

SELF LEARNING MATERIAL

M.A. EDUCATION

COURSE – EDU : 102

(1st Semester)

ADVANCED EDUCATIONAL PSYCHOLOGY

BLOCK : 1, 2, 3, 4, 5

**Directorate of Open and Distance Learning
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EDUCATION
COURSE – EDU : 102
ADVANCED EDUCATIONAL PSYCHOLOGY

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BLOCK – I
SCHOOLS OF PSYCHOLOGY AND THEIR
BEARING OF EDUCATION

UNIT – I
BEHAVIOURISM – ITS BEARING ON
EDUCATION

STRUCTURE

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Concept of psychology
- 1.3 Concept of schools of psychology
- 1.4 Behaviourism
 - 1.4.1 Origin of behaviourism
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 - Possible answers to CYP
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1.0 OBJECTIVES

After going through this unit you will be able to

- * define behaviourism
- * outline the features and tenets of behaviourism
- * analyse the educational implications of behaviourism.

1.1 INTRODUCTION

The subject 'psychology' is becoming increasingly popular day by day. The number of students opting to study this subject is increasing every year. The credit of this increase in popularity of psychology goes to different psychologist who made significant contributions through their valuable researches. Some of them conducted extensive studies on the contents or tenements of consciousness, while some others dealt with the process of consciousness. Thus, the different approaches adopted by different psychologist in different times in psychological study gave rise to a few schools of psychology. In this unit you will be acquainted with a very important school i.e. 'behaviourism'. You will also be able to know the educational implications of behaviourism and its implication in other fields of life.

1.2 CONCEPT OF PSYCHOLOGY AND SCHOOLS OF PSYCHOLOGY

Psychology as per its latest accepted meaning refers to a science that studies behaviour of living organisms through the application of scientific method. The term 'behaviour' is very broad. It refers to all the activities that the living organism

performs. It has three dimensions – cognitive, affective and conative or psychomotor.

Cognitive behaviour includes the activities i.e. thinking, reasoning etc. Affective behaviour refers to activities i.e. feeling (fear, love) and psycho-motor or conative behaviour includes the activities that involve both mental abilities (i.e. thinking) and motor organs. For example we may point out to the activities i.e. cycling, swimming, walking etc. To perform these activities both – mental abilities and motor organs are used. As a science, behavioural psychology, activities pertaining to the above three dimensions or domains.

1.3 CONCEPT OF SCHOOLS OF PSYCHOLOGY

Although psychology has a long history systematic studies in this field started with the establishment of a psychological laboratory in 1879. It was Wilhelm Wundt (1832-1920) who is associated with this establishment at the University of Leipzig in Germany. In his laboratory he conducted a study on the elements of consciousness. The particular method he used in his study was ‘introspection’.

The theory of evolution put forwarded by Charles Darwin (1809-1882) gave rise to some innovative thoughts in the field of psychology too. Inspired by Darwin, American educationists and psychologist i.e. John Dewery (1859-1952) James Angell (1869-1946) George Herbert Mend (1863-1931), Robert. S. Woodworth (1869-1946) E.L Thorndike (1874-1949) conducted basic experiments in the field of psychology. They were of the opinion that the nature of human mind can be understood only through interactive processes with the environment.

Thus, you may observe different approaches adopted by different thinkers. The approach and method adopted by Wundt

is different from American educationists as we have mentioned. These approaches have led to the origin of certain schools. So, a school of psychology refers to a particular approach of psychological study having its own area of interest and own method. Wundt's approach was termed as structuralism, while the other approach held by Dewey, Angell, Herber etc. was termed as functionalism. Next to structuralism and functionalism some other schools also emerged. These are behaviourism, psychoanalysis and Gestaltism.

1.4 BEHAVIOURISM

1.4.1 Origin of behaviourism

Behaviourism as a school of psychology emerged in the early 20th century. J.B. Watson (1878-1958) laid the foundation stone of this new school which is closely linked to a philosophy of science based exclusively on observable events as in biology, chemistry and physics*. But before Watson there were some prominent psychologists who initially worked in this line of thought. Notable contribution in this regard were made by Russian psychologist and pharmacologist, Ivan Petrovich Pavlov (1849-1936) and American psychologist E. L. Thorndike. Pavlov conducted a study on 'Saliva Secretion by a dog' i.e. how a dog behaves when it sees a piece of meat and how the response (Saliva - Secretion) is associated with the sound of bell. His experiment greatly influenced the American schools of psychology. The prominent psychologist E.L. Thorndike conducted more comprehensive studies than Pavlov

<p>* Psychological foundation of education and Educational Statistics, Dr. Mukul Kumar Sarmah Page No - 47.</p>

on chicks, dogs and cat and laid down a theory named connectionism. Through this theory he explained how, through, conditioning specific response (R) came to be linked to specific stimuli. According to him, this S.R. links on bonds are products of biological changes in the nervous system and learning is nothing but acquiring such bounds.

The experiment conducted by Pavlov and Thorndike inspired Watson to work rigorously in the field of stimulus response bond, conditioning etc. and gave him a new approach of study of behaviour of individual which popularly emerged as behaviourism.

1.4.2 Concept of behaviourism

Behaviourism is the school of psychology that focuses its attention entirely on overt behaviour. Overt behaviour refers to observable behaviour. For example the activities like Walking, Speaking, Writing, Playing with a ball – all are observable behaviour. Behaviourism maintains that psychology, in order to be a science of behaviour should study behaviour of an individual in relation to the environment through application of scientific or direct experimental method. It reduces the subject matter of psychology to those actions/events that can be observed or objectively recorded. The incidents or events that cannot be studied through direct method has to be excluded from psychology. For example ‘feeling of fear’ is not a subject matter of psychology in the opinion of the behaviourist as it cannot be measured objectively. But the effects created by the feeling of fear i.e. changes in heart beat, blood pressure often draw the attention of the behaviourists.

Check your progress - 1

1. What do you mean by schools of psychology ?
2. Name the psychologists who are associated with the school of 'functionalism'.
3. Define 'Behaviourism'.

1.4.3 Behaviourism in contrast to functionalism

Behaviourism emerged as a school of psychology as a protest against functionalism. It doesn't agree with functionalism's idea of studying conscious behavior. It states that consciousness cannot be the subject matter of psychology as stated by functionalism because it cannot be proved by any scientific test. It can be neither seen nor touched. Behaviourism is in contrast to functionalism not only in case of subject matter, but in terms of the method of study too. Functionalism adopts 'introspective method' while behaviourism prefers only observation and experimental method.

1.5 WATSONIAN BEHAVIOURISM AND NEO-BEHAVIOURISM

You have already seen that Watson laid the foundation stone of behaviourism. He made tremendous contribution through his extensive experiments. Watson was followed by some other psychologists like Hull, Tolman, Guthrie, Skinner, to name a few. But they were different from Watson to some extent in their approaches to study behaviour. They are known to be neo-behaviourists and their approach is known as neo-behaviourism. The base approach (i.e. Watson's Approach) is known to be Watsonian behaviourism.

1.5.1 Watsonian Behaviourism

Watsonian behaviourism believes that life can be explained in essentially mechanistic terms. It focuses not on mental process but on the effect that external events have on the action of the individual. Its emphasis is upon the operation of the brain and nervous system as the interest of the Watsonian behaviourists is in neural physiology and physical mechanism of S.R. bonds. They don't see any purposiveness in human behaviour. *They emphasise the importance of the environmental conditions so much that in their views the developing individual is reduced to a passive recipient only. Individual's behavioural development, according to them, is a function of learning under appropriate environmental conditions.

1.5.1.1 Watson's Experiment

You might be curious as to what is the base behind Watson's extreme preference to environment. His opinions are based on some famous experiments. In one of his experiments he experimented with an 11 month old infant named Albert where he (Albert) was confronted with white rat. At the beginning he (Albert) showed no fear of the rat. Then the conductor of the experiment made a loud clanging noise every time the rat was shown to Albert. This loud noise caused the baby to cry and crawl away. After several repetitions it was found that Albert came to fear anything white and furry, even Santa claus's beard. The fear of the infant (which is natural) to loud noise becomes conditioned with the white rat and also

<p>* Psychological foundation of education, Dr. Mukul Kumar Sarma page 48.</p>
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shifts to all that resemble the white rat. It's an example of conditioning. Through this experiment Watson could firmly say that our behaviour is stimulated and evoked by external stimuli (environment in broader sense). His famous passage reveals his firm conviction that he feels about the superiority of environmental force and passive role of individual as he says "Give me a dozen healthy infants wellformed and may own specified world to bring them up in, and I will guarantee to take anyone at random and train him to become any type of specialