fetus develops. The hormonal secretion by these glands leads to another intracellular environment. Hormones are important for normal development, but defects in hormone secretion, such as over or under secretion, may result in congenital deformities. Amniotic fluid surrounds the growing embryo in the uterus which creates another environment. This fluid provides the necessary warmth and protection against the dangers due to organisms and other chemical effects on the fetus. Moreover, the umbilical cord connects the fetus to the mother through which it gets nourishment. Sufficient nourishment is important from the mother. If adequate nourishment is not given to the mother, then the child will suffer from malnutrition. The defects in the mother, such as drug or alcohol addiction, smoking, malnutrition, diabetes, endocrine disturbances, small uterus and such other problems, cause many problems in the child. Besides, the psychological state of the mother such as over excitement and depression may also have a damaging effect on the child. 6.4 Unit Summary Jean Piaget's Theory of Cognitive Development: Jean Piaget is regarded as one of the pioneers in psychological investigation of children, although he neither undertook formal study nor passed any examination in psychology. He was a biologist by training. At the age of 22, he obtained his Doctorate Degree in Zoology on Mollusks of Valias. He worked on child

development for more than 50 years and produced enormous literature on developmental psychology. Vygotsky (1962) believed that children are active seekers of knowledge, but emphasized that rich social and cultural contexts profoundly affect their thinking. A major feature that distinguishes human beings from animals is their ability to use vocal speech as a means of communication. Sometimes the words 'speech' and 'communication' are used as if they mean the same thing. Speech is the most important form of communication. Communication has these forms: Speech, Facial and bodily movements that show different emotions, Touch, Sign language used by the deaf, Arts such as music, dance and painting, Written symbols of words. Language use has two aspects— production and comprehension. In the production of language, we start with a thought, somehow translate it into a sentence, and end up with sounds that express the sentence. In the comprehension of language, we start by hearing sounds, attach meanings to the sounds in the form of words, combine the words to create a sentence, and then somehow extract meaning from it. Language use seems to involve moving through various levels. At the highest level are sentence units, including sentences and phrases. Development occurs at all three levels of language. It starts at the level of phonemes, proceeds to the level of words and other morphemes, and then moves on to the level of sentence units, or syntax. The various perspectives of language development are as follows: The Behaviorist Perspective, The Nativist Perspective, and Perspective of Interactionists. Factors Affecting Individual Differences can be classified under two heads: Hereditary factors, Environmental factors. Scholars have viewed the influence of heredity and environment on the development of an individual differently. There are extreme views also. However, the fact remains that the functioning of heredity and environment is similar to that of two eyes, two hands, two feet, two

legs, and so on, on the development of a person. Each one is complementary and supplementary to the other. Sometimes one plays a more dominant role and the other a relatively less dominant role. 6.5 Key Terms ● Cognitive development: It is the development of the ability to think and reason. ●

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Depth perception: It is the visual ability to perceive the world in three dimensions. ●

Infancy: It refers to very early childhood, usually the period before being able to walk. ● Intellect: It is a series of mental operations, which occur to manufacture the perception of an image. ● Motor development: It is the development of strength, speed and accuracy in the use of muscular parts of the body such as arms, eyes, legs and neck muscles. ● Perception: It is the process by which information is interpreted in order to give some sensible meaning to the world. ● Schemas: It refers to the cognitive structures or the patterns of behavior that children and adults use in dealing with objects in their environment. ● Sensation: It refers to the feelings like hearing, touching, tasting and smelling that occur when any stimulus interacts with the sensory receptors. ● Senses: It refers to the elementary impressions gathered by sense organs. 6.6 Check Your Progress 1. Discuss the theories of cognitive development in brief. 2. Who was Jean Piget? What are the basic concepts of his theory? 3. What are the stages of cognitive development according to Jean Piget? 4. What are the aspects of learning according to Jean Piget ? 5. Discuss the Psychological differences in individuals in detail?
Module III: Learning (Memorising and Remembering) and Forgetting
Unit 7: Learning Theories 7.0 Introduction 7.1 Unit Objective 7.2 Meaning, Nature, and Significance of Theories of Learning 7.3 Connectionism: Thorndike's Theory of Learning 7.3.1. Laws Propounded by Thorndike 7.3.2 Laws 7.3.3 Thorndike's Five Aids to Improve Learning 7.3.4
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Evaluation of Thorndike's Theory of Learning and

Laws 7.4 Gestalt (Or Kohler's) Theory of Learning by Insight 7.4.1 Principles of Learning 7.4.2 Factors Influencing Insight 7.4.3 Educational Implications of the Theory of Insight 7.4.4 Limitations of the Theory 7.5 Lewin's Field Theory Of Learning 7.5.1 Main Concepts of Lewin's Field Theory 7.5.2 Classroom and Educational Implications of Field Theory 7.6 Classical Conditioning: Pavlov's Theory of Learning 7.6.1 Principles of Conditioning 7.6.2 Contribution of Pavlov's Theory of Conditioning to Learning 7.7 Skinner's Theory Of Operant Conditioning 7.7.1 Meaning of Operant Conditioning 7.7.2 Operations Involved in Operant Conditioning 7.7.3 Schedules for Reinforcement 7.7.4 Skinner's Experiments 7.7.5 Educational Implications of Skinner's Learning Theory 7.7.6 Limitations of Operant Conditioning 7.8 Constructivism 7.9 Unit Summary 7.10 Key Terms 7.11 Check Your Progress

7.0 Introduction Learning is a key process of human behaviour. Parents and teachers are greatly interested in their child's learning. A child's instincts, attitudes, appreciations, skills and abilities are primarily the product of learning. Each individual is born with some native endowments, which determine his/her response. These native tendencies are not enough in the struggle of existence. Any organism, at any stage of its evolution is not only present in an environment but is being reacted upon by that environment and in turn reacting to it. Such active and reactive behaviour involves changes and modifications of the organism as well as in some cases, changes in the

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environment. Thus, learning is a modification of behaviour through experience and training. Briefly speaking, learning is a change in behaviour-organisation. It is the

organism as a whole that learns. Learning reconstruction combines thinking, skill, information and appreciation in a single unitary process and it is characterised by flexibility since it must constantly adapt itself to the circumstances. A child in a school learns a sense of personal worth and his whole personality undergoes transformation. 7.1 Unit Objective In this unit you will learn the different theories of learning. 7.2 Meaning, Nature, and Significance of Theories of Learning

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Theories of learning attempt to explain the mechanism of behaviour involved in the learning process. Experts have formulated different theories of learning with the result that it is not possible to give one theory which meets the expectations of all. Before discussing the different theories of learning, the meaning of a theory needs to be explained. The most acceptable definition of a theory is that of Melvin H.Marx (1970). According to him, 'a theory is a provisional explanatory proposition or set of propositions, concerning some natural phenomena and consisting of symbolic representation of the following: ● The observed relationships among independent and dependent variables. ● The mechanisms or structures presumed to underlie such relationships. ● Inferred relationships and underlying mechanisms intended to account for observed data in the absence of any direct empirical manifestation of the relationships. A theory provides detailed systematised information of an area of knowledge. It serves as a guideline to conduct further research in the area. It produces new facts or supplements the previous facts. It gives an organised explanation about a phenomenon. It provides practical wisdom. It provides effective guidelines. Important characteristics of a theory are: • Testability of its principles • Predictability of the outcomes of the actions • Comprehensiveness • Brevity • Simplicity A learning theory is supposed to find answers of the following: • Role of drill and practice in learning. • Utility of rewards and punishments or other incentives/motives in learning. • Place of insight and understanding in the process of learning. • Role of transfer of learning in various situations. 7.3

Connectionism: Thorndike's Theory of Learning Thorndike's theory of learning "Connectionism" is also called "
Theory of

Trial and Error". E. L. Thorndike (1874–1949) was the chief exponent of the theory of connectionism or trial and error. The basis of learning, accepted by Thorndike, was an association between the sense impressions and impulses to action. This association came to be known as a 'bond' or a '

connection'. Since it is these bonds or connections which become strengthened or weakened in the making and breaking of habits, Thorndike's system is sometimes called

a 'bond' psychology or simply 'connectionism.' As it believed in
a

stimulus and response type of learning, it was also called SR Psychology of Learning. Thorndike called it learning by selecting and connecting. It is also known as trial and error theory as learning takes place through random repetitions.

Thorndike propounded his theory on the basis of experiments conducted on cats, chickens, dogs, fish, monkeys and rats. He placed them under different learning situations and studied them carefully. With the help of these experiments, he tried to evolve certain laws and evolved his theory of connectionism or trial and error. It is interesting to know the type of experiments he carried out with these animals.

One such experiment is mentioned below.

He put a hungry cat in a puzzle box. There was only one
exit

door which could be opened by correctly manipulating a latch.
A fish was placed outside the box. The

smell of the fish

worked as a strong 'motive' for the hungry cat to come out of the box. Consequently, the cat made every possible effort to come out. Thorndike observed, the cat

tries to squeeze through every opening; it claws and bites at the bars or wires, it thrusts its paws through any opening and claws at everything

it could reach."

In this way, it made a number of random movements. In one of such movements, by 'chance', the latch was manipulated, the cat came out and got its 'reward'.

For

another trial, the process was repeated. The cat was kept hungry and placed in the same puzzle box. The fish and its smell again worked as

a '

motive' for getting out of the box. It again made random movements and frantic efforts. But

this time, it took less time

to come

out.

On subsequent

trials, incorrect responses—biting, clawing and dashing gradually diminished and the cat

took less time on every succeeding trial. In due course, it was in a position to manipulate the latch as soon as it was put in the box. In this way, gradually, the cat learnt the art of opening the door.

An analysis of the trial and learning indicated the following characteristics: ● Where there is drive or motive, there is learning. In the

experiment, the cat was hungry, so its motive was to get food by learning to come out of the cage. ● An organism makes a number of varied types of responses. The cat made these responses—clawing, scratching, walking around, pawing, pulling, etc. ● When some responses lead to the goal, they are known as satisfying responses. The response of pulling the

strings, etc.,

by the cat was satisfying. Some do not lead to the goal and they are known as annoying responses. The responses of clawing, pawing, scratching, and walking were annoying for the cat. ● Satisfying responses

are

better learnt as they lead to the attainment of the goal. ● Annoying responses tend to be eliminated gradually as they do not lead to the goal.

The experiment summed up the following stages in the process of learning: ●

Drive: In the present experiment, drive was hunger and was intensified with the sight of the food. ● Goal:

The goal was

to get the food by getting out of the box. ● Block: The cat was confined in the box with a closed

door,

which was the main blockage. ● Random Movements: The cat persistently made random

movements, by trying

to get out of the box. ● Chance Success: As a result

of this striving and random movement, the cat, by chance, succeeded in opening

the door. ● Selection of Proper Movement: Gradually, the cat selected the proper way of manipulating the

latch out of its random movements. ● Fixation: At last,

the cat learnt the proper way

of opening

the door by eliminating all the incorrect responses and fixing the only right responses. Now it was able to open the door without any error or in other words,

it learnt the way of opening the door. Thorndike

named the learning of his experimental cat as 'Trial and Error Learning'. He maintained that learning is

nothing but

the stamping in of the correct responses and stamping out of the incorrect responses through trial and error. In trying for the correct solution, the cat made so many vain attempts.

It committed errors and errors before getting success. On

subsequent trials, it tried to avoid the erroneous ways and repeat the correct way of manipulating the latch. Thorndike

called it, '

Learning by selecting and connecting' as it provided an opportunity for the selection of the proper responses and correcting or associating them with adequate stimuli.

In this context, Thorndike wrote, 'Learning is connecting. The mind is man's connection system.' Learning is,

thus,

caused by

the formation of connection in the nervous system between stimuli and

response.

The following summary description of the behaviour of 12 cats ranging from 3 to 19 months of age in the puzzle box is quoted from Thorndike's book entitled, Animal Intelligence (1901). 'When put into the box the cat would show evident signs of discomfort and an impulse to escape from confinement.

It tries to squeeze through any opening; it claws and bites at the bars or wire; it thrusts its paws out through any opening and claws at everything

it reaches; it continues its
efforts when it strikes anything loose and shaky; it may claw at things within the box. It does not pay very much attention to the food outside, but seems simply to strive instinctively to escape from confinement. The vigour with which it struggles is extraordinary. For eight or 10 minutes it will claw and

bite and squeeze incessantly. The cat that is clawing all over the box in her impulsive struggle

to open the door,

will probably chance upon the string or loop or button. And gradually all the other non-successful impulses will be stamped out by the resulting pleasure, until, after many trials, the cat will, when put in the box, immediately claw the button or loop in a definite way.' 7.3.1.

Laws Propounded by Thorndike

On the basis of his experiments, Thorndike propounded the following laws of learning: 1. Law of Readiness:

The law stated, '
When any conduction unit is ready to conduct, for it to do so is satisfying. When any conduction unit is not in readiness

to conduct, for it to conduct is annoying. When any conduction unit is in readiness to conduct, for it not to do so is annoying.' The law is indicative of a learner's state to participate in the learning process. According to Thorndike, readiness is preparation for action. Readiness does not come automatically with maturation. It is a law of preparatory adjustment, not a law about growth. Thorndike termed the neurons and synapses involved in establishment of a specific bond or connection, a conduction unit. According to this law, for a conduction unit ready to conduct, to do, is satisfying and for it not to do so is annoying. Educational Implications: Teachers should prepare the minds of students to be ready to accept knowledge, skills and aptitudes. For this, he should provide opportunities for experiences in which students can spontaneously participate. In other words, he should arouse their capacity to link the experiences with their everyday life. 'Simple to complex' is an important maxim. Aptitude tests may be given to students to find out their readiness to learn. 2. Law of Effect: The law stated, 'Of several responses made to the same situation, those which are accompanied or closely followed by satisfaction to the animal will, other things being equal, be more firmly connected with the situation, so that, when it recurs, they will be more likely to recur; those which are accompanied or closely followed by discomfort to the animal, will, other things being equal, have 'their' connections with that situation weakened, so that, when it recurs, they will be less likely to occur. The greater the satisfaction or discomfort, the greater is the strengthening or weakening of the bond.' Thorndike explained the meaning of satisfaction and discomfort as: 'By a satisfying state of affairs is meant one which the animal does nothing to avoid, often doing such things as attain and preserve it. By a discomforting or annoying state of affairs is meant one which the animal commonly avoids and abandons.' Educational Implications: A pleasing environment should be created in the classroom. The teacher should be sympathetic but firm

and

should enjoy his work. Experiences provided to the students should be satisfying and meaningful. They should be organised in the order of increasing difficulty. Material should be provided in a number of interesting ways including the use of audio-visual aids. In simple words, the law of effect means that learning takes place properly when it results in satisfaction and the learner derives pleasure out of it. In the situation when the child meets a failure or is dissatisfied, the progress in learning is blocked. All the pleasant experiences have a lasting influence and are remembered for a long time, while the unpleasant ones are soon forgotten. Therefore, the satisfaction or dissatisfaction, pleasure or displeasure obtained as a result of some learning ensures the degree of effectiveness of that learning. 3. Law of Exercise or Repetition: It stated, 'Any response to a situation will, other things being equal, be more strongly connected with the situation in proportion to the number of times it has been connected with that situation and to the average vigour and duration of the connection.' According to this law, the more a stimulus-induced response is repeated, the longer it will be retained. The law states, other things being equal, exercise strengthens the bond between situation and response. Conversely, a bond is weakened through failure to exercise it. Thus, the law has two subparts, (i) law of use (ii) law of disuse. Law of Use: 'When a modifiable connection is made between a situation and response, that connection's strength is, other things being equal, increased.' Law of Disuse: 'When a modifiable connection is not made between a situation and response, during a length of time that connection's strength is decreased.' Educational Implications: More and more opportunities should be provided to the students to use and repeat the experiences in the classroom. Drill strengthens the bonds of SR. Review of the lesson helps to maintain connections. 7.3.2 Laws Apart from the three laws explained above, Thorndike gave the following subordinate laws: Multiple Response: Confronted with a new situation, the learner responds in a variety of ways before arriving at the correct response. Attitude: The learner performs the task well if he has his attitude set in the task. Prepotency of Elements: The learner reacts to the learning situation in a selective manner. He uses his insight, selects the prepotent elements in a situation and bases his responses upon those elements. Analogy: The organism responds to a new situation on the basis of the responses made by him in

a

similar situation in the past. He makes responses by comparison or analogy. Associative Shifting: According to it, we can get from the learner

any response of which he is capable, and response

associated with any situation to which he is sensitive. Principle of Polarity: It states that connections act more easily in the direction in which they were first formed than in opposite

directions. 7.3.3 Thorndike's Five Aids to Improve Learning The five aids given by Thorndike

to improve learning are: ● Interest in the work ● Interest in improvement ● Significance of the work ●

Problem-attitude ● Attentiveness ● Change in Thorndike's Stand As a result of his further research, Thorndike modified his laws in the early 1930s. His growing interest in educational psychology eventually led him to carry out research in the field of human learning. The law of exercise was disproved by Thorndike in an experiment in which exercise was made the independent variable while other factors were held constant. He experimented on a college student who was asked to draw a three-inch line blindfolded. Mere repetition did not bring any change or improvement. Some subjects were given more than a thousand trials. However, on an average, there was no improvement from the first to the final trial. Practice without knowledge of results failed to produce any result. As regards the law of exercise, Thorndike began to realize that rewards and punishment were not equal and opposite in effect. While reward strengthened the connection considerably, punishment did not weaken the connection to the same degree. The intensity and speed of reward in casting influence upon learning was greater than that of punishment. It also brought healthy and desirable improvement in the personality of the child. In this way, he began to give more importance to rewards and praise in place of punishment and blame. 7.3.4

Educational Implications of Thorndike's Theory of Learning and Laws Thorndike's theory of trial and error and laws of learning have great educational significance. Thorndike's findings made the learning purposeful and goal-directed. There is no doubt that many discoveries and inventions in various fields of knowledge are the results of trial and error. But at the same time it must be remembered that in the case of human beings, trial and error is not always devoid of thinking and understanding. Thus, trial and error, coupled with insight can make the process of learning more effective.

Some of the important educational implications of Thorndike's theory are: Readiness is preparation for action and

is very essential for learning. If a child is ready to learn, he learns more quickly, effectively and with greater satisfaction than if he is not ready to learn.

Thorndike was of the view that a child should not be made to

learn till he is ready to learn and any opportunity of providing learning experiences

to the child should not be missed
if the

child is already prepared to learn. The right movements concerning the learning situation and the learner's state of mind should be very well recognized and maximum use of this knowledge should be made by the teacher. He should also make an attempt to motivate his students by arousing their attention, interest and curiosity. Thorndike's law of effect emphasized the role of rewards and punishment in the process of learning. Getting a reward as a result of some learning, motivates and encourages a child to proceed on the same path with more intensity and enthusiasm, while punishment of any sort discourages him and creates disinterest towards that learning.

The main task of a teacher in the teaching-learning process is to see what generalizations, principles and theories, etc., should be remembered by the students.

Consequently he must try to strengthen the bonds or connections between the stimuli and the responses of those things which are to be remembered. This could be done through drill, repetition and reward. .

Other implications of

Thorndike's theory and laws are: ● Mere repetition is of no use. Repetition becomes useful

only

when the response is rewarded. In that case, repetition strengthens the connections. ● Understanding grows out of previous experience. The best way to develop understanding is to develop a body of connections appropriate to that understanding. ● Transfer in learning takes place because of identical elements in the two situations. ● Rewards have more strengthening effects than the corresponding weakening effect of punishment. ● Forgetting takes place because of the law of disuse. ● The child should be encouraged to do his work independently. 7.3.5

Evaluation of Thorndike's Theory of Learning and Laws In the words of J. P. Chaplin and T.S. Krawie (I960), 'Thorndike's pioneer efforts rank among the greatest in the history of psychology…. whatever the ultimate status of Thorndike's basic laws and principles, there is general agreement among psychologists that his theory of learning heralded the rise of modem learning to the position of pre-eminence in modem psychology.' R. A. Roback (1962) was of the view, 'Thorndike is known in psychology for his theory of effect, according to which the satisfaction gained by an act tends to stamp it in, so that it will re-occur.' W. F. Hill (1972) pointed out the significance of the work of Thorndike as 'Thorndike was no less a pioneer of objective psychology than Watson, indeed his original contributions were quite

likely more important than Watson's. However, our concern here is that he incorporated within his objective psychology of learning, the law of effect and thus became the first real reinforcement theorist.' 7.4 Gestalt (Or Kohler's)

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Theory of Learning by Insight Gestalt theory of learning, also named as Learning by Insight, is the contribution of German psychologists who were studying the nature of perception. Max Wertheimer (1880–1943) was the founder of Gestalt psychology. He did a lot of research work at the University of Frankfurt and the University of Berlin. Thereafter, he worked at the New School of Social Research in New York. Wolfgang Kohler and Kurt Koffka were the other German psychologists associated with Wertheimer. Gestalt theory of learning (Learning by Wholes) or Learning by Insight stated that perceptual phenomena are only experienced as wholes or gestalts. Learning, according to Gestalt Theory, is not by random steps, neither by trial and error, nor by conditioning but by insight, introspection and understanding. Gestaltians placed far more emphasis on the intrinsic organising capacity in the brain of an individual and emphasised the dynamic interaction of the elements in the entire perceptual field. Gestalt theory of learning essentially

consisted of

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problem-solving by understanding the relative position of the elements in the entire perspective or situation. 'Gestalt' is a German word for which there is no equivalent word

in

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English. The term was carried over into English psychological literature. The nearest English translation of gestalt is 'configuration' or more simply 'an organised whole in contrast to a collection of parts'. Gestalt psychologists considered the process of learning as an organised whole.

The basic idea behind this theory was that a thing

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cannot be understood just by the study of its constituent parts only,

but by the study of

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it as a totality. Gestalt school made a strong attack on Thorndike's Theory of 'trial and error' and asserted that learning was not stamping of correct responses through trial and errors. Neither was the behaviourists approach acceptable to gestaltists as they wanted to study behaviour as a whole and learn in its totality. Gestalt psychology

was a revolt against the SR

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approach to learning. It pointed out two weaknesses in the theory of conditioning: ● Conditioning reduces complex human behaviour to an accumulation of simple conditioned responses. ● SR-theorists attributed learning to reduction of basic organic drives. Gestalt psychology

was

primarily concerned with the nature of perception. According to it, an individual perceived wholes and not parts. Learning was viewed as

a

purposive, explorative, imaginative and creative enterprise in which the total situation was taken into account by the learner. Kohler and Koffka conducted many experiments on Chimpanzees and brought out a book, 'Mentality of Apes' in 1925 (result of the experiments conducted during 1913–17.) These experiments showed that learning was not the result of trial and error but of insight and the ability to see relationships between various factors involved in a situation. A very detailed and systematic treatment of learning from Gestalt viewpoint was found in Koffka's Principles of Gestalt Psychology (1935). As mentioned earlier, Kohler and Koffka were the chief exponents of this theory. They stressed the totality of the process of learning. They took the process of learning as a synthetic activity which brought forth complete solutions of problems. Experiment I In one of his experiments, Kohler shut the chimpanzee, Sultan by name, in a big cage. A banana was placed outside, at a considerable distance from the cage. Inside the cage, there were two sticks—one of them a long one and the other a bit shorter. The shorter stick could be screwed into the long one. The long stick could not reach the banana but if the other one was screwed into it, the banana could be touched.

The

Sultan tried to get the banana. He first tried with the longer stick but it did not reach the fruit. The other was still smaller. He sat down and began to play with both the sticks. But he was still brooding over the matter. Suddenly, an idea flashed him. He thrust the smaller stick into the hole of the longer one and thus managed to get the banana with the help of the combined sticks. Experiment 2 In this experiment, the chimpanzee was shut in a room with unscalable walls. A banana was hanging from the ceiling. The animal was hungry. He jumped at the fruit but it was too high. He left his efforts and sat down. There was a box lying in the corner of the room. The animal began to play with the box. He then suddenly got up and pushed the box to the center of the room below where the banana was hanging, jumped from it and got the fruit. 7.4.1 Principles of Learning Koffka suggested that the laws of perception were equally applicable to learning.

According to him, the

learning situation was a problem situation and the learner had to see the problem as a whole and find its solution by insight. The law of organization of perception as applicable to learning was the law of pragnanz and four laws of organization subordinate to it—the laws of similarity, proximity, closure and good continuation. The Law of Pragnanz: The German word pragnanz means 'compact but significant'. The law suggested the direction of events. According to it, psychological organization tended to move in one general direction, always towards the state of pragnanz, towards good gestalt. A good gestalt had the properties of regularity, simplicity, stability, etc. So, this law spoke of the movement of our psychological organization towards the direction of stability, i.e., we accept only those experiences which do not disturb our psychological organization (equilibrium). How good the pragnanz is, is examined by the following subordinate laws: Law of Similarity: This law said, 'other things being equal, the stimuli that are more similar to one another will have greater tendency to be grouped.' Thus, learning similar things is easier than learning dissimilar things, according to this law.

Law of Proximity: According to this law, 'Perceptual groups are favored according to the nearness of the parts.' This means that we perceive all closely situated or located things as groups. Law of Closure: This law stated that 'Closed areas are more stable than unclosed ones and therefore, more readily form figures in perception.' It is similar to Thorndike's law of effect. Unless the work is finished, the individual does not feel satisfied

as he is under tension which is over only when the work is completed.

Law of Good Continuation: This law stated, 'Organization in perception which appears to go in a particular direction appears to be going infinitely in the same direction.' So there is a tendency of factors to give direction, movement and continuation to perceptual organization. Koffka believed in the trace

theory of memory. The function of learning, according to him, was to strengthen those traces

and create new ones. The essential features of the trace theory are: ● Trace is the result of past experience, so that it represents the past in the present. ●

The present process can select, reactivate or communicate with the trace. ●

There is a resulting new process of recall or recognition. 7.4.2 Factors Influencing Insight Insight involves the following: ● The learner perceives the situation as a whole. ● The learner tries to understand the relationships between various factors involved in a situation. ● As a result of the understanding of the relationship, the learner is helped in the sudden grasping of the solution of the problem. On the whole, insight depends on the following factors: ● Experience: Past experiences assist in the insight of the problems. ● Intelligence: Basic intelligence of the learner is an important factor in insight learning. ● Learning Situation: As a common observation, insight occurs when there is ample scope for observation in a learning situation. ● Initial Efforts: The initial efforts in the form of trial and error open the way of insight learning. ● Reception and Generalization: Learning gained in one situation, helps the learner to react insightfully in other identical situations. 7.4.3

Educational Implications of the Theory of Insight The Gestalt theory highlighted the following points: ● From Whole to Parts:

According to the theory,

the whole is greater than the parts. Therefore, the teachers should present the picture of a topic or subtopic as a whole. It is especially more important in the case of small children. While teaching the topic 'parts of a flower', the flower should be presented first, and the parts should be taken up later. Similarly, the poem may be taken up as a whole. ● Problem-Solving Approach: The theory rejected memorization and rote learning. It stressed that the learners must be given opportunities

to use their thinking power and power of observation. Students should be provided training and encouraged to become pioneers. Questions of 'What and When' should be replaced by 'Why and How' and be the key-note of the teaching-learning process. Spoon-feeding, according to the theory, does not result

in constructive and creative thinking. Progressive and scientific methods like Heuristic, analytical and problem-solving should be made use of. ● Integrated Approach: The contents of a subject should not be treated as mere collection of isolated facts. They could be closely integrated into

the

whole. . In the same way, all subjects and activities of the curriculum should reflect unity and cohesion. ● Motivational Aspect:

A

child's curiosity and interest must be aroused. He should be fully familiarized with the specific aim and purpose of every task that is being undertaken. 7.4.4 Limitations of the Theory It was argued that every type of learning is

not

the product of insight. Quite a number of our day-to-day experiences are the results of chance contiguous associations and not of insight. In insight learning, one cannot altogether eliminate learning by trial. Some measures of learning by trial and error come into play in insight learning also. All children are not capable of independent thinking. Hence, slow learners need to be taught with other methods as well.

Moreover,

mechanical application of rules is also needed in several cases. 7.5

Lewin's Field Theory Of Learning Kurt Lewin (1890–1947), unlike Pavlov, Skinner and Gestalten psychologists, conducted experiments on the study of behaviour of children. He utilised an elaborate experimental set-up with a view to control a child's total environment during the course of the investigation for getting detailed information. Lewin emphasised the study of behaviour as a function of the total physical and social situation. Lewin held that psychological laws

should

not be formulated solely on the basis of statistical averages. Rather, the individual case was equally important,

according to him. Even if all general psychological laws were known, there was still a

need to understand the specific individual and 'total situation' in which he existed, before making any prediction about his behaviour. Thus Lewin favoured an 'idiographic psychology' in which the focus was on the individual, as opposed to 'nomothetic psychology', where the emphasis was on statistical average. Lewin described his viewpoint in the following formula: B = f (PE) where B represents behaviour, f is a function, P is the person,

and E is the total environmental situation. Lewin
explained an individual's

behaviour on the basis of his life-space. An individual's life-space,

according to him,

depends on his psychological force. It includes the person; his drives, tensions, thoughts and his environment, which consists of perceived objects and events. Lewin represented his theory through a diagram in which an individual is in the centre. He moves through his life- space which consists of the totality of facts that determine his behaviour at a given time. A life- space contains the individual himself, the goals he is seeking (positive valence) or avoiding (negative valence), the barriers that restrict the individual's movements and the path he must follow to reach his goal. Desire creates tensions in the individual and tensions come to a balancing state and the person acts. After the goal has been achieved, the organism (individual) returns to a state of repose until a new desire activates him. In Lewin's theory, threat, goal and barrier are the main factors. An individual who has to achieve some goal has to cross a barrier. The barrier may be psychological or physical. Because of the changes in the barrier in the life-space of an individual, continuous reconstruction takes place. Lewin's theory is called field theory, because to a psychologist, field means total psychological world in which a person lives at a certain time. It includes matters and events of past, present and future, concrete and abstract, actual and imaginary—all interpreted as simultaneous aspects of a situation. Lewin stated that each person exists within a field of forces,

called his life-space,

to which the individual is responding or reacting. Lewin's theory regarded learning as a relativistic process by which a learner develops new insight or changes old ones. According to the theory, learning is not a mechanistic process of connecting stimuli and responses within a biological organism. Field psychology explains

the

development of insight as a change in cognitive structure of life-space. Lewin's theory may be explained as

under. Fig. 7.1: Lewin's Theory of Learning

Suppose a person P is moving towards a goal of getting social recognition. But to achieve the goal, he has to

apologize, which in turn acts as

the barrier coming in his way. The barrier may be physical or psychological forces, preventing him from reaching the goal,

as explained in Figure 7.1.

These forces organize themselves into a pattern which determines his future behavior. Lewin classified learning into the following categories: ● Learning is a change in cognitive structure. ● Learning is a change in motivation, i.e., in valences and values. ● Learning is acquisition of skills. ● Learning is a change in group belonging. ● Learning of all types involves change in perception. Changes in cognitive structure are caused by the forces in the psychological field—needs, aspirations and

valances. The

level of aspiration depends upon the potentialities of an individual and on the influences of the group to which he belongs. Too high or low level of aspiration discourages Learning. 7.5.1

Main

Concepts of Lewin's Field Theory Lewin's theory rests on concepts derived from topology—a branch of higher mathematics that deals with

transformation in space; from vector analysis—or the mathematics of directed lines; and from the sciences of

chemistry and physics with concepts as valence, equilibrium and field force. Lewin's most important publication was Principles of Topological Psychology (1936). The main concepts used in Lewin's field theory

are as follows: Topology: It is also called topological. Two basic concepts which topological space denotes are: (i) connectedness,

and (ii) part-whole relationships. Topological concepts are used to represent the structure of life-space in such a way as to define the range of possible perceptions and actions. This is accomplished by showing the arrangements of the functional parts of life-space. The parts are shown as various regions and their boundaries. When

an individual

structures his life-space, he divides it into regions. Vector: The term vector represents a force

which influences a movement towards a goal

or away from it. If there is only one vector (force), there is

a movement

in the direction of the vector. However, if there are two or more vectors acting simultaneously in different directions, the movement is in the direction of the resultant force. Life-Space: It is also called the psychological field. The psychological field is the space in which the person moves psychologically. It

contains the whole of one's psychological reality—one's self and what one thinks of or what one gains from his physical and social environment. The Person in Life-Space: The person is often represented as a point moving about in his life- space, affected by pulls and pushes on him, circumventing barriers in his locomotion

in his own life-space. Valence: When a person is attracted by an object, that object is said to have

a positive valence. When a person is repelled by an object, it is said to have a negative valence. The person tends to move towards a region in life-space that has positive valence but tends to move away from a region in life-space that has negative valence. As life-space may contain regions with several
valences active at a time, which in turn gives rise to conflicts, especially when the

opposing forces are approximately in balance. Lewin specified three chief kinds of conflicts: ● Two Positive Valence: When a child has to choose between going

to picnic and playing with his friends. ● A

Simultaneous Positive and Negative Valence: When a child is offered a reward for

the school task which he does not wish to perform. ● Two Negative Valence: When a child is threatened with punishment for not doing a task which

he does not wish to perform. Distance and Direction: When there is a close correspondence between life-space and physical space, physical distances and directions may be used for experimental purposes as

approximations of distances and directions in life space. Behavior: Lewin regarded behavior as a function of present life space. He insisted that behavior depends on the present and not on

the past or future. Barrier: It is a dynamic part of an environment which resists

action or movement through it and stands in the way of a person's reaching his goal. Goal: Goal is a region of valence-region of life-space to which a person is psychologically attracted. Tension: It is very close to and is descriptive of psychological needs. Release of tension may be achieved either through reaching a goal or through reconstructing a life-space. Cognitive Structure: It is an environment including a person as known by the person. It is synonymous with insight or understanding. 7.5.2 Classroom and Educational Implications of Field Theory The classroom implications of the field theory

include the significance of seeing the whole situation at the beginning of a lesson or an activity. The teacher should preview the activities involved and the problem to be encountered. Moreover, from the point of view of a field theorist, the teacher should keep in mind that the student, the teacher himself, other teachers, the school and

the

peer group—are all parts of the total situation. The need for seeing the whole and details of the situation is necessary. The teacher must assist the students to perceive the goal and the barrier. The goal must be presented in an easier and simplified manner. Sometimes, partial insight of a situation may provide partial relief from tension. Following are the major educational implications of this theory: 1. Reward and Punishment: According to

Lewin,
a learner because of the

attraction of rewards may resort to shortcut methods. For example, to get distinction in the examination (record), a student may resort to cheating (shortcut method). It is, therefore, necessary to put some barriers over

rewards in order

to avoid access to such shortcut methods. In the case of punishment, however, one tends to leave the field because of the unpleasantness of the task, unless some strong barriers are there to keep him in the field. Reward activities often become interesting and are liked, while the activities controlled by the threat of punishment tend to be disliked. 2. Success and Failure: Psychological analysis of success from the point of view of a learner shows the following possibilities: ● To reach a goal, constitutes success. ● To get within the region of the goal, may be a success in itself. ● To make some progress in the direction of the goal, also constitutes a successful experience. ● To select a socially approved goal is also

an experience of success. Psychological success or failure depends upon the self-involvement of an individual and his level of aspiration. Success in an easy task might not be

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a successful experience, since it does not involve the ego of the person. Similarly, failure in a very difficult task

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might not be a failure. 3.

94%	**MATCHING BLOCK 127/339**	W

Motivation: The repetition of an activity brings changes both in the cognitive structure and in the need-tension systems. As a result of this goal, attractiveness changes. Lewin called goal attractiveness valence and valence change. The valence may change in any of the following ways: ● Attractive goals may lose attention if the activity related to them is repeated to the points of satiation. ● Choice of goals is influenced by previous experiences of success and failure. 4. Memory: Lewin stated the following regarding memory: Tasks which have no sense in completion are not remembered. ● Unfinished tasks are remembered better than finished tasks because of psychological tension. ● Tasks which lead to the satisfaction of many needs are remembered better than tasks which lead to the satisfaction of one need. 7.6

Classical Conditioning:

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Pavlov's Theory of Learning Ivan P. Pavlov (1849–1936), a Russian psychologist, was the originator of

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the classical conditioning theory of learning. He won the Nobel

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Prize in 1904 for his research on the digestive process. He was interested in studying the process of gastric secretion in dogs. His findings brought about a revolutionary change in the field of learning. Conditioning is the modification of the natural response. By conditioning, Pavlov modified the behaviour of the dog on which he experimented.

According to him, the behaviour of learners can also be modified

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in such a way, as the response originally connected with a particular stimulus comes to be aroused by a different stimulus. The classical experiment conducted by Pavlov made clear the process of conditioning. Pavlov's Experiment: In one of his experiments, Pavlov kept a dog hungry during night and then tied him on the experimental table which was fitted with certain mechanically controlled devices. The dog was made comfortable and distractions were excluded as far as possible. The observer (Pavlov) kept himself hidden from the dog's view but was able to view all the movements of it by means of a set of mirrors. Arrangement was made to give food to the dog through automatic devices. With this act of offering food to

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the dog, a bell was rung simultaneously. It was natural for the dog to secrete saliva at the sight of

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76%	**MATCHING BLOCK 132/339**	SA	MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

food. The saliva went into the tube and it was measured. The experiment went on for some days. One day, the bell rang but no food

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was given.

95%	**MATCHING BLOCK 133/339**	SA	MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

The dog secreted saliva even then. It was observed that the saliva

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secreted was of the same quantity even when no food was given and just the bell was rung

for some days. The actual stimulus to bring forth the response, i.e., the secretion of saliva, was the sight of the food but it was conditioned in such a way that another stimulus, which ordinarily had nothing to do with secretion of saliva, began to stimulate it. Food was the 'natural stimulus' as it motivated the dog to respond. Its response was secretion of saliva. Ringing

of the bell was an '

artificial stimulus', also called 'conditioned stimulus'. The response of the dog when the bell was rung is called a 'conditioned response'. Conditioning is thus the modification of the natural response. The abbreviations used are: NS for Natural Stimulus, CS for Conditioned Stimulus, NR for Natural Response and CR for Conditioned Response. In this experiment, the dog learnt to secrete saliva at the sound of the bell. This kind of learning was named as Learning by Conditioning. The experiment was conducted in a windowless soundproof room in order to minimize the effects of extraneous stimuli on the subject. An apparatus was used to measure the number of drops of the saliva secreted as well as the total amount in cubic centimeters. 7.6.1 Principles of Conditioning To explain his theory, Pavlov gave some principles of conditioning. 1. Principle of Reinforcement: The term reinforcement refers to the following

of the conditioned stimulus by the unconditioned stimulus, i.e., food following the bell. Pavlov stated that it was only reinforcement that led to the conditioning. Without reinforcing the bell with meat, no conditioning could be developed—this was reinforcement. This

principle

is applicable to children also. Children's learning becomes effective when they are rewarded immediately after

a good performance Thus,

their behavior is conditioned with reinforcement. Quite often, the unconditioned stimulus reduces a drive or tension. Thus, the term reinforcement has also come to mean reduction in drives or tensions. 2. Principle of Sequence and Time Intervals: There is an optimal time between the presentation of the conditioned stimuli and the unconditioned stimuli. If there is any variation, i.e., increase or decrease in the optimal time, then there is no conditioning and a bond cannot be formed. 3. Principle of Stimulus Generalization: According to this principle, if we are conditioned to one thing, i.e., the bell, then we would be conditioned, more or less, to all sorts of bells. In the earlier stages of learning by conditioning, the animal responded to a number of stimuli which accompanied the exact conditioned stimulus. The response was the greatest to the conditioned stimulus and went on decreasing to other stimuli which were less similar to the original one. 4. Principle of Differentiation:When two stimuli are sufficiently distinguishable,

a living being

can be conditioned to respond to one of them. This is done by regularly reinforcing one stimulus and non-reinforcing the other. The individual can be conditioned to react differently to the two stimuli, which at first make nearly the same response. This is how one learns to differentiate between different brands of tea or coffee. But in case, the organism is pressed too far, it causes experimental neurosis. In the laboratory, when the dog was made to discriminate between two very thin ellipses it started howling at the experiments. It is clear that response to a particular stimulus can be achieved only through selective reward. 5. Principle of Extinction: If the sound of the bell was not followed by food, it implied that there

was no reinforcement. A stage was reached

when the dog stopped secreting saliva. This process is called extinction. Pavlov noted in his experiments that when the spacing of test trials was increased, the response extinguished rapidly. 6. Principle of Spontaneous Recovery: The principle of spontaneous recovery explains that there is no complete extinction on account of the time interval but there is inhibition of CR. When the dog was brought out of the experimental set-up and again put in the set-up after a lapse of time, the dog responded to Conditioned Stimulus (CS) by gastric secretion. This process is called spontaneous recovery. 7. Principle of Inhibition: Inhibition may be defined as a process in which a stimulus inhibits a response that would otherwise occur. Pavlov mentioned two types of inhibition. External Inhibition:

Even when the dog was conditioned, it did not react to

Conditioned Response (CR) in the presence of some stranger. Often we come across cases when pupil- teachers fail to deliver a well-prepared lesson in the presence of their supervisors. Internal Inhibition: Pavlov observed that complete extinction of CR was obtained by not providing food to the dog. But when it was given after a period of 24 hours,

there was spontaneous recovery of CR

when the dog was tested again. Thus, the extinction did not permanently weaken the CR. It was argued by Pavlov that spontaneous recovery proved that CR in extinction did not represent dying of the reflex or any real weakening of the learnt SR connections. It was blocked by some internal inhibitory process. For example, physical health of an organism or preoccupation with some other activity, could block the response. 8. Principle of Higher Order Conditioning: When conditioning is done to a new stimulus on the basis of a previous conditioned stimulus, it is designated as higher order conditioning. By this process, conditioning can be done by associating one stimulus with another. The process of conditioning becomes difficult if the process is carried too far. 9. Principle of Secondary Reinforcement: Conditioned Response (

CR)

is established to some stimulus other than the primary one, e.g., food elicited salivation. By repeated presentation it was found that sight of food led to salivation or a part response. It is called secondary reinforcement. Secondary reinforcement plays an important role in later learning, especially in the case of children, when the reward may be no more than a kind word or some other gesture or some token reward. 10. Principle of Age and Conditioning: The process of conditioning is valuable at all ages but especially in early childhood. 7.6.2 Contribution of Pavlov's Theory of Conditioning to Learning & its Classroom Implications Pavlov's work on the laws of conditioning is considered

as

a landmark contribution to educational psychology. No learning theorist can ignore the technical and theoretical discoveries of Pavlov. Pavlov's work influenced the thought process of behaviorist psychologists, especially those of Watson, Guthrie, Hull and Skinner. Pavlov explained learning in terms of physiological changes by adopting an objective method of study. Conditioning was accepted as

a

theoretical framework and practical technique for solving a variety of applied problems. Most of the terminology used in learning was developed by Pavlov. The principles of classical conditioning can be used in various areas of teaching-learning in the classroom also. A child learns through conditioning. A child who fears a particular object or subject can be made to love it through conditioning, thereby dispelling fear and hatred

for the same.

A teacher with his defective methods of teaching or improper behavior, may be disliked by a particular student or a group of students. He may develop the habit of rebuking children while returning the checked assignment or listening to their answers. Gradually, the students develop hatred for the subject as well as for the teacher. On the other hand, a friendly and sympathetic teacher will have a positive impact on the students through the process of conditioning. The students develop

a positive attitude both for

the subject as well as the teacher. The use of audio-visual aids in the teaching-learning process involves the conditioning theory. For instance, the teacher shows a picture of a cow, along with the written word 'cow'. The teacher speaks out the word 'cow' and asks the student to say 'cow', everytime the picture is presented. After some time, the picture of the cow is not presented. Only the written word cow is shown. But the child responds to it by saying cow. He associates the written word cow with the picture of the cow and the sound of the word. Principles of classical conditioning help in developing good habits in children—habits of cleanliness, punctuality, respect for others, etc. Bad habits,

too, can be eliminated through conditioning. As most of the learning is acquired in a

social environment, principles of classical conditioning can be used to remove bad habits like fear and anxiety in children. Classical conditioning can be used for developing

a

favourable attitude towards subjects, teachers and above all, the school. The concept of reinforcement in classical conditions points out the need for immediate rewards. Pavlov's theory of conditioning is criticised on two grounds. (i) All learning is not conditioning and on the other hand, it is an active process. (ii) Learning needs intelligence and understanding but conditioning ignores it by and large. 7.7

Skinner's Theory Of
Operant Conditioning Prof. B. F.

Skinner started his research work on behaviour while he was

a graduate

in the Department of Psychology at Harvard University. In 1931, he wrote his thesis entitled, The Concept of the Reflex in the Description of the Behaviour. Thereafter, in the middle of forties, Skinner conducted a good deal of research at the Minnesota and Indiana Universities, on the theory of operant conditioning. Skinner was a practical psychologist who conducted several experiments on rats and pigeons. He popularised 'teaching machines' in learning in 1954. His important publications are: The Behaviour of Organism (1938); Science and Human Behaviour (1953); Verbal Behaviour (1957); Cumulative Record (1959); Beyond Freedom and Dignity (1971), and About Behaviourism (1974). 7.7.1

Meaning

of Operant Conditioning Skinner called his theory operant conditioning, as it is based on certain 'operations or actions' which an organism has to carry out. The term 'operant' stresses that behaviour

is carried out in

the

environment to generate its own consequences. An operant is a set of acts which conditions an

organism in doing something. In the process of operant conditioning, operant responses are modified or changed by reinforcement. Reinforcement is a special kind or aspect of conditioning within which the tendency for a stimulus to evoke a response on subsequent occasions is increased by reduction of a need. Most SR theorists have assumed the existence of a stimulus as a prerequisite for evoking a response. In the absence of any external stimulus, they have assumed some internal stimuli for evoking the response. Skinner was against this 'No stimulus—no response' theory and believed that most of the responses could not be attributed to the known stimuli. He defined two kinds of responses—the one elicited by the known stimuli, which he called as respondent or reflexive behaviour, and the other emitted by the unknown stimuli, which he called as operant behaviour. Respondent behaviour is learnt according to

the

Pavlovian model of conditioning. Since it is concerned with the stimuli, it is known as S-type conditioning. Skinner attached greater importance to operant behaviour which is primarily concerned with response rather than stimuli, it is known as R-type conditioning. Out of many responses which an organism is capable of giving, the problem with the experimenter is to evoke only the appropriate responses and fix them properly. Thus Skinner changed the usual SR formula into an RS formula. 7.7.2 Operations Involved in Operant Conditioning Several operations are involved in the process of operant conditioning. Some of the important operations briefly described are as follows: • Shaping (generalisation, chaining and habit competition) • Extinction • Spontaneous recovery • Concept of reinforcement 1. Shaping: Shaping is the most important mechanism used in operant conditioning. It refers to the judicious use of selective reinforcement to bring certain desirable changes in the behaviour of the organism. The basic process in shaping is successive approximation to the desired behaviour. The experimenter shapes or moulds the behaviour of the organism just as clay is moulded by a potter in a definite form of a pot. Principles involved in shaping: There are three important psychological principles which are involved in the process of successful shaping of behaviour. They are as follows: ● Generalization, ● Habit competition, ●

Theories of Learning

Each segment in the chain must be linked to the other. 2. Extinction: It is permitting a behaviour to die out by not reinforcing it. This is known as an external approach to motivation. 3. Spontaneous Recovery: Extinction of a response may take place due to non-reinforcement or interference by incompatible responses but there can be

a

spontaneous recovery of the responses. 4. Reinforcement: A reinforcer is the stimulus whose presentation or removal increases the probability of a response. Skinner thought of two kinds of reinforcements—positive and negative. A positive reinforcement is any stimulus the presentation of which strengthens the probability of a response. A negative reinforcement is any stimulus the withdrawal of which weakens the probability of response. Any electric shock, a loud voice are negative reinforcements while food, water, etc., are positive reinforcements. Skinner did not attribute motivation to internal processes within

a living being. He stressed that the reinforcement of conditions was a common way for motivation. He pointed out that just as food was reinforcement to a parrot or pigeon, correct knowledge was to a learner in school. According to him,

reward strengthens the behaviour which preceded it but punishment does not permanently reduce a tendency to respond. Extinction—permitting

a

behaviour to die out by not reinforcing it—and not punishment,

according to him, was the appropriate process for breaking habits. This was, in Skinner's view, the

external approach to motivation. 7.7.3 Schedules for Reinforcement As a result of

the

external approach, Skinner worked out the following effective schedules of reinforcement: ● Fixed Interval Reinforcement:

According to him, when reinforcement is given after a fixed interval of time, it should be called fixed interval reinforcement. ●

Fixed Ratio Reinforcement: When reinforcement is given after a fixed number of responses, it is called fixed ratio reinforcement. ● Variable-Interval Ratio Reinforcement: When reinforcement is given on varying intervals of time or after a varying number of responses, it is called variable reinforcement.

Skinner was of the view that

learning of a response takes place quickly if every correct response is reinforced but is forgotten easily when the reinforcement is stopped. If reinforcement is given after

a varying number of correct

responses or at varying intervals of time, the response is remarkably resistant to extinction. Two Types of Operant Reinforcements: There are two types of operant reinforcements— stimulus discrimination and response discrimination. Stimulus discrimination occurs when a given response is made to one member of a pair of stimuli and not to the other member of the pair. Differentiation of a response occurs when the response form is adjusted or attested approximately to the situation. Typical Problems in Learning Explained by Skinner's Theory ● Capacity: Differences in capacity have been attributed to the empirical constants which are formed in Skinner's laws, because the value of these constants varies from species to species. ● Practice: Skinner accepted something like a law of exercise for 'Type-S' conditioning and for 'Type-R' conditioning he favours repeated reinforcement. He emphasised intermittent reinforcement as protection against extinction. ● Motivation: Reward increases the operant strength, while punishment has no corresponding weakening influence. Drive level also affects the role of responding. ● Understanding: Rapid learning, which has been identified with 'insight' by Keller and Schoenfeld, depends upon (

a) similarity of the problem to one solved earlier, and (b)

simplicity of the problem. Problem solving is the process of manipulating variables to correct responses. It does not involve originality. ● Transfer: Generalisation, which Skinner called induction, is the basis of transfer. ● Forgetting: There is no special theory proposed by Skinner for forgetting. Extinction of a response may take place due to non-reinforcement or interference by incompatible responses, but there can be spontaneous recovery of the response also, which means that extinction is not forgetting. True forgetting is a slow process of decay with time. 7.7.4 Skinner's Experiments

An experiment done on the rats is following:

Skinner prepared a box for experiment which is called Skinner's box. A lever was added with this box. Which was connected to a bowl, and by the side of the lever there was a hole for the entering of rats. After pressing the lever the sound 'khatt' was echoed, and food came into the bowl. In this box a white hungry rat entered the box by the path, prepared by the side of the lever. Rat wandered here and there and leapt and jumped, naturally the lever was pressed by

the

rat. Food came into the bowl with the sound of khatt. Rat ate the food. Naturally the lever was pressed again by the rat and food came with the sound of khatt, which was again eaten by

the

rat. Later on pressing the lever and having the food, it was seen that

the rat started to live by the side of the

lever, pressing the lever, eating the arrived food, the rat was set with comfort. After the repetitions of this experiment, Skinner saw that on being hungry, rats began to press the lever. This conclusion was found from this experiment that "if any strength providing stimulus is obtained after any action, there is growth in the strength of that action." Skinner did not see in his experiment under which conditions does the lever press, rather he watches the event of response by pressing the lever. He considers this response as an emitted response. According to Psychologist Stephens—This theory can be understood in this way—"whichever type of study includes such emitted responses, it is the suggestion of Skinner for their explanation, whatever response helps in the reinforcement that will be reinforced, means the

response will be more reinforced. This is the general tendency of

the

above response, which is reinforced, that this response is reinforced only. It is not any SR tendency or condition. Rat presses the lever and gets the food, thus rat's possibility of pressing the lever is developed and this response is reinforced and rat even after having the food, presses the lever." It is clear from the description of this experiment that rats are inspired by the reward (food) and reinforced for doing some actions. Rat's continued attempts

are

due to the reinforcement. It is also clear from this experiment that learning is a sequence process, which is developed by the efforts and goes on to be stronger. He did his second experiment on the pigeons. Skinner used another special technique for the experiment on the pigeons, which is called pigeon Box. The experiments done on the pigeon, Skinner set this aim that

the

pigeon, after completing a whole round from the right side, learnt to peck on a certain place. With this experiment,

a

hungry pigeon which was imprisoned in the pigeon box, as soon as flying toward the right side and started to peck on the certain place, he got a grain of wheat. By this wheat it got strength for the repetition of its behaviour, and moving towards the right side it responded to peck the beak. Consequently he got a grain of wheat and that's why the pigeon learnt the way to get the grain (food) by pecking its beak and moving toward the right side. Skinner gave birth to a new conditioning theory in the field of learning by his experiments. He found the conclusion that our learning related behaviour is moved by operant conditioning. Our behaviour and response is like operant conditioning to some extent. Skinner gives a lot of importance to reinforcement in his experiment, on which, his learning theory depends. So it is necessary to understand the opinions on reinforcement. 7.7.5

Educational Implications of Skinner's Learning Theory ● Learning objectives should be defined very specifically in terms of behaviour. ● Objectives should be arranged in order from simple to complex ● For developing motivation in students for classroom work

or activity, reinforcements

like praise, blame, grades, etc., should be used. ● Proper use of positive and negative gestures also serves as

reinforcements. ● Reinforcement

should be used periodically so that the possibility of extinction of the desired behaviour is resisted. ● In the classroom, the principle of immediate reinforcement is very important. ● Praise for a job done well given immediately can be a stronger motivator than a grade given much later. ● Skinner's principles of learning focus attention on the individual's pace of learning. Various teaching mechanisms and learning programme systems have been devised on the basis of the theory of learning, founded by Skinner. 7.7.6 Limitations of Operant Conditioning ● It is doubtful if live results derived from controlled experimental studies on animals, would yield the same results on human beings in social learning situations. ● It is argued that Skinner had ignored the structural and hereditary factors which are very important in the development of the psychological process of language. ● The operant reinforcement system did not adequately take into account the elements of creativity, curiosity and spontaneity in human beings. ● Skinner argued that all human behaviour is acquired during the lifetime of an individual. Thus, the importance of genetic inheritance was not given due consideration. ● Skinner's theory of learning dehumanised the learning process on account of its emphasis on the mechanisation of the mental process. ● Operant theory of learning did not deal with the depth of mind and, thus, is artificial in nature. Table 7.1 Comparison Between Classical and Operant Conditioning 7.8

Constructivism Constructivism is a basic theory that elaborates on how knowledge is built (or 'constructed') when new information pours in and comes in contact with the already existing knowledge bank, which has been developed in the course of time by various researchers. Constructivism finds its roots in cognitive psychology as well as human biology. It is that approach to education which gives due emphasis to the various methods followed in the creation of knowledge, and that finds adaptability in the changing education scenario. Constructs are the special types of filters that are selected in order to place over those realities to bring change in the existing reality—from the state of 'chaos' to the state of 'order'. Philosopher and Emeritus Professor of Psychology at the University of Georgia, Ernst von Glasersfeld describes constructivism as 'a theory of knowledge with roots in philosophy, psychology, and cybernetics'. Constructivism finds its implications in the theory of instruction. Discovery, hands-on, experiential, project-based and task-based learning process, and collaborative are a number of applications that base teaching and learning on constructivism. It is not at all necessary that constructivist learning theory implies that a learner must follow a 'constructivist' pedagogical strategy. Rather, it is the opinion of most of the researchers that knowledge is constructed, but a few (for instance, mainstream instructional designers) do not adopt an instructional design pattern, which can be tagged as being 'constructivist'. In a normal situation, a constructivist teaching strategy is based on the assumption that learners learn best when they

gain knowledge

through exploration and active learning. In place of textbooks, hands- on materials are utilised, and the learners are motivated to think and reason. Moreover, they need to give explanations on their reasoning, rather than memorising and reciting facts fed to their memory. Education revolves around the themes and concepts, and the relationship between them, rather than isolated information. Under the theory of constructivism, educators focus on building relations between facts and promoting new understanding in students. Instructors tailor

their

teaching strategies to student responses and encourage their students to analyse, interpret and predict information. Teachers/Instructors also rely heavily on open-ended questions and promote extensive dialogue among learners. Constructivism calls for the elimination of grades and standardised testing. Rather, the theory of constructivism suggests that assessment becomes a part of the learning process with the intention that learners can play a bigger role in evaluating their own growth. 7.9

Unit Summary

Theories of learning attempt to explain the mechanism of behaviour involved in the learning process. Experts have formulated different theories of learning with the result that it is not possible to give one theory which meets the expectations of all.

Connectionism: Thorndike's Theory of Learning: Thorndike's theory of learning "Connectionism" is also called "
Theory of

Ivan P. Pavlov (1849–1936), a Russian psychologist, was the originator of the classical conditioning theory of learning. He won the Nobel

According to him, the behaviour of learners can also be modified

should

according to him. Even if all general psychological laws were known, there was still a

need to understand the specific individual and 'total situation' in which he existed, before making any prediction about his behaviour. Thus Lewin favoured an 'idiographic psychology' in which the focus was on the individual, as opposed to 'nomothetic psychology', where the emphasis was on statistical average. Lewin described his viewpoint in the following formula: B = f (PE) Prof. B.

F.

Skinner started his research work on behaviour while he was

a graduate

in the Department of Psychology at Harvard University. In 1931, he wrote his thesis entitled, The Concept of the Reflex in the Description of the Behaviour. Thereafter, in the middle of forties, Skinner conducted a good deal of research at the Minnesota and Indiana Universities, on the theory of operant conditioning. Skinner was a practical psychologist who conducted several experiments on rats and pigeons. He popularised 'teaching machines' in learning in 1954.

Constructivism is a basic theory that elaborates on how knowledge is built (or 'constructed') when new information pours in and comes in contact with the already existing knowledge bank, which has been developed in the course of time by various researchers. Constructivism finds its roots in cognitive psychology as well as human biology. It is that approach to education which gives due emphasis to the various methods followed in the creation of knowledge, and that finds adaptability in the changing education scenario. 7.10

Key Terms ● Hopelessness: Frustration ● Valence: To attract Exert traction ● Reflex: Come back, Return ● Extinction: Spoil, Separate, Hide, Rob ●
Conditioning: Adopting according to the situation. ● Reinforcement: To provide strength. ●
Insight Theory: The theory of internal sight. ● Mastery: Skillfulness, expertise. 7.11
Check Your Progress 1. State any three limitations of operant conditioning. 2. What are the important operations involved in operant conditioning? 3. Who was Evan P.Pavlov? State one of his achievements. 4. On what grounds is Pavlov's theory of conditioning criticised? 5. What is the principle of spontaneous recovery? 6. State some of the essential features of trace theory. 7. State two weaknesses of the theory of conditioning. 8. What are the chief conflicts as stated by Lewin? 9. State the categories under which Lewin classified learning. 10. What is the basic role of an educator as per the theory of constructivism?
Unit 8: Memory & Forgetting 8.0 Introduction 8.1 Unit Objective 8.2 Meaning and Definition of Memory 8.2.1 Elements of Memory 8.2.1.1 Learning 8.2.1.2 Retention 8.2.1.3 Recall 8.2.1.4 Recognition 8.2.2 Characteristics of Good Memory 8.2.3 Kinds of Memory 8.2.4 Stages of Memory 8.2.4.1 Multistore Model of Memory 8.2.5 Signs/Conditions of a Good Memory 8.2.6 Measurement of Memory 8.3 Forgetting 8.3.1 Strategies for Enhancing Memory 8.3.2 Theories of Forgetting 8.3.2.1 The Trace decay theory 8.3.2.2 Interference Theory 8.3.2.3 Repression Theory 8.2.3.4 Retrieval (Cue) failure theory 8.4 Unit Summary 8.5 Key Terms 8.6 Check Your Progress 8.0 Introduction There is a great importance of memory in our day-to-day life. It is difficult for a man to move his life properly without memory. Whatever a man feels ever, that continues to collect in some form in his mind. The experiences, which are on the unconscious level of mind or are not conscious, they are called collected. And which comes on the level of conscious mind, they are called memory. According to the needs, these collected experiences help us in different situations.
Memory helps us in the practical activities of life. If man could not remember his previous experiences, he would not have made so much progress today. Thus, we can say that development and education is dependent on the tendency of collection of previous knowledge and experiences, good memory is needed for it. Especially intellectual work cannot be done in the absence of memory. Memory has an important place in education. It is almost impossible to get knowledge without memory. So it is necessary to think in detail about the nature of memory. 8.1
Unit Objective This Unit aims to introduce the learners with the following topics: ●
Meaning and Definition of Memory: Elements of Memory; Characteristics of Good Memory; Kinds of Memory;
Stages of Memory; Multistore Model of Memory; Signs/Conditions of a Good Memory; Measurement of Memory. ● Forgetting: Strategies for Enhancing Memory; Theories of Forgetting; 8.2

Meaning and Definition of Memory Memory is a mental process. With its help we bring our previous experiences, which are stored in our unconscious mind as mental instinct, into our current conscience. Many kinds of events happen in our daily life. If we see any place or things, get some experiences from them, which do not remain in the conscious mind forever but in the unconscious mind. The impressions of those experiences are marked in the mind. The process of coming into the conscious mind of these experiences collected in the unconscious mind, is called memory. For example- Tajmahal is worth seeing among the different historical places in the Agra. I saw it many years ago. Seeing it directly, an image that has been stored in my mind, that was on my unconscious level. Today when describing Tajmahal to my younger sister, the experiences which were collected on the unconscious level came into the conscious mind, it is memory. The definitions of memory given by psychologists are following— 1) Scout—"Memory is the ideal revival so far as ideal revival is merely reproductive in which the object of past experiences are reinstated as far as possible in the order and manner of their original occurrence." 2) Woodworth—"Memory is the direct use of what is learned."

3) Mc Dougall—Memory implies imagining events as experienced in the past and recognizing them as belonging to one's own past experience." 4) W. James—"Memory is the knowledge of past condition after being detached from the conscious or it is the knowledge of an event or fact, about which we have not thought till sometimes, along with we have to think this that we have thought or experienced about it before.'' 5) Nunn—"The power of collecting our experiences when connected with consciousness, we call it memory.'' 6) Ryburn—"After sometimes collecting our previous experiences and getting them, the power which we have for bringing them into the field of consciousness is called memory." We can say on the basis of above definitions that memory is such a mental process by which collected or past experiences, due to need, are again brought into the consciousness. 8.2.1

Elements

of Memory Memory is a complicated mental process. According to Woodworth, four following factors are included in memory— 1. Learning 2. Retention 3. Recall 4. Recognition 8.2.1.1 Learning First it is necessary to learn to memorise the content of anything. What is the process of learning and how does it happen?

There is a close relation between learning and memorising. We cannot remember anything without learning it very well and we can learn anything without remembering it. In order to learn any

lesson, a child repeats it again and again, understands its meaning and connects it with others' lessons. In this process its traces fall on the mind. Thus remembering the learnt things from that lesson, he establishes association to the past knowledge with new knowledge. In this section of memory the rules of learning are followed completely.

8.2.1.2 Retention To remember anything is only to do retention of learnt things. The power of remembrance depends upon the power of retention. Retention is that power of mind by which we keep the learnt or remembered content in the mind. According to Woodworth- "Retention is such a situation in which everything, which is learnt, until it is repeated again, lies in it.''

These traces are not destroyed. These are protected in the form of mental purification on the unconscious level. We can remember that learnt material till the memory traces are present in our mind. Retention is such a factor which can be proved by remembrance. We can remember those things again which we have retained in our mind. Thus remembrance depends upon retention and retention depends upon learning. The factors influencing the retention-power—The factors influencing the retention power are following— a) Mind: Mental activities are

influenced by the

mind. Memory traces are marked in the mind. The man whose mind is more developed, his memory traces are also more powerful, consequently,

the

retention process is also affected due to personality differences means it is affected by less intelligence or more intelligence. b) Health: Retention power is also affected by health. The men who are not healthy cannot retain the learnt, seen or experienced things for a long time. For example, in the morning when we are not tired or we are healthier, at that time we learn any things immediately. So students are forced to do study or learning, after getting up early in the morning. So they can retain the learnt things very well. c) Interest: Whichever subject is learnt with interest and care. That remains in mind for a long time. For making the retention- power swift, teachers should pay attention

to

awakening interest of the child towards the subject. d) Rumination: Retention-power is also related to rumination. In whichever subject we are interested

in,

we think about that subject. When we think about any problem, past experiences and learned things are remembered quickly. And the

mind absorbs them properly.

Favourable conditions of Retention—Psychologists have done many experiments related to favourable conditions of retention. The conclusion obtained from these experiments can be presented in the following form— ● The period of stimulus is internally related to retention-power. The stimulus remaining in mind for a longer time can be absorbed in mind for longer. ● It has been concluded from the study of Lunt, Enbinghas and Croger, that the favourable effect falls on the retention-power by more teaching. Within the definite period, the more a child will be taught, the more he will assume. ● Favourable effect falls

on

the speed of learning on the retention-power. Any subject that is learnt quickly is retained with equal swiftness. ● The effect of the health of a child falls on retention-power. Healthy child can retain the learnt thing for a long time. ●

Whichever learning material is learnt with attention and interest remains in mind for a long time. Means attention and interest also favour the retention-power. ● It is necessary for making retention powerful that memorising materials are stimulating, fast, clear and meaningful. The more are these qualities in the stimulus, more will be the retention. These qualities provide

a favourable

condition to retention. ● Above learning method provides retention favourable conditions. as- retention is good and long in learning by the active method than passive method. ● If we have more quantity of material. It throws a favourable conditioning effect on retention-power. Long time and hard work is taken in the learning of big content. More time and hard work makes retention-power strong. A child assembles the different parts of a big content looking into its essence rather than the small content. It helps in retention. ● Some psychologists have concluded that sleeping after remembrance proves helpful in the form of a favourable condition to the retention-power. During the time of remembrance if mind is diverted, hindrance comes in retention. But after learning any subject, if

a child takes rest, memory traces get a good opportunity for being powerful. ●

Experiences or content learnt for some purpose is stable in memory for long times. So, often it has been seen that the content learnt during the examination time is kept in mind for a long time, because the effect of purpose falls on it.

● In retention, past collected knowledge is more important. If content is not related to past collected knowledge, there is difficulty in retention. The mixture of past collected knowledge provides

a

conditioning stage to retention. ● Retention is also affected by feelings and emotional situations. The feeling of Suffering, pleasure, fear and hopelessness etc. traces

a

deep mark in the mind that is kept in mind for a long time. But this kind of educational situation cannot be developed

to provide a favourable

condition to the retention. 8.2.1.3 Recall To bring the past experiences into consciousness is recall. The concepts which are marked on mind with the past experiences, they come on the level of consciousness by a recall. Recall depends on retention-power. If a child, after learning any lesson absorbs it in a proper way, he can remember it easily. "Recall is the mental process, by which we bring our past feelings in our consciousness without presented by any original stimulus." There are two kinds of recall- (a) Spontaneous (b) Deliberate. In the first kind there is no need of any kind of effort, they come on the level of consciousness itself according to the need. In the second type of recall, there is a need for effort. As in the examination hall, there is a need of effort for the remembrance of the answer of the question in writing. Besides, the factors influencing the retention power there are some other factors that influence recall, which are following— ●

Emotional Stage: Emotional stage affects the process of recall. In the time of recall if a man is worried, fearful and nervous, he does not recall the well learnt or assumed things. For example in the examination hall, sometimes when looking at the question paper, the student does not answer some question, but coming out of the hall he remembers the answer of the question properly, because his retention power is good.

The reason was the

emotional stage. If a man is cheerful and healthy, he recalls things quickly. ● Mental Set: When a man is mentally prepared for learning any thing, he can recall more things. For example— in the examination times

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student reads or learns whichever subjects, he learns them successfully, because in the mind of the student there is a mental tendency of learning the subject due to the examination, which helps him in recall.

8.2.1.4 Recognition Recognition is an important factor. According to Woodworth—"to know the past experiences is recognition, or to introduce that thing in the current time which we have been introduced in the past." For example, when an adult man sees his teacher after many years who taught him in the fourth and fifth class, he recognizes that "he taught me maths" Teacher also recognizes him by recalling that he was the mischievous boy of the class. Thus association of ideas depends on the feelings of introduction. 8.2.2 Characteristics of Good Memory Important qualities and characteristic of good memory are following: 1. Quick Learning: The first characteristic of good learning is quick learning. The child who learns anything after reading or hearing on time, then his memory is called good. 2. Good Retention: If a child can remember learnt

things

for a long time, his memory is more stable. This is the quality of good memory. 3. Quick Recall: There is also another quality of good memory- recall. Learnt content is early recalled that is so useful. From the educational point of view, quick recall is the most important quality for the student. 4. Quick and Accurate Recognition: For good memory, not only quick recall but quick and accurate recognition is also needed. Child reads many things related to

the

subject, learns and remembers, in the examination time he recalls these things, but without quick and accurate recognition he is not able to answer the desired questions. 5. Forgetting of Meaningless Things: This is also a good quality of good memory that a child forgets useless things and remembers useful things. Useless things hinders in the remembrance, recall, retention and recognition of useful things. 8.2.3 Kinds of Memory Psychologists have given the following kinds of memory: 1) Immediate Memory: After learning a fact or any subject, immediately repeating is immediate

memory. But in this type of learning, there are more possibilities of forgetting. 2) Permanent Memory: Learnt things are remembered in it for a long time. It found more in the children.

3) Active Memory: To recall the past experiences after making efforts according to desire is called active memory, as- in the examination hall remembering effort fully to write the answers of the questions. 4) Passive Memory: When we recall our past experiences without any effort that is called passive memory. For example, as- telling the name of

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blackboard, remembering its blackness. 5) Personal Memory: To recall our own personal past experiences is personal memory, as- after watching any event, remembering some experience of our childhood. 6) Impersonal Memory: In this type of memory besides our personal experiences, other experiences obtained by the means of friends, books, and newspapers are remembered. 7) Rote Memory: To memorise any subject without understanding it well and to recall it successfully when needed is rote memory. Nowadays, most students take the support of this type of memory for getting success in the examination. This type of memory helps in the learning of tables in maths. 8) Logical Memory: Learning content after understanding it properly and remembering it and telling it when needed is logical memory. It is also called intellectual memory. This type of memory is useful in the education of a child. 9) Habit Memory: When a man learns or repeats anything again and again, it turns into his habit. Due to this habit he does not make an effort to remember it. 10) Sense Impression Experience: In this type of memory, when we recall or recognize anything by fact and thought due to the experience of the sense impression, as- telling about something after touching, tasting and smelling it or remembering any fact after hearing. 11) Physical Memory: When we do some work repeatedly, our related parts are in the habit of doing the same work and there is no mistake in doing that work, as in typing fingers freely on the proper letters. 12) True Memory: Psychologists have called it the best memory. In this kind of memory, content is remembered in sequence. The sequential knowledge of learnt content becomes stable in it. Facts can be recalled soon by true memory. This type of memory is important in education.

8.2.4

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Stages of Memory Psychologists have discovered that memory is not a single

or unitary

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system. It has more than one distinct system. In other words, there are more than one type of memory. According to the most acceptable model of memory, there are three major systems of memory : Sensory Memory; Short-Term Memory (STM), and Long-Term Memory (LTM). Information moves successively through these three systems if attention is given to the material. If attention (focused awareness) is not given, information does not move further into the system.

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Sensory Memory: Hold any object about 12 inches in front of you. Look at it steadily for a while. Close your eyes and notice how long the clear image of that object lasts. A clear visual image of any object will last in sensory memory for about half a second after the stimulus is removed. Sensory memory holds representations of sensory input for very brief periods of time, depending upon the modality involved. There are different sensory registers for each of the senses.

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Short-Term Memory (STM): Look up for a moment and note what attracts your visual attention. Try to identify the sounds and sensations that you are experiencing now. What you have identified is the content of short-term memory or STM. It holds relatively small amounts of information for brief periods of time, usually 30 seconds or less. This is the memory system we use when we look up the phone number and dial it. If we are connected on the first instance the telephone number is forgotten. However, if we get the line engaged for some time, we keep on dialling the number and through repeated dialling rehearsal of the telephone number we push it to the long-term memory (LTM) storage. However, it has been found that short-term storage is more than a passive "holding area" (e.g. holding a telephone number). On the contrary, it involves active processing of information. This finding has led psychologists to use the term working memory. It means that something active goes on during the short-term memory.

Attempt Activity 1 to understand the working of STM.

STM has a limited capacity to hold information. In general it holds

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about 5 to 9 units (the "magic number" 7 ± 2) of information at one go. If the number of units goes higher, new information displaces or writes over the existing units. Thus

in the example given earlier

it is easy to remember a telephone number consisting of 7 to 9 digits. If more information is added we lose at least part of the phone number. However, this limitation in capacity can be effectively expanded by a process known as chunking i.e. several units of meaningful information are packed into one chunk. For example the number 194720021941 (12 digits) can easily

be

remembered if the 12 digits are chunked into three units 1947, 2002, 1941, all referring to calendar years. Long – Term Memory (LTM): It

refers to the

memory system for the retention of large amounts of information for long periods of time. It is the memory system that permits us to remember events that happened many years ago, yesterday, last year, and so on. It is the long- term memory that allows us to remember factual information making it possible for us to learn different subjects, appear

for examinations and communicate with others. It brings continuity and meaning to our life. When we pay attention to a piece of

information and engage in active rehearsal the material is stored in the long-term memory (LTM). Information in the sensory memory enters short-term memory when it becomes the focus of our attention. If we do not pay attention to the incoming sensory information, the material fades and quickly disappears. We tend to pay attention to certain information and not to the other. Paying attention to certain aspects of our world is what we call

it. "

selective attention". The information from STM is often rehearsed by us. This rehearsal helps the transfer of that information from STM to LTM. 8.2.4.1 Multistore Model of Memory The

multi-store model is an explanation of memory proposed by Atkinson and Shiffrin which assumes there are three unitary (separate) memory stores, and that information is transferred between these stores in a linear sequence. The three main stores are

the sensory memory, short- term memory (STM) and long-term memory (LTM).

Each of the memory stores differs in the way information is processed (encoding), how much information can be stored (capacity), and for how long (duration). Information passes from store to store in a linear way, and has been described as an information processing model (like a computer) with an input, process and output. Information is detected by the sense organs and enters the sensory memory, which stores a
fleeting impression of sensory stimuli. If attended to this information enters the STM and if the information is given meaning (elaborative rehearsal) it is passed on to the LTM. According to the Atkinson-Shiffrin model, memory has three components. Each stores, encodes and processes information in varying ways: ● The sensory register Sensory information that is not attended to is lost forever. Information attended to in this register passes to … ● the short-term store Holds limited information from the sensory register and information retrieved from the long-term store. Rehearsal allows storage in … ● the long-term store Permanently held information, in a store with essentially unlimited capacity. Structural features of the Atkinson-Shiffrin Model This means the permanent, built-in or fixed features of memory. Structural features include: ● the three different stores ● the function of each store - that is, the role it plays in human memory ● each component's storage capacity ● the duration of time that information is held

Control features of the Atkinson-Shiffrin Model These vary from individual to individual - we can choose. For instance, you can choose what you pay attention to and therefore what passes from the sensory register to the short-term register. Rehearsal is also under individual control; it determines how long information is held in the short-term store and whether it is passed on to the long-term store. Retrieval is another control process. The method we use to access information is chosen by us. 8.2.5 Signs/Conditions of a Good Memory a. Rapidity with which thing is learnt. It depends upon the concentration or attention and consequently on the keenness of interest. b. The length of time during which the remembered material lasts. A person retains longer. c. The rapidity or accuracy of recall or recognition. Some people can learn quickly and easily but soon forget and cannot recall rapidly and accurately. Such people have a bad memory. Others may take a long time to learn, and also retain for a long time. d. A good memory is serviceable. We should recollect the right things at the right time. The serviceableness of memory depends upon the methods of learning. When we read and think over what we read, form connections and relations between different parts of knowledge, we have a well-organised knowledge. When knowledge is well-organised, it is serviceable. 8.2.6 Measurement of Memory Whenever we talk of measuring memory, we mean measuring retention. Methods of measuring retention are: 1. Method of Recognition: Show 10 photographs to the subject. Let the subject have a look at these photographs for about five minutes or so. Then mix the photographs with another 20 photographs. After some time-say another 10 minutes, ask him to recognize the original ten photos from these 30. It is to be done quickly. Recognition score of the subject can be calculated as: Recognition Score= (R-W) X100/N R=Right; W=Wrong; N= Original number of photos i.e. 10

2. Methods of Recall-Saving and Scoring methods: Let the subject remember a list of 10 nonsense syllables. Note the time and trials taken by him to remember the list. Then after some time, half an hour, ask him to recall the list in the same order. He may fail to do so. Let him again relearn the list. The time taken and trials will be less. You can calculate the saving score. 8.3 Forgetting It is a common experience that sometimes we are unable to remember information that we need at a particular time. We find that on some occasions this lets us down as we are unable to remember the information that we require desperately. During examinations we are unable to remember or retrieve what we have learned. This is what we call forgetting. Why does this occur? Many explanations have been offered to explain this kind of loss. Let us briefly consider some theories to explain the causes of forgetting. ● Decay: Some psychologists think that it is due to gradual fading of memory traces or decay that happens with lapse of time. This does not explain why certain memories fade forever while others seem to be well preserved. Passing of time cannot, therefore, be considered as the main cause of forgetting. ● Interference: A more useful explanation is found in the view called interference theory. It argues that memories are lost because of what happens to them during the period when we retain them. Thus inhibition or interference by subsequently learned material becomes the major cause of forgetting. There are two types of such interference − Retroactive interference and Proactive interference. Retroactive interference (acting backwards) occurs, when the current information interferes with what has been retained earlier. For example, you learn Punjabi language on Monday and Bengali on Tuesday. During a Punjabi test taken on Wednesday interference is expected from the learning of Bengali words. Forgetting may also occur due to (acting forwards) proactive interference. This is a situation in which earlier information in the memory interferes with the current information. Suppose you have been driving a scooter with gears. Now, you have a new scooter which has no gears (automatic drive). You will tend to change the gears in the new scooter and this habit can persist for long. Proactive interference thus explains one's inability to acquire new knowledge or habit because of the powerful interference from old habits.

● Level of Processing: While learning some material we may attend to it in detail and process at a deeper level or neglect it and attend at a surface level. This may be a cause of forgetting. 8.3.1 Strategies for Enhancing Memory How good is your memory? We all would like to improve our memories so that we can retain more facts and information. This is possible with little effort and almost anyone can improve his or her memory. Here are some tips to enhance one's memory. 1. Deep Processing: If you want to learn something and wish to enter information into long-term memory, you have to think about it. You need to consider its meaning and examine its relationship to information you already have. Careful planning, considering the meaning of information, and relating it to existing knowledge is helpful in learning it and remembering it later. The retention of material is dependent directly upon the depth at which it has been processed. Deeper level in terms of meaning is very important. Second, the depth of processing also refers to the rehearsal of material to be remembered. Greater the rehearsal, the more the chances of recalling the material later. 2. Attending carefully: If you want to learn something well and ensure its retention in long-term memory you have to put in conscious effort to attend to it carefully. 3. Minimise interference : You have learned that interference is a major cause of forgetting and you should try to reduce it as much as possible. In general, the more similar the materials to be learned, the more likely they will produce interference. Thus, you should arrange your studies so that you don't study similar subjects one right after the other. For example, if you have to study two languages, study them on different days. 4. Distributed practice: While learning some material it is beneficial to learn it using distributed practice in which there is a gap between trials. Take rest after a period of study. If the chapter is lengthy, divide it into two or three parts and learn a part in one go. After mastering one part then go to the second and so on. Do not try to cram all the information you want to memorise at once. 5. Using memory aids: People use various cues, indicators and signs to connect events. This often facilitates remembering. You can use visual imagery to remember objects and places. For example, if you visit a new place, you can remember the location by remembering several associated objects and places. You may remember the place to be

close to a cinema hall, in front of a signal post and so on. 6. Shorthand codes: You can develop your own shorthand codes to memorise a long list of items. You can use the first letter of each word or item and construct a unique "word". For example, to remember the seven constituents of light we use VIBGYOR; where V stands for Violet, I for Indigo, B for Blue, G for Green, Y for Yellow, O for Orange and R for Red. During the school days. We used to forget the order of Mughal emperors in history. We developed a shorthand code: BHAJSA" where B stands for Babar, H for Humayun, A for Akbar, J for Jahangir, S for Shahjahan and A for Aurangzeb. It helped remembering the names in order. 8.3.2 Theories of Forgetting Forgetting is a universal phenomenon. It seems to be to some degree in every human being. How and why does this condition occur? This question has given rise to extensive research and development of some theories. Some important theories are: 8.3.2.1 The Trace decay theory According to this theory, the memories we make leave traces on our brains, and as soon as these traces take time, they will fade. These marks or traces which are responsible for our memory are called engrams. The memory system is formed in our nervous system. If the learned process is not used for a long time, the mark fades. Therefore, it is a mistake of time that is responsible for forgetting. In other words, trace decay is a natural loss of information over time. As soon as we were formed, engrams or memory marks and we are unable to remember some facts, events, and materials that have not been modified often can easily be faded and forgotten. However, if continuous memory or modification happens, then these organs are kept firm and can easily be remembered. 8.3.2.2 Interference Theory One important reason to forget about everyday life is the interference of the material. New and old experiences may have to be forgotten by interference. Memory marks or traces that overlap interfere with each other and erase them.

In other words, if the material learned is to remain in memory for a long time then it will have to make memory traces in our brain. All of us learn and experience memory traces. When more and more memory traces are formed, there is some overlapping of the traces, which results in obliteration and interference. Learning here will interfere with and inhibit another memory process of learning. There are two types of interference: (a) proactive inhibition (b) Retroactive inhibition. a. Proactive inhibition: If earlier education interferes with learning later and remembers new material, then it is known as a proactive inhibition. This usually happens when the previous education is better than the present. For example, if one learns a theory in psychology and then learns the second, then the new theory is remembered and forgotten the old, then it is proactive interference. b. Retroactive inhibition: Inhibition or prevention of earlier learning and remembering by later learning is known as retroactive inhibition. The underlying condition between the original education and its memories is the reason for forgetting. It is called retroactive because interference happens with the memory of events that came before the intervention activity. For example, a student learned about inspiration in psychology last week, this week he learned about perception. Now he tries to remember information about the inspiration, but the points related to perception will be remembered in his memory. 8.3.2.3 Repression Theory Repression is a defensive mechanism. As stated by Freud in the theory of psychoanalysis, painful experiences and forbidden desires are pushed into the unconscious and the person does not want to remember them. Although they try to come to the level of consciousness, they are pushed back or deliberately avoided. According to Correspondence Early Childhood Education, there are times when an incident or any action is so painful that we cannot cope with its memory, so we completely repress the memory. Teachers of Early Childhood Education argued that very dangerous or anxiety-stimulating content is often unable to gain access to awareness. By pressing memory in the subconscious and actively repressing it, we are unable to remember the memory.

Motivated forgetting is purposeful forgetting, even if it is not purposeful at a conscious level. Unable to remember the casualty patients, what happened in the time of the accident was because the painful memories of the traumatic incident are probably repressed 8.2.3.4 Retrieval (Cue) failure theory Retrieval is required to remember. Some retrieval cues and rebuilding processes help in this process. These retrieval cues or reminders, direct the memory search to the appropriate section of the LTM section. Without proper recovery signals, items stored in LTM cannot be demanded. It leads to forgetting. Retrieval failure is a failure to remember or recall the memory due to unacceptable stimuli or cues which were present when the memory is encoded. It is a very common experience that when we see that person, we fail to remember somebody's name because we are unable to recover it from our memory. Sometimes we describe it as the answer to 'tip of the tongue'. Also, forgetting during the exam is this sort of forgetting. 8.4 Unit Summary

Memory is a mental process. With its help we bring our previous experiences, which are stored in our unconscious mind as mental instinct, into our current conscience. Many kinds of events happen in our daily life. If we see any place or things, get some experiences from them, which do not remain in the conscious mind forever but in the unconscious mind.

It is a common experience that sometimes we are unable to remember information that we need at a particular time. We find that on some occasions this lets us down as we are unable to remember the information that we require desperately. 8.5 Key Terms ● Recall: Call back ● Recognition: Identity, Consideration

8.6 Check Your Progress 1) What is memory, define it. 2) What are different elements of memory? 3) What are the characteristics of good memory? 4) What are different types of memory? 5) How can we measure memory? 6) What is forgetting? 7) What are different strategies for developing memory? 8) Discuss the theories of forgetting.

Module IV: Variables in Human Learning

Unit 9: Motivation & Transfer of Learning 9.0 Introduction 9.1 Unit Objectives 9.2 Maturation and Learning 9.3 Motivation in Learning 9.3.1 Intrinsic and Extrinsic Motivation 9.3.2 Five General Approaches to Motivation 9.3.3 Theories of Motivation 9.3.3.1 Hierarchy of need Theory (A.H.Maslow, 1943) 9.3.3.2 Achievement Motivation Theory (David C.Mc Clelland, 1980s) 9.4 Transfer of learning 9.4.1 Definitions of Transfer of Learning 9.4.2 Brief History of the Concept 9.4.3 Importance of the Transfer of Learning Theories

of Learning 9.4.4 Types of Transfer of Learning 9.4.5 Theories of Transfer of Learning 9.4.5.1 Theory of Mental Discipline 9.4.5.2 Theory of Identical Elements or Components 9.4.5.3 Theory of Generalisation of Experience 9.4.5.4 Theory of

Ideals 9.4.5.5 Gestalt (or Relationship) Theory 9.4.6 Educational Implications
of Theories

of Transfer of Learning 9.4.7 Principles of Transfer (or Conditions that Facilitate Transfer) of Learning 9.4.8 Role of the Teacher in Transfer of Learning 9.5

Unit
Summary 9.6
Key Terms 9.7 Check Your Progress 9.0 Introduction "Maturation" is a term that refers to the natural unfolding of changes with increasing age, e.g. hormonal changes as the individual reaches puberty. An example of this can be seen in breast development which is influenced by release of oestrogen when a girl reaches adolescence. Maturation refers to the changes which are primarily biological in nature and occur due to our genetic programme. Our biological structure follows a predetermined course of changes with time. This can be seen in the development of teeth during childhood. Changes in body proportions with age provide an example of such predetermined universal trends. The size of the head is roughly half of the whole body at birth, but the proportion keeps decreasing until adulthood, when it is less than one-fourth of the whole body. Therefore, maturational changes in our body are primarily due to the ageing process rather than learning or other factors such as illness or injury. Motivation is a way of creating a high level of enthusiasm to reach organisational goals, and this situation is accommodated by satisfying some individual need. Basically, motivation refers to achieving organisational main goals by satisfying an individual employee's needs or demands. The idea of transfer of learning is basic to education. Education is considered to be a preparation for life. Whatever students learn in educational institutions is useful only when they can apply the same in everyday life. This application or carry over learning from one act to another is called transfer of learning. Transfer of learning thus implies the application of knowledge in various subjects and fields. It is assumed that whatever knowledge, skills, attitudes and information are either taught in schools, or given training in, would be useful only when children use it to solve problems of life after completing their formal education. Arithmetic is taught on the assumption that it would be useful in handling day-to-day life problems. Civics is taught on the assumption that its knowledge would be helpful in facing social problems successfully. 9.1 Unit Objective This unit intends to cover the following topics: ● Maturation and Learning ● Motivation in Learning ● Transfer of learning

9.2 Maturation and Learning "Maturation" is a term that refers to the natural unfolding of changes with increasing age, e.g. hormonal changes as the individual reaches puberty. An example of this can be seen in breast development which is influenced by release of oestrogen when a girl reaches adolescence. Maturation refers to the changes which are primarily biological in nature and occur due to our genetic programme. Our biological structure follows a predetermined course of changes with time. This can be seen in the development of teeth during childhood. Changes in body proportions with age provide an example of such predetermined universal trends. The size of the head is roughly half of the whole body at birth, but the proportion keeps decreasing until adulthood, when it is less than one-fourth of the whole body. Therefore, maturational changes in our body are primarily due to the ageing process rather than learning or other factors such as illness or injury. It must be noted that changes in behaviour also occur due to "learning". Learning takes place as a result of a person's interaction with the environment. Maturation provides the raw material and sets the stage for learning to occur. Taking the case of learning to read, the child needs to be biologically ready. The eyes need to develop proper focusing ability before a child can learn to read. Therefore, maturation and learning jointly bring about changes in a person's behaviour.

Learning and maturation are intertwined and interdependent processes. It can be difficult to distinguish between which behavioural changes are the result of learning and which are the result of maturation at times. A. Weismann (1889) proposed the concept of maturation, which saw germplasm as the carrier of heredity that was passed down from generation to generation. This word has gained popularity in recent years,

thanks to A. Gesell (1930). "Growth is such a sophisticated and sensitive process that there must be powerful stabilising elements, inherent rather than exogenous growth trends," he says. In some ways, maturation is a moniker for his regulatory process. D. C. Marquis (1931) gave a more detailed definition of maturation. "

at the time."
Later, J. A. McGoeth (1942) defined maturation as "

McGoeth defines learning

This transformation has a path that satisfies the individual's current motivating factors in the majority of cases, if not all." "

wrote L. Carmichael (1947), who conducted extensive research on the problem of maturation—learning. In addition,

Maturation is a growth

M. L. Biggie and M. P. Hunt (1968) noted. "

writes George G. Thompson (1979). Thompson goes on to say that while these definitions emphasise distinct aspects of the maturation process, they are all basically the same in their emphasis on biologically internal growth processes that are mostly independent of external environmental variables. As a result, maturation entails the changes that come with regular development. It is relatively unaffected by exercise, practice, or experience. Learning, on the other hand, is an individual transformation that

a series of events.

If a behaviour sequence develops in predictable stages, regardless of intervening practises or training, the behaviour is said to have matured. If training processes do not change or speed up behaviour, they aren't considered vital, and the changes aren't considered learning. The ability of tadpoles to swim and birds to fly is mostly due to maturity. However, in the case of humans, determining whether the actions are the product of maturation or learning is difficult. The most straightforward example is that of a child. When a youngster reaches a given stage or age in development, he learns to speak. It's also true that he doesn't learn the language just because he reaches a certain age. He is taught the language. The language he learns is the language he hears. It is obvious that the two processes of maturity

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and learning are inextricably linked. Maturation aids in the learning process. Only when the stage for that form of learning has been reached through a

maturation process does learning take place.

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A teacher will be effective if he comprehends the complexities of the changes that occur as a result of both processes and their interactions. The inverse would be detrimental. For

example, if a youngster is pushed to learn certain speech patterns before reaching a certain level of maturity, the child's normal speech development will be disturbed.

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On the other hand, failing to provide specific speech training at the appropriate moment could be a major educational

blunder. Maturation vs. Learning: What's the Difference? Heredity plays a major role in maturation. Learning is mostly based on observation. Maturation is a process that occurs automatically. Learning is a process that is carefully organised. The process of ageing has an age limit. Learning has no age restrictions. Learning Maturity is linked to structure. Learning is intertwined with actions. Behavioural training does not necessitate practice. Behavioural change necessitates practice. Maturation is unaffected by motivation. Learning is impossible without motivation. Racial differences have an impact on maturation.
Psychological factors have an impact on learning. Types of acceptable and unsuitable It is used in various scenarios. Only favourable or appropriate circumstances are permitted. Maturity and Learning: What's the Connection? Maturity and learning are not two independent factors that influence development. Rather, they are inextricably linked, with

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one helping or hindering the other. Maturation supplies the raw material for learning and establishes the more general patterns and sequences of

an individual's behaviour, which is dependent on hereditary endowment. However, development would not occur just through maturation without practice. It is incorrect to believe that development and learning are limited to the prenatal and postnatal phases of an individual's life. Crawling, creeping, sitting, walking, and other phylogenetic functions are shared by all members of the race. They occur mostly as a result of maturation and to a lesser extent as a result of learning. Other ontogenetic functions, such as swimming and cycling, are unique to the individual. They are mostly the result of learning and are less the result of development. The link between maturity and learning is as follows: Personality traits such as attitudes, interests, ambitions, and personality Patterns are the result of maturity and learning, not just maturation. Individual personalities would not exist if development was solely based on maturation. ● Maturity establishes the boundaries beyond which advancements are not permitted.

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even with the most favourable learning methods and the highest levels of desire on the learner's part (Gesell). When Cattell and others said, "All learning and adjustment is constrained by fundamental features of the organism,"

they were emphasising this point. ● The interplay between maturation and learning creates a for learning, there is a timetable." He will not be able to study until he is ready. The "teachable moment" occurs when development readiness is met.
It is necessary to learn the task. "

as Scott has pointed out, both of which may severely cripple him later in life. 9.3 Motivation in Learning Motivation is usually defined as an internal state that arouses, directs, and maintains behaviour. Psychologists studying motivation have focused on five basic questions: 1. What choices do people make about their behaviour? Why do some students, for example, focus on their homework and others play video games? 2. How long does it take to get started? Why do some students start their homework right away, while others procrastinate? 3. What is the intensity or level of involvement in the chosen activity? Once the backpack is opened, is the student engrossed and focused or is he just going through the motions? 4. What causes someone to persist or to give up? Will a student read the entire Shakespeare assignment or just a few pages? 5. What is the person thinking and feeling while engaged in the activity? Is the student enjoying Shakespeare, feeling competent, or worrying about an upcoming test (Anderman & Anderman, 2014; S. Graham & Weiner, 1996; Pintrich, Marx, & Boyle, 1993)? 9.3.1 Intrinsic and Extrinsic Motivation We all know how it feels to be motivated, to move energetically toward a goal or to work hard, even if we are bored by the task. What energises and directs our behaviour? The explanation could be drives, basic desires, needs, incentives, fears, goals, social pressure, self-confidence, interests, curiosity, beliefs, values, expectations, and more. Some psychologists have explained motivation in terms of personal traits or individual characteristics. Certain people, so the theory goes, have a strong need to achieve, a fear of tests, a curiosity about mechanical objects, or an enduring interest in art, so they work hard to achieve, avoid tests, tinker endlessly in their garages, or spend hours in art galleries. Other psychologists see motivation more as a state, a temporary situation. If, for example, you are reading this paragraph because you have a test tomorrow, you are motivated (at least for now) by the situation. Of course, the motivation we experience at any given time usually is a

combination of trait and state. You may be studying because you value learning and because you are preparing for a test. In addition, your motivational traits may set your general level or range of motivation, but certain situations (or states) may engage you more or less within that general range. A classic distinction is made about amotivation, intrinsic motivation, and extrinsic motivation. A motivation is a complete lack of any intent to act—no engagement at all. Intrinsic motivation is the natural human tendency to seek out and conquer challenges as we pursue personal interests and exercise our capabilities. When we are intrinsically motivated, we do not need incentives or punishments, because the activity itself is satisfying and rewarding (Anderman & Anderman, 2014; Deci & Ryan, 2002; Reiss, 2004). Satisfied Spenser studies chemistry outside school simply because he loves learning about chemistry; no one makes him do it. Intrinsic motivation is associated with many positive outcomes in school such as academic achievement, creativity, reading comprehension and enjoyment, and using deep learning strategies (Corpus, McClintic-Gilbert, & Hayenga, 2009). In contrast, when we do something to earn a grade, avoid punishment, please the teacher, or for some other reason that has very little to do with the task itself, we experience extrinsic motivation. We are not really interested in the activity for its own sake; we care only about what it will gain us. Safe Sumey works for the grade; she has little interest in the subject itself. Extrinsic motivation has been associated with negative emotions, poor academic achievement, and maladaptive learning strategies (Corpus et al., 2009). However, extrinsic motivation also has benefits if it provides incentives as students try new things, gives them an extra push to get started, or helps them persist to complete a mundane task. Beware of either/or! According to psychologists who adopt the intrinsic/extrinsic concept of motivation, it is impossible to tell just by looking if a behaviour is intrinsically or extrinsically motivated. The essential difference between the two types of motivation is the student's reason for acting— whether the locus of causality for the action (the location of the cause) is internal or external— inside or outside the person. Students who read or practice their backstroke or paint may be reading, swimming, or painting because they freely chose the activity based on personal interests

(internal locus of causality/intrinsic motivation), or because someone or something else outside is influencing them (external locus of causality/extrinsic motivation) (Reeve, 2002; Reeve & Jang, 2006a, 2006b). As you think about your own motivation, you probably realise that the dichotomy between intrinsic and extrinsic motivation is too either/or—too all or-nothing. 9.3.2 Five General Approaches to Motivation STOP & THINK Why are you reading this chapter? Are you curious about motivation and interested in the topic? Or is there a test in your near future? Do you need this course to earn a teaching licence or to graduate? Maybe you believe that you will do well in this class, and that belief keeps you working. Maybe you just got caught up in the ideas and can't put the book down . Perhaps it is some combination of these reasons. What motivates you to study motivation? • Motivation is a vast and complicated subject encompassing many theories. Some theories were developed through work with animals in laboratories. Others are based on research with humans in situations that used games or puzzles. The work done in clinical or industrial psychology inspired additional theories as well. Our examination of the field will be selective; otherwise we would never finish. To get the big picture, we consider five families of explanations. Behavioural Approaches To Motivation. According to the behavioural view, an understanding of student motivation begins with a careful analysis of the incentives and rewards present in the classroom. A reward is an attractive object or event supplied as a consequence of a particular behaviour. For example, Safe Sumey was rewarded with bonus points when she drew an excellent diagram. An incentive is an object or event that encourages or discourages behaviour. The promise of an A+ was an incentive to Sumey. Actually receiving the grade was a reward. Providing grades, stars, stickers, and other reinforcers for learning—or demerits for misbehaviour—is an attempt to motivate students by extrinsic means of incentives, rewards, and punishments. Humanistic Approaches To Motivation. In the 1940s, proponents of humanistic psychology such as Carl Rogers argued that neither of the dominant schools of psychology, behavioural or Freudian, adequately explained why people act as they do. Humanistic interpretations of

motivation emphasise such intrinsic sources of motivation as a person's needs for "self- actualization" (Maslow, 1968, 1970), the inborn "actualizing tendency" (Rogers & Freiberg, 1994), or the need for "self-determination" (Deci, Vallerand, Pelletier, & Ryan, 1991). So, from the humanistic perspective, to motivate means to encourage people's inner resources—their sense of competence,determination theory, discussed later, are influential humanistic explanations of motivation. Giving students choices in projects, goals, books, or topics is an example of applying humanistic approaches. Cognitive Approaches To Motivation. In cognitive theories, people are viewed as active and curious, searching for information to solve personally relevant problems. Thus, cognitive theorists emphasise intrinsic motivation. In many ways, cognitive theories of motivation also developed as a reaction to the behavioural views. Cognitive theorists believe that behaviour is determined by our thinking, not simply by whether we have been rewarded or punished for the behaviour in the past. Behaviour is initiated and regulated by plans (G. A. Miller, Galanter, & Pribram, 1960), goals (Locke & Latham, 2002), schemas (Ortony, Clore, & Collins, 1988), expectations (Vroom, 1964), and attributions (Weiner, 2010). We will look at goals, expectations, and attributions later in this chapter. Social Cognitive Theories. Many influential social cognitive explanations of motivation can be characterised as expectancy 3 value theories. This means that motivation is seen as the product of two main forces: the individual's expectation of reaching a goal and the individual's value of that goal. In other words, the important questions are, "If I try hard, can I succeed?" and "If I succeed, will the outcome be valuable or rewarding to me?" Motivation is a product of these two forces, because if either factor is zero, then there is no motivation to work toward the goal. For example, if I believe I have a good chance of making the basketball team (high expectation), and if making the team is very important to me (high value), then my motivation should be strong. But if either factor is zero (I believe I haven't a prayer of making the team, or I couldn't care less about playing basketball), then my motivation will be zero, too (Tollefson, 2000). Jacqueline Eccles and Allan Wigfield add the element of cost to the expectancy $\times$ value equation. Values have to be considered in relation to the cost of pursuing them. How much energy will be required? What could I be doing instead? What are the risks if I fail? Will I look stupid? Is the cost worth the possible benefit (Eccles, 2009; Eccles & Wigfield, 2002)?

Sociocultural Conceptions Of Motivation. Finish this sentence: I am a/an _____. What is your identity? With what groups do you identify most strongly? Sociocultural views of motivation emphasise participation in communities of practice. People engage in activities to maintain their identities and their interpersonal relations within the community. Thus, students are motivated to learn if they are members of a classroom or school community that values learning. Just as we learn through socialisation to speak or dress or order food in restaurants— by watching and learning from more capable members of the culture—we also learn to be students by watching and learning from members of our school community. In other words, we learn by the company we keep (Eccles, 2009; Hickey, 2003; Rogoff, Turkanis, & Bartlett, 2001). 9.3.3 Theories of Motivation Motivation is a way of creating a high level of enthusiasm to reach organisational goals, and this situation is accommodated by satisfying some individual need. Basically, motivation refers to achieving organisational main goals by satisfying an individual employee's needs or demands. 9.3.3.1 Hierarchy of need Theory (A.H.Maslow, 1943) Hierarchy of needs theory is proposed

by Abraham Maslow in his paper titled "A Theory of Human Motivation"

published in Psychological Review in 1943. Maslow's Hierarchy of needs is one of the best known motivation theories. Maslow proposed that there are five different levels of needs people have to seek for satisfaction of their basic needs. The core of this theory lies in the fact that when one need is fulfilled, its strength diminishes and the strength of the next level increases. Maslow does note that one level of needs doesn't have to be totally fulfilled before a person moves to the next level. The individual can be partly satisfied with one level and still seek satisfaction at the next level.

Source: https://www.pinterest.com/pin/333266441154062106/ Needs identified by Maslow ● Physiological needs refer to the need for food, water, and other biological needs. These needs are basic because when they are lacking, the search for them may overpower all other urges. ● Once physiological needs are satisfied, people tend to become concerned about safety needs. ● Belongingness and love are also called social needs. Social needs refer to the need to bond with other human beings, be loved, and form lasting attachments with others. In fact, attachments, or lack of them, are associated with our health and well-being. ● The satisfaction of social needs makes esteem needs more salient. Esteem need refers to the desire to be respected by others, feel important, and be appreciated. ● Self-actualization needs manifests itself by the desire to acquire new skills, take on new challenges, and behave in a way that will lead to the attainment of one's life goals.

Source: https://www.slideserve.com/kovit/chapter-13-powerpoint-ppt-presentation Existence, Relatedness and Growth theory (Clayton Alderfer, 1969) This theory is given by Clayton Alderfer. It is a variation of Maslow's hierarchy of needs. Alderfer expanded Maslow's basic needs and refined them into existence needs, relatedness needs, and growth needs. Existence needs Existence needs include various forms of safety, physiological and material needs. Safety needs- prevention from fear, anxiety, threat, danger, tension, and so on. Physiological needs- Individual's. pursuit of satisfaction at the vitality level, such as leisure, exercise, sleep. Material needs- Resources required for an individual's living, including food and clothing. Relatedness needs Relatedness needs senses of security, belonging, and respect. Sense of security involves the mutual trust of humanity. Sense of belonging refers to prevention from all forms of suffering,

such as isolation, loneliness and distance. Sense of respect means feeling of respect from others, such as popularity, social status, superiority, importance and compliment. Growth needs Growth needs include self esteem and self actualization. Self esteem- ability to pursue, to seek knowledge, to achieve, to control, to build confidence, to be independent and to feel competent. Self actualization- self accomplishments including achieving an individual's goals and developing his or her personality. The abilities to realize one's potential and to support the growth of others are also included. Source:https://www.slideserve.com/kovit/chapter-13-powerpoint-ppt-presentation 9.3.3.2 Achievement Motivation Theory (David C.Mc Clelland, 1980s) David McClelland was an American psychologist who created a theory in the 1980s that attempts to explain how the needs for achievement, power and affiliation affect human motivation and the

actions of people. The McClelland Human MotivationTheory also referred to as "the three social motives" or "Acquired Need Theory". The Three Social Motives are described as: a. Need for Achievement: Daft (2008) stated the need of Achievement is the desire to accomplish something difficult, master complex tasks, attain a high standard of success and surpass others. b. Need for Power: Need for Power as the unconscious concern for influencing others and seeking positions of authority. It is described as the desire to cause others to behave in they that would be show by the individual c. Need for Affiliation: Daft (2008) defined the need for Affiliation as the desire to form close personal relationships, avoid conflict, and establish warm friendship. Source:Reduan(n.d.) Source:Reduan(n.d.) The following two steps process can be used to apply McClelland's theory: The following two steps process can be used to apply McClelland's theory: The following two steps process can be used to apply McClelland's theory: Step 1: Identify the Motivational Needs of the Team: Examining the team to determine which of the three needs is a motivator for each person. Personality traits and past actions can help in this process. For example, someone who always takes charge of the team when a project is assigned. The one who speaks up in meetings to encourage people, and delegates responsibilities in order to facilitate achieving the goals of the

group. Someone who. likes to control the final deliverables. This team member is likely being driven by power. Another team member who does not speak during meetings, and is happy agreeing with the team thoughts, is good at managing conflicts and may seem uncomfortable while someone talks about undertaking high-risk, high-reward tasks. This team member is likely being driven by affiliation. Step 2: Approach Team according to their need type Based on the motivating needs of the team members, alter your leadership style to assign projects according to the type of the need of each individual team member. Challenging projects would definitely be a part of a work portfolio of someone who enjoys power while relatively simpler projects go to the kitty of someone derived from affiliation. This information is crucial to influence while setting up relevant goals for the individual, monitoring, providing feedback, recommending the learning plan, etc. If a particular need type does not fit the position of the individual, he/she can be made aware of the same, so that they can either work in the right direction or accept it. 9.4 Transfer of learning The idea of transfer of learning is basic to education. Education is considered to be a preparation for life. Whatever students learn in educational institutions is useful only when they can apply the same in everyday life. This application or carry over learning from one act to another is called transfer of learning. Transfer of learning thus implies the application of knowledge in various subjects and fields. It is assumed that whatever knowledge, skills, attitudes and information are either taught in schools, or given training in, would be useful only when children use it to solve problems of life after completing their formal education. Arithmetic is taught on the assumption that it would be useful in handling day-to-day life problems. Civics is taught on the assumption that its knowledge would be helpful in facing social problems successfully. Children are required to do additions and subtractions of fractions in algebra. The teacher points out to them that the principle is the same as that in arithmetic. This implies that transfer of learning of arithmetic takes place in the learning of algebra.

There are many educators who believe that subjects like mathematics, English language and science, etc., are superior to other subjects like economics, history, arts, crafts and home science as they are more helpful in sharpening the intellect of the students. The intellect so sharpened, they think, can be profitably employed in the performance of any other activity which may or may not be directly related to the subjects studied. But this is going too far. Traditionally, children had been given long poems to memorise, long mathematical tables to learn by rote and a huge store of material to be committed to memory. It was believed that such learning was meant for disciplining the mind. 9.4.1 Definitions of Transfer of Learning In order to understand the term transfer of learning, we may consider the following definitions: According to

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M J Peterson (1957), 'Transfer is generalisation, for it is the extension of ideas to a new field.'

L D Crow and A C
Crow (1963) viewed, '
The carry-over habits of thinking, feeling or working of knowledge or of skills from one learning
area to another
usually is referred to as the
transfer of training.'

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B L Bigge (1964) said, 'Transfer of learning occurs when a person's learning in one situation influences his learning and performance in other situations.' H C

Ellis (1965) defined, 'Transfer of learning means that experience or performance on one task influences
the performance on some subsequent task.' According to K Lovell (1970), 'Transfer of learning is the effect which some particular course of training has on learning or execution of a second performance. Such an

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effect may be of a helpful nature or it may hinder.'

Guthrie and Powers (1973) observed, 'Transfer may be defined as a process of extending and applying behaviour.'

A comprehensive definition of transfer of learning can be '

application or

carry-over of knowledge, skills, attitudes, habits, values or other responses from the situation

in which they were initially acquired

for some other situation for which they were not specifically learnt." 9.4.2 Brief History of the Concept The idea of transfer of learning is as old as the Vedic system and the Greek system of education. Memorization and chanting of Vedic hymns in Sanskrit was considered essential for training the mind. In Greece, Plato believed that geometry was essential for training the mind. Latin, Greek and Sanskrit were considered to be the subjects to train the various faculties of the mind. In due course, mathematics was also placed in this country. William Jones (1890) was the first to challenge this view. He found that practice in memorising

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Milton's Paradise Lost did not produce any improvement in

memorising French poetry. The findings evoked a lot of research in the field of transfer of learning and more than 300 studies were conducted on this subject. Types of material used in transfer of learning may be categorised under the following heads: • School subjects • Memory materials • Perceptual materials • Reasoning materials • Sensory-motor materials • Ideals-related materials 9.4.3 Importance of the Transfer of Learning Theories of Learning There is no doubt that almost all educational and training programmes are built on the premise that learners have the ability to transfer what they have learnt in one situation to another. This relationship has a great significance for any educational practice as it lends importance and faith to the usefulness of formal education. Learning becomes functional only when it enables students to feel confident that they would use their experiences and skills obtained in the school in their day-to-day life. The very

existence of our educational institutions is based on the assumption that the knowledge, skills and attitudes developed by them in their students will be transferred to life situations. The following issues arise in connection with the study of transfer of learning: ● What are the areas in which transfer of training takes place? ● What is the degree of transfer of training from one area to another? ● How best can transfer of learning take place? ● Is transfer of training possible in reasoning?

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Areas of Transfer of Learning Scope of transfer of learning is very wide. Some of the areas

in which it is important are: ● Transfer from knowledge to knowledge ● Transfer from knowledge to skill ● Transfer from knowledge to behaviour ● Transfer from attitude to attitude ● Transfer from attitude to behaviour 9.4.4 Types

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of Transfer of Learning Some of the important types of transfer of learning

are: 1. Lateral transfer: It is the most common form of transfer which takes place. Suppose a child has been taught addition and subtraction and he understands that 15 − 8 = 7

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in the context of beads or blocks used in the classroom by the teacher.

It is hoped that this understanding of addition and subtraction would transfer to other situations too. For example, the same child removes 8 apples from a basket containing 15 apples at home and understands that there would be 7 left. This is an example of lateral transfer as in this case, the child has made use of the understanding and skill learnt in his school in learning situations outside the school. 2. Sequential transfer: The contents of the subjects of the school curriculum are divided into sequent units. One idea leads to another and both ideas have some relationship to the third idea to be taught.

3. Horizontal transfer: Lateral and sequential transfers are called horizontal for

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the learner is within the same behavioural category while making the transfer. 4. Vertical transfer: Vertical transfer of learning implies facilitating the higher behavioural level

in a vertical manner

transfers to another. Training in the use of a pen by the right hand transfers training to the left. Positive, Negative and Zero Transfer A positive transfer takes place when the learning of a particular task facilitates the subsequent learning of another task. But on the other hand, if learning of a particular task interferes with the learning of a subsequent task, it is called a negative transfer. If, however, learning of a particular task makes no difference whatsoever to the learning of a subsequent task, it is said to be zero transfer or no transfer of learning. Once a child has learnt to misspell a word, it is difficult to correct it, especially if the child has been writing it for a long time. Similarly, if a child has developed faulty handwriting, it is more difficult to improve it than to teach him to write well from the beginning. These are examples of negative transfer. 9.4.5 Theories

Ideals ● Gestalt or Relationship Theory 9.4.5.1 Theory of Mental Discipline General transfer of training through mental discipline is the oldest theory but hardly accepted by modern psychologists. The principal feature of the theory of mental discipline is that the mind or its faculties such as memory, reason, will and perseverance are the muscles of the mind, and like muscles of the body, they are strengthened through exercise and later on function

automatically in all situations and areas in which they are involved. It was thought that the rigorous study of geometry could train the faculty of reasoning and it was so trained in a person that he could reason well in the realms of mathematics, social studies, philosophy and business. This theory was first challenged by William James. Experiments by James and Sleight showed that one could hardly improve memory for all situations in which it was called for by rigorously exercising it in any one specific situation. Thorndike did a lot of research work on this problem and came to the following conclusion, 'The notions of mental machinery which being improved for one sort of data held the improvement equally for all sorts, of magic powers which, being trained by exercise of one sort to a high efficiency, held that efficiency whatever they might be exercised upon, and of the mind as a reservoir for potential energy which could be fired by any one activity and drawn on for any other—have now disappeared from expert writing on psychology.' This sets limitations to formal disciplines. A G Wesman (1945) concluded on the basis of his studies that there was no clear-cut superiority of any subject as regards the amount of transfer. 9.4.5.2 Theory of Identical Elements or Components Thorndike and Woodworth were the main founders of this theory. On the basis of their experiments carried out in 1901, they concluded that transfer of learning occured from one situation to another on account of the presence of identical twins. The theory implied that learning was facilitated in the new situation to the extent that identical elements which occurred in an earlier situation were present in the new situation. The similarity of elements could be either in the subject-matter or in procedure or in attitudes. Peter Sandiford (1941) stated, 'This theory of identical elements is a perfectly reasonable one. Out of the millions of specific reactions, each with its specific connection in the nervous system, some of them are bound to be common to several situations. The greater the number of these common elements, the greater will be the transfer effect.'

According to this theory, addition is supposed to improve multiplication on account of lots of additive processes required in multiplication tables. Learning of one language helps in the learning of the other, as the methods of learning used in two languages have common elements of vocabulary. In a simple way, it may be stated that the transfer of learning is in terms of 'identity of content, identity of procedure and identity of ideals'. 9.4.5.3 Theory of Generalisation of Experience CH Judd (1908) came to the conclusion on the basis of his experiments conducted on transfer of learning that transfer took place to the extent to which a learner was able to generalise his experiences. Judd laid emphasis on the intelligence of the learner which enabled him to understand and apply knowledge of principles or generalisations from one situation to another. The theory states, 'The development of special skills, the mastery of specific facts, the achieving of particular habits or attitudes in one situation have little transfer unless the skills, facts, habits are systematised and related to other situations in which they can be utilised.' Thus, if we are trying to build good habits of study and work, it should be done in such a way that these are applicable in all subjects and not merely to one subject. 9.4.5.4 Theory of Ideals W C Bagley, who gave an explanation of transfer in terms of ideals, asserted that generalisations were more likely to transfer, if they were regarded as of some value as desirable. According to him, generalisation is not the whole story, but it must be given an emotional sanction or be elevated to a plane of an ideal worth living for. Thus, the teacher should consciously seek maximum transfer of values by emphasising ideals of neatness, of love, of learning, tolerance for difference of opinion and so on 9.4.5.5 Gestalt (or Relationship) Theory According to Gestalt psychologists, transfer of learning means that generalisations, concepts or insights which are developed in one learning situation are employed as a whole in other situations in which they are applicable. However, the transfer of generalisations or insights does not occur

automatically. For transfer to occur, the pupil must perceive the relationships between the two situations, must understand that the generalisations gained through past experience are appropriate in the new situations and must have the desire to use the generalisations and to benefit by the perceived commonality. 9.4.6 Educational Implications of Theories of Transfer of Learning Inclusion in the Curriculum: In the curriculum, the utility aspect should be kept in view. In selecting and planning the curriculum, the selection and arrangement of material in subjects should be such as they are closely associated with the daily needs of the learners. This implies that spellings or those words should be taught first which are used in everyday life of the learners. Similarly, the kinds of readings they would use in their life should be given priority. Curriculum content should be related directly to vocational interests and ways of life. Mathematical symbols and formulas should be expressed in familiar terms to the students. Superiority of one subject over the other in terms of transfer has little relevance. The degree of transfer depends upon the applicability of the outcomes of learning. As Thorndike pointed out, 'The differences are so small and the unreliabilities are relatively so large, that the influence of the subject studied seems unimportant. Indeed, one subject was about as good as another." 9.4.7 Principles of Transfer (or Conditions that Facilitate Transfer) of Learning ● Transfer of learning takes place when there is some similarity between two tasks. ● It is not necessary that there should be similarity between two tasks but the learner must realise that similarity. ● Transfer of learning is more likely to occur if the learner is keen to use his old learning in the new situation. ● Transfer of learning depends on the ability of the learner. The more intelligent a learner is, it is more likely that transfer will take place. The impact of transfer of learning on the part of the learner also depends on the intelligence of the teacher. ● The better the first task has been learnt, it is more likely that the learning will be transferred to the new situation. ● Understanding of the underlying principles, i.e., arriving at generalisations, adds transfer of learning. ● When children discover principles for themselves, there is greater possibility of transfer than when they are told the principles. ● The more experiences children have, of applying a principle in different situations, the easier it will be for them to apply it in a new situation. 9.4.8 Role of the Teacher in Transfer of Learning ● Subject matter of all subjects should be taught and learnt in close contact with its applications. ● Adequate experiences and practice should be provided with the original task for its transfer to other situations in learning. ● Important features of a task should be identified so that differences and similarities with other tasks should be comprehended and proper relationships established. ● Implications of concepts and rules in actual life should be thoroughly discussed to make its applications practicable. ● Students should be guided to discover common essential features and relationships of situations which appear to be different superficially. ● Students should be encouraged to develop proper generalisations. ● Students may be motivated to see the significance of identical elements and components of ideas, skills, attitudes and objects. ● Emphasis should be on the development of desirable flexible behaviour and not merely apply the ideas or skills mechanically. ● While teaching abstract concepts, a number of illustrations and practical examples should be given. ● Relationships should be emphasised and the learners guided to perceive them within a subject, between the subjects and out of school life. Project method is very useful in cutting across several subjects. ● Discussions and debates should be arranged to develop students' power of understanding relationships. ● Field trips to important places of commercial, educational, economic, historical, cultural and scientific, etc., help in developing proper understanding of situations in life in the context of curriculum content.

● Logical thinking should be kept in constant focus. Students may constantly be asked the why and how of generalisations. ● Goals, outputs and objects of a particular activity should be made very clear to the students. 9.5 Unit Summary "Maturation" is a term that refers to the natural unfolding of changes with increasing age, e.g. hormonal changes as the individual reaches puberty. An example of this can be seen in breast development which is influenced by release of oestrogen when a girl reaches adolescence. Maturation refers to the changes which are primarily biological in nature and occur due to our genetic programme. Our biological structure follows a predetermined course of changes with time. This can be seen in the development of teeth during childhood. Changes in body proportions with age provide an example of such predetermined universal trends. The size of the head is roughly half of the whole body at birth, but the proportion keeps decreasing until adulthood, when it is less than one-fourth of the whole body. Therefore, maturational changes in our body are primarily due to the ageing process rather than learning or other factors such as illness or injury. Motivation is a way of creating a high level of enthusiasm to reach organisational goals, and this situation is accommodated by satisfying some individual need. Basically, motivation refers to achieving organisational main goals by satisfying an individual employee's needs or demands. The idea of transfer of learning is basic to education. Education is considered to be a preparation for life. Whatever students learn in educational institutions is useful only when they can apply the same in everyday life. This application or carry over learning from one act to another is called transfer of learning. Transfer of learning thus implies the application of knowledge in various subjects and fields. It is assumed that whatever knowledge, skills, attitudes and information are either taught in schools, or given training in, would be useful only when children use it to solve problems of life after completing their formal education. Arithmetic is taught on the assumption that it would be useful in handling day-to-day life problems. Civics is taught on the assumption that its knowledge would be helpful in facing social problems successfully.

9.6 Key Terms ● Transfer of learning occurs when people apply information, strategies, and skills they have learned to a new situation or context. Transfer is not a discrete activity, but is rather an integral part of the learning process. ●

It

is what causes you to act, whether it is getting a glass of water to reduce thirst or reading a book to gain knowledge. Motivation involves the biological, emotional, social, and cognitive forces that activate behaviour. 9.7

Check Your Progress 1. Discuss maturation role in learning. 2. Discuss motivation in learning. 3. Discuss the transfer of learning. 4. Define the term motivation. 5. What are the types of motivation? 6. What is the importance of transfer of learning? 7. Discuss the theories of transfer of learning.

Unit 10: Intelligence and Intelligence Test 10.0 Introduction 10.1 Unit Objectives 10.2 Intelligence: Meaning, Definitions, Characteristics 10.2.1 Factors influencing the intelligence 10.3 Theories of Intelligence 10.3.1

Spearman's Two-Factor Theory or Eclectic Theory 10.3.2 Thurstone's Group Factor Theory or Anarchic Theory 10.3.3 Unitary Theory or Monarchic Theory 10.3.4 Oligarchic Theory or Sampling Theory 10.3.5 J P Guilford's Theory of Structure of Intellect (SOI) 10.4 Evaluation and Educational Implications of Theories of Intelligence 10.5 Intelligence Test 10.5.1 Kinds of Intelligence Tests 10.5.1.1 Personal Verbal Intelligence Test 10.5.1.2 Personality Non-Verbal Intelligence Test 10.5.1.3 Community Verbal Intelligence Test 10.5.1.4 Group Nonverbal Intelligence Test 10.5.2 Intelligence Testing in India 10.5.3 Measuring Intelligence 10.5.4 Intelligence Quotient 10.6 Unit Summary 10.7 Key Terms 10.8 Check Your Progress 10.0

Introduction Educational psychology is primarily concerned with psychological principles, facts and categories that are responsible for the modifications or changes brought about in a child,

so that he/she is fashioned into a citizen of the particular

society or community. It has also been highlighted that education is the name attributed to the process and practice of bringing about these modifications and changes. However, these modifications and changes, or the whole process of educating the individual do not entirely depend on

the environmental forces or factors, but in a great measure, on the genetic constitution and the innate capacities. They also depend on the qualities or attributes of the individual

in various aspects of development, intellectual capacity or intelligence, which is also referred to by some psychologists as mental energy (as compared to physical energy, stamina or physical strength).

The teachers or the educationists, who are responsible for the education

of individual children since the beginning, are supposed to know that intelligence portrays its real nature; whether it is a unitary quality and a faculty or is composed of certain elements or factors. Sometimes, teachers in the

classrooms and even

many educational administrators are not quite clear about the concept of intelligence. It is, for example, noted that if a teacher is asked to

point out the most intelligent student in the class, he/she very often points out to a quiet and shy child who gives no trouble, comes to the class regularly, does his homework regularly and causes no problem to the teacher. The teacher aligns good behaviour with routine class work to intelligence. On the other hand, the teacher may point out another child who is rather aggressive, rowdy, misses classes, ignores homework and questions the teacher in the class or enters in an argument as bad or unintelligent. However,

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if the intelligence of these two boys is judged, the former may be found to have an I.Q. of about 90 or 100 whereas the second child who is active and restless may be found to have an I.Q. of 125. To the teacher, ordinarily good

behaviour stands for high intelligence but known good behaviour is quite different from intelligent behaviour. The confusion therefore arises

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when the meaning of intelligence as a concept is not understood. In educational psychology

attention is devoted to the study of intelligence with regard to its meaning, nature, variation as well as to

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the various methods and means of assessing its level in different individuals.

Since the interest taken in its study by psychologists in modern times, after the pioneering work of Binet, intelligence has been understood in different ways and has been defined by many psychologists from their own points of view. However, now there seems to be almost a consensus about the meaning of intelligence, although definitions of the term have differed so widely during all these decades. Binet, for instance, himself thought of intelligence as the capacity to think in abstract terms or the capacity to reason well, to judge well and be self-critical.

10.1 Unit Objective This Unit intends to introduce the learners on the following topics: ● Intelligence: Meaning, Definitions, Characteristics ● Theories of Intelligence ● Evaluation and Educational Implications of Theories of Intelligence ● Intelligence Test 10.2 Intelligence: Meaning, Definitions, Characteristics

Intelligence is a common word in daily life, which is used in many meanings. During the time of studying personality differences in detail, we will see that two persons are not similar, some are more intelligent and some are dull minded, some are slow and some resolve the problems within a few minutes. There are many reasons for personality differences, among which Intelligence is important. Mental ability of a child is affected by his intelligence. This is a universal truth that, an intelligent man gets success in all the spheres of life, on the other hand a proper environment is also needed for his development. Intelligence is not one quality in itself but a collection of many qualities. A man cannot be called intelligent or dull minded, until the intellectual characteristics in his behaviour are tested. Intellect cannot be seen directly, so we can say that intellect is an imagined power. A man mostly uses intellect in understanding the different problems and in learning them. It is necessary to know his intellectual level and mental capability for mental development. From this point of view this question should be pondered "what is intellect?"

Thorndike thought of

intelligence

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as the power of good responses from the point of view of truth or fact.

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According to him, the mind was a host of highly particularised and independent

abilities and he even identified three types of intelligences: Abstract intelligence: It involves understanding abstract ideas, concepts and symbols and their effective use. Concrete intelligence: It is the ability to deal with concrete objects, things or material as in skilled traders or working with appliances, apparatus and tools used in physical sciences or in practical tasks. Social intelligence: It is the ability to understand people in life and to make one's headway through them by dealing with them or handling them. Political leaders in society, for example, may be said to possess a higher social intelligence, though they may have failed in academics.

Cyril Burt, while working on various investigations at Oxford and Liverpool, thought of intelligence as 'the inborn general intellectual efficiency.' Similarly, Lewis Terman, who was a great contributor in the field of intelligence testing in the USA, understood that a person was intelligent in proportion to his capability of abstract thinking. Freeman, in 1940, also defined intelligence as the ability to learn action or to perform new actions that were functionally useful. William Stern in Germany (who first gave the idea of I.Q. as a ratio between mental age and chronological age multiplied by 100) defined

intelligence as

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a general capacity of the individual to consciously adjust his thinking to new requirements.

Intelligence has now generally been understood as: ● the capacity to integrate experiences and to meet a new situation successfully by means of appropriate and adaptive responses of varied nature and of numerous types. ● It is also the capacity to learn new things to the extent one is educable. As a capacity to perform intellectual task requiring the use of concrete media. ● As a capacity to perform intellectual tasks by carrying on abstract thinking by using symbols and concepts, which may be verbal or numerical. ● Intelligence is also considered as the capacity to deal with social situations and also to deal with different types of people, to make a successful career, as we find in the case of social or political workers and leaders. Considering all these areas with which the individual is concerned in actual life,

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intelligence is considered by Wechsler as the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his/her environment.

Woodworth, in a similar manner, thought of intelligence as the mental capacity to deal with novel situations successfully. In both these definitions, the reference is to all sorts of situations in the environment, which the individual has to face and his/ her intelligence involves dealing with all those new situations as effectively and successfully as possible and the degree of success or effectiveness will lie in the level of his/her mental capacity. Another writer, Stoddard

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defined intelligence as 'the ability to undertake activities that are difficult, complex and abstract and which are adaptive to a goal, and are done quickly and which have social value and which lead to the creation of something new and different'.

Here again the meaning of intelligence is understood, as the capacity to handle new situations. So, on the whole, investigators concerned with the study of intelligence have understood it as the mental capacity or mental energy (as called by Burt in later years), which enables the individual to handle his/her environment involving abstract and concrete of social situations as successfully as the level of his/her mental capacity could warrant. The word 'mental energy' is used for intelligence in contrast with physical energy, strength or stamina, which means that intelligence is a function of the quality of the brain cells. Sometimes in ordinary parlance, it is said that intelligent people have big heads or brains and the working class has big feet. This popular statement is not scientifically correct like many such popular sayings which are 'half truths'. Big heads with big brains do not necessarily mean high intelligence. One study, for example, conducted by Dunlop to find the correspondence between the size of the brain in the head and the level of mental alertness revealed a low correlation as .112, which meant that there was hardly any relationship between intelligence and the size of the brain or the head or cranium (skull). What actually mattered was not so much the size, shape or the dimensions of the brain or head, but what actually was contained in the head. This meant that the quality of the brain and not so much the size of the brain in the head was important. The quality of the brain means the type of nerve cells in the brain cortex in the frontal lobe of the cerebrum, which is said to be the seat of cognitive functioning. The nerve cells in the brain cortex of an intelligent man seem to be different in quality than the nerve cells of a less intelligent person. If mental energy made available by the type of the nerve cells is used to deal with novel situations, success will depend on the amount of the nervous energy supplied by the nerve cells. By analogy the supply of the nervous energy could be understood if we consider the amount of water passed on to a spot by various pipes or tubes from a reservoir or the flowing river. The amount of water carried by these tubes or pipes to the spot will depend upon: ● The numbers of the pipes put in action. ● The bore of the pipes which measures its capacity to transfer the water. ● The ease and smoothness with which the water flows through the pipe, i.e., if there is any obstruction inside or the pipes are constructed intricate, zigzag and lying in a confused state, the flow of water will be slower and comparatively less.

In a similar manner, when a new task is to be handled its success would depend upon the supply of the mental energy. The mental energy supplied would depend upon the number of cells coming into operation at the moment, the amount of energy carried by the nerve cells as well as the ease and the smoothness with which the energy is supplied by the nerve cells. Neurologically, therefore, an intelligent man seems to possess nerve cells in the brain cortex which are so sensitive that a large number of them come into operation and carry energy quickly to be thrown, as it were, in the task and the success depending on the amount of mental energy or intelligence available at the moment. It is not so simple or certain to say that intelligent behaviour depends actually on such a neurological framework. However, to understand intelligence as nervous energy is one-way to explain the phenomenon by taking the analogy of supply of the quantity of water from a source by a network of pipes. People not so keen on the role of nerve cells in intelligence think of intelligence as a faculty like other faculties, such as memory, attention, perceptions, imagination, reasoning, etc. Faculty psychologists like Ebbinghause, Galton and others believed that the mind constituted a number of faculties and that intelligence was one of those faculties. However, studies conducted from the epoch-making work of Binet (when he tried to measure the mental level of school children) reveal the nature of intelligence. The inquiry was to find out whether intelligence was a unitary quality or a faculty or that it was constituted by or composed of certain factors. This inquiry started with Binet's work to assess the mental level of children and led to the mass of knowledge and investigations resulting in a host of intelligence tests in which the investigators were led to study the nature of intelligence itself and a number of theories of intelligence were propounded. Binet had thought that there were three characteristics of intelligent behaviour: ● Tendency to maintain and take a definite line of thinking ● To make adaptations for attaining the right goal ● Power of self-criticism to judge the success Binet's contribution in the study of intelligence was to give out the concept of general mental level as well as the concept of an individual's mental age. He, however, did not go into the question of further analysing the nature of the thinking process or of the intelligent behaviour.

On the basis of the definitions given by psychologists, intelligence has following characteristics:

1. Intelligence is an innate power. It is gained from heredity. 2. Intelligence is the power, by which, a man organises his behaviour according to the situation after removing its complication. 3.

Intelligence is the capacity of learning. 4. Intelligence

is the ability of taking advantage of previous experiences. 5. Intelligence is the ability of abstract thinking, meaning with the help of intelligence we can think of something which is not evident. 6. Intelligence is the set of different abilities. 7. Intelligence is the essence of all special abilities. 8. Knowledge obtained by intelligence can be used in new situations. 9. There is

a

difference between intelligence and knowledge. 10. Due to the sexual differences, difference is not seen in intelligence. 11. Intelligence is the power of introspection. Intelligence itself criticises the actions and thoughts done by a man. 12. Intelligence tries to understand any problem, and then inspires the mind to make decisions. 10.2.1 Factors influencing the intelligence There are many factors influencing the intelligence: 1. Heredity—Many psychologists did various experiments in this context and found out the conclusion that heredity affects intelligence. As Freeman considered that intelligence is closely related to heredity. Gesell and Galton found out the conclusion that intelligence is more affected by heredity not by environment. Pearson proved this on the basis of his study that the children of intelligent parents are also intelligent to a large extent. Besides it, Psychologists like Schvesinger, Dason, Newman also considered that intelligence is more affected by heredity. So it is an important factor.

2. Environment—Many psychologists also did many experiments in the relation of

the environment. They believe that intelligence is more affected by the

environment than heredity. Kodak studied eighty mothers who had brought up their children in

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good environment to know the effect of environment on intelligence. Wellman Leahy and Skeel also proved on the basis of his experiment, if a child is provided

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good environment, big changes can be brought in his intelligence. The psychologist of this belief also accepts that intelligence is more affected by

the

environment. 3. Age—The relationship between intelligence and age is also accepted as an important factor. Many experiments and studies have been done in this context. As by- Terman, Miles & Miles, Johns, Thorndike, Spearman etc. On the basis of all these experiments it has been concluded that, generally intelligence grows from the age of 16 to 20 years, but in India it is considered that the development of intelligence happens till the age of 25. 4. Race—Psychologists also accepted the effect of race on intelligence in their study and reached the conclusion that race difference has no effect on intelligence. There are three groups of people found in all the races - intelligent, common and dull minded. Their percentage can be more or less, however some psychologists consider that intelligence is also affected by race. 5. Sex—Intelligence is affected by sex, or not, many experiments also have been done in this connection. 6. Psychologist Witty considered that there is no especial difference between sex difference and intelligence, but if girls are not provided proper environment , their rumination side

go backward, and the girls, who do not get liberal environment, are less intelligent than the boys. MacMeeken (1939) evaluated the intelligence of 875 children in his study, who were from Scotland. The evaluation of the intelligence of these children was done by the

Stanford Binet Test. After the study it was found that boys' IQ was on average 100.5 and girls' IQ average was 99.7. Both the mean of I.Q and S.D was 15.9 and 15.2 respectively. Some psychologists' concept was that girls I.Q were more than that of boys from six to fourteen. After this at the age of sixteen both, girls' and boys' IQ is equal and after this age boys' IQ is more. 7. Health—As it is said that 'Healthy mind grows in

a

healthy body'. It has been felt that from daily life's experiences that better is the health, better is the development of the intelligence in the child. So health also affects the intelligence of a person. 10.3

Theories of Intelligence Psychologists have attempted to understand the structure of intelligence for which they have formulated several theories. Among the important theories, the following deserve special mention. ● Spearman's Two-Factor Theory or Eclectic Theory ● Thurstone's Group Factor Theory or Anarchic Theory ● Unitary Theory or Monarchical Theory ● Oligarchic Theory or Sampling Theory ● Guilford's Theory ● Thorndike's Multifactor Theory 10.3.1

Spearman's Two-Factor Theory or Eclectic Theory In 1904, Spearman, an English psychologist, produced strong evidence based on his own research that there was one fundamental ability underlying all cognitive functions. According to him, every task involving intellectual activity depended upon a general ability or 'g' factor and a separate ability or "specific" factor. This view is popularly known as two-factor theory of intelligence, i.e., 'g' factor and 's' factor.

This 'g' factor represents native intelligence. Thus, when we respond to any situation or perform an intellectual task, our general mental ability or 'g' factor is responsible for part of our reactions and our specific ability in that particular task is responsible for the rest. Eclectic Theory or Two-Factor Theory Thurstone's Anarchic Theory, or Multiple Factor Theory

There are a large number of

specific abilities, such as

the

ability to draw inferences, ability to complete sentences, ability to

continue a series of numbers,

ability to code messages,

etc. 10.3.2

Thurstone's Group Factor Theory or Anarchic Theory L L Thurstone, an American psychologist, propounded the group factor theory of intelligence. According to him, intellectual activity is neither an expression of numerous highly specific factors as claimed by Thorndike, nor the expression primarily of a general factor which prevails in all mental tasks as Spearman believed. Instead, as revealed by factor analysis,

certain mental operations have in common a primary factor which gives them psychological and functional unity, and which distinctly separates them from other mental operations. These mental

operations

are said to

constitute a group 'A', similarly, another group of mental operations have their own unifying primary factor

and may be said to constitute a group 'B'

and so on. Thus, there are a number of groups of mental abilities, each of which has its own primary factor.

Thurstone proposed seven factors and called them primary mental abilities. These are: 1. M—Memory: To be able to learn and retain information. Also, to be able to recall the learned material. 2. N—Number: To be able to understand quickly and with accuracy simple arithmetic computations. 3. P—Perceptual: To be able to identify objects quickly and accurately. 4. R—Reasoning: To be able to perceive and utilise abstract relationships. To be able to put together past experiences in the solution of new problems. 5. S—Spatial: To be able to deal with objects in space. 6. V—Verbal: To be able to understand and utilise verbal ideas. 7. W—Word fluency: To be able to think of words rapidly. Spearman's theory is also known as 'eclectic theory' because it harmonises elements from all the main types of abilities. Thurstone's theory is also known as the 'anarchic theory' because he conceived that the mind consists of a number of independent facilities. Unitary Theory or Monarchic Theory of Intelligence 10.3.3 Unitary Theory or Monarchic Theory According to monarchic attitude,

intelligence is regarded as an adaptability which enables a creature to adjust itself to

the changing environment. This is a popular view which regards

intelligence as a unitary (monarchic) faculty that determines the level of man's achievement in any intellectual enterprise he may take. Accordingly, inborn all round mental efficiency is a sign of intelligence. Accordingly, had Newton turned his mind to poetry, he could have as well been a poet. 10.3.4 Oligarchic Theory or Sampling Theory This theory is criticised by the advocates of Oligarchic Theory. A person cannot be expert in all fields; moreover, a single factor alone cannot be mentioned which means intelligence. This theory is sometimes known as

the

sampling theory of intelligence. It was put forward by Prof. Thompson. According to it, intellectual abilities belong to certain groups. It maintains that cognitive abilities are manifestations not of a single commanding faculty, but of a few main intellectual powers or a group of abilities. For example, a child who is intelligent in one group of knowledge may not be intelligent in the other group. But he may be equally intelligent in the various subjects of that particular group.

Fig.: Oligarchic Theory or Group Factor Theory of Intelligence 10.3.5

J P Guilford's Theory of Structure of Intellect (SOI) This three-dimensional theory was developed

by Guilford and his associates in

a

psychology laboratory at the University of Southern California in 1966.

Work on it began in 1956. Guilford conceived the idea of intellectual functioning as having three dimensions: (

i) operations, (ii) content and (iii) products.

Operations are the processes involved in intellectual behaviour-cognition, memory, divergent thinking, convergent thinking and evaluation. The content of these operations may be figural, symbolic (letters, numbers), verbal (information about other persons), behaviour, attitudes, needs, etc.

The products may be—units, classes, relations, systems, transformations and implications. Thus, the model contains 120 cells (5 operations 4 contents 6 products); each of which represents a distinct factor which is measured by a separate test. Diagrammatically, the model can be represented as shown in the Figure.

Guilford suggested that the five processes act on the four units to produce one of six cognitive products. The six products are units of a single word or idea, classes, a relationship between or among units or classes, systems, an organised sequence of ideas, transformations, a change or redefinition or a unit or class, and implications, predictions of the future. Guilford believed that each person is a unique composite of a great many different intellectual abilities. Each intellectual functioning involves three components: a cognitive operation, specific content and a specific product. 10.4

Evaluation and Educational Implications of Theories of Intelligence Spearman's theory is criticised on the main ground that it fails to take into account sufficiently specific types of abilities and towards the later years of his life,

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Spearman himself had begun to realise the existence of 'group factors.' Thorndike's theory accords undue weightage to abstract intelligence. Guilford's theory of intelligence seems to be the most comprehensive theory as it attempts to

take into consideration all possible aspects of intellectual activity. This theory has several educational implications. The SOI model provides knowledge about the specific ability of the students to guide them in the right direction. An analysis of the students' abilities by the guidance worker can suggest a reliable base on which future learning could be based. The SOI model is useful in finding out the reasons for the unsatisfactory performance of students in spite of their adequate intelligence. It points out that for understanding human learning and higher mental processes of thinking, problem-solving and creativity, etcSome drastic modifications would be required in our theory of curriculum construction and methodology of instruction. The model explored 120 intellectual abilities which enables

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us to know whether or not we are paying adequate attention to each of them. If not, how should

we improve them? The model guides us to devise enrichment programmes for the creative and the

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gifted children. The model discards the ideas of transfer of learning and stresses that learning of specific skills

should be our focus of attention. 10.5

Intelligence Test It is evident after describing the meaning, nature, kinds and theories of intelligence that psychologists define intelligence as the ability of learning, ability of rumination and the ability of adjustment. The credibility of intelligence and its connection goes to personality differences. In 1796 in

the

Greenwich astrological laboratory, a man named Kinnerbrooke was appointed as an assistant supervisor. He studied the movement of stars, planets with the help of

a

telescope and calculated the time. His speed was slow, so he was fired from the job. After some time astrologers pondered on this event and found out that every man has different ability and capability. So they developed the thought of a personality equation. In modern times, scientific studies related to intelligence tests were started in Europe. The famous German Psychologist, Wundt established the first laboratory of psychology in 1879. In this laboratory intelligence test was done on the scientific basis. Here the measurement of intelligence was done by the instrument. Being encouraged by the work of Wundt, the psychologists of other countries also started doing work related to intelligence tests. In this relation Alfred Binet of France, Thorndike and Terman of America have done works that

are worth mentioning. Other psychologists such

as Galton, Cattell and Pearson have also invented many intelligence tests, but these tests measure common mental activities, so these cannot be called intelligence tests. In this field the first and prominent was Alfred Binet. In 1950 Binet prepared exercises for the intelligence test of

children

of different ages' children with the help of psychologist Simon, which was called 'Binet-Simon Scale'. Binet Simon Tests were considered in different countries. Then after 1908 Binet Simon Scale was improved in America and Europe. Terman in America corrected the name of Binet Simon Scale between 1913 and 1916 and kept

its name Stanford Binet Scale. In 1937 Terman, in India, made some improvements in it with the help of Merril and kept its name Terman-Merril Scale. These tests are used for the measurement of intelligence for the children in America and India. Even in Indian psychologists' laboratories, Allahabad corrected Binet Simon tests for the Indian children. In India Dr. Sohanlal, Dr. Jalota, P. Lajjashanker Jha and Dr. Bhatia etc have prepared different tests. 10.5.1 Kinds of Intelligence Tests Different psychologists have prepared different tests for the measurement of intelligence. It is evident from the study of intelligence tests' History that many intelligence tests had been prepared even before Binet in which Cattell's intelligence test was also present, but Binet, with the help of Simon in 1905 prepared an intelligence test, which has a scientific basis and which was used in different countries as a first famous intelligence test. Although after improving many things it has been given a new look yet many intelligence tests have been prepared in comparison to it. Today many intelligence tests are present, for the measurement of intelligence. If we put light on the kinds of intelligence tests, they can be divided between two groups: (a) Personal or community intelligence test (b) Verbal or non-verbal intelligence test Intelligence test can be divided into four parts by the combination of above two groups: 1. Personal translation intelligence test 2.

Personal non-verbal intelligence test 3. Community verbal intelligence test 4. Community non-verbal intelligence test It is necessary to understand the differences and the nature of both groups before describing the different kinds of intelligence tests (a) Personal or community intelligence test—Personal intelligence test includes the testing of one man at a time, on the contrary, when many people are tested together at one time, it is called community intelligence test. Personal and community intelligence tests have some differences which are following-

Difference between personal and community intelligence tests Following differences are found in the personal and community intelligence test:

We can say after the above description that the personality test is better in comparison to the

community test. Personality tests need more money, time and training, so community tests are used mostly. But as far as the question of validity and reliability, personality tests are appropriate. (b) Verbal or Non-Verbal Intelligence Test—Language is used in the verbal intelligence test. Many questions are collected together in a small book in this test. In the verbal test words and digits are mostly used. In this test it is necessary for a man to have knowledge of language and digits. In non-verbal intelligence test language is not used. Some indications are indicated for doing some work in this test, so it is also called 'Performance Test'. Performance intelligence tests are used for the people who do not have the knowledge of language or

are

illiterate. Mostly non-verbal or performance intelligence tests are in the form of personality tests.

Difference

between verbal or non-verbal intelligence test In verbal or

non-

verbal intelligence test, following differences are found: Now it will be appropriate to briefly describe the four groups of intelligence tests that emerge from these two broad categories 10.5.1.1 Personal Verbal Intelligence Test One man is tested at a time in the personal verbal intelligence test. It is necessary for a man to know the language which is used in the test. Specific personality verbal intelligence test are following: Binet-Simon Intelligence Scale: Binet developed an intelligence test with the support of his companion Simon in the effort of recognizing weak students, which was published in 1905.

The

Binet test is considered first among the successful intelligence tests. In 1908 and 1911, both tried to make it complete after doing corrections in it. This test is known by the name of the Binet-Simon Scale test. In

the

Binet-

Simon Scale test Intelligence is done on the basis of mental age. Some questions are given to know the mental age each year. The child who responds correctly to the entire questionnaire for the determining age, his mental age is calculated, for example, if five years child gives correct answers of the questions determined for four years' age, his mental age is considered to be four years, but if he answers correctly to the questions determined for the seven years, his mental age will be considered seven years. In the comparison of real age, if the mental age is more, the child will be considered more intelligent. This type of intelligence measurement is expressed as intelligence quotient. To know the intelligence quotient methods are given. Binet- Simon intelligence test was decided for 3 to 15 years old girls/boys, four questions were determined for 4 years' children and no questions were determined for 11 to13 years old. For three years' age, following questions were determined: (i) Tell your name. (ii) Point your mouth, nose and ear with your hand.

iii) After seeing a picture tell some important things. (iv) Repeat easy sentences of six words. (v) Repeat two digits after hearing once. As 2-3, 3-7, 6-8 etc. It was found in the final studies that the Binet-Simon Scale had many faults. The main fault was if any child could not answer the questions determined for his age, his mental state was considered less than his real age. Stanford Binet Scale: In spite of having many faults in

the

Stanford Binet-Scale, it became world famous and got success in getting the attention of popular psychologists. To make Binet-Simon intelligence Scale free of faults, Cyril Burt of England and Lewin M. Terman of America, who were professors of psychology in Stanford University, did important work in 1916. Thus

the

improved intelligence test is known by the name of 'Stanford Binet-Scale'. While doing corrections Terman made it fault-less with the help of his friend Maud A. Merrill in 1937 and again in 1960. 90 questions were put in place of 54 exercises of Binet in this corrected intelligence test, in which, some questions of Binet were also included. The intelligence of boys and girls of 2 to 14 years of age is measured by this scale. In this test two months were decided for the correct answer of each question for the age till 13, four months for the age till 14, and five months were decided for

normal adults. On the basis of the answers of the questions of this exercise, mental age is known. And a decision is given about the measurement of intelligence in the ratio to his real age. For example, in the exercise of Stanford Binet for the age of three years the list of determining questions is followings: (i) Telling the name of his family. (ii) To say about itself whether boy or girl (sex knowledge). (iii) Repeat sentences of 6 to 7 words. (iv) Telling about his mouth, nose, ears etc with his finger. (v) Seeing the knife, Scissors and keys etc, to tell their name. (vi) Seeing any picture, telling its important things. Through the above-mentioned questionnaire Binet – Simon and Stanford – Binet Scale IQ differences can be seen. 10.5.1.2 Personality Non-Verbal Intelligence Test Personality nonverbal intelligence tests are for those who do not have language related knowledge. Pictures, things and figures are used in place of language. This type of intelligence is also called performance intelligence, because answers are given in it in a performing way. Important nonverbal intelligence tests are following- a) Picture Drawing—This test is appropriate for the child from 4 to 10 years. Paper and pencil is given to the child, he is asked to draw a picture of a cow. In this test, marks are given on the basis of the completeness of the picture. b) Picture Completion Test—In this test in front of the child the picture is given cutting in square shape, and said to them, after collecting, make a complete picture. c) Maze Test—In this test,

a

child is given such a picture which has many ways to reach a destination. The children, who reach there without any difficulty, are considered intelligent.

d) Form Board Test—In it, there is a board of wood in which the holes of different shapes are made, as circular, semi-circular, triangular and quadrangular etc. The pieces that have been cut out have to be fixed in proper places. The child, who puts the proper pieces in proper places within proper time, is considered intelligent. e) Performance Group–Test made by Dr. Alexander—Alexander has invented a Battery after assembling up three

tests

for the measurement of intelligence. This battery has following three tests— ● Kohs Block Design Test—In this test, there are sixteen colourful cubes of one inch and ten designs. These designs are prepared upon the piece of card-board with the same colour. Child has to jumble up all the cubes in such a way that design is made. Child has to jumble up all the cubes in many ways for different designs.

● Cube Construction Test—This test has three parts— In the first part, there is a big model Block of 3″ × 1″ × 1″. Its four surfaces are of red colours and upper and lower surfaces are simple. Apart from this, there are 9 cubes made of 1 inch. Its surfaces are colourful. Arranging the small boxes the shape of the model block is obtained. In the second part of the model block, only the lower surface is not colourful. There are 9 cubes of 1 inch cube in it, whose surfaces are colourful. It is asked to them to prepare the shape of model block by jumbling them up.

In the third part there is a colourless cube of two inches and cubes of 8 cubes of 1 inch, out of which three surfaces are colourful. Assembling up, all these small cubes have to be put in a shape. ● Pass Along-Test: In this test, there are 8 square or rectangular pieces of red or yellow colour. These have to be moved without lifting that the required design is obtained. There are eight designs in this test. ● Object Assembling Test: Wacksler test is famous among this kind of

test. A human figure is divided into many parts and the

child has to prepare a complete human figure after assembling the different parts. ● Bhatia Battery: The founder of Bhatia battery is Chandra Mohan Bhatia. It is also made for the measurement of intelligence in

the

Indian situation. In this Battery, there is a assembling of five tests, which are following- (i) Kohs Block design test (ii) Alexander pass along test (iii) Pattern drawing test (iv) Immediate memory test

(v) Picture creativity test

In the above test, there is a

limitation of time. Only 45 minutes are given for the responses. Students can answer the questions as early as they want. On the basis of it, the speed of a person is also tested along with intelligence. In the tests where time is limited, they are called time limited tests. Some tests don't have time limitations. Students can take a long time to respond to

the questions. In this test, it is also seen how accurate work a student can do along with their intelligence. 10.5.1.3 Community Verbal Intelligence Test language is more used in it. In this test many questions are collected in a small book. In the verbal test words and digits are used mostly. Children's verbal ability is measured by these tests. The examples of the questions of Verbal intelligence tests are following— 1. In the following words which are different from other words, underline them—Chair, Table, Cupboard, Bed, Shirt. 2. Which is not matched with the rest four among the five words? China, Japan, Mumbai, India, France. 3. The opposite of night is –pupil, king, day, evening. 4. 1, 4, 12, 16, 20—Write the successive terms of this sequence. 5. The meaning of mountain is—Field, Coast, Hill, Stone. 6. Vimal runs faster than Kamal. Hari runs slower than Kamal. Who runs fastest? Kamal, Vimal, Hari? Group verbal intelligence test was developed during the time of

the

First World War, because armies were to be selected within

a

short span of time. The main tests of this group are following: (a) Army Alpha Test—This is for the people who know English. This test was developed in America for selecting officers, supporting staff and soldiers in large numbers during the time of World War I. It seems that the subject material of this test has been taken from the Stanford-Binet Test. (

b) Army General Classification—Army general classification had been prepared for the classification of army for the different divisions during World War II in America. In this test, there are three kinds of problems, As-Vocabulary, Maths and the problems related to counting. This test was used for conducting the intelligence test for about 12 lacs applicants. In the field of collective intelligence tests, notable efforts have been made in India. In which, Dr Mohanlal's B.P.T 12, B.P.T 13, B.P.T 14 are for the age of 12, 13,14. Dr. Jalota's and Dr. Joshi's tests are considered important. Besides it many intelligence tests have been prepared by Psychologists' Laboratory, Uttar Pradesh which are for the classes of eight, ninth and tenth standard. 10.5.1.4 Group Nonverbal Intelligence Test Language is not used in it. In this test the picture of any animal is made and mistakes are to be found in the given picture. Terman, Thomson, Hangto, Ballard and Cattell etc. psychologists gave essential contributions in the construction of intelligence tests. Ballard's saying in this relation—"To find out fools and not to plough donkey with bull and to place capable

persons in

the right position is possible with this plan." This type of test is applied for many men together without using language. This group's noted tests are following: (a) Army Beta Test—Army beta test was also developed during the time of First World War in America for the fulfilment of purpose like Army Alpha test. The selection for the various positions for different divisions in the army was to be done from the people who were illiterate or had no knowledge of English language. Hence this method was adopted to find out the people with relative intelligence among the people with no knowledge of English language. Intelligence is measured in this method by counting of the articles, telling the relation between two articles with respect to the printed figure, and marking the elements of the figure which do not correspond to these articles at all etc. problem resolving. (b) Chicago Non-verbal Test—Chicago non-verbal test is used for the age from 6 years boys or girls till adulthood. It has proved more useful for the intelligence test of the age of 13 years. In this test, many working instructions are given, such as telling the equality or inequality in different shapes, completing the picture after assembling the separated pieces of the picture, counting the things with the help of wooden pieces and recognizing the same things among the different things and putting them in different classes.

Besides the above in the group verbal intelligence test, Cattle's cultural independence test and Pigeon's non-verbal test have important place, where different kinds of shapes are shown and similarities or differences have to be shown in those shapes. 10.5.2 Intelligence Testing in India The development of intelligence testing has been done in India some days ago. In the above described intelligence test, it was attempted to use

the

Binet test in the Indian situation. Intelligence test related work was being done in the 'education department 'or psychological Bureau' in the universities of the different states. In 1922 Dr. C.H. Rice published 'Hindustani Binet Performance Test.' This test is the corrective form of

the

Binet test. After this, whichever performance test was constructed, Dr. Bhatia Battery of Performance Test is worth mentioning. Bhatia Battery of Performance Test: Dr. Bhatia constructed the performance test for the children on the basis of a battery of performance tests made by Alexander. Following five tests are included: 1.

Kohs

Block Design Test. 2. Alexander Pass Along Test. 3.

| 94% | MATCHING BLOCK 239/339 | W |

Pattern Drawing Test. 4. Immediate Memory Test for digits. 5. Picture Construction Test, it has two tests of the same types which have been described above. Pattern Design Test: In the Pattern Design Test, 8 line art were drawn on different cards. It is asked to draw a similar picture by putting them in front. In the Immediate Test for Digits: some digits as 7, 5, 11, 14 are asked to repeat once they are shown or told. Picture Construction Test: There are five scenes from Indian life, putting them in different pieces. it is told to assemble them. Complete picture is prepared with this activity. Apart from these intelligent tests, following tests have been prepared in Hindi— 1. Verbal Intelligence Test—This was constructed in the psychological Bureau in U.P. This test is for the age of 10 to adulthood. 2. Verbal Intelligence Test—This test has been prepared in U.P., this test is for the children of class 8, 10, and 12. 3. Verbal Intelligence Test—This test is for children of 10 to 16. It has been constructed by Dr. S.A. Mohsin. 4. General Mental Ability test—This test has been constructed by Dr. Jalota. This test is for the age of 12 to 16 years. Besides it, many intelligence tests have been prepared, which are used in the different fields according to the need. 10.5.3

Measuring

Intelligence Intelligence Quotient (IQ): Measure of intelligence that takes into account a child's mental and chronological age. IQ Score = MA / CA x 100 Mental age (MA): the typical intelligence level found for people at a given chronological age Chronological age (CA): the actual age of the child taking the intelligence test People whose mental age is equal to their chronological age will always have an IQ of 100. If the chronological age exceeds mental age – below-average intelligence (below 100). If the mental age exceeds the chronological age – above-average intelligence (above 100). The normal distribution: most of the population falls in the middle range of scores between 84 and 116. ● Very Superior Intelligence (gifted) - Above 130 ● Superior Intelligence - 120 to 129 ● High Average Intelligence - 110 to 119 ● Average Intelligence - 90 to 109 ● Low Average Intelligence - 80 to 89 ● Borderline Intellectual Functioning - 71 to 79 ● Mild Mental Retardation - 55 to 70 ● Moderate Retardation - 40 to 54 ● Severe Mental Retardation - 25 to 39 ● Profound Mental Retardation - Below 25

Method:
It is necessary for us to obtain knowledge about two subjects for knowing the method of measuring intelligence. 1. Mental Age 2. Intelligence Quotient

Mental Age—Mental age of a man is the indication of the level of intelligence. Mental age, in some special age, expresses the mental maturity of a child. According to Dr. Mathur, "Mental age is the expression of limit of the development obtained by any man which is known by his works, and it is expected of him in some specific age.'' In psychology various kinds of intelligence tests have been constructed for the different ages and for determining mental age. Mental age can be known by these intelligence tests. For example, if any intelligence test, for the age of 12 years, determines average score as 75, if the test score of any child is 75, his mental age will be considered 12 years even if he is 10 years old. There is no fixed relationship between the real age and mental age of any child. The mental age of a 12 years old child can be equal to

an 8

years old child also. It is necessary to use intelligence

tests

for knowing the mental age. The knowledge of mental age is obtained on the basis of the responses of the above descriptive tests.
10.5.4 Intelligence Quotient After knowing the mental age of a man, it is not found whether he is intelligent, common or dull minded. Psychologist Terman invented the intelligence quotient for measuring intelligence. What is Intelligence Quotient? To know this, first it is necessary to find out the chronological age and mental age. After this, intelligence quotient is known by the following formula.
For example if the mental age of any child is 15 years and his chronological age is 12 years, his intelligence quotient is obtained in this way: The meaning of this intelligence quotient is that the child is intelligent. Generally, whose intelligence quotient is 100 or approximately, they are considered of normal intelligence. 10.6
Unit Summary Thorndike thought of
intelligence

as the power of good responses from the point of view of truth or fact.

According to him, the mind was a host of highly particularised and independent

abilities and he even identified three types of intelligences:
Abstract intelligence: It involves understanding abstract ideas, concepts and symbols and their effective use. Concrete intelligence: It is the ability to deal with concrete objects, things or material as in skilled traders or working with appliances, apparatus and tools used in physical sciences or in practical tasks. Social intelligence: It is the ability to understand people in life and to make one's headway through them by dealing with them or handling them. Political leaders in society, for example, may be said to possess a higher social intelligence, though they may have failed in academics.
In modern times, scientific studies related to intelligence tests were started in Europe. The famous German Psychologist, Wundt established the first laboratory of psychology in 1879. In this laboratory intelligence test was done on the
scientific basis. 10.7 Key Terms ●
Quotient: Obtained ● Non–Verbal Intelligence Test: In it language is not used. ●
obtained power: collected power 10.8 Check Your Progress 1.
Explain the intelligence test in detail. 2. Write a short comment on the history of intelligence tests. 3. Explain the main differences between 'Binet-Simon Scale and 'Stanford Binet Scale'. 4. Explain the situation of intelligence tests in India. 5. What do you understand by intelligence quotient? 6. Explain the utility of intelligence
tests. 7. What is educational psychology primarily concerned with? 8. What did Thorndike think of intelligence? 9. Name Binet's two outstanding contributions to the theory of psychological measurement.

Unit 11: Personality 11.0 Introduction 11.1 Unit Objectives 11.2 Personality: Meaning & Definitions 11.3 Theories of Personality 11.3.1 Type Theory 11.3.2 Trait Theory 11.3.3 Psychoanalytic Theory 11.4 PF test Inventory 11.4.1 Measurement Of Personality 11.4.2 Tools of Personality Assessment 11.5 Mental Hygiene 11.5.1 Principles of Mental Hygiene/Mental Health: Classification 11.6 Mental Health 11.7 Unit Summary 11.8 Key Terms 11.9 Check Your Progress 11.0 Introduction

No topic in the field of psychology is more fascinating than personality. Tremendous
research has been done on the topic but no conclusions have been drawn as regards the nature of personality.
If you ask a
person the meaning of the term personality, the individual will be unable to give a clear
answer to this simple question in definite terms because the
human personality is so complex a phenomenon that it can be interpreted in many ways.
Psychologists who have analysed the problem of personality and the variables influencing its development have defined the term 'personality'
in various ways. 11.1 Unit Objective This Unit intends to inform the students on the following topics:

11.2 Personality: Meaning & Definitions
The meaning and definition of any term is arbitrary. This also holds true in case of the word personality.
To arrive at its meaning, we have to trace the historical root of the word.
The term personality has been derived from the Latin word Persona
that was associated with Greek theatre in ancient times. Persona meant a mask, which the Greek actors commonly used to wear
when they worked on the stage. In our own country, actors in Ram Lila and Krishna Lila use masks when they enact the role of a
particular character from the epics. The mask, worn by
the actors, was called
a
persona. According to the concept of mask,
personality was thought to be the effect and influence that the individual wearing a mask left on the audience. Even today,
for
a layman, personality means the effect that an individual leaves on other people.
Precisely, we can say
that the mask or persona of the actor implied a cover for the real person behind it. It was developed on the basis of Plato's idealistic
philosophy who believed that personality is a mere facade for some substance.
Some Definitions 1.
Personality as a stimulus: Some psychologists define personality in terms of
its social stimulus value. How an individual affects other
person with whom he comes in
contact, whether he is impressive or repulsive,
whether he has a dominating
or a submissive personality.
Personality, from this point of view, becomes identical to reputation and impression, mostly in terms of
physical appearance, clothing, conversation and etiquette. Generally, we use this concept of personality in selecting applicants for
various jobs and courses. The interviewers take into consideration the total picture of an individual's organised behaviour. 2.
Summative approach: The second approach
of defining personality emphasises
the importance of sum total of different processes and activities of the individuals as, for example, innate dispositions, habits, impulses and
emotions.
This approach was criticised by Gestalt psychologists who
objected to the idea of aggregation or sum total of parts without introducing the concept of organisation and integration of parts into
a total whole. 3. Integrative approach: The definitions of this category lay emphasis on the integrative aspects of personality
and its definite pattern of
organisation. Warren's dictionary defines personality as, 'personality
is the integrative organisation of all the cognitive, affective
and physical
characteristics of an individual as it manifests itself in focal
distinction from others.'
G.W. Hartman
defined it as, 'personality is an
integrated organisation
of all the pervasive characteristics of an individual as it manifests itself in focal
distinctiveness to others.' 4. Totality view:
This approach to define
personality puts more
emphasis on integration than the first category of definitions given above.
It forgets the part. According to this view, the general characterization or pattern of

an individual's total behaviour is his personality.

A man's personality is the total picture of his organised behaviour, especially, as it can be characterised by his fellowmen in a consistent way. Mark Sherman in his book Personality: Inquiry and Application (1979) has defined

personality as, '

the characteristic pattern of behaviour, cognitions and emotions which may be experienced by the individual and/or manifest to others.' 5.

Personality as adjustment: An individual, since

his birth, attempts to adjust to his environment.

The

behaviour

of

an individual can be defined as an adjustment to his environment. Every individual develops his own unique way of adjustment in society. According to this

approach, personality is an individual's characteristic pattern of

behaviour. An individual, through his continuous reactions, attempts to adjust himself in his environment. We can say that the

sum of the individual's movements as he adapts himself to the environment is his personality. We have described the various approaches to define the term personality. We now examine

the

important definitions of personality. Fredenburgh, in his book, The Psychology of Personality and Adjustment, tried to summarise the various definitions in a single definition

that runs as, '

Personality is a stable system of complex characteristics by which the life pattern of

the individual may be identified.'

Allport (1961) who devoted most of his time for research on personality defines, '

Personality is

the

dynamic organisation within the individual of those psychophysical systems that determine

his

unique adjustment to

his

environment.'

The definition given by Allport

is

very comprehensive and includes all aspects of an individual's personality.

Some terms used in the definition need explanation.

A dynamic personality is one

that is

undergoing constant changes but is still

organised. It constitutes

two types of systems,

i.e..Psycho (

mental) and physical and these two systems interact with internal and external environments.

The word 'determine' emphasises that it is the psychophysical system that activates the organism for action.

The unique adjustment of

the individual to his environment means that each individual employs different methods of adjustment resulting in unique adjustment.

Guilford (1959) defines personality as 'an individual's personality, then, is his unique pattern of traits.

A trait is any distinguishable, relatively enduring way in which one individual differs

from another.'

Thus, we see that different approaches have been taken to define personality but there is no agreement on a single definition of personality.

Though there is diversity of views, even then all psychologists agree on

certain common basic characteristics.

One basic fact is that personality is unique. No two individuals, even identical twins, have

the same

personality. The second basic fact regarding personality is that

it is the product of its own functioning. What we do today

depends on our accumulated experiences of the past. The experiences are accumulated daily and shape our personality by

a

continuous interaction with the external environment. The third common characteristic of most definitions is that they stress on

the need to understand the meaning of individual differences. Personality is what makes an individual unique. It is only through the study of personality that the relevant differences among individuals can be made clear. 11.3

Theories
of Personality

Psychologists have developed several theories of personality to study its structure and growth.

Some of these are as follows: ● Type theory ● Trait theory

● Psychoanalytic theory ● Phenomenological theories ● Learning theory of personality ● Social Behaviour theory ● Rotter's Expectancy–Reinforcement model 11.3.1 Type Theory

It has been the nature of people,

from ancient times, to name and classify objects of the environment and

human beings into different categories called types. The old system of typology still continues and in modern times. Greek physicians were the first in 5 BC, who classified people

into four broad categories on the basis of emotional and temperamental characteristics.

One of Aristotle's pupils theorised that

the human body consists of

four fluids.

The personality of

an individual is typed by the dominance of one of them in the body.

The

four

fluids were subsequently referred to as the Four Humours (from the Latin "humour", meaning "fluid"). Sanguine Indicates the personality of an individual with the temperament of blood (which was believed to be produced in the liver), the season of spring (wet and hot), and the element of air. A person who is sanguine is generally optimistic, cheerful, even-tempered, confident, rational, popular, and fun-loving. He or she can be daydreamy to the point of not accomplishing anything and impulsive, acting on whims in an unpredictable fashion. Sanguines usually have a lot of energy, but have a problem finding a way to direct the energy. This also describes the manic phase of bipolar disorder. Choleric corresponds to the fluid of yellow bile (yellowy-green bile is present in the gallbladder), the season of summer (dry and hot), and the element of fire. A person who is choleric is a doer and a leader. They have a lot of ambition, energy and drive, and try to instil it in others, but can dominate people of other temperaments, especially phlegmatic types. Many great charismatic, military and political figures were cholerics. On the negative side, they are easily angered or bad tempered. In folk medicine, a baby referred to as "colic" is one who cries frequently and seems to be constantly angry. This is an adaptation of "choleric," although no- one now would attribute the condition to bile. Similarly, a person described as "bilious" is mean spirited, suspicious, and angry. This, again, is an adaptation of the old humour theory "choleric." The disease Cholera gained its name from choler (bile). Melancholic is the personality of an individual characterised by black bile: hence (Greek melas, "black" + khole, "bile"). There is no bodily fluid corresponding to black to black bile. However, the medulla of the adrenal glands decomposes very rapidly after death, and it is possible that this product is the mythical "black bile". A person who was a thoughtful ponderer had a melancholic disposition.Often very kind and considerate, melancholics can be highly creative – as in poets and artists – but also can become overly obsessed by the tragedy and cruelty in the world, thus becoming depressed. It also indicates the season of autumn (dry and cold) and the element of earth. A melancholic is often a perfectionist, being very particular about what they want and how they want it. This often results in being dissatisfied with one's own artistic or creative works, always pointing out to themselves what could and should be improved. This temperament describes the depressed phase of a bipolar disorder. A phlegmatic (lungs) person is calm and unemotional. Phlegmatic means pertaining to phlegm and corresponds to the season of winter (wet and cold), and connotes the element of water. While phlegmatics are generally self-content and kind, their shy personality can often inhibit enthusiasm in others and make themselves lazy and resistant to change. They are very consistent, relaxed, and observant, making them good administrators and diplomats. Like the sanguine personality, the phlegmatic has many friends. But the phlegmatic is more reliable and compassionate; these characteristics typically make the phlegmatic a more dependable friend. If we study our own scriptures we find that

in ancient India

there existed an advanced system of Ayurveda, in which our ancient physicians broadly categorised all human beings on the basis of three elements

in the body. The predominance of one of the three decided the category of the person. It appears that this system

of Hippocrates and Indian physicians were, more or less, similar. The three elements, which the Indian physicians theorised are

pitt (bile), bat (wind) and kuf (mucus). A number of typologies have been attempted

for constitutional, temperamental and behavioural types of persons by philosophers and psychologists in the ancient and current literature.

Constitutional type Ernest

Kretschmer, a German psychiatrist, classified human beings on the basis of

physical constitution. He attempted to establish

a relationship between personality characteristics and bodybuilding.

Somatotype William

H. Sheldon, an American surgeon,

divided all human beings

into three broad categories of physical dimensions and their corresponding temperamental characteristics.

He believed that
physical structure of the body is the determinant of personality characteristics.

Spranger's type E. Spranger, German philosopher, divided human beings, on the basis of interest, in the
following categories: ● Theoretical:
Persons who are theoretical in nature neglect social and political participation ●
Economic: Persons who are interested in money-hoarding ● Aesthetic: Persons who
are lovers of
beauty and are busy in sensuous gratification ●
Social: Persons who are
interested in social activities. ● Political: Dominating and desirous of power ● Religious:
Persons who devote themselves to religious activities and
mysticism

Jung's Typology Jung, a Swiss psychiatrist,
attempted to classify human beings
on two behavioural dimensions: extrovert and introvert. His typology is widely known and is most influential among professional
workers. The major characteristics of two types are as follows: 1. Introvert:
Defined as

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a person who tends to withdraw into himself, especially, when facing emotional conflicts and stress in

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the
environment. An introverted individual is shy, avoids people and enjoys being alone. Scientists and philosophers
may be termed as introverts. 2.
Extrovert: In contrast to the introvert type, an extrovert
person'
s orientation
is towards the external world. He deals with people intelligently in social situations. He is
conventional, outgoing, social, friendly and
free from worries. Social workers, politicians, business executives
may be typed as extroverts. These two broad categories have been further classified on the basis of
rational and irrational processes. Jung's system of classification of human beings is eight-fold
and not two-fold as is popularly known. A person, according to Jung, may be extroverted for one function, for example, feeling and
the same person may be introverted in intuition. All persons can be divided into eight types, based on the dominance of one of the
above factors. Modern writers have introduced ambivert, another type in between two extreme poles of extroversion and introversion.
Ambivert refers to those persons who can be classified as neither extroverts nor introverts.

Freud's Typology Freud, on the basis of his theory of psycho-sexual development, identified three types of personality.
The type depends
on the fixation of sexual energy at a particular stage of sex development.
The three types are as follows: 1. Oral-erotic type:
According to Freud, sex in infancy is located
within a month of birth.
There is a membrane in the mouth which,
when irritated, gives pleasure to the infant. Sexual gratification at this stage
involves activities related to mouth. Oral-erotic type of personality shows
excessive degree of pleasures associated with oral activity. Sucking, biting or putting anything in the mouth gratifies sex
in infancy. Fixation at the oral stage results in two types of personality in later life. a.
Oral passive type:
This
type of person is dependent, optimistic and immature
in his/her thinking and other activities
like a child. He/she expects help from other people. b. Oral sadistic type:
This type of person is pessimistic. He/she is
suspicious and aggressive. He/she is often bitter in his/her
dealings with others. 2. The anal type: The second stage of sex development is anal, when the child obtains gratifications through anal
activities. These activities
generally relate to
the expulsion of faecal material through the anus or the retention of these materials in response to the
social demands of toilet training.
Some traits

of personality develop due to fixation of sex energy at this

stages include obstinacy, miserliness, orderliness, etc., in later life. 3. The

phallic type: The third stage of psycho-sexual development is phallic. This type

of person shows self-love and exhibitionism. He tries to

draw the attention of others. These characteristics are found in early adolescence.

Evaluation of the Type Approach Classification of human beings into types has been generally criticised by psychologists on the

basis that typologies tend to

place emphasis upon one or another phase of development. They deal with extreme rather than

mediocrity of human nature.

It is very difficult

to categorise individuals under one of the types as proposed by some typologists. Two or three types are wholly inadequate

to describe human varieties of behaviour into a few limited categories. The second criticism of typology is that types are discontinuous and non-scalable. There is

a

multiplicity of type theories, which are very difficult to apply in practice.

Criticism does not mean that typology is useless. Typology has its historical value in the sense that it was the first attempt to typify people, which generated a great deal of research. The second important contribution of typology is that it attempts to assess the personality of

an individual as a whole. It does not study personality in fragments of

traits. The type approach is very useful for psychologists who attempt to comprehend the personality of an individual as a whole. The third advantage of typology is that types are useful and valuable from the point of view of experiments in physical science, where attention to certain processes in a relatively pure form

is

uncontaminated by accidental and confusing factors. Lastly, we can say that they serve one very important function as reference points or guides for the examination of dimensions of personality by different psychologists. 11.3.2 Trait Theory Typology and trait approaches are interrelated to each other

in the sense that typology includes a wide variety of traits in classifying human beings in broad types while in trait approach we label or call

a person by a specific mode of behaviour, which he shows in a variety of circumstances.

In modern psychology,

the

type approach is not so widely used as the

trait approach

to understand the development of personality.

In our daily life, we label traits as honest, aggressive, fearful, dependent, lazy, dull, etc.

In the simplest sense, by trait we mean a mode of behaviour manifested in a number of life situations consistently. It is any distinguishable, relatively enduring way in which one individual varies from another.

Trait may be defined, 'as a property within the individual that accounts for his unique but relatively stable reactions to the

environment.'

Walter Mischel, in his book, Introduction to Personality, states, '

trait is a continuous dimension on which individual differences may be arranged quantitatively in terms of the amount of the characteristics the individual

has.'

Let us now explain the process of development of traits. Trait in daily life, first, is used simply as an adjective,

for instance, 'Ram behaves in a lazy way in several situations'. The description is generalised

from individual

behaviour to the individual (Ram), we say that he (Ram) is

lazy. Laziness becomes a trait of

Ram's

personality, a characteristic mode of his behaviour. Development of Friendliness

Some properties of traits ● Scalability: Traits are scalable. They can be measured and scaled

quantitatively. ● Inference from behaviour: Personality traits are not directly observable but are manifested in a number of activities and verbal expressions.

We infer a trait from the behaviour of the individual. ● Flexibility: Traits are not static in nature.

Traits

are flexible in childhood. They become stable with the maturity of the person with age

but some variability is always present. ● Universality: There are certain traits, which are universal in nature like height and weight. ●

Functional unity:

The trait must have

functional utility. It means that there must be different indications, which may vary or are

manifested consistently in
the behaviour of the individual. ● Traits are
higher order habits: Guthrie conceived that a trait is a higher order habit, which recurs in behaviour frequently.
● Traits
are mental sets: Some psychologists define
traits
as a
mental set.
It is a readiness to respond to any variety of situations in a consistent way.
Cason stated that there is
a generalised
tendency in some people to be annoyed easily. ●
Traits are frame of reference: The
personality of an individual is an organised whole of beliefs, emotions,
etc., about the environment. In this reference, traits are organised frames of references. ● Traits are learned: Traits are learned during
interaction with the environmental stimuli. They are biologically determined as
neuroticism and other traits, which depend
on the disposition and intellectual potentialities of the individual. G.W. Allport's Classification G.W. Allport is one of the most
outstanding trait psychologists.
His conception and research on trait approach to personality
has had an immense
influence on psychologists. He has conceived that traits have a real and vital existence. He defined
a trait, 'as a generalised and focalized neuropsychic system
with the capacity to render many stimuli functionally equivalent and to
imitate and guide consistent forms of adaptive and
expressive behaviour.' The definition given by Allport is a comprehensive one. It emphasises that traits are not linked with a small
number of stimuli but are general and enduring in nature.
He classified all human traits into three broad categories as follows: ● Cardinal traits:
Traits that appear the
most in the behaviour of an organism are called cardinal. It may be illustrated with the example of achievement in life. Some people
are so devoted to achievement that this trait pervades their entire life. ● Central
traits:
Central traits are less pervasive than cardinal traits but are
generalised dispositions. ● Secondary dispositions: Secondary dispositions are specific and narrow traits. They are also known as
attitudes.
According to Allport, traits differ in intensity and magnitude in
the

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general population from individual to individual. No two individuals are alike in their behaviour. People operate in their unique way in the environment. Each individual is unique in his adjustment. R.B. Cattell's Classification

Raymond B. Cattell is another ardent propounder of trait theory of personality. The basic structural element for him is the trait. He stated that a trait is

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the structure of personality inferred from behaviour in different situations. He classified traits into four categories: ● Common traits:

There are certain traits, which are widely distributed in the general population or among all groups. They are known as common traits. Generally, aggression and cooperation can be considered common traits. ● Unique traits: These traits are possessed by particular persons like temperamental traits, emotional reactions, etc. ● Surface traits: Traits that
can be easily recognized by overt manifestation of behaviour are called surface traits,
such as curiosity, integrity, honesty, tactfulness and dependability. ● Source traits: Source traits are the underlying structure of sources that determine behaviour. Dominance and emotionality are source traits. Cattell, through the

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factor analytic approach, determined the contribution of hereditary and learning factors in the development of traits in the individual.

He emphasised on the importance of interaction between hereditary and environmental influences in personality development. H.J. Eysench's Classification H.J. Eysenck, a British psychologist, devoted much of his research studies to explore the trait dimensions. He conducted extensive research on trait dimensions by applying quantitative techniques of factor analysis. He conducted research on ten thousand soldiers and by statistical analysis isolated two dimensions in personality: ● Introversion and extroversion ● Neuroticism Later on, he isolated another personality dimension as psychoticism. According to Eysenck, psychoticism is an independent

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dimension of personality. It is quite different from the introversion-extroversion dimension. Eysenck has found three fundamental dimensions of personality. ● Introversion vs extroversion ● Normality vs neuroticism ● Psychoticism

The first two dimensions given above may be taken as the part of normal personality. Their relationship is presented as follows: Eysenck developed personality inventory to test the traits of personality. His findings have generated research activities by several psychologists. His most important contribution is that he tried to prove that personality is genetically caused. He traced neuroticism to the autonomic nervous system and introversion-extroversion to the central nervous system. He emphasised the importance of heredity in the development of traits of personality as against the concept of American psychologists who are biassed in favour of the environment. Common Features of Trait Theories Though trait theories disagree with

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the specific content and structure of the traits needed to describe personality, there is still agreement on the

general concept of traits: ● Consistency of traits: All theories agree that
traits are consistent in an individual's behaviour. They are not temporary dispositions
but enduring characteristics of the individual. ● Trait dimensions: There is agreement as regards the various dimensions
of traits as
source traits and surface traits, common and unique, broad and narrow.
Traits vary in
breadth and generality. ● Traits
are dispositions: Traits fluctuate or change in a person's position with respect to a disposition.
All psychologists are
committed in their search for broad and stable traits. Criticism
of Trait Theory The
trait theory of personality has often been criticised by
many psychologists in recent years. The main points of criticism are as follows: ●
There is no agreement among psychologists concerning the use of the terms. ●
There is a view that a trait is a behavioural disposition, which is consistent and does not vary from situation to situation. In daily
observation, we find that
if a man possesses
friendliness as a trait, he does not behave in
a
friendly manner in all
the situations of life. Trait is not a permanent or a static characteristic of the individual because personality does undergo change. ●

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Another difficulty is the quantification of human traits as there is no zero reference and equality of units in trait measurement. There is no suitable measuring tool of trait dimensions. Generally, traits are measured with the help of paper-pencil tests, which can be manipulated by the subject by giving fake information. ● 'Halo effect' operates when a person rates an individual very high on a specific trait. He may rate the same person on other traits equally high. ● The behaviour of an individual cannot be predicted on the basis of scores on trait inventory. Traits are the only point of reference. An examination of the personality traits of an individual enables us to make only probability statements about what the individual may do. ● The last criticism against trait theory is that it is still unclear whether a trait is viewed as an inner process that causes difference among individuals or

is
it the situation that brings into play certain organisational tendencies, which create the behaviour. 11.3.3
Psychoanalytic Theory We will now discuss different theories of personality that emphasise on the
dynamics of human behaviour. We will outline the views of classical psycho-analysis and examine the views of neo- Freudians who
deviate from Freud but claim to be psycho-analysts. Freud's theory:
Sigmund
Freud was the first psychologist who
placed great importance on instincts as the determinant of human behaviour. He proposed two instincts: (i) Eros, (love and

the
self-preservation), (ii) Thanatos, (death instinct, as the ultimate
cause of all human activity).

Psychic energy, according to Freud, comes from libido. It denotes sexual energy. When Freud revised his theory, which included two groups of instincts, sexual libido was regarded as the primary driving force of personality. The dynamics of personality is seen as largely governed by the need to gratify the libido. Id: Implies inborn and its main function is the discharge of psychic energy, which when pent up produces tension

through

the personality system. Identity operates on animal level. It cannot differentiate between good and bad and operates on the principle of pleasure. The primary process of thinking and explaining id behaviour, resulting from pent up tensions

is described by
Freud as frustration. The primary process attempts to discharge tensions by bringing into consciousness,
memories associated with the source of frustration. The ego: The id knows only the subjective reality of the mind. The second concept of Freud is the ego, which
distinguishes between subjective reality and things in the external environment.
It operates on the principle of reality. The ego is called the executive of personality. It obeys the reality principle and operates by means of
secondary process. The pleasure principle is only concerned with whether an experience is painful or pleasant; the principle of reality is concerned with whether it is true or false. The ego
formulates a plan for the satisfaction of the need and executes it, keeping into consideration
the reality principle. It often integrates the conflicting demands of id, the superego and
the external world. The ego is
an organised portion of the id, which has been modified by
the
contact of external
reality and experience. It
comes into existence to forward the aims of the id. It brings a compromise between the instinctual
urges of
the id and demands and forces of the external environment. Freud remarked about the function of ego. The poor ego
has to serve three harsh masters and has to do its best to reconcile the demands of all three. Explaining the relationship between ego and the id,
Freud once said, 'Imagine that the relationship between the ego and the id is similar to the relationship between a horse (id) and its rider (ego). While the rider usually determines the direction of the horse, there are those times when
it is the horse who leads the rider.' The superego: The third concept is
the super ego. It is the agency that internalises the parental influences and ideals of society through early childhood experiences. It represents the ideal rather than the real and strives for perfection. It works in accordance with the moral standards authorised by the agents of society.
Let us explain it with the help of
an example: Suppose there is a beautiful toy in the room,
a
child sees it and runs towards it, this is the id level. The second stage occurs when the
parents instruct
the child not to touch the toy. The child sees the toy but does not touch it
out of fear of punishment in the presence of
the
parents. The third stage of development is
when the toy is in the room
and
the parents are not there but the child does not touch the toy. This is the super ego. The superego involves the internalisation of parental control in the form of self-control.
We can say that
id is biological and seeks pleasure; ego is
a psychological test of reality.
The superego represents the social-self and seeks perfection. The superego develops gradually

by

the process of reward and punishment meted out by the parents to the child in early childhood training. The parental reward and punishment

is substituted by self-control. An individual with a well-developed superego refrains from bad or evil temptations, such as stealing or telling a lie, etc., even in the absence of

the

punishing agent.

The process of adoption of the moral and ethical standards of family and society

is called the process of introjections. Dynamics of Personality According to Freud,

the human organism is a complex energy system that derives its energy from the food it consumes.

The energy created by biological factors may

be transformed to psychic energy.

The three parts of the psychic structure, i.e.,

id, ego and superego are

in constant conflict.

The dynamics of personality involves

a continuous interaction and clash between id impulses seeking release and inhibition imposed by the

superego. The individual is in quest for immediate gratification of impulses,

seeks pleasure and avoids pain in order to reduce tension. The drive for immediate satisfaction of instinctual demands leads to early clash between the individual and environment. Conflicts develop when the parents or other members impose restriction or control

on expression. There is a perpetual warfare between

the pressure of the environment and the demands of the id and superego. The ego, in order to adjust in the social environment, utilises a number of mental mechanisms

to it

and the demands of the id and the superego reduce the tensions of the individual.

Extensive Interpretative Materials In addition to the unique features

inherent in

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the test, the BPI Manual offers a wealth of information to facilitate interpretation of the results. ● Detailed individual scale considerations based on the professional opinions of experienced psychologists. ● Discussion of the detection of invalid cases and of the role of faking and motivated distortion ● Correlations with other well-established measures of psychopathology (for example, the MMPI) ● Empirically derived profiles representing specific symptoms of psychopathology (for example, delusions and alcoholism)

Norms of the Inventory Separate adult (N = 1419) and adolescent (N = 2210) norms are reported in the manual. Adult norms are based on a North American sample using comparisons with US census data. Reliability of the Inventory Internal consistency reliabilities for the BPI are routinely found to be acceptable. In one large psychiatric sample (N = 812), KR20 coefficients ranged between .66 and .86 (median = .76). A group of normal adults (N = 379) produced values ranging from .61 to .83 (median = .70), and a college sample (N = 52) gave coefficients ranging from .61 to .86 (median = .76). Test-retest reliabilities are similarly acceptable. Two studies (N = 123 and 168), each with retest intervals of one month, gave a combined range of .62 to .87 (median = .77). These values indicate appreciable and stable reliabilities for BPI scale scores. Validity of the Inventory The BPI scales have demonstrated sizable correlations with other self-report measures intended to assess the same dimensions of psychopathology. For example, in a study of 235 substance abusers, BPI-Hypochondriasis correlated .73 with MMPI-Hypochondriasis. Other convergences were .55 for BPI-Depression and MMPI-Depression, .62 for BPI-Thinking Disorder and MMPI- Schizophrenia, and .58 for BPI-Social Introversion and MMPI-Social Introversion. BPI validities involving other clinical batteries (e.g., the Millon Clinical Multiaxial Inventory) are similarly

acceptable. Correlations between BPI scales and clinical ratings (by others) like dimensions provide further support. In a study of 112 psychiatric patients, such correlations ranged from .32 to .51 (mean = .40), which compares favourably to an average correlation of .12 between the scales and ratings on irrelevant dimensions. Overall, such independent research strongly supports the BPI's validity. Mail in Scoring of the Inventory The BPI Basic Report generated by the Mail-in scoring service contains an interpretive validity paragraph, a profile of scores on 11 clinical scales and 1 critical item scale. In addition, the report features scale descriptions for high and low scorers, a list of critical items endorsed, and a summary of raw responses. Materials required for mail-in scoring include the test manual, one reusable test booklet, one machine scored answer sheet and one coupon. 11.4

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PF test Inventory Cattell, R. B., Cattell, A. K., Cattell, H. ERussell, and Karol (1994)

explained that the 16 Personality Factor, 5th Edition (16PF) test

is a well-known personality test used to measure normal personalities

and

has been extensively researched in a variety of different applications, settings, and is available in over 25 languages. The 16PF test is administered in the form of a questionnaire with three possible answers for each question and can be

taken in a pen and paper format

or electronically if desired. This test has 16 personality factors that take a bottom up approach to describe five large categories of personality,

which are referred to

as the Big Five (Cattell, Cattell, Cattell, Russel, & Karol, 1994). The significant historical milestones associated with the development of the 16PF questionnaire, started in the 1930s with the development of a factor analysis method of studying human behaviour, led by Cattell and Spearman in which Cattell furthered into personality structure research. Cattell started out designing the 16PF in the 1940s with a belief in the concepts of a person having wide ranges of personalities including personality, ability, and motivations and that these human characteristics could be found in personality roles, states, verbal or nonverbal behaviours, abilities, interests, thoughts, and actions (Noller, Law, & Comrey, 1987). Cattell began the process of collecting and categorising data using three sources of information,

which were

L-data (life record and life observation data), Q-data (questionnaire data and personal self-descriptive data), and T-data (objective measurement of

behaviour

often collected in laboratory settings, experimental situations, or projective tests) (Cattell, 1956). Cattell (1956)

gathered information from

this research to create the primary traits of his test, which were rated and described from a low range to

a high range of occurrence. The first publication of

the 16PF test was in 1949 in the United States and then in 1952 in Great Britain. It has undergone four revisions dated in 1956, 1962 and 1968, with the Fifth Edition published in 1993 (Schuerger, 1994). Additionally, the test was standardised in 2000 with a population of over 10,000 people. The

latest version of the 16 primary traits are warmth (A), reasoning (B), emotional stability (C), dominance (E), liveliness (F) , rule-consciousness (G), social boldness (H), sensitivity (I), vigilance L), abstractedness (M), privacy (N), apprehension (O), openness to change (Q1), self-reliance (Q2), perfectionism (Q3), and tension (Q4). The traits are labelled with alphabetic designations (although some letters are missing due to updates) that represent traits derived from L-data and T-data and the last four traits are labelled Q1-4 as they were derived from questionnaire data (Schuerger, 1994).

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The 16PF test can be scaled upwards to create five second order global traits,

which are

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extraversion, anxiety, tough- mindedness, independence, and self-control (Cattell, 1956). These global

traits are very consistent with

95%	MATCHING BLOCK 264/339	SA	EDN-103- Psychological Foundations of Educatio ... (D141387240)

the 'Big Five', which are extraversion, neuroticism, conscientiousness, agreeableness, and openness to experience. This multilevel factor structure allows for the specificity of the personality to be reviewed, while having a larger overview of the person's global personality (Noller, Law, & Comrey, 1987). Norms and Qualities of the Test The 16 PF Questionnaire consists of 185 items across 16 scales and uses a 3 point Likert scale for a response system. Each item is scored between 0, 1, or 2 as the questions are on a bipolar scale with one answer left as a question mark (?) for a desired response (Cattell, Cattell, Cattell, Russel, & Karol, 1994). The raw scores are then transformed to standard scores and then calculated in reference to the norm group. The questionnaire was standardised again in 2000 using a stratified sample of 10,261 individuals based upon the year 2000 census data in the United States to accurately reflect age, sex, and race. The 16PF 5th Edition has additionally been reassessed to have simpler and clearer language in the questions, increased the consistency in the response format, and decreased the amount of time associated with administering and taking the test to approximately 40 minutes (Dancer & Woods, 2006). Reliability of the Test The internal consistency reliability was determined using Cronbach's alpha (n = 10,261) in which a 0 denotes zero internal consistency and a 1 denotes perfect internal consistency. The results for the primary scales were warmth = .69, reasoning = .75, emotional stability = .79, dominance = .68, liveliness = .73, rule-consciousness = .0.77 social boldness = .87, sensitivity = .79, vigilance = .73, abstractedness = .78, privacy = .77, apprehension = .80, openness to change = .68, self- reliance = .79, perfectionism = .74, and tension = .76. The overall mean for this reliability was .76 (n = 10,261) and, upon a two week test-retest interval, the mean was .80 (n = 204), and upon a two month test-retest interval, the mean was .70 (n = 159). The global scales (not calculated alone for internal consistency as they are a combination of the 16 primary factors) of extraversion, anxiety, tough-mindedness, independence, and self-control had a mean of 87 for the two week test-retest and a mean of .78 for the two month interval. All of this demonstrates high reliability, which is one of the reasons for the popularity of the 16PF The 16PF was

constructed in a manner

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to ensure validity using factor analysis to ensure that the factors meant to be independent remained independent,

an

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absence of significant correlation with other factors in the test, and equal loading for the factors when appropriate (Cattell, 1956). The validity of the 16PF test has been demonstrated in a variety of studies

and is noted to have improved validity in the 5th edition versus the 4th. 11.4.1 Measurement Of Personality One of the important inventory for personality measure is basic personality inventory by Douglas N. Jackson (1988, 1955, 1997). The Basic Personality Inventory (BPI) is an innovative, multi- phased personality assessment, intended for use with clinical and normal populations

70%	**MATCHING BLOCK 267/339**	SA	EDN-103- Psychological Foundations of Educatio … (D141387240)

to identify sources of maladjustment and personal strengths. BPI can be used with both adolescents and adults and is completed in half the time

of other measures. BPI measures twelve distinct psychological traits. Scale names

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were chosen to avoid potentially inaccurate diagnostic labels while emphasising construct dimensions of psychopathology. BPI

makes use of sophisticated procedures to minimise susceptibility to the social desirability response bias. It is sensitive to

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the tendency to describe oneself in favourable ('fake-good') and unfavourable ('fake- bad') terms. The easy reading level makes it suitable for a

variety of populations. 11.4.2 Tools of Personality Assessment Self-report inventories, also known as personality inventories are the

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self-rating questionnaires, where the individual describes his own feelings, environment, and reactions of others towards himself. In a nutshell, on

the self-report inventories a person reports about himself in the light of

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the questions (or items) put therein. Hence, the method is known as a self-report inventory. Self- report inventories are further classified into the following five types: ● Inventories that attempt to measure social and certain other specified traits, such as self-confidence, dominance, ego-strength, extroversion, responsibility, etc. The Bernreuter Personality Inventory, the Eysenck Personality Questionnaire, and the Differential Personality Scale

are some of the examples of this category. ● Inventories that attempt to evaluate adjustment of people to different aspects of the

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environment, such as school, home, health, etc. The Bell adjustment inventory is the best example. ● Inventories that attempt to evaluate pathological traits, such as hysteria, paranoia, hypomania, depression, schizophrenia,

etc.

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the Minnesota Multiphasic Personality Inventory (MMPI) is the best example. ●

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Inventories that attempt to serene individuals into two or three groups. The Cornell Index is the best example of such an inventory. The Cornell index screens people into two groups-those having psychosomatic difficulties like asthma, peptic ulcers, migraine, convulsive disorders,

etc., and those not having them, that is, those who are normal. ● Inventions that attempt to measure attitudes, interests and values of persons. The Kuder inventories (vocational, occupational, and personal), the Strong Vocational Interest Blank, and the Allport-Vernon Study of Values are some of the best examples of this category of self-report inventories.
It does not follow, however, that the above five classifications of inventors

have nothing in common. In reality, the classification is based upon the purpose and the nature of the item content. All the above self-report inventories are based upon the same principle, which states that behaviours are nothing but the manifestation of trial and one can use the presence

and absence of a trait as a means of assessing behaviour. Observational Methods Observational methods are distinct from self-report inventories.

Observational methods provide either a structured or unstructured situation. A structured situation is

a controlled situation

whereas an unstructured situation is an uncontrolled situation. People whose personality traits are to be observed are put in either of these two situations

and careful, impartial and accurate observations are emphasised. Observation becomes the basis for assessing personality traits. In some observational methods, however, a departure is made

from the above set procedure. The difference in observations made by different observers reflects the subjectivity in the observations. Some Representative Personality Inventories We will now analyse some significant representative personality inventories developed in India and abroad. 1. Self-report Inventories Abroad: The first attempt to measure personality through a questionnaire

was made by Francis Galton in 1880. He developed a questionnaire for studying mental imagery, that is, the inner world of perception and feeling. However, this did not prove to be a popular inventory. Thereafter, the first systematic effort to develop a personality inventory was made by Woodworth in 1918. This inventory is known as the Woodworth Personal Data Sheet and consists of 116 questions all relating to

neurotic tendencies. The purpose of the inventory was to screen out emotionally unfit men before they were sent overseas during World War I. Since then, a number of self-report inventories have come into vogue. The Minnesota Multiphasic Personality Inventory

is one of the most important self- report inventories, which was

developed in the early 1940s by Starke R. Hathaway and J. C. McKinley (1943). The inventory is a very important means for detecting disabling psychological abnormalities. It is called 'multiphasic' because it was designed to detect several psychiatric problems. Originally, the inventory had 550 affirmative statements each to be answered

from among the given three category options, i.e., 'True', 'False' and 'Can't say'. The inventory applies to people who are 16 years

and above, but has also been successfully used on persons below 16. Over the years, it has been widely used to screen large groups of people for whom clinical interviews are not ordinarily feasible. MMPI has undergone extensive revisions. The most recent version is called MMPI-2, which has been developed by Butcher, Dahlstrom, Graham, Tellegen & Kaemmer (1989). This version consists of several true-false items that are used to produce 14 different scales. Out of these 14 scales, ten are clinical scales that identify particular psychological problems,

such as

schizophrenia, paranoia, depression, hysteria, hypochondria, etc. In addition to these clinical scales, the MMPL-2 also contains four validity scales

like the

Question or Cannot say (?), Lie (L), Infrequency (F) and Correction (K). These four scales exemplify a test's need to guard against different kinds of response biases commonly shown by

the respondents.

New validity scales to be used in conjunction with ?, L.F and K have

also been added. Two of these scales abbreviated as

VRIN and TRIN are included for identifying persons who have answered test items in an adult form and adolescent form is designed as MMPI-A. (Butcher

et al., 1992). The full length form of MMPI-2 has 704 items while the adolescent form has 654 items (

Morris, 1996). Both forms include 550 items from the original MMPI to ensure that the clinical information obtained does not differ significantly from the original

one. MMPI's objective scoring made it popular both as a research tool and clinical tool. According to Graham (1990), it has been used in more than 10,000 studies. One survey has revealed that it is preferred by about 90 per cent of the clinical psychologists (Aiken, 1989) The California Psychological Inventory is

another important personality inventory, which is based in part upon the MMPI. The inventory

consists of 462 items and is meant for normal persons above 13 years. Each item is to

be answered as 'True' or 'False'. There are altogether 18 scales, of which three are validity scales designed to measure various kinds of response sets. These three scales are called 'sense of well-being' designed to measure social undesirability

tendency of 'faking-bad' tendency, 'good
impression'

designed to measure social desirability tendency or 'faking-good' and 'communality' designed to measure the greater number of popular responses. Other 15 scales measure personality traits like dominance, sociability, responsibility, self-control, socialisation, self-acceptance,

achievement- via-conformance, achievement-via-

independence and femininity. The Minnesota Counselling Inventory is a personality

inventory, which is based upon the MMPI. It has 335 items, each to be answered as 'True' or 'False'. The seven important areas of personality measured by this inventory are

emotional stability, family relationships, social relationships, leadership, adjustment to reality, conformity and mood. The Guilford-Zimmerman Temperament Survey

is

another personality inventory. The inventory is based upon factor analysis and measures ten personality traits. Guilford and Zimmerman (1956) computed intercorrelations of items from different inventories. As a by-product of these researches three inventories were developed: Inventory of Factors STDCR, Guilford-Martin Personnel Inventory, and Inventory of Factors GAMIN.

Ultimately, these three inventories were combined into a new one called the Guilford- Zimmerman Temperament Survey. For measuring each trait, there are 30 affirmative statements each to be answered as 'Yes', '?' and 'No'. Thus, there are 300 items in all. The ten traits covered by the inventory include

general activity, ascendance, restraint, sociability, objectivity, friendliness, thoughtfulness, personal relations, masculinity and emotional stability.

In this inventory, three verification keys have been given to detect carelessness and falsification, if any, by the examinees. The Bell Adjustment Inventory is

another important personality inventory. It intends to measure home adjustment (satisfaction or dissatisfaction with home life), social adjustment (extent of introversion, shyness and submissiveness), health adjustment (extent of illness), emotional adjustment, ease of disturbance and occupational adjustment (satisfaction or dissatisfaction with work, colleagues, and conditions of works).

The inventory has been developed in two forms (

student form and adult form). The student form has only the first four areas of adjustment mentioned above whereas the adult form

besides having these four areas, has an additional area of occupational adjustment. Each
item is to

be answered as 'Yes', 'No' or '?'..The inventory has proved to be a very useful tool for rough screening of students and adults who are in need of solving personal problems. Besides the above cited inventories, there are other self-report inventories designed to measure personality traits.

A few examples include

Gordon Personal Profile, Eysenck Personality Questionnaire, Heston Personal Adjustment Inventory, Mooney Problem Checklist, SRA Junior Inventory, SRA (Science Research Associates) Youth Inventory, sixteen Personality Factor Questionnaire, STS (Scholastic Testing service) Youth Inventor, Gordon Personal Inventory, California Test of Personal Orientation Inventory and Maslow Security-Insecurity Scale. 2. Self-report Inventories in India:

In India, several self-report personality inventories have been constructed. Some of the international tests have also been adapted to suit Indian conditions. B.K. Sohoni (1953) developed a test of temperament and character for high school children. The reliability of the test ranged from 0.44 to 0.54 and the validity coefficient ranged from 0.23 to 0.45. Singh (1967) constructed an adjustment inventory for college students. It

measured adjustment in five areas, i.e., home, health, society, emotion and education

and had a total of 102 'Yes-No' items. The internal consistency reliability ranged from 0.92 to 0.94. The validity coefficient of

the inventory against Asthana's adjustment inventory was 0.62. M.D. Bengalee (1964) developed a Multiphasic Personality Inventory,

which was named the Youth Adjustment Analyser (YAA). The prupose of

the inventory was to screen out maladjusted students from the college going population. It covered five areas of personal and social adjustment, namely, unhealthy parent attitudes, general home adjustment, aggressive behaviour, neuroticism and interests. For measuring the first two personality traits, two independent scales were developed, i.e., the Parent Attitude Scale for measuring unhealthy parental attitude and the General Home Adjustment Scale for measuring general home adjustment. The Parent Attitude Scale

has five subscales, namely,

dominance, acceptance, submission, rejection and total parent attitudes. The General Home Adjustment Scale

consists of 38 items. The Parent Attitude Scale consists of 35 items. Items of the former are available in English, Marathi and Hindi languages. Prasad (1974) developed an inventory for measuring

adjustment, social adjustment, emotional adjustment and self-acceptance. The inventory has 279 items and norms for different sections of the population are provided. A.K. Singh and L.N.K. Sinha 1979

have developed a personality test known as the Differential Personality Scale, which

measures nine personality traits, namely, decisiveness, responsibility, emotional stability, masculinity, friendliness, heterosexuality, ego- strength, curiosity and dominance.

This scale has been revised by Singh and Singh (2002) and has been renamed as Differential Personality Inventory, which apart from the above nine dimensions also includes the dimension of self-concept. The inventory has a total of 150 items in

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Hindi and is meant for college students. However, it can be administered in upper classes at school as well. The test-retest reliability coefficient for the various dimensions of the scale ranged from 0.73 to 0.86

and the internal consistency coefficients

55%	**MATCHING BLOCK 305/339**	SA	EDN-103- Psychological Foundations of Educatio ... (D141387240)

ranged from 0.70 to 0.89. The validity coefficients of the different dimensions ranged from 0.55 to 0.84. The intercorrelations of all the

nine dimensions were low and statistically not significant. There have been some adaptations of

75%	**MATCHING BLOCK 306/339**	SA	EDN-103- Psychological Foundations of Educatio ... (D141387240)

foreign-made tests to suit Indian conditions. Mohsin and Hussain (1981) adapted the Bell Adjustment Inventory (students'

form) in Hindi. The Hindi adaptation of the inventory consists of 135 items and in its present modified form published in 1987, it has only 124 items. The test-retest reliability coefficients of the four areas of the adjustment of the

94%	**MATCHING BLOCK 307/339**	SA	EDN-103- Psychological Foundations of Educatio ... (D141387240)

inventory ranged from 0.700 to 0.926and the split-half reliability coefficient ranged from 0.738 to 0.932. The validity coefficients of the four areas of adjustment ranged from 0.272 to 0.785 against the Neuroticism Scale of the Hindi adaptation of Eysenk's Personality Inventory and from -0.088 to 0.255 against the extroversion scale of the same inventory, Bell's adjustment inventory

has also been adapted in Hindi by Saxena (1959) for the age range of 11 -20 years. Singh and Jamuar (1971) adapted the Maslow Security-Insecurity Inventory in Hindi. There are 70 items in

60%	**MATCHING BLOCK 308/339**	SA	EDN-103- Psychological Foundations of Educatio ... (D141387240)

the adopted inventory. The test-retest reliability coefficient was 0.79 and the split-half reliability coefficient was 0.86. Percentile norms were developed separately for male and female

students of BA Part-I. Singh (1972) adapted the Maudsley Personality Inventory in Hindi. The test-retest reliability coefficient for the E scale (extroversion) was 0.77 and Guilford-Zimmerman Temperament Survey and several other criteria.
11.5 Mental Hygiene When discussing mental hygiene, it should be kept in mind that it has an important place in educational practices. With a working knowledge of the meaning and principles of mental hygiene, teachers

94%	**MATCHING BLOCK 309/339**	SA	EDN-103- Psychological Foundations of Educatio ... (D141387240)

have several opportunities to develop social attitudes and social skills among students. Thus, enabling them to develop better personal and social adjustment. Some psychologists consider mental hygiene and mental health as synonymous. The following definitions are very helpful in understanding the meaning of mental hygiene. ● In the words of Klein, D. B., 'Mental hygiene, as its name suggests, is concerned with the realisation and maintenance of the mind's health and efficiency.' ● Wallace-Wallin has defined mental hygiene as 'the application of a body of hygienic information and techniques for the purpose of observation and improvement of mental health of individuals and of the community, for the prevention and care of minor and major mental diseases and defects and of mental, educational and social maladjustments.' ● Drever, James considers mental hygiene as 'investigation of the laws of mental health and the taking or advocacy of measures for its preservation.' ● Hadfield considers mental hygiene as 'concerned with the maintenance of mental health and the prevention of mental disorder.' ● The American Psychiatric Association observes, 'Mental hygiene consists of measures to reduce the incidence of mental illness through prevention and early treatment and to promote mental health.' ● Crow and Crow conceive mental hygiene 'as a science that deals with human welfare and pervades all fields of human relationship.' ● The Dictionary of Education by Carter W. Good defines mental hygiene as 'Establishment of environmental conditions, emotional attitudes and habits of thinking that will resist an honest personality and habits of thinking that will resist an onset of personality maladjustments. It is the study of principles and practices in the promotion of mental health and prevention of mental disorders.' ● According to Boring, E.G. The aim of mental hygiene is to 'aid people to achieve more satisfying

and

more productive lives through the prevention of anxieties and maladjustment.' The movement of mental hygiene began in the first decade of the 20th century with the publication of A Mind That Found Itself (1908)

authored by Clifford Beers.

His book revolutionised the concept of mental health. Beers, a graduate with so much

of unnecessary strain and stress that he
attempted to commit suicide. He however

was saved and treated for his mental illness. After recovery, he described his experiences and treatment he received, in his book which

created awareness in the general public for

mental hygiene as a movement. 11.5.1 Principles of Mental Hygiene/Mental Health: Classification 1. Principles of Seeking Adjustment with Oneself: Following principles fall in this category: Principle of knowing the self Principle of accepting one's self Principle of balancing one's development Principle of self-drive and shaping Principle of self-control 2. Principle Seeking Adjustment with Environment Principle of understanding others Principle of accepting and understanding others Principle of socialising oneself Principle of satisfying needs adequately Principle of training emotions Principle of adjusting with the world of work Principle of developing positive attitude towards life Principle of bearing the stresses and strains of life Principle of good physical health Principle of faith in Good 3. Principles of Mental Hygiene/Mental Health: Principle of prevention of mental disorders through an understanding of the relationship that exists between wholesome personality development and life experiences: This implies: ● Listing various causes of maladjustment-personal as well as social. ● Furnishing the knowledge of drives, needs, motives, conflicts of motives, frustration and tension, etc. ● Suggesting ways and means of achieving emotional and social adjustment, and ● Suggesting the solution for the inner conflicts and frustrations and thus relieving from the tensions, anxieties and emotional disturbances. Principles of preservation of the mental health of the individual and of the group. This means: ● Developing total potentialities of an individual. ● Attaining emotional maturity and stability. ● Achieving personal and social security as well as adequacy. ● Helping an individual in acquiring

a

sound body and normal mental health. Principle of cure of mental health. This is related to: ● Suggesting various forms of therapy for treatment and curing specific mental illness and disorders. ● Suggesting means for the rehabilitation and readjustment of the mentally ill persons. 11.6

Mental Health In the words of N.
E. Cutts and N. Mosel, '

Mental health has various strains of the environment we meet in life and mental hygiene as the means we take to assure the adjustment.' Role of Parents (home) in Promoting Mental Health of their Children ● Providing proper affection and love to children ● Providing conducive environment in the home ● Developing proper attitudes to life ● Criticising the children when absolutely essential ● Discarding the tendency to compare their children with other children ● Accepting the limitation of their children ● Avoiding over protection to their children ● Becoming democratic in their behaviour with children ● Setting proper examples of cooperation between husband and wife and with other members ● Meeting the legitimate needs of children ● Building confidence in children ● Providing guidance where necessary ● Avoiding frequent change of address ● Encouraging sibling cooperation ● Paying equal attention to sibling Mental Health Hazards in School We may briefly mention the following factors,

which adversely affect the mental health of a child. ●

Lack of friendliness on the part of teachers. ● Undue stress on scholastic and other competitions. ● Defective system of evaluation- element of subjectivity and unreliability/loss ● of confidence in the teacher's marking. ● Fear of failure resulting in tension. ● Excess of homework. ● Heavy curriculum and failure of the child to cooper with it.

Symptoms of a Mentally Ill Child:

The symptoms can be divided into the following three categories: ● Physical symptoms: Drumming with fingers, facial twitching, nail biting, restlessness, rocketing feet, scratching head, stammering, and vomiting. ● Behavioural deviation: Aggression, bullying hyperactivity, lying, negativism, poor school achievement and sexual disturbances. ● Emotional symptoms: Persistent anxiety, intense conflicts and tension, fear, hatred, inferiority complex, extreme timidity, temper, tantrum and excessive worry. ● Role of School in Promoting Mental Health of the Children: ● The school has a

great responsibility in the promotion of mental health of children.

It must provide a suitable emotional, intellectual and physical environment in which a child can develop

the 'feeling of security' and the 'feeling of belongingness'. He should feel that his personality is given its due recognition. The following measures can be very helpful in securing mental health of the students: ● Relationship between mental health and physical health: Mental health is related to the physical health of an individual. 'A sound mind in a sound body' is

a popular saying, which truly reflects the vital connection between the mind and the body. Apart from a well-organized programme of games and sports

in a school, there should be a regular programme of yogic exercises. Yogic exercises help to maintain a sort of psycho-physical balance. They tone up the endocrine glands, nervous system and the muscular system. When yogic exercises are combined with pranayam, individuals experience

good physical and mental health. ● Emotional stability of the teacher: A teacher's personality has a great bearing on the personality development of the students. A UNESCO publication entitled The Education and Training of Teachers

states that 'While books can teach, only personality can educate'. Various researches show clearly that

the emotional stability of teachers affects that of pupils. Unhappy, frustrated, dissatisfied teachers cannot help their pupils become happy and well-adjusted young people. Teachers should be mentally alert and strive to develop alertness and stability in students. They should undergo self-introspection,

find out the limitations and shortcomings in their behaviour and temperament and try to remove them so that the

students do not face adverse influence of prejudices affecting their emotional behaviour. They should,

as far as

possible, have high ideals. ● Love for children: A teacher must have an abundance of love for children. One who does not like children should not stay in the

teaching profession. ● Missionary zeal: E.A. Pires opines that a great teacher has the zeal of a missionary. There is a certain aptness in the analogy between a missionary and a teacher, for every true missionary is first and last a teacher. S. Balakrishan Joshi feels, '

Without a band of devoted teachers who are inspired by

a

holy zeal, an institution with the paraphernalia of modern convenience will be like a beautiful corpse without spark of life, a carcass without soul.'

According to the same author, teaching is a divinely ordained mission. ● Meditation and Moral Education: Mediation need not be done in an elaborate manner accompanied by several rituals. Meditation is merely observance of silence for a few minutes either in the morning assembly or in

a regular period. Meditation is likely to provide peace of mind and calmness,

if practised regularly. ● According

respect for the individuality of the child: A child should not be treated like cattle. He/she has his/her own individuality. He/she thinks and feels. His/her sense of respect should not be undermined merely because he/she is a child. ● Establishing close pupil-teacher contacts: The teacher is expected to observe the child carefully in and outside

the class and also know the child's home environment. This will enable the teacher to understand the child in a better way. ● Regular medical examination: There should be a regular medical check up of the students and follow up action taken to safeguard the health of students. Cases requiring special treatment should be sent to child guidance clinics. ● Patience: A teacher has to

deal with a large number of students having different levels of understanding. He/she may have to repeat the lessons many times

for the sake of the less intelligent. A teacher should not be irritated in doing so. Some students, by nature, pick up lessons very slowly and a teacher should possess the required patience to make them understand gradually. Good habits are not formed overnight. It requires time and patience to inculcate virtues in students. ● Consistent behaviour: Inconsistent behaviour of the teacher can disturb the mental attitude of the child. A teacher should not be moody and whimsical. ● Democratic attitude: A teacher cannot afford to be an autocrat. Present day education lays much stress on the inculcation of democratic ideas in students. A teacher who is to guide the way of democracy to students

must develop a democratic attitude. His/her role is that of a friend, philosopher and guide and not of a policeman. ● Honest: Less commands should be given to students and when given, they must be

stuck to, otherwise they

| 79% | **MATCHING BLOCK 330/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

lose their effectiveness and are likely to create conflict. ● Just and impartial: The teacher does not show undue favour to any student.

All students should be treated equally. Undue favour to some students will lead to frustration among

| 76% | **MATCHING BLOCK 331/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

others. ● Provision of educational, vocational and personal guidance: It is not essential that a psychologist

must be appointed

| 66% | **MATCHING BLOCK 332/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

in every school. Trained teachers may be provided opportunities to undergo short-term courses, in guidance. For difficult cases, area counsellors may provide necessary guidance. ● Balanced curriculum: The curriculum should be in accordance with 3 A's, i.e., age, ability and aptitude of the students. A right curriculum does not suit all categories of students. ● Imparting sex education: It is

now being increasingly realized that there should be a well-drawn up programme of sex education in schools so that the

| 88% | **MATCHING BLOCK 333/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

students develop positive attitudes towards sex. ● Motivating intellectual environment of the school: Sound

methods of teaching- learning suited

| 87% | **MATCHING BLOCK 334/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

to the individual needs of the students should be adopted. Activity methods,

for example, Play-way, Project Method, Dalton method, etc., should be encouraged. Special attention should be paid to weak students. ●

| 100% | **MATCHING BLOCK 335/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

Provision of co-curricular activities: Properly planned co-curricular activities are very helpful in providing suitable opportunities to students to sublimate their instincts. ● Balanced approach to freedom and self-discipline: A child who

breathes in an environment of freedom develops courage and initiative. Unregulated punishment results in mental retardation. According to Hobbes, '

| 90% | **MATCHING BLOCK 336/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

A fool cannot be mended by flogging and he who flogs is the greatest fool'.

A.S. Neill has observed, 'We could abolish caning by an act of the

| 68% | **MATCHING BLOCK 337/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

Parliament, but no act of Parliament can abolish the fear of teachers or a system.' Discipline should be inculcated through actions and a constructive approach. ● Correct level of aspiration: Students should not be made to engage in

the blind race of excelling. This disturbs their mental equilibrium. For winning,

| 75% | **MATCHING BLOCK 338/339** | SA | EDN-103- Psychological Foundations of Educatio ... (D141387240) |

they may resort to unethical ways, which may lead to conflict and have negative

consequences in the future.

Common Characteristics of Mentally Healthy People: The common characteristics of psychologically healthy individuals given by several psychologists are as follows: ● Adaptable and resilient ● Calm ● Cheerful ● Conscious control of life ● Emotionally balanced ● Definite philosophy of life ● Enthusiastic and reasonable ● Independent in thinking ● Insight into one's own conduct ● Instincts and habits will regulated ● Free from prejudice ● Good tempered ● Normal sex-consciousness ● Realistic imagination ● Satisfied with the work or occupation ● Socially adaptable 11.7

Unit Summary

The meaning and definition of any term is arbitrary. This also holds true in case of the word personality.

To arrive at its meaning, we have to trace the historical root of the word.

The term personality has been derived from the Latin word Persona

that was associated with Greek theatre in ancient times. Persona meant a mask, which the Greek actors commonly used to wear when they worked on the stage.

One basic fact is that personality is unique. No two individuals, even identical twins, have

the same

personality. The second basic fact regarding personality is that

it is the product of its own functioning. What we do today

depends on our accumulated experiences of the past. The experiences are accumulated daily and shape our personality by

a

continuous interaction with the external environment. The third common characteristic of most definitions is that they stress

on

the need to understand the meaning of individual differences. Personality is what makes an individual unique. It is only through the study of personality that the relevant differences among individuals can be made clear.

Psychologists have developed several theories of personality to study its structure and growth.

Some of these are as follows: Type theory; Trait theory; Psychoanalytic theory; Phenomenological theories; Learning theory of personality; Social Behaviour theory; Rotter's Expectancy–Reinforcement model. 11.8

Key Terms Asthenic: lean, weak. Ambivert: both of the sides

Internal knowledge—Knowledge of Mind 11.9 Check Your Progress 1. What are the basic characteristics of mentally healthy people? 2. What are the factors which adversely affect the mental health of a child? 3. What is the role of the school in promoting mental health of the children? 4. State the Greek meaning of the term 'persona'. 5. What is a dynamic personality? 6. What makes an individual unique? 7. What is a self-report inventory? 8. What is the Woodworth Personal Data Sheet? 9. How does the Minnesota Counselling Inventory function? 10. How does D. B. Klein define mental hygiene? 11. What is the aim of mental hygiene, according to Boring? 12. Which are the three categories of symptoms of a mentally ill child?

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Educational Psychology: Nature and Scope 2.4.1 Nature of Educational Psychology 2.4.2 Scope of Educational Psychology 2.5 Educational Psychology:

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| of Learning 9.4.4 Types of Transfer of Learning 9.4.5 Theories of Transfer of Learning 9.4.5.1 Theory of Mental Discipline 9.4.5.2 Theory of Identical Elements or Components 9.4.5.3 Theory of Generalisation of Experience 9.4.5.4 Theory of | of Training/ Learning, Types of Transfer of Learning, Theories of Transfer of Learning- (1) Theory of Mental Discipline (2) Theory of Identical Elements or Components (3) Theory of Generalisation of Experience - Role of |

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Since there were many defects in the definition of structuralists, another definition of psychology was introduced by behaviorists, J. B. Watson is important among the behaviorists. They accepted psychology as a positive science of behavior. This definition clarifies that conscious experience was diversified from the object of psychology and behavior replaced it, which was more objective because that can be seen and heard, Running, crying, smiling, thinking etc are the few main examples of behavior. In this definition, Psychology was accepted as positive science, because it studies all three aspects such as what, why, and how related to behavior. In this definition the main defect was described that the behavior alone is meaningless. The fact is that the explanation of any kind of behavior is based on the basis of our own experiences then only we get the real meaning. The meaning of Psychology introduced by the Modern Psychologists seems to be the juncture of both the definitions mentioned above. Atkinson, Smith and Hilgard have said describing Psychology— "Psychology is the scientific study of behavior and mental processes." This definition clarifies that Psychology is not only the study of behavior but also studies about those mental processes that cannot be seen but only assumed on the basis of the behavior. Morgan, King, Weisz and Schopler have also clarified that psychology is the science of study of human and animal behavior. They have further clarified that while calling Psychology a science of behavior, mind or internal mental events are not being differentiated but it is also included in the same. In the words of Morgan, King, Weisz and Scoplar – "When we define psychology as a science of behavior we do not differentiate mind we only say that whatever human does means his behavior is the avenue through which the study of internal mental events is being done." Thus, we can say that in the modern era Psychology means a science in which both behavior and mental processes are studied. 1.3

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Educational Psychology: Nature and Scope 2.4.1 Nature of Educational Psychology 2.4.2 Scope of Educational Psychology 2.5 Educational Psychology:

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the nature of educational psychology is scientific. 2.4.1 Nature of Educational Psychology In discussing the nature of psychology,

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| 11/339 | SUBMITTED TEXT | 35 WORDS | 81% MATCHING TEXT | 35 WORDS |

The following points further confirm the nature of educational psychology as scientific: Educational psychology possesses a well-organized, systematic and universally accepted body of facts supported by the relevant psychological laws and principles.

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| 12/339 | SUBMITTED TEXT | 14 WORDS | 76% MATCHING TEXT | 14 WORDS |

the findings of such a study are never taken as absolute and permanent.

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| 13/339 | SUBMITTED TEXT | 27 WORDS | 87% MATCHING TEXT | 27 WORDS |

The results of any study in educational psychology can be challenged and are modified or altered in terms of the latest explanation and findings. 2.4.2

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| 14/339 | SUBMITTED TEXT | 26 WORDS | 67% MATCHING TEXT | 26 WORDS |

Educational psychology can be challenged and are modified or altered in terms of the latest explanation and findings. Scope means the limit of

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| 15/339 | SUBMITTED TEXT | 12 WORDS | 100% MATCHING TEXT | 12 WORDS |

The scope of educational psychology may be discussed under the following

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| 16/339 | SUBMITTED TEXT | 14 WORDS | 88% MATCHING TEXT | 14 WORDS |

In this unit, you will study about the process of growth and development

SA HC 1.3 Psychology of Education (Eng).pdf (D142430302)

| 17/339 | SUBMITTED TEXT | 20 WORDS | 100% MATCHING TEXT | 20 WORDS |

Reasoning plays a significant role in one's adjustment to one's environment. It controls not only one's cognitive activities but

SA A2.pdf (D142512250)

18/339	SUBMITTED TEXT	19 WORDS	88%	MATCHING TEXT	19 WORDS

also influence the total behavior and personality by proper or improper development of one's reasoning ability. 4.5

SA A2.pdf (D142512250)

19/339	SUBMITTED TEXT	16 WORDS	89%	MATCHING TEXT	16 WORDS

Depth perception: It is the visual ability to perceive the world in three dimensions. ●

SA Basics of Psychology - EM_10th April 23.pdf (D164292460)

20/339	SUBMITTED TEXT	20 WORDS	100%	MATCHING TEXT	20 WORDS

Reasoning plays a significant role in one's adjustment to one's environment. It controls not only one's cognitive activities but

SA A2.pdf (D142512250)

21/339	SUBMITTED TEXT	18 WORDS	88%	MATCHING TEXT	18 WORDS

also influence the total behavior and personality by proper or improper development of one's reasoning ability.

SA A2.pdf (D142512250)

22/339	SUBMITTED TEXT	105 WORDS	92%	MATCHING TEXT	105 WORDS

From birth onwards, everybody in this world is beset with some problem or the other. There are needs and motives that are to be satisfied. For this purpose, definite goals or aims are set. In an attempt for their realization, one experiences obstacles and interferences in one's attempt to achieve them. This creates problems and serious as well as deliberate efforts have to be made to overcome these impediments. The productive work involved in the evaluation of the situation and the strategy worked out to reach one's set goals is collectively termed as problem-solving. This is an essential exercise for individual advancement

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23/339	SUBMITTED TEXT	21 WORDS	100%	MATCHING TEXT	21 WORDS

Reasoning Reasoning plays a significant role in one's adjustment to one's environment. It controls not only one's cognitive activities but

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24/339	SUBMITTED TEXT	27 WORDS	91%	MATCHING TEXT	27 WORDS

Reasoning is step wise thinking with a purpose or goal in mind. — Garrett ● Reasoning is the term applied to highly purposeful controlled selective thinking. —

Reasoning is step-wise thinking with a purpose or goal in mind." • Gates Reasoning is the term applied to highly purposeful controlled selective thinking." •

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25/339	SUBMITTED TEXT	44 WORDS	93%	MATCHING TEXT	44 WORDS

principles) furnished by recall, present observation or both; are combined and examined to see what conclusion can be drawn from the combination. — Woodworth ● Reasoning is the word used to describe the mental recognition of cause and effect relationships. It may be

principles) furnished by recall or present observation or both; are combined and examined to see what conclusion can be drawn from the combination." • Skinner Reasoning is the word used to describe the mental recognition of cause-and-effect relationships. It may be

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26/339	SUBMITTED TEXT	23 WORDS	92%	MATCHING TEXT	23 WORDS

prediction of an event from an observed cause or the inference of a cause from an observed event. —Skinner ● Reasoning is

prediction of an event from an observed cause or the inference of a cause from an observed event. • Reasoning is

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27/339	SUBMITTED TEXT	19 WORDS	91%	MATCHING TEXT	19 WORDS

combining past experiences in order to solve a problem which cannot be solved by mere reproduction of earlier

combining past experience in order to solve a problem which cannot be solved by mere reproduction of earlier

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28/339	SUBMITTED TEXT	21 WORDS	52%	MATCHING TEXT	21 WORDS

Selection of the most appropriate possibility or solution by careful mental analysis of all the available alternatives. ● Testing the

Selection of the most appropriate way of solution based on observation: After careful analysis of all the available alternatives, the

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29/339	SUBMITTED TEXT	15 WORDS	100%	MATCHING TEXT	15 WORDS

highly specialized thinking, which helps an individual to explore mentally the cause and effect

highly specialized thinking which helps an individual to explore mentally the cause and effect

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30/339	SUBMITTED TEXT	19 WORDS	100%	MATCHING TEXT	19 WORDS

a problem by adopting some well-organized systematic steps based on previous experiences combined with present observation. 5.2.1

a problem by adopting some well-organized systematic steps based on previous experiences combined with present observation.

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31/339	SUBMITTED TEXT	25 WORDS	92%	MATCHING TEXT	25 WORDS

also influence the total behavior and personality by proper or improper development of one's reasoning ability. It is essentially a cognitive ability and is

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32/339	SUBMITTED TEXT	16 WORDS	82%	MATCHING TEXT	16 WORDS

may be classified into two broad types– inductive reasoning and deductive reasoning. 1. Inductive reasoning:

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may be classified into two broad categories- (a) Inductive reasoning and (b) Deductive reasoning Inductive reasoning

33/339	SUBMITTED TEXT	15 WORDS	85%	MATCHING TEXT	15 WORDS

a rule is true in one particular case, it will be true in all

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a statement is true in one particular case, it will also be true in all

34/339	SUBMITTED TEXT	11 WORDS	100%	MATCHING TEXT	11 WORDS

specialized thinking aimed at the discovery or construction of a

SA A2.pdf (D142512250)

35/339	SUBMITTED TEXT	19 WORDS	90%	MATCHING TEXT	19 WORDS

generalized principle, by making use of particular cases, special examples and identity of elements or relations. 2.

SA A2.pdf (D142512250)

36/339	SUBMITTED TEXT	16 WORDS	76%	MATCHING TEXT	16 WORDS

the ability to draw logical conclusions from known statements or evidence. Here, one starts with

SA A2.pdf (D142512250)

37/339	SUBMITTED TEXT	16 WORDS	100%	MATCHING TEXT	16 WORDS

already known or established generalized statement or principle and applies it to specific cases.

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| 38/339 | SUBMITTED TEXT | 58 WORDS | 83% | MATCHING TEXT | 58 WORDS |

Reasoning: Conditioned reasoning is the reasoning tied down by some specific conditions, for example, if there is a solar eclipse, the street will be dark. There is a solar eclipse. Therefore, the streets are dark. 4. Categorical Reasoning: This type of reasoning is based on some categorical statements like: All robins are birds. All birds lay eggs.

SA A2.pdf (D142512250)

| 39/339 | SUBMITTED TEXT | 22 WORDS | 100% | MATCHING TEXT | 22 WORDS |

In the process of reasoning, the individual reasons from the past known circumstances to the present or future unknown conditions,

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In the process of reasoning, the individual reasons from the past known circumstances to the present or future unknown conditions

| 40/339 | SUBMITTED TEXT | 24 WORDS | 84% | MATCHING TEXT | 24 WORDS |

John Dewey described reasoning as speculative thinking and analyzed it, describing the following steps in it: A felt difficulty: An individual starts

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John Dewey described reasoning as speculative thinking and analyzed it with the help of the following five steps in it: (1) A felt difficulty: An individual starts

| 41/339 | SUBMITTED TEXT | 16 WORDS | 90% | MATCHING TEXT | 16 WORDS |

one bit of information may help to clear the whole picture for an individual if

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one piece of information may help to clear the whole picture for an individual, if

| 42/339 | SUBMITTED TEXT | 18 WORDS | 82% | MATCHING TEXT | 18 WORDS |

Apply the solution: The next step is the application of solution or inference to solving the problem,

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Apply the solution: The final step is the application of solution or inference to solve the problem

| 43/339 | SUBMITTED TEXT | 37 WORDS | 92% | MATCHING TEXT | 37 WORDS |

all robins lay eggs. 5. Linear reasoning: This type of reasoning involves straightforward relationships among elements, for example: ● If Ram is taller than Mohan and Mohan is taller than Sohan, Ram is the tallest. ●

SA A2.pdf (D142512250)

56/339	SUBMITTED TEXT	16 WORDS	86%	MATCHING TEXT	16 WORDS

development of formal operations enables the adolescent to transfer understanding from one situation to another.

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57/339	SUBMITTED TEXT	29 WORDS	89%	MATCHING TEXT	29 WORDS

Factors Influencing Language Development Following are the important factors affecting the development of language: o Imitation of the language of parents, other adults and teachers o Cultural factors

SA HC 1.3 Psychology of Education (Eng).pdf (D142430302)

58/339	SUBMITTED TEXT	21 WORDS	77%	MATCHING TEXT	21 WORDS

Level of intelligence o Physical conditions o Number of children in the family o Socio-economic status of the family

SA HC 1.3 Psychology of Education (Eng).pdf (D142430302)

59/339	SUBMITTED TEXT	20 WORDS	60%	MATCHING TEXT	20 WORDS

all the external powers, effects and circumstances which affect the life, nature, behavior, growth and development of a living

all the external forces, influences and conditions, which affect the life, nature, behavior, the growth, and development and maturation of living

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60/339	SUBMITTED TEXT	16 WORDS	89%	MATCHING TEXT	16 WORDS

Depth perception: It is the visual ability to perceive the world in three dimensions. ●

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61/339	SUBMITTED TEXT	25 WORDS	47%	MATCHING TEXT	25 WORDS

environment. Thus, learning is a modification of behaviour through experience and training. Briefly speaking, learning is a change in behaviour-organisation. It is the

environment. Definitions 1. Learning is the modification of behaviour through experience and training. ----- Gates 2. Learning is a process of progressive behaviour adaptation. 3. Learning is the

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62/339	SUBMITTED TEXT	29 WORDS	66%	MATCHING TEXT	29 WORDS

It tries to squeeze through any opening; it claws and bites at the bars or wire; it thrusts its paws out through any opening and claws at everything

It tries to squeeze through every opening; it claws and bites at the bars or wires. paws through any opening and claws at everything

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Theories of learning attempt to explain the mechanism of behaviour involved in the learning process. Experts have formulated different theories of learning with the result that it is not possible to give one theory which meets the expectations of all. Before discussing the different theories of learning, the meaning of a theory needs to be explained. The most acceptable definition of a theory is that of Melvin H.Marx (1970). According to him, 'a theory is a provisional explanatory proposition or set of propositions, concerning some natural phenomena and consisting of symbolic representation of the following: ● The observed relationships among independent and dependent variables. ● The mechanisms or structures presumed to underlie such relationships. ● Inferred relationships and underlying mechanisms intended to account for observed data in the absence of any direct empirical manifestation of the relationships. A theory provides detailed systematised information of an area of knowledge. It serves as a guideline to conduct further research in the area. It produces new facts or supplements the previous facts. It gives an organised explanation about a phenomenon. It provides practical wisdom. It provides effective guidelines. Important characteristics of a theory are: • Testability of its principles • Predictability of the outcomes of the actions • Comprehensiveness • Brevity • Simplicity A learning theory is supposed to find answers of the following: • Role of drill and practice in learning. • Utility of rewards and punishments or other incentives/motives in learning. • Place of insight and understanding in the process of learning. • Role of transfer of learning in various situations. 7.3

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bite and squeeze incessantly. The cat that is clawing all over the box in her impulsive struggle

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will probably chance upon the string or loop or button. And gradually all the other non-successful impulses will be stamped out by the resulting pleasure, until, after many trials, the cat will, when put in the box, immediately claw the button or loop in a definite way.' 7.3.1.

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On the basis of his experiments, Thorndike propounded the following laws of learning: 1. Law of Readiness:

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to conduct, for it to conduct is annoying. When any conduction unit is in readiness to conduct, for it not to do so is annoying.' The law is indicative of a learner's state to participate in the learning process. According to Thorndike, readiness is preparation for action. Readiness does not come automatically with maturation. It is a law of preparatory adjustment, not a law about growth. Thorndike termed the neurons and synapses involved in establishment of a specific bond or connection, a conduction unit. According to this law, for a conduction unit ready to conduct, to do, is satisfying and for it not to do so is annoying. Educational Implications: Teachers should prepare the minds of students to be ready to accept knowledge, skills and aptitudes. For this, he should provide opportunities for experiences in which students can spontaneously participate. In other words, he should arouse their capacity to link the experiences with their everyday life. 'Simple to complex' is an important maxim. Aptitude tests may be given to students to find out their readiness to learn. 2. Law of Effect: The law stated, 'Of several responses made to the same situation, those which are accompanied or closely followed by satisfaction to the animal will, other things being equal, be more firmly connected with the situation, so that, when it recurs, they will be more likely to recur; those which are accompanied or closely followed by discomfort to the animal, will, other things being equal, have 'their' connections with that situation weakened, so that, when it recurs, they will be less likely to occur. The greater the satisfaction or discomfort, the greater is the strengthening or weakening of the bond.' Thorndike explained the meaning of satisfaction and discomfort as: 'By a satisfying state of affairs is meant one which the animal does nothing to avoid, often doing such things as attain and preserve it. By a discomforting or annoying state of affairs is meant one which the animal commonly avoids and abandons.' Educational Implications: A pleasing environment should be created in the classroom. The teacher should be sympathetic but firm

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should enjoy his work. Experiences provided to the students should be satisfying and meaningful. They should be organised in the order of increasing difficulty. Material should be provided in a number of interesting ways including the use of audio-visual aids. In simple words, the law of effect means that learning takes place properly when it results in satisfaction and the learner derives pleasure out of it. In the situation when the child meets a failure or is dissatisfied, the progress in learning is blocked. All the pleasant experiences have a lasting influence and are remembered for a long time, while the unpleasant ones are soon forgotten. Therefore, the satisfaction or dissatisfaction, pleasure or displeasure obtained as a result of some learning ensures the degree of effectiveness of that learning. 3. Law of Exercise or Repetition: It stated, 'Any response to a situation will, other things being equal, be more strongly connected with the situation in proportion to the number of times it has been connected with that situation and to the average vigour and duration of the connection.' According to this law, the more a stimulus-induced response is repeated, the longer it will be retained. The law states, other things being equal, exercise strengthens the bond between situation and response. Conversely, a bond is weakened through failure to exercise it. Thus, the law has two subparts, (i) law of use (ii) law of disuse. Law of Use: 'When a modifiable connection is made between a situation and response, that connection's strength is, other things being equal, increased.' Law of Disuse: 'When a modifiable connection is not made between a situation and response, during a length of time that connection's strength is decreased.' Educational Implications: More and more opportunities should be provided to the students to use and repeat the experiences in the classroom. Drill strengthens the bonds of SR. Review of the lesson helps to maintain connections. 7.3.2 Laws Apart from the three laws explained above, Thorndike gave the following subordinate laws: Multiple Response: Confronted with a new situation, the learner responds in a variety of ways before arriving at the correct response. Attitude: The learner performs the task well if he has his attitude set in the task. Prepotency of Elements: The learner reacts to the learning situation in a selective manner. He uses his insight, selects the prepotent elements in a situation and bases his responses upon those elements. Analogy: The organism responds to a new situation on the basis of the responses made by him in

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similar situation in the past. He makes responses by comparison or analogy. Associative Shifting: According to it, we can get from the learner

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associated with any situation to which he is sensitive. Principle of Polarity: It states that connections act more easily in the direction in which they were first formed than in opposite

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to improve learning are: ● Interest in the work ● Interest in improvement ● Significance of the work ●

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Educational Implications of Thorndike's Theory of Learning and Laws Thorndike's theory of trial and error and laws of learning have great educational significance. Thorndike's findings made the learning purposeful and goal-directed. There is no doubt that many discoveries and inventions in various fields of knowledge are the results of trial and error. But at the same time it must be remembered that in the case of human beings, trial and error is not always devoid of thinking and understanding. Thus, trial and error, coupled with insight can make the process of learning more effective.

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is very essential for learning. If a child is ready to learn, he learns more quickly, effectively and with greater satisfaction than if he is not ready to learn.

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learn till he is ready to learn and any opportunity of providing learning experiences

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child is already prepared to learn. The right movements concerning the learning situation and the learner's state of mind should be very well recognized and maximum use of this knowledge should be made by the teacher. He should also make an attempt to motivate his students by arousing their attention, interest and curiosity. Thorndike's law of effect emphasized the role of rewards and punishment in the process of learning. Getting a reward as a result of some learning, motivates and encourages a child to proceed on the same path with more intensity and enthusiasm, while punishment of any sort discourages him and creates disinterest towards that learning.

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Consequently he must try to strengthen the bonds or connections between the stimuli and the responses of those things which are to be remembered. This could be done through drill, repetition and reward. .

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Thorndike's theory and laws are: ● Mere repetition is of no use. Repetition becomes useful

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when the response is rewarded. In that case, repetition strengthens the connections. ● Understanding grows out of previous experience. The best way to develop understanding is to develop a body of connections appropriate to that understanding. ● Transfer in learning takes place because of identical elements in the two situations. ● Rewards have more strengthening effects than the corresponding weakening effect of punishment. ● Forgetting takes place because of the law of disuse. ● The child should be encouraged to do his work independently. 7.3.5

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Theory of Learning by Insight Gestalt theory of learning, also named as Learning by Insight, is the contribution of German psychologists who were studying the nature of perception. Max Wertheimer (1880–1943) was the founder of Gestalt psychology. He did a lot of research work at the University of Frankfurt and the University of Berlin. Thereafter, he worked at the New School of Social Research in New York. Wolfgang Kohler and Kurt Koffka were the other German psychologists associated with Wertheimer. Gestalt theory of learning (Learning by Wholes) or Learning by Insight stated that perceptual phenomena are only experienced as wholes or gestalts. Learning, according to Gestalt Theory, is not by random steps, neither by trial and error, nor by conditioning but by insight, introspection and understanding. Gestaltians placed far more emphasis on the intrinsic organising capacity in the brain of an individual and emphasised the dynamic interaction of the elements in the entire perceptual field. Gestalt theory of learning essentially

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problem-solving by understanding the relative position of the elements in the entire perspective or situation. 'Gestalt' is a German word for which there is no equivalent word

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English. The term was carried over into English psychological literature. The nearest English translation of gestalt is 'configuration' or more simply 'an organised whole in contrast to a collection of parts'. Gestalt psychologists considered the process of learning as an organised whole.

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cannot be understood just by the study of its constituent parts only,

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it as a totality. Gestalt school made a strong attack on Thorndike's Theory of 'trial and error' and asserted that learning was not stamping of correct responses through trial and errors. Neither was the behaviourists approach acceptable to gestaltists as they wanted to study behaviour as a whole and learn in its totality. Gestalt psychology

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approach to learning. It pointed out two weaknesses in the theory of conditioning: ● Conditioning reduces complex human behaviour to an accumulation of simple conditioned responses. ● SR-theorists attributed learning to reduction of basic organic drives. Gestalt psychology

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primarily concerned with the nature of perception. According to it, an individual perceived wholes and not parts. Learning was viewed as

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purposive, explorative, imaginative and creative enterprise in which the total situation was taken into account by the learner. Kohler and Koffka conducted many experiments on Chimpanzees and brought out a book, 'Mentality of Apes' in 1925 (result of the experiments conducted during 1913–17.) These experiments showed that learning was not the result of trial and error but of insight and the ability to see relationships between various factors involved in a situation. A very detailed and systematic treatment of learning from Gestalt viewpoint was found in Koffka's Principles of Gestalt Psychology (1935). As mentioned earlier, Kohler and Koffka were the chief exponents of this theory. They stressed the totality of the process of learning. They took the process of learning as a synthetic activity which brought forth complete solutions of problems. Experiment I In one of his experiments, Kohler shut the chimpanzee, Sultan by name, in a big cage. A banana was placed outside, at a considerable distance from the cage. Inside the cage, there were two sticks—one of them a long one and the other a bit shorter. The shorter stick could be screwed into the long one. The long stick could not reach the banana but if the other one was screwed into it, the banana could be touched.

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Sultan tried to get the banana. He first tried with the longer stick but it did not reach the fruit. The other was still smaller. He sat down and began to play with both the sticks. But he was still brooding over the matter. Suddenly, an idea flashed him. He thrust the smaller stick into the hole of the longer one and thus managed to get the banana with the help of the combined sticks. Experiment 2 In this experiment, the chimpanzee was shut in a room with unscalable walls. A banana was hanging from the ceiling. The animal was hungry. He jumped at the fruit but it was too high. He left his efforts and sat down. There was a box lying in the corner of the room. The animal began to play with the box. He then suddenly got up and pushed the box to the center of the room below where the banana was hanging, jumped from it and got the fruit. 7.4.1 Principles of Learning Koffka suggested that the laws of perception were equally applicable to learning.

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learning situation was a problem situation and the learner had to see the problem as a whole and find its solution by insight. The law of organization of perception as applicable to learning was the law of pragnanz and four laws of organization subordinate to it—the laws of similarity, proximity, closure and good continuation. The Law of Pragnanz: The German word pragnanz means 'compact but significant'. The law suggested the direction of events. According to it, psychological organization tended to move in one general direction, always towards the state of pragnanz, towards good gestalt. A good gestalt had the properties of regularity, simplicity, stability, etc. So, this law spoke of the movement of our psychological organization towards the direction of stability, i.e., we accept only those experiences which do not disturb our psychological organization (equilibrium). How good the pragnanz is, is examined by the following subordinate laws: Law of Similarity: This law said, 'other things being equal, the stimuli that are more similar to one another will have greater tendency to be grouped.' Thus, learning similar things is easier than learning dissimilar things, according to this law.

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Law of Proximity: According to this law, 'Perceptual groups are favored according to the nearness of the parts.' This means that we perceive all closely situated or located things as groups. Law of Closure: This law stated that 'Closed areas are more stable than unclosed ones and therefore, more readily form figures in perception.' It is similar to Thorndike's law of effect. Unless the work is finished, the individual does not feel satisfied

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Law of Good Continuation: This law stated, 'Organization in perception which appears to go in a particular direction appears to be going infinitely in the same direction.' So there is a tendency of factors to give direction, movement and continuation to perceptual organization. Koffka believed in the trace

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and create new ones. The essential features of the trace theory are: ● Trace is the result of past experience, so that it represents the past in the present. ●

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The present process can select, reactivate or communicate with the trace. ●

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There is a resulting new process of recall or recognition. 7.4.2 Factors Influencing Insight Insight involves the following: ● The learner perceives the situation as a whole. ● The learner tries to understand the relationships between various factors involved in a situation. ● As a result of the understanding of the relationship, the learner is helped in the sudden grasping of the solution of the problem. On the whole, insight depends on the following factors: ● Experience: Past experiences assist in the insight of the problems. ● Intelligence: Basic intelligence of the learner is an important factor in insight learning. ● Learning Situation: As a common observation, insight occurs when there is ample scope for observation in a learning situation. ● Initial Efforts: The initial efforts in the form of trial and error open the way of insight learning. ● Reception and Generalization: Learning gained in one situation, helps the learner to react insightfully in other identical situations. 7.4.3

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Educational Implications of the Theory of Insight The Gestalt theory highlighted the following points: ● From Whole to Parts:

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the whole is greater than the parts. Therefore, the teachers should present the picture of a topic or subtopic as a whole. It is especially more important in the case of small children. While teaching the topic 'parts of a flower', the flower should be presented first, and the parts should be taken up later. Similarly, the poem may be taken up as a whole. ● Problem-Solving Approach: The theory rejected memorization and rote learning. It stressed that the learners must be given opportunities

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in constructive and creative thinking. Progressive and scientific methods like Heuristic, analytical and problem-solving should be made use of. ● Integrated Approach: The contents of a subject should not be treated as mere collection of isolated facts. They could be closely integrated into

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whole. . In the same way, all subjects and activities of the curriculum should reflect unity and cohesion. ● Motivational Aspect:

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child's curiosity and interest must be aroused. He should be fully familiarized with the specific aim and purpose of every task that is being undertaken. 7.4.4 Limitations of the Theory It was argued that every type of learning is

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the product of insight. Quite a number of our day-to-day experiences are the results of chance contiguous associations and not of insight. In insight learning, one cannot altogether eliminate learning by trial. Some measures of learning by trial and error come into play in insight learning also. All children are not capable of independent thinking. Hence, slow learners need to be taught with other methods as well.

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mechanical application of rules is also needed in several cases. 7.5

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Lewin's Field Theory Of Learning Kurt Lewin (1890–1947), unlike Pavlov, Skinner and Gestalten psychologists, conducted experiments on the study of behaviour of children. He utilised an elaborate experimental set-up with a view to control a child's total environment during the course of the investigation for getting detailed information. Lewin emphasised the study of behaviour as a function of the total physical and social situation. Lewin held that psychological laws

Lewin's Field Theory of Learning Kurt Lewin (1890-1947), unlike Pavlov, Skinner and Gestltian psychologists, conducted experiments on the study of behaviour of children. He utilized an elaborate experimental set-up with a view to control child's total environment during the course of the investigation for getting detailed information. Lewin the study of behaviour as a function of the total physical and social situation. Lewin holds that psychological laws

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need to understand the specific individual and 'total situation' in which he existed, before making any prediction about his behaviour. Thus Lewin favoured an 'idiographic psychology' in which the focus was on the individual, as opposed to 'nomothetic psychology', where the emphasis was on statistical average. Lewin described his viewpoint in the following formula: $B = f (PE)$ where B represents behaviour, f is a function, P is the person,

need to understand the specific individual and 'total situation' in which he exists before we could make any prediction about his behaviour. Thus Lewin favours an idiographic psychology in which the focus on the individual, as opposed to nomothetic psychology, where the emphasis is on Statistical average. Lewin describes his viewpoint in the following formula: $b=F(pe)$ B represents behaviour f is a function P is the person

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behaviour on the basis of his life-space. An individual's life-space,

behaviour on the basis of life-space. An individual's life-space

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depends on his psychological force. It includes the person; his drives, tensions, thoughts and his environment, which consists of perceived objects and events. Lewin represented his theory through a diagram in which an individual is in the centre. He moves through his life- space which consists of the totality of facts that determine his behaviour at a given time. A life- space contains the individual himself, the goals he is seeking (positive valence) or avoiding (negative valence), the barriers that restrict the individual's movements and the path he must follow to reach his goal. Desire creates tensions in the individual and tensions come to a balancing state and the person acts. After the goal has been achieved, the organism (individual) returns to a state of repose until a new desire activates him. In Lewin's theory, threat, goal and barrier are the main factors. An individual who has to achieve some goal has to cross a barrier. The barrier may be psychological or physical. Because of the changes in the barrier in the life-space of an individual, continuous reconstruction takes place. Lewin's theory is called field theory, because to a psychologist, field means total psychological world in which a person lives at a certain time. It includes matters and events of past, present and future, concrete and abstract, actual and imaginary—all interpreted as simultaneous aspects of a situation. Lewin stated that each person exists within a field of forces,

depends on his psychological force. It includes the person; his drives, tensions, thoughts and his environment, which consists of perceived objects and events. Lewin represents his theory through a diagram in which an individual is in the centre. He moves through his life-space which consists of the totality of facts that determine his behaviour at a given time. A life-space contains the individual himself, the goals he is seeking (positive valence) or avoiding (negative valence), the barriers that restrict the individual's movements and the path he must follow to reach his goal. Desire creates tensions in the individual and tensions come to a balancing state and the person acts. After the goal has been achieved, the organism (individual) returns to a state of repose until a new desire activates him. In Lewin's theory, threat, goal and barrier are the main factors. An individual who has to achieve some goal has to cross a barrier. The barrier may be psychological or physical. Because of the changes in the barrier in the life- space of an individual, continuous reconstruction takes place. Lewin's theory is called field theory to a psychologist field the total psychological world in which a person lives at a certain time. It includes matters and events of past, present and future, concrete and abstract, actual and imaginary – all interpreted as simultaneous aspects of a situation. Lewin states that each person exists within a field of forces.

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to which the individual is responding or reacting. Lewin's theory regarded learning as a relativistic process by which a learner develops new insight or changes old ones. According to the theory, learning is not a mechanistic process of connecting stimuli and responses within a biological organism. Field psychology explains

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development of insight as a change in cognitive structure of life-space. Lewin's theory may be explained as

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Suppose a person P is moving towards a goal of getting social recognition. But to achieve the goal, he has to

Suppose a person P is moving towards a goal of getting social recognition. But to achieve the goal, he has to

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the barrier coming in his way. The barrier may be physical or psychological forces, preventing him from reaching the goal,

the barrier coming in his way. The barrier may be physical or psychological forces preventing him from reaching the goal.

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These forces organize themselves into a pattern which determines his future behavior. Lewin classified learning into the following categories: ● Learning is a change in cognitive structure. ● Learning is a change in motivation, i.e., in valences and values. ● Learning is acquisition of skills. ● Learning is a change in group belonging. ● Learning of all types involves change in perception. Changes in cognitive structure are caused by the forces in the psychological field—needs, aspirations and

These forces organise themselves into a pattern which determines his future behaviour. Lewin classified learning into the following categories: a) Learning is a change in cognitive structure. b) Learning is a change in motivation, i.e., in valences and values. c) Learning is acquisition of skills. d) Learning is a change in group belonging. Learning of all types involves change in perception. Changes in cognitive structure are caused by the forces in the psychological field – needs, aspirations and

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level of aspiration depends upon the potentialities of an individual and on the influences of the group to which he belongs. Too high or low level of aspiration discourages Learning. 7.5.1

level of aspiration depends upon the potentialities of an individual and on the influences of the group to which he belongs. Too higher or too level of aspiration discourages learning.

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not be formulated solely on the basis of statistical averages. Rather, the individual case was equally important,

not be formulated solely on the basis of statistical averages. Rather the individual case is equally important.

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Concepts of Lewin's Field Theory Lewin's theory rests on concepts derived from topology—a branch of higher mathematics that deals with

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chemistry and physics with concepts as valence, equilibrium and field force. Lewin's most important publication was Principles of Topological Psychology (1936). The main concepts used in Lewin's field theory

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and (ii) part-whole relationships. Topological concepts are used to represent the structure of life-space in such a way as to define the range of possible perceptions and actions. This is accomplished by showing the arrangements of the functional parts of life-space. The parts are shown as various regions and their boundaries. When

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structures his life-space, he divides it into regions. Vector: The term vector represents a force

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or away from it. If there is only one vector (force), there is

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in the direction of the vector. However, if there are two or more vectors acting simultaneously in different directions, the movement is in the direction of the resultant force. Life-Space: It is also called the psychological field. The psychological field is the space in which the person moves psychologically. It

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in his own life-space. Valence: When a person is attracted by an object, that object is said to have

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opposing forces are approximately in balance. Lewin specified three chief kinds of conflicts: ● Two Positive Valence: When a child has to choose between going

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Simultaneous Positive and Negative Valence: When a child is offered a reward for

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he does not wish to perform. Distance and Direction: When there is a close correspondence between life-space and physical space, physical distances and directions may be used for experimental purposes as

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the past or future. Barrier: It is a dynamic part of an environment which resists

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include the significance of seeing the whole situation at the beginning of a lesson or an activity. The teacher should preview the activities involved and the problem to be encountered. Moreover, from the point of view of a field theorist, the teacher should keep in mind that the student, the teacher himself, other teachers, the school and

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attraction of rewards may resort to shortcut methods. For example, to get distinction in the examination (record), a student may resort to cheating (shortcut method). It is, therefore, necessary to put some barriers over

attraction to rewards may resort to shortest methods. For example, to get distinction in the examination (record) the student may like to cheat (shortcut method). It is, therefore, necessary to put some barriers over

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to avoid access to such shortcut methods. In the case of punishment, however, one tends to leave the field because of the unpleasantness of the task, unless some strong barriers are there to keep him in the field. Reward activities often become interesting and are liked, while the activities controlled by the threat of punishment tend to be disliked. 2. Success and Failure: Psychological analysis of success from the point of view of a learner shows the following possibilities: ● To reach a goal, constitutes success. ● To get within the region of the goal, may be a success in itself. ● To make some progress in the direction of the goal, also constitutes a successful experience. ● To select a socially approved goal is also

to avoid access to such short methods. In the case of punishment, however, there is a tendency to leave the field because of the unpleasantness of the task, unless some strong barriers are there to keep one in the field. Reward activities often become interesting and are liked so that is no longer extrinsic while activities controlled by the threat of punishment tend to become extremely hated. b) Success and Failure: Psychological analysis of success from the point of view of the learner shows the following possibilities: ? To reach a goal constitutes success. ? To get within the region of the goal may be a success experience. ? To make some progress in the direction of the goal also constitutes a success experience. ? To select a socially approved goal is also

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a successful experience, since it does not involve the ego of the person. Similarly, failure in a very difficult task

a success experience, since it does not involve the ego of the person. Similarly, failure in a very difficult task

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Motivation: The repetition of an activity brings changes both in the cognitive structure and in the need-tension systems. As a result of this goal, attractiveness changes. Lewin called goal attractiveness valence and valence change. The valence may change in any of the following ways: ● Attractive goals may lose attention if the activity related to them is repeated to the points of satiation. ● Choice of goals is influenced by previous experiences of success and failure. 4. Memory: Lewin stated the following regarding memory: Tasks which have no sense in completion are not remembered. ● Unfinished tasks are remembered better than finished tasks because of psychological tension. ● Tasks which lead to the satisfaction of many needs are remembered better than tasks which lead to the satisfaction of one need. 7.6

Motivation: The repetition of an activity brings change both in the cognitive structure and in the need-tension systems. As a result of this goal, attractiveness changes. Lewin calls goal attractiveness valence and valence change. The valence may change in any of the following ways: ? Attractive goals may lose attention if the activity related to them is repeated to the points of satiation. ? Choice of goals is influenced by previous experiences of success and failure. d) Memory: The field theory states the following regarding memory: ? Tasks which have no sense in completion are not remembered. ? Unfinished tasks are remembered better than finished tasks because of psychological tension. ? Tasks which lead to the satisfaction of many needs are remembered better than tasks which lead to the satisfaction of one need. 3) "

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peer group—are all parts of the total situation. The need for seeing the whole and details of the situation is necessary. The teacher must assist the students to perceive the goal and the barrier. The goal must be presented in an easier and simplified manner. Sometimes, partial insight of a situation may provide partial relief from tension. Following are the major educational implications of this theory: 1. Reward and Punishment: According to

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Pavlov's Theory of Learning Ivan P. Pavlov (1849–1936), a Russian psychologist, was the originator of

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Prize in 1904 for his research on the digestive process. He was interested in studying the process of gastric secretion in dogs. His findings brought about a revolutionary change in the field of learning. Conditioning is the modification of the natural response. By conditioning, Pavlov modified the behaviour of the dog on which he experimented.

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in such a way, as the response originally connected with a particular stimulus comes to be aroused by a different stimulus. The classical experiment conducted by Pavlov made clear the process of conditioning. Pavlov's Experiment: In one of his experiments, Pavlov kept a dog hungry during night and then tied him on the experimental table which was fitted with certain mechanically controlled devices. The dog was made comfortable and distractions were excluded as far as possible. The observer (Pavlov) kept himself hidden from the dog's view but was able to view all the movements of it by means of a set of mirrors. Arrangement was made to give food to the dog through automatic devices. With this act of offering food to

food. The saliva went into the tube and it was measured. The experiment went on for some days. One day, the bell rang but no food

The dog secreted saliva even then. It was observed that the saliva

for some days. The actual stimulus to bring forth the response, i.e., the secretion of saliva, was the sight of the food but it was conditioned in such a way that another stimulus, which ordinarily had nothing to do with secretion of saliva, began to stimulate it. Food was the 'natural stimulus' as it motivated the dog to respond. Its response was secretion of saliva. Ringing

artificial stimulus', also called 'conditioned stimulus'. The response of the dog when the bell was rung is called a 'conditioned response'. Conditioning is thus the modification of the natural response. The abbreviations used are: NS for Natural Stimulus, CS for Conditioned Stimulus, NR for Natural Response and CR for Conditioned Response. In this experiment, the dog learnt to secrete saliva at the sound of the bell. This kind of learning was named as Learning by Conditioning. The experiment was conducted in a windowless soundproof room in order to minimize the effects of extraneous stimuli on the subject. An apparatus was used to measure the number of drops of the saliva secreted as well as the total amount in cubic centimeters. 7.6.1 Principles of Conditioning To explain his theory, Pavlov gave some principles of conditioning. 1. Principle of Reinforcement: The term reinforcement refers to the following

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of the conditioned stimulus by the unconditioned stimulus, i.e., food following the bell. Pavlov stated that it was only reinforcement that led to the conditioning. Without reinforcing the bell with meat, no conditioning could be developed—this was reinforcement. This

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is applicable to children also. Children's learning becomes effective when they are rewarded immediately after

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their behavior is conditioned with reinforcement. Quite often, the unconditioned stimulus reduces a drive or tension. Thus, the term reinforcement has also come to mean reduction in drives or tensions. 2. Principle of Sequence and Time Intervals: There is an optimal time between the presentation of the conditioned stimuli and the unconditioned stimuli. If there is any variation, i.e., increase or decrease in the optimal time, then there is no conditioning and a bond cannot be formed. 3. Principle of Stimulus Generalization: According to this principle, if we are conditioned to one thing, i.e., the bell, then we would be conditioned, more or less, to all sorts of bells. In the earlier stages of learning by conditioning, the animal responded to a number of stimuli which accompanied the exact conditioned stimulus. The response was the greatest to the conditioned stimulus and went on decreasing to other stimuli which were less similar to the original one. 4. Principle of Differentiation:When two stimuli are sufficiently distinguishable,

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can be conditioned to respond to one of them. This is done by regularly reinforcing one stimulus and non-reinforcing the other. The individual can be conditioned to react differently to the two stimuli, which at first make nearly the same response. This is how one learns to differentiate between different brands of tea or coffee. But in case, the organism is pressed too far, it causes experimental neurosis. In the laboratory, when the dog was made to discriminate between two very thin ellipses it started howling at the experiments. It is clear that response to a particular stimulus can be achieved only through selective reward. 5. Principle of Extinction: If the sound of the bell was not followed by food, it implied that there

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when the dog stopped secreting saliva. This process is called extinction. Pavlov noted in his experiments that when the spacing of test trials was increased, the response extinguished rapidly. 6. Principle of Spontaneous Recovery: The principle of spontaneous recovery explains that there is no complete extinction on account of the time interval but there is inhibition of CR. When the dog was brought out of the experimental set-up and again put in the set-up after a lapse of time, the dog responded to Conditioned Stimulus (CS) by gastric secretion. This process is called spontaneous recovery. 7. Principle of Inhibition: Inhibition may be defined as a process in which a stimulus inhibits a response that would otherwise occur. Pavlov mentioned two types of inhibition. External Inhibition:

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Conditioned Response (CR) in the presence of some stranger. Often we come across cases when pupil- teachers fail to deliver a well-prepared lesson in the presence of their supervisors. Internal Inhibition: Pavlov observed that complete extinction of CR was obtained by not providing food to the dog. But when it was given after a period of 24 hours,

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when the dog was tested again. Thus, the extinction did not permanently weaken the CR. It was argued by Pavlov that spontaneous recovery proved that CR in extinction did not represent dying of the reflex or any real weakening of the learnt SR connections. It was blocked by some internal inhibitory process. For example, physical health of an organism or preoccupation with some other activity, could block the response. 8. Principle of Higher Order Conditioning: When conditioning is done to a new stimulus on the basis of a previous conditioned stimulus, it is designated as higher order conditioning. By this process, conditioning can be done by associating one stimulus with another. The process of conditioning becomes difficult if the process is carried too far. 9. Principle of Secondary Reinforcement: Conditioned Response (

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is established to some stimulus other than the primary one, e.g., food elicited salivation. By repeated presentation it was found that sight of food led to salivation or a part response. It is called secondary reinforcement. Secondary reinforcement plays an important role in later learning, especially in the case of children, when the reward may be no more than a kind word or some other gesture or some token reward. 10. Principle of Age and Conditioning: The process of conditioning is valuable at all ages but especially in early childhood. 7.6.2 Contribution of Pavlov's Theory of Conditioning to Learning & its Classroom Implications Pavlov's work on the laws of conditioning is considered

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a landmark contribution to educational psychology. No learning theorist can ignore the technical and theoretical discoveries of Pavlov. Pavlov's work influenced the thought process of behaviorist psychologists, especially those of Watson, Guthrie, Hull and Skinner. Pavlov explained learning in terms of physiological changes by adopting an objective method of study. Conditioning was accepted as

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theoretical framework and practical technique for solving a variety of applied problems. Most of the terminology used in learning was developed by Pavlov. The principles of classical conditioning can be used in various areas of teaching-learning in the classroom also. A child learns through conditioning. A child who fears a particular object or subject can be made to love it through conditioning, thereby dispelling fear and hatred

A teacher with his defective methods of teaching or improper behavior, may be disliked by a particular student or a group of students. He may develop the habit of rebuking children while returning the checked assignment or listening to their answers. Gradually, the students develop hatred for the subject as well as for the teacher. On the other hand, a friendly and sympathetic teacher will have a positive impact on the students through the process of conditioning. The students develop

the subject as well as the teacher. The use of audio-visual aids in the teaching-learning process involves the conditioning theory. For instance, the teacher shows a picture of a cow, along with the written word 'cow'. The teacher speaks out the word 'cow' and asks the student to say 'cow', everytime the picture is presented. After some time, the picture of the cow is not presented. Only the written word cow is shown. But the child responds to it by saying cow. He associates the written word cow with the picture of the cow and the sound of the word. Principles of classical conditioning help in developing good habits in children—habits of cleanliness, punctuality, respect for others, etc. Bad habits,

social environment, principles of classical conditioning can be used to remove bad habits like fear and anxiety in children. Classical conditioning can be used for developing

favourable attitude towards subjects, teachers and above all, the school. The concept of reinforcement in classical conditions points out the need for immediate rewards. Pavlov's theory of conditioning is criticised on two grounds. (i) All learning is not conditioning and on the other hand, it is an active process. (ii) Learning needs intelligence and understanding but conditioning ignores it by and large. 7.7

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Skinner started his research work on behaviour while he was

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in the Department of Psychology at Harvard University. In 1931, he wrote his thesis entitled, The Concept of the Reflex in the Description of the Behaviour. Thereafter, in the middle of forties, Skinner conducted a good deal of research at the Minnesota and Indiana Universities, on the theory of operant conditioning. Skinner was a practical psychologist who conducted several experiments on rats and pigeons. He popularised 'teaching machines' in learning in 1954. His important publications are: The Behaviour of Organism (1938); Science and Human Behaviour (1953); Verbal Behaviour (1957); Cumulative Record (1959); Beyond Freedom and Dignity (1971), and About Behaviourism (1974). 7.7.1

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of Operant Conditioning Skinner called his theory operant conditioning, as it is based on certain 'operations or actions' which an organism has to carry out. The term 'operant' stresses that behaviour

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organism in doing something. In the process of operant conditioning, operant responses are modified or changed by reinforcement. Reinforcement is a special kind or aspect of conditioning within which the tendency for a stimulus to evoke a response on subsequent occasions is increased by reduction of a need. Most SR theorists have assumed the existence of a stimulus as a prerequisite for evoking a response. In the absence of any external stimulus, they have assumed some internal stimuli for evoking the response. Skinner was against this 'No stimulus—no response' theory and believed that most of the responses could not be attributed to the known stimuli. He defined two kinds of responses—the one elicited by the known stimuli, which he called as respondent or reflexive behaviour, and the other emitted by the unknown stimuli, which he called as operant behaviour. Respondent behaviour is learnt according to

Pavlovian model of conditioning. Since it is concerned with the stimuli, it is known as S-type conditioning. Skinner attached greater importance to operant behaviour which is primarily concerned with response rather than stimuli, it is known as R-type conditioning. Out of many responses which an organism is capable of giving, the problem with the experimenter is to evoke only the appropriate responses and fix them properly. Thus Skinner changed the usual SR formula into an RS formula. 7.7.2 Operations Involved in Operant Conditioning Several operations are involved in the process of operant conditioning. Some of the important operations briefly described are as follows: • Shaping (generalisation, chaining and habit competition) • Extinction • Spontaneous recovery • Concept of reinforcement 1. Shaping: Shaping is the most important mechanism used in operant conditioning. It refers to the judicious use of selective reinforcement to bring certain desirable changes in the behaviour of the organism. The basic process in shaping is successive approximation to the desired behaviour. The experimenter shapes or moulds the behaviour of the organism just as clay is moulded by a potter in a definite form of a pot. Principles involved in shaping: There are three important psychological principles which are involved in the process of successful shaping of behaviour. They are as follows: ● Generalization, ● Habit competition, ●

Fixed Ratio Reinforcement: When reinforcement is given after a fixed number of responses, it is called fixed ratio reinforcement. ● Variable-Interval Ratio Reinforcement: When reinforcement is given on varying intervals of time or after a varying number of responses, it is called variable reinforcement.

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learning of a response takes place quickly if every correct response is reinforced but is forgotten easily when the reinforcement is stopped. If reinforcement is given after

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responses or at varying intervals of time, the response is remarkably resistant to extinction. Two Types of Operant Reinforcements: There are two types of operant reinforcements — stimulus discrimination and response discrimination. Stimulus discrimination occurs when a given response is made to one member of a pair of stimuli and not to the other member of the pair. Differentiation of a response occurs when the response form is adjusted or attested approximately to the situation. Typical Problems in Learning Explained by Skinner's Theory ● Capacity: Differences in capacity have been attributed to the empirical constants which are formed in Skinner's laws, because the value of these constants varies from species to species. ● Practice: Skinner accepted something like a law of exercise for 'Type-S' conditioning and for 'Type-R' conditioning he favours repeated reinforcement. He emphasised intermittent reinforcement as protection against extinction. ● Motivation: Reward increases the operant strength, while punishment has no corresponding weakening influence. Drive level also affects the role of responding. ● Understanding: Rapid learning, which has been identified with 'insight' by Keller and Schoenfeld, depends upon (

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simplicity of the problem. Problem solving is the process of manipulating variables to correct responses. It does not involve originality. ● Transfer: Generalisation, which Skinner called induction, is the basis of transfer. ● Forgetting: There is no special theory proposed by Skinner for forgetting. Extinction of a response may take place due to non-reinforcement or interference by incompatible responses, but there can be spontaneous recovery of the response also, which means that extinction is not forgetting. True forgetting is a slow process of decay with time. 7.7.4 Skinner's Experiments

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Educational Implications of Skinner's Learning Theory ● Learning objectives should be defined very specifically in terms of behaviour. ● Objectives should be arranged in order from simple to complex ● For developing motivation in students for classroom work

like praise, blame, grades, etc., should be used. ● Proper use of positive and negative gestures also serves as

should be used periodically so that the possibility of extinction of the desired behaviour is resisted. ● In the classroom, the principle of immediate reinforcement is very important. ● Praise for a job done well given immediately can be a stronger motivator than a grade given much later. ● Skinner's principles of learning focus attention on the individual's pace of learning. Various teaching mechanisms and learning programme systems have been devised on the basis of the theory of learning, founded by Skinner. 7.7.6 Limitations of Operant Conditioning ● It is doubtful if live results derived from controlled experimental studies on animals, would yield the same results on human beings in social learning situations. ● It is argued that Skinner had ignored the structural and hereditary factors which are very important in the development of the psychological process of language. ● The operant reinforcement system did not adequately take into account the elements of creativity, curiosity and spontaneity in human beings. ● Skinner argued that all human behaviour is acquired during the lifetime of an individual. Thus, the importance of genetic inheritance was not given due consideration. ● Skinner's theory of learning dehumanised the learning process on account of its emphasis on the mechanisation of the mental process. ● Operant theory of learning did not deal with the depth of mind and, thus, is artificial in nature. Table 7.1 Comparison Between Classical and Operant Conditioning 7.8

Constructivism Constructivism is a basic theory that elaborates on how knowledge is built (or 'constructed') when new information pours in and comes in contact with the already existing knowledge bank, which has been developed in the course of time by various researchers. Constructivism finds its roots in cognitive psychology as well as human biology. It is that approach to education which gives due emphasis to the various methods followed in the creation of knowledge, and that finds adaptability in the changing education scenario. Constructs are the special types of filters that are selected in order to place over those realities to bring change in the existing reality—from the state of 'chaos' to the state of 'order'. Philosopher and Emeritus Professor of Psychology at the University of Georgia, Ernst von Glasersfeld describes constructivism as 'a theory of knowledge with roots in philosophy, psychology, and cybernetics'. Constructivism finds its implications in the theory of instruction. Discovery, hands-on, experiential, project-based and task-based learning process, and collaborative are a number of applications that base teaching and learning on constructivism. It is not at all necessary that constructivist learning theory implies that a learner must follow a 'constructivist' pedagogical strategy. Rather, it is the opinion of most of the researchers that knowledge is constructed, but a few (for instance, mainstream instructional designers) do not adopt an instructional design pattern, which can be tagged as being 'constructivist'. In a normal situation, a constructivist teaching strategy is based on the assumption that learners learn best when they

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through exploration and active learning. In place of textbooks, hands- on materials are utilised, and the learners are motivated to think and reason. Moreover, they need to give explanations on their reasoning, rather than memorising and reciting facts fed to their memory. Education revolves around the themes and concepts, and the relationship between them, rather than isolated information. Under the theory of constructivism, educators focus on building relations between facts and promoting new understanding in students. Instructors tailor

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teaching strategies to student responses and encourage their students to analyse, interpret and predict information. Teachers/Instructors also rely heavily on open-ended questions and promote extensive dialogue among learners. Constructivism calls for the elimination of grades and standardised testing. Rather, the theory of constructivism suggests that assessment becomes a part of the learning process with the intention that learners can play a bigger role in evaluating their own growth. 7.9

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Theories of learning attempt to explain the mechanism of behaviour involved in the learning process. Experts have formulated different theories of learning with the result that it is not possible to give one theory which meets the expectations of all.

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A theory provides detailed systematised information of an area of knowledge. It serves as a guideline to conduct further research in the area. It produces new facts or supplements the previous facts. It gives an organised explanation about a phenomenon. It provides practical wisdom. It provides effective guidelines.

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Trial and Error". E. L. Thorndike (1874–1949) was the chief exponent of the theory of connectionism or trial and error. The basis of learning, accepted by Thorndike, was an association between the sense impressions and impulses to action. This association came to be known as a 'bond' or a 'connection'. Since it is these bonds or connections which become strengthened or weakened in the making and breaking of habits, Thorndike's system is sometimes called a 'bond' psychology or simply 'connectionism.' As it believed in a stimulus and response type of learning, it was also called SR Psychology of Learning. Thorndike called it learning by selecting and connecting. It is also known as trial-and- error theory as learning takes place through random repetitions.

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Prize in 1904 for his research on the digestive process. He was interested in studying the process of gastric secretion in dogs. His findings brought about a revolutionary change in the field of learning. Conditioning is the modification of the natural response. By conditioning, Pavlov modified the behaviour of the dog on which he experimented.

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in such a way, as the response originally connected with a particular stimulus comes to be aroused by a different stimulus. The classical experiment conducted by Pavlov made clear the process of conditioning.

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Kurt Lewin (1890–1947), unlike Pavlov, Skinner and Gestalten psychologists, conducted experiments on the study of behaviour of children. He utilised an elaborate experimental set-up with a view to control a child's total environment during the course of the investigation for getting detailed information. Lewin emphasised the study of behaviour as a function of the total physical and social situation. Lewin held that psychological laws

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need to understand the specific individual and 'total situation' in which he existed, before making any prediction about his behaviour. Thus Lewin favoured an 'idiographic psychology' in which the focus was on the individual, as opposed to 'nomothetic psychology', where the emphasis was on statistical average. Lewin described his viewpoint in the following formula: B = f (PE) Prof. B.

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Gestalt theory of learning, also named as Learning by Insight, is the contribution of German psychologists who were studying the nature of perception. Max Wertheimer (1880−1943) was the founder of Gestalt psychology. He did a lot of research work at the University of Frankfurt and the University of Berlin. Thereafter, he worked at the New School of Social Research in New York. Wolfgang Kohler and Kurt Koffka were the other German psychologists associated with Wertheimer. Gestalt theory of learning (Learning by Wholes) or Learning by Insight stated that perceptual phenomena are only experienced as wholes or gestalts.

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Constructivism is a basic theory that elaborates on how knowledge is built (or 'constructed') when new information pours in and comes in contact with the already existing knowledge bank, which has been developed in the course of time by various researchers. Constructivism finds its roots in cognitive psychology as well as human biology. It is that approach to education which gives due emphasis to the various methods followed in the creation of knowledge, and that finds adaptability in the changing education scenario. 7.10

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Stages of Memory Psychologists have discovered that memory is not a single

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system. It has more than one distinct system. In other words, there are more than one type of memory. According to the most acceptable model of memory, there are three major systems of memory : Sensory Memory; Short-Term Memory (STM), and Long-Term Memory (LTM). Information moves successively through these three systems if attention is given to the material. If attention (focused awareness) is not given, information does not move further into the system.

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Sensory Memory: Hold any object about 12 inches in front of you. Look at it steadily for a while. Close your eyes and notice how long the clear image of that object lasts. A clear visual image of any object will last in sensory memory for about half a second after the stimulus is removed. Sensory memory holds representations of sensory input for very brief periods of time, depending upon the modality involved. There are different sensory registers for each of the senses.

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Short-Term Memory (STM): Look up for a moment and note what attracts your visual attention. Try to identify the sounds and sensations that you are experiencing now. What you have identified is the content of short-term memory or STM. It holds relatively small amounts of information for brief periods of time, usually 30 seconds or less. This is the memory system we use when we look up the phone number and dial it. If we are connected on the first instance the telephone number is forgotten. However, if we get the line engaged for some time, we keep on dialling the number and through repeated dialling rehearsal of the telephone number we push it to the long-term memory (LTM) storage. However, it has been found that short-term storage is more than a passive "holding area" (e.g. holding a telephone number). On the contrary, it involves active processing of information. This finding has led psychologists to use the term working memory. It means that something active goes on during the short-term memory.

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about 5 to 9 units (the "magic number" 7 ± 2) of information at one go. If the number of units goes higher, new information displaces or writes over the existing units. Thus

SA   Book.docx (D33779030)

| 193/339 | **SUBMITTED TEXT** | 42 WORDS | **93%** | **MATCHING TEXT** | 42 WORDS |

of Learning 9.4.4 Types of Transfer of Learning 9.4.5 Theories of Transfer of Learning 9.4.5.1 Theory of Mental Discipline 9.4.5.2 Theory of Identical Elements or Components 9.4.5.3 Theory of Generalisation of Experience 9.4.5.4 Theory of

of Training/ Learning, Types of Transfer of Learning, Theories of Transfer of Learning- (1) Theory of Mental Discipline (2) Theory of Identical Elements or Components (3) Theory of Generalisation of Experience - Role of

W http://117.239.27.2/sites/default/files/EDU_102.pdf

| 194/339 | **SUBMITTED TEXT** | 28 WORDS | **52%** | **MATCHING TEXT** | 28 WORDS |

of Transfer of Learning 9.4.7 Principles of Transfer (or Conditions that Facilitate Transfer) of Learning 9.4.8 Role of the Teacher in Transfer of Learning 9.5

of Transfer of Learning 2.4.2 Theories of Transfer of Learning 2.4.3 Role of Teacher in Transfer of Learning 2.5

W http://117.239.27.2/sites/default/files/EDU_102.pdf

| 195/339 | **SUBMITTED TEXT** | 11 WORDS | **100%** | **MATCHING TEXT** | 11 WORDS |

the sensory memory, short- term memory (STM) and long-term memory (LTM).

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| 196/339 | **SUBMITTED TEXT** | 66 WORDS | **34%** | **MATCHING TEXT** | 66 WORDS |

Learning and maturation are intertwined and interdependent processes. It can be difficult to distinguish between which behavioural changes are the result of learning and which are the result of maturation at times. A. Weismann (1889) proposed the concept of maturation, which saw germplasm as the carrier of heredity that was passed down from generation to generation. This word has gained popularity in recent years,

SA MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

| 197/339 | **SUBMITTED TEXT** | 25 WORDS | **44%** | **MATCHING TEXT** | 25 WORDS |

Maturation is a change in an organism's pattern in response to stimuli in the intercellular and intracellular environments that are independent of external influences

SA MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

| 198/339 | **SUBMITTED TEXT** | 24 WORDS | **84%** | **MATCHING TEXT** | 24 WORDS |

any change with age in the conditions of learning that depends primarily on organic growth factors rather than prior practice or experience."

SA MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

199/339	SUBMITTED TEXT	11 WORDS	100%	MATCHING TEXT	11 WORDS

as "a change in performance as a function of practice."

SA   MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

200/339	SUBMITTED TEXT	47 WORDS	95%	MATCHING TEXT	47 WORDS

Today it is becoming more and more clear that during the entire period of growth and even during maturity, and again especially in the decline of capacity in old age, the behaviour of an organism can always be seen as resulting from changes, structure and function,"

SA   MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

201/339	SUBMITTED TEXT	25 WORDS	60%	MATCHING TEXT	25 WORDS

he noted that these changes were mostly the product of inherited patterns, with some appearing to be independent of learning and environmental experience. "

SA   MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

202/339	SUBMITTED TEXT	27 WORDS	82%	MATCHING TEXT	27 WORDS

process within which a person from time to time expresses distinct qualities the blueprints which have been carried in his cells from the time of conception,"

SA   MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

203/339	SUBMITTED TEXT	24 WORDS	91%	MATCHING TEXT	24 WORDS

Maturation is a name for the growth process during which a structure or a function becomes more and more adult, that is, mature,"

SA   MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

204/339	SUBMITTED TEXT	17 WORDS	71%	MATCHING TEXT	17 WORDS

is not caused by genetic inheritance. It is a procedure that occurs as a result of

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205/339	SUBMITTED TEXT	26 WORDS	44%	MATCHING TEXT	26 WORDS

and learning are inextricably linked. Maturation aids in the learning process. Only when the stage for that form of learning has been reached through a

SA   MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

213/339	**SUBMITTED TEXT**	13 WORDS	**100%**	**MATCHING TEXT**	13 WORDS

effect may be of a helpful nature or it may hinder.'

SA Book.docx (D33779030)

214/339	**SUBMITTED TEXT**	10 WORDS	**100%**	**MATCHING TEXT**	10 WORDS

Milton's Paradise Lost did not produce any improvement in

SA Book.docx (D33779030)

215/339	**SUBMITTED TEXT**	18 WORDS	**94%**	**MATCHING TEXT**	18 WORDS

Areas of Transfer of Learning Scope of transfer of learning is very wide. Some of the areas

SA Book.docx (D33779030)

216/339	**SUBMITTED TEXT**	14 WORDS	**76%**	**MATCHING TEXT**	14 WORDS

of Transfer of Learning Some of the important types of transfer of learning

SA Book.docx (D33779030)

217/339	**SUBMITTED TEXT**	15 WORDS	**82%**	**MATCHING TEXT**	15 WORDS

in the context of beads or blocks used in the classroom by the teacher.

SA Book.docx (D33779030)

218/339	**SUBMITTED TEXT**	26 WORDS	**56%**	**MATCHING TEXT**	26 WORDS

the learner is within the same behavioural category while making the transfer. 4. Vertical transfer: Vertical transfer of learning implies facilitating the higher behavioural level

SA Book.docx (D33779030)

219/339	**SUBMITTED TEXT**	35 WORDS	**79%**	**MATCHING TEXT**	35 WORDS

of Transfer of Learning Important theories of transfer of learning are as under: ● Theory of Mental Discipline ● Theory of Identical Elements or Components ● Theory of Generalisation of Experience ● Theory of | of Transfer of Learning, Theories of Transfer of Learning- (1) Theory of Mental Discipline (2) Theory of Identical Elements or Components (3) Theory of Generalisation of Experience - Role of

W http://117.239.27.2/sites/default/files/EDU_102.pdf

220/339	SUBMITTED TEXT	12 WORDS	100% MATCHING TEXT	12 WORDS

Motivation is the process that initiates, guides, and maintains goal-oriented behaviours.

Motivation is the process that initiates, guides, and maintains goal-oriented behaviours.

W http://117.239.27.2/sites/default/files/EDU_102.pdf

221/339	SUBMITTED TEXT	39 WORDS	91% MATCHING TEXT	39 WORDS

is what causes you to act, whether it is getting a glass of water to reduce thirst or reading a book to gain knowledge. Motivation involves the biological, emotional, social, and cognitive forces that activate behaviour. 9.7

is what causes us to act, whether it is getting a glass of water to reduce thirst or reading a book to gain knowledge. It involves the biological, emotional, social, and cognitive forces that activate behaviour.

W http://117.239.27.2/sites/default/files/EDU_102.pdf

222/339	SUBMITTED TEXT	23 WORDS	59% MATCHING TEXT	23 WORDS

by the lower level of learning. 5. Bilateral transfer: This type of transfer takes place when training imparted to one lateral automatically

SA Book.docx (D33779030)

223/339	SUBMITTED TEXT	26 WORDS	96% MATCHING TEXT	26 WORDS

Introduction Educational psychology is primarily concerned with psychological principles, facts and categories that are responsible for the modifications or changes brought about in a child,

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224/339	SUBMITTED TEXT	46 WORDS	72% MATCHING TEXT	46 WORDS

society or community. It has also been highlighted that education is the name attributed to the process and practice of bringing about these modifications and changes. However, these modifications and changes, or the whole process of educating the individual do not entirely depend on

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225/339	SUBMITTED TEXT	31 WORDS	74% MATCHING TEXT	31 WORDS

in various aspects of development, intellectual capacity or intelligence, which is also referred to by some psychologists as mental energy (as compared to physical energy, stamina or physical strength).

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 226/339 | **SUBMITTED TEXT** | 38 WORDS | **77%** | **MATCHING TEXT** | 38 WORDS |

of individual children since the beginning, are supposed to know that intelligence portrays its real nature; whether it is a unitary quality and a faculty or is composed of certain elements or factors. Sometimes, teachers in the

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 227/339 | **SUBMITTED TEXT** | 25 WORDS | **64%** | **MATCHING TEXT** | 25 WORDS |

many educational administrators are not quite clear about the concept of intelligence. It is, for example, noted that if a teacher is asked to

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| 228/339 | **SUBMITTED TEXT** | 47 WORDS | **89%** | **MATCHING TEXT** | 47 WORDS |

if the intelligence of these two boys is judged, the former may be found to have an I.Q. of about 90 or 100 whereas the second child who is active and restless may be found to have an I.Q. of 125. To the teacher, ordinarily good

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| 229/339 | **SUBMITTED TEXT** | 15 WORDS | **82%** | **MATCHING TEXT** | 15 WORDS |

when the meaning of intelligence as a concept is not understood. In educational psychology

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 230/339 | **SUBMITTED TEXT** | 16 WORDS | **100%** | **MATCHING TEXT** | 16 WORDS |

as the power of good responses from the point of view of truth or fact.

as "the power of good responses from the point of view of truth or fact"

W http://117.239.27.2/sites/default/files/EDU_102.pdf

| 231/339 | **SUBMITTED TEXT** | 14 WORDS | **100%** | **MATCHING TEXT** | 14 WORDS |

the various methods and means of assessing its level in different individuals.

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 232/339 | **SUBMITTED TEXT** | 14 WORDS | **88%** | **MATCHING TEXT** | 14 WORDS |

According to him, the mind was a host of highly particularised and independent

SA A2.pdf (D142512250)

| 233/339 | SUBMITTED TEXT | 16 WORDS | 85% | MATCHING TEXT | 16 WORDS |

a general capacity of the individual to consciously adjust his thinking to new requirements.

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 234/339 | SUBMITTED TEXT | 43 WORDS | 100% | MATCHING TEXT | 43 WORDS |

defined intelligence as 'the ability to undertake activities that are difficult, complex and abstract and which are adaptive to a goal, and are done quickly and which have social value and which lead to the creation of something new and different'.

defined intelligence as "the ability to undertake activities that are difficult, complex and abstract and which are adaptive to a goal, and are done quickly and which have social value and which lead to the creation of something new and different."

W http://117.239.27.2/sites/default/files/EDU_102.pdf

| 235/339 | SUBMITTED TEXT | 29 WORDS | 76% | MATCHING TEXT | 29 WORDS |

intelligence is considered by Wechsler as the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his/her environment.

SA MA 1st Sem, Paper-2, Block-1.pdf (D165732708)

| 236/339 | SUBMITTED TEXT | 36 WORDS | 65% | MATCHING TEXT | 36 WORDS |

Spearman himself had begun to realise the existence of 'group factors.' Thorndike's theory accords undue weightage to abstract intelligence. Guilford's theory of intelligence seems to be the most comprehensive theory as it attempts to

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 237/339 | SUBMITTED TEXT | 20 WORDS | 92% | MATCHING TEXT | 20 WORDS |

us to know whether or not we are paying adequate attention to each of them. If not, how should

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 238/339 | SUBMITTED TEXT | 19 WORDS | 55% | MATCHING TEXT | 19 WORDS |

gifted children. The model discards the ideas of transfer of learning and stresses that learning of specific skills

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

Pattern Drawing Test. 4. Immediate Memory Test for digits. 5. Picture Construction Test, it has two tests of the same types which have been described above. Pattern Design Test: In the Pattern Design Test, 8 line art were drawn on different cards. It is asked to draw a similar picture by putting them in front. In the Immediate Test for Digits: some digits as 7, 5, 11, 14 are asked to repeat once they are shown or told. Picture Construction Test: There are five scenes from Indian life, putting them in different pieces. it is told to assemble them. Complete picture is prepared with this activity. Apart from these intelligent tests, following tests have been prepared in Hindi— 1. Verbal Intelligence Test— This was constructed in the psychological Bureau in U.P. This test is for the age of 10 to adulthood. 2. Verbal Intelligence Test —This test has been prepared in U.P., this test is for the children of class 8, 10, and 12. 3. Verbal Intelligence Test—This test is for children of 10 to 16. It has been constructed by Dr. S.A. Mohsin. 4. General Mental Ability test—This test has been constructed by Dr. Jalota. This test is for the age of 12 to 16 years. Besides it, many intelligence tests have been prepared, which are used in the different fields according to the need. 10.5.3

Pattern Drawing Test. Notes 4. Immediate Memory Test for digits. 5. Picture Construction Test, it has two tests of the same types which have been described above. Pattern Design Test—In the Pattern Design Test, 8 line art were drawn on different cards. It is asked to draw the similar picture putting them in front. In the Immediate Test for Digits—some digits as 7, 5, 11, 14 are asked to repeat once they are shown or told. Picture Construction Test—There are five scenes from Indian life, putting them in the different pieces it is told to assemble them. Complete picture is prepared with this activity. Apart from these intelligent following tests have been prepared in Hindi— 1. Verbal Intelligence Test—This was constructed in psychological Bureau in U.P. This test is for the age of 10 to adulthood. 2. Verbal Intelligence Test—This test has been prepared in U.P., this test is for the children of class 8, 10, and 12. 3. Verbal Intelligence Test—This test is for the children of 10 to 16. It has been constructed by Dr. S.A. Mohsin. 4. General Mental Ability test—This test has been constructed by Dr. Jalota. This test is for the age of 12 to 16 years. Besides it, many intelligence tests have been prepared, which are used in the different fi elds according to the need.

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as the power of good responses from the point of view of truth or fact.

as "the power of good responses from the point of view of truth or fact"

W http://117.239.27.2/sites/default/files/EDU_102.pdf

Intelligence Intelligence Quotient (IQ): Measure of intelligence that takes into account a child's mental and chronological age. IQ Score = MA / CA x 100 Mental age (MA): the typical intelligence level found for people at a given chronological age Chronological age (CA): the actual age of the child taking the intelligence test People whose mental age is equal to their chronological age will always have an IQ of 100. If the chronological age exceeds mental age – below-average intelligence (below 100). If the mental age exceeds the chronological age – above-average intelligence (above 100). The normal distribution: most of the population falls in the middle range of scores between 84 and 116. ● Very Superior Intelligence (gifted) - Above 130 ● Superior Intelligence - 120 to 129 ● High Average Intelligence - 110 to 119 ● Average Intelligence - 90 to 109 ● Low Average Intelligence - 80 to 89 ● Borderline Intellectual Functioning - 71 to 79 ● Mild Mental Retardation - 55 to 70 ● Moderate Retardation - 40 to 54 ● Severe Mental Retardation - 25 to 39 ● Profound Mental Retardation - Below 25

SA PSY 201 PRAG.docx (D120366162)

| 242/339 | SUBMITTED TEXT | 14 WORDS | 88% MATCHING TEXT | 14 WORDS |

According to him, the mind was a host of highly particularised and independent

SA   A2.pdf (D142512250)

| 243/339 | SUBMITTED TEXT | 17 WORDS | 87% MATCHING TEXT | 17 WORDS |

a person who tends to withdraw into himself, especially, when facing emotional conflicts and stress in

A person who tends to withdraw into himself, especially when faced by emotional conflicts and stress in

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| 244/339 | SUBMITTED TEXT | 20 WORDS | 83% MATCHING TEXT | 20 WORDS |

the structure of personality inferred from behaviour in different situations. He classified traits into four categories: ● Common traits:

the structure of personality inferred from behavior in different situations." Cattell classified traits into four categories- i) Common Traits-

W   http://117.239.27.2/sites/default/files/EDU_102.pdf

| 245/339 | SUBMITTED TEXT | 20 WORDS | 92% MATCHING TEXT | 20 WORDS |

factor analytic approach, determined the contribution of hereditary and learning factors in the development of traits in the individual.

factor analytic approach, determined the contribution of heredity and learning factors in the development of traits in the individual. 14.5.3

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| 246/339 | SUBMITTED TEXT | 36 WORDS | 95% MATCHING TEXT | 36 WORDS |

general population from individual to individual. No two individuals are alike in their behaviour. People operate in their unique way in the environment. Each individual is unique in his adjustment. R.B. Cattell's Classification

SA   EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 247/339 | SUBMITTED TEXT | 33 WORDS | 55% MATCHING TEXT | 33 WORDS |

dimension of personality. It is quite different from the introversion-extroversion dimension. Eysenck has found three fundamental dimensions of personality. ● Introversion vs extroversion ● Normality vs neuroticism ● Psychoticism

SA   EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 248/339 | SUBMITTED TEXT | 19 WORDS | 83% MATCHING TEXT | 19 WORDS |

the specific content and structure of the traits needed to describe personality, there is still agreement on the

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Another difficulty is the quantification of human traits as there is no zero reference and equality of units in trait measurement. There is no suitable measuring tool of trait dimensions. Generally, traits are measured with the help of paper-pencil tests, which can be manipulated by the subject by giving fake information. ● 'Halo effect' operates when a person rates an individual very high on a specific trait. He may rate the same person on other traits equally high. ● The behaviour of an individual cannot be predicted on the basis of scores on trait inventory. Traits are the only point of reference. An examination of the personality traits of an individual enables us to make only probability statements about what the individual may do. ● The last criticism against trait theory is that it is still unclear whether a trait is viewed as an inner process that causes difference among individuals or

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Psychic energy, according to Freud, comes from libido. It denotes sexual energy. When Freud revised his theory, which included two groups of instincts, sexual libido was regarded as the primary driving force of personality. The dynamics of personality is seen as largely governed by the need to gratify the libido. Id: Implies inborn and its main function is the discharge of psychic energy, which when pent up produces tension

SA　EDN-103- Psychological Foundations of Education.pdf (D141387240)

the personality system. Identity operates on animal level. It cannot differentiate between good and bad and operates on the principle of pleasure. The primary process of thinking and explaining id behaviour, resulting from pent up tensions

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the test, the BPI Manual offers a wealth of information to facilitate interpretation of the results. ● Detailed individual scale considerations based on the professional opinions of experienced psychologists. ● Discussion of the detection of invalid cases and of the role of faking and motivated distortion ● Correlations with other well-established measures of psychopathology (for example, the MMPI) ● Empirically derived profiles representing specific symptoms of psychopathology (for example, delusions and alcoholism)

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the 'Big Five', which are extraversion, neuroticism, conscientiousness, agreeableness, and openness to experience. This multilevel factor structure allows for the specificity of the personality to be reviewed, while having a larger overview of the person's global personality (Noller, Law, & Comrey, 1987). Norms and Qualities of the Test The 16 PF Questionnaire consists of 185 items across 16 scales and uses a 3 point Likert scale for a response system. Each item is scored between 0, 1, or 2 as the questions are on a bipolar scale with one answer left as a question mark (?) for a desired response (Cattell, Cattell, Cattell, Russel, & Karol, 1994). The raw scores are then transformed to standard scores and then calculated in reference to the norm group. The questionnaire was standardised again in 2000 using a stratified sample of 10,261 individuals based upon the year 2000 census data in the United States to accurately reflect age, sex, and race. The 16PF 5th Edition has additionally been reassessed to have simpler and clearer language in the questions, increased the consistency in the response format, and decreased the amount of time associated with administering and taking the test to approximately 40 minutes (Dancer & Woods, 2006). Reliability of the Test The internal consistency reliability was determined using Cronbach's alpha (n = 10,261) in which a 0 denotes zero internal consistency and a 1 denotes perfect internal consistency. The results for the primary scales were warmth = .69, reasoning = .75, emotional stability = .79, dominance = .68, liveliness = .73, rule-consciousness = .0.77 social boldness = .87, sensitivity = .79, vigilance = .73, abstractedness = .78, privacy = .77, apprehension = .80, openness to change = .68, self- reliance = .79, perfectionism = .74, and tension = .76. The overall mean for this reliability was .76 (n = 10,261) and, upon a two week test-retest interval, the mean was .80 (n = 204), and upon a two month test-retest interval, the mean was .70 (n = 159). The global scales (not calculated alone for internal consistency as they are a combination of the 16 primary factors) of extraversion, anxiety, tough-mindedness, independence, and self-control had a mean of 87 for the two week test-retest and a mean of .78 for the two month interval. All of this demonstrates high reliability, which is one of the reasons for the popularity of the 16PF The 16PF was

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to ensure validity using factor analysis to ensure that the factors meant to be independent remained independent,

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absence of significant correlation with other factors in the test, and equal loading for the factors when appropriate (Cattell, 1956). The validity of the 16PF test has been demonstrated in a variety of studies

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273/339	SUBMITTED TEXT	12 WORDS	100%	MATCHING TEXT	12 WORDS

the Minnesota Multiphasic Personality Inventory (MMPI) is the best example. ●

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274/339	SUBMITTED TEXT	41 WORDS	63%	MATCHING TEXT	41 WORDS

Inventories that attempt to serene individuals into two or three groups. The Cornell Index is the best example of such an inventory. The Cornell index screens people into two groups- those having psychosomatic difficulties like asthma, peptic ulcers, migraine, convulsive disorders,

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275/339	SUBMITTED TEXT	49 WORDS	52%	MATCHING TEXT	49 WORDS

have nothing in common. In reality, the classification is based upon the purpose and the nature of the item content. All the above self-report inventories are based upon the same principle, which states that behaviours are nothing but the manifestation of trial and one can use the presence

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276/339	SUBMITTED TEXT	14 WORDS	84%	MATCHING TEXT	14 WORDS

Observational methods provide either a structured or unstructured situation. A structured situation is

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277/339	SUBMITTED TEXT	26 WORDS	66%	MATCHING TEXT	26 WORDS

whereas an unstructured situation is an uncontrolled situation. People whose personality traits are to be observed are put in either of these two situations

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278/339	SUBMITTED TEXT	52 WORDS	79%	MATCHING TEXT	52 WORDS

from the above set procedure. The difference in observations made by different observers reflects the subjectivity in the observations. Some Representative Personality Inventories We will now analyse some significant representative personality inventories developed in India and abroad. 1. Self-report Inventories Abroad: The first attempt to measure personality through a questionnaire

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neurotic tendencies. The purpose of the inventory was to screen out emotionally unfit men before they were sent overseas during World War I. Since then, a number of self-report inventories have come into vogue. The Minnesota Multiphasic Personality Inventory

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developed in the early 1940s by Starke R. Hathaway and J. C. McKinley (1943). The inventory is a very important means for detecting disabling psychological abnormalities. It is called 'multiphasic' because it was designed to detect several psychiatric problems. Originally, the inventory had 550 affirmative statements each to be answered

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and above, but has also been successfully used on persons below 16. Over the years, it has been widely used to screen large groups of people for whom clinical interviews are not ordinarily feasible. MMPI has undergone extensive revisions. The most recent version is called MMPI-2, which has been developed by Butcher, Dahlstrom, Graham, Tellegen & Kaemmer (1989). This version consists of several true-false items that are used to produce 14 different scales. Out of these 14 scales, ten are clinical scales that identify particular psychological problems,

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schizophrenia, paranoia, depression, hysteria, hypochondria, etc. In addition to these clinical scales, the MMPL-2 also contains four validity scales

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New validity scales to be used in conjunction with ?, L.F and K have

SA   EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 284/339 | SUBMITTED TEXT | 31 WORDS | 48% | MATCHING TEXT | 31 WORDS |

Question or Cannot say (?), Lie (L), Infrequency (F) and Correction (K). These four scales exemplify a test's need to guard against different kinds of response biases commonly shown by

SA   EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 285/339 | SUBMITTED TEXT | 26 WORDS | 92% | MATCHING TEXT | 26 WORDS |

VRIN and TRIN are included for identifying persons who have answered test items in an adult form and adolescent form is designed as MMPI-A. (Butcher

SA   EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 286/339 | SUBMITTED TEXT | 26 WORDS | 73% | MATCHING TEXT | 26 WORDS |

Morris, 1996). Both forms include 550 items from the original MMPI to ensure that the clinical information obtained does not differ significantly from the original

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| 287/339 | SUBMITTED TEXT | 15 WORDS | 71% | MATCHING TEXT | 15 WORDS |

another important personality inventory, which is based in part upon the MMPI. The inventory

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| 288/339 | SUBMITTED TEXT | 39 WORDS | 68% | MATCHING TEXT | 39 WORDS |

be answered as 'True' or 'False'. There are altogether 18 scales, of which three are validity scales designed to measure various kinds of response sets. These three scales are called 'sense of well-being' designed to measure social undesirability

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| 289/339 | SUBMITTED TEXT | 33 WORDS | 57% | MATCHING TEXT | 33 WORDS |

designed to measure social desirability tendency or 'faking-good' and 'communality' designed to measure the greater number of popular responses. Other 15 scales measure personality traits like dominance, sociability, responsibility, self-control, socialisation, self-acceptance,

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290/339	SUBMITTED TEXT	12 WORDS	100%	MATCHING TEXT	12 WORDS

independence and femininity. The Minnesota Counselling Inventory is a personality

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291/339	SUBMITTED TEXT	19 WORDS	88%	MATCHING TEXT	19 WORDS

emotional stability, family relationships, social relationships, leadership, adjustment to reality, conformity and mood. The Guilford-Zimmerman Temperament Survey

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292/339	SUBMITTED TEXT	49 WORDS	56%	MATCHING TEXT	49 WORDS

another personality inventory. The inventory is based upon factor analysis and measures ten personality traits. Guilford and Zimmerman (1956) computed intercorrelations of items from different inventories. As a by-product of these researches three inventories were developed: Inventory of Factors STDCR, Guilford-Martin Personnel Inventory, and Inventory of Factors GAMIN.

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293/339	SUBMITTED TEXT	15 WORDS	89%	MATCHING TEXT	15 WORDS

general activity, ascendance, restraint, sociability, objectivity, friendliness, thoughtfulness, personal relations, masculinity and emotional stability.

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294/339	SUBMITTED TEXT	48 WORDS	77%	MATCHING TEXT	48 WORDS

another important personality inventory. It intends to measure home adjustment (satisfaction or dissatisfaction with home life), social adjustment (extent of introversion, shyness and submissiveness), health adjustment (extent of illness), emotional adjustment, ease of disturbance and occupational adjustment (satisfaction or dissatisfaction with work, colleagues, and conditions of works).

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295/339	SUBMITTED TEXT	23 WORDS	90%	MATCHING TEXT	23 WORDS

student form and adult form). The student form has only the first four areas of adjustment mentioned above whereas the adult form

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be answered as 'Yes', 'No' or '?'..The inventory has proved to be a very useful tool for rough screening of students and adults who are in need of solving personal problems. Besides the above cited inventories, there are other self-report inventories designed to measure personality traits.

Gordon Personal Profile, Eysenck Personality Questionnaire, Heston Personal Adjustment Inventory, Mooney Problem Checklist, SRA Junior Inventory, SRA (Science Research Associates) Youth Inventory, sixteen Personality Factor Questionnaire, STS (Scholastic Testing service) Youth Inventor, Gordon Personal Inventory, California Test of Personal Orientation Inventory and Maslow Security-Insecurity Scale. 2. Self-report Inventories in India:

measured adjustment in five areas, i.e., home, health, society, emotion and education

the inventory against Asthana's adjustment inventory was 0.62. M.D. Bengalee (1964) developed a Multiphasic Personality Inventory,

the inventory was to screen out maladjusted students from the college going population. It covered five areas of personal and social adjustment, namely, unhealthy parent attitudes, general home adjustment, aggressive behaviour, neuroticism and interests. For measuring the first two personality traits, two independent scales were developed, i.e., the Parent Attitude Scale for measuring unhealthy parental attitude and the General Home Adjustment Scale for measuring general home adjustment. The Parent Attitude Scale

sound body and normal mental health. Principle of cure of mental health. This is related to: ● Suggesting various forms of therapy for treatment and curing specific mental illness and disorders. ● Suggesting means for the rehabilitation and readjustment of the mentally ill persons. 11.6

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Mental health has various strains of the environment we meet in life and mental hygiene as the means we take to assure the adjustment.' Role of Parents (home) in Promoting Mental Health of their Children ● Providing proper affection and love to children ● Providing conducive environment in the home ● Developing proper attitudes to life ● Criticising the children when absolutely essential ● Discarding the tendency to compare their children with other children ● Accepting the limitation of their children ● Avoiding over protection to their children ● Becoming democratic in their behaviour with children ● Setting proper examples of cooperation between husband and wife and with other members ● Meeting the legitimate needs of children ● Building confidence in children ● Providing guidance where necessary ● Avoiding frequent change of address ● Encouraging sibling cooperation ● Paying equal attention to sibling Mental Health Hazards in School We may briefly mention the following factors,

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Lack of friendliness on the part of teachers. ● Undue stress on scholastic and other competitions. ● Defective system of evaluation-element of subjectivity and unreliability/loss ● of confidence in the teacher's marking. ● Fear of failure resulting in tension. ● Excess of homework. ● Heavy curriculum and failure of the child to cooper with it.

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The symptoms can be divided into the following three categories: ● Physical symptoms: Drumming with fingers, facial twitching, nail biting, restlessness, rocketing feet, scratching head, stammering, and vomiting. ● Behavioural deviation: Aggression, bullying hyperactivity, lying, negativism, poor school achievement and sexual disturbances. ● Emotional symptoms: Persistent anxiety, intense conflicts and tension, fear, hatred, inferiority complex, extreme timidity, temper, tantrum and excessive worry. ● Role of School in Promoting Mental Health of the Children: ● The school has a

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| 318/339 | SUBMITTED TEXT | 18 WORDS | 100% | MATCHING TEXT | 18 WORDS |

It must provide a suitable emotional, intellectual and physical environment in which a child can develop

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| 319/339 | SUBMITTED TEXT | 25 WORDS | 72% | MATCHING TEXT | 25 WORDS |

a popular saying, which truly reflects the vital connection between the mind and the body. Apart from a well-organized programme of games and sports

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 320/339 | SUBMITTED TEXT | 36 WORDS | 48% | MATCHING TEXT | 36 WORDS |

good physical and mental health. ● Emotional stability of the teacher: A teacher's personality has a great bearing on the personality development of the students. A UNESCO publication entitled The Education and Training of Teachers

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| 321/339 | SUBMITTED TEXT | 42 WORDS | 60% | MATCHING TEXT | 42 WORDS |

the emotional stability of teachers affects that of pupils. Unhappy, frustrated, dissatisfied teachers cannot help their pupils become happy and well-adjusted young people. Teachers should be mentally alert and strive to develop alertness and stability in students. They should undergo self-introspection,

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| 322/339 | SUBMITTED TEXT | 15 WORDS | 75% | MATCHING TEXT | 15 WORDS |

students do not face adverse influence of prejudices affecting their emotional behaviour. They should,

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| 323/339 | SUBMITTED TEXT | 30 WORDS | 55% | MATCHING TEXT | 30 WORDS |

possible, have high ideals. ● Love for children: A teacher must have an abundance of love for children. One who does not like children should not stay in the

SA EDN-103- Psychological Foundations of Education.pdf (D141387240)

| 324/339 | SUBMITTED TEXT | 11 WORDS | 100% | MATCHING TEXT | 11 WORDS |

Without a band of devoted teachers who are inspired by

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| 331/339 | SUBMITTED TEXT | 18 WORDS | 76% | MATCHING TEXT | 18 WORDS |

others. ● Provision of educational, vocational and personal guidance: It is not essential that a psychologist

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| 332/339 | SUBMITTED TEXT | 62 WORDS | 66% | MATCHING TEXT | 62 WORDS |

in every school. Trained teachers may be provided opportunities to undergo short-term courses, in guidance. For difficult cases, area counsellors may provide necessary guidance. ● Balanced curriculum: The curriculum should be in accordance with 3 A's, i.e., age, ability and aptitude of the students. A right curriculum does not suit all categories of students. ● Imparting sex education: It is

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| 333/339 | SUBMITTED TEXT | 16 WORDS | 88% | MATCHING TEXT | 16 WORDS |

students develop positive attitudes towards sex. ● Motivating intellectual environment of the school: Sound

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| 334/339 | SUBMITTED TEXT | 13 WORDS | 87% | MATCHING TEXT | 13 WORDS |

to the individual needs of the students should be adopted. Activity methods,

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| 335/339 | SUBMITTED TEXT | 32 WORDS | 100% | MATCHING TEXT | 32 WORDS |

Provision of co-curricular activities: Properly planned co-curricular activities are very helpful in providing suitable opportunities to students to sublimate their instincts. ● Balanced approach to freedom and self-discipline: A child who

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| 336/339 | SUBMITTED TEXT | 16 WORDS | 90% | MATCHING TEXT | 16 WORDS |

A fool cannot be mended by flogging and he who flogs is the greatest fool'.

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| 337/339 | SUBMITTED TEXT | 39 WORDS | 68% | MATCHING TEXT | 39 WORDS |

Parliament, but no act of Parliament can abolish the fear of teachers or a system.' Discipline should be inculcated through actions and a constructive approach. ● Correct level of aspiration: Students should not be made to engage in

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| 338/339 | SUBMITTED TEXT | 15 WORDS | 75% | MATCHING TEXT | 15 WORDS |

they may resort to unethical ways, which may lead to conflict and have negative

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| 339/339 | SUBMITTED TEXT | 88 WORDS | 99% | MATCHING TEXT | 88 WORDS |

Common Characteristics of Mentally Healthy People: The common characteristics of psychologically healthy individuals given by several psychologists are as follows: ● Adaptable and resilient ● Calm ● Cheerful ● Conscious control of life ● Emotionally balanced ● Definite philosophy of life ● Enthusiastic and reasonable ● Independent in thinking ● Insight into one's own conduct ● Instincts and habits will regulated ● Free from prejudice ● Good tempered ● Normal sex-consciousness ● Realistic imagination ● Satisfied with the work or occupation ● Socially adaptable 11.7

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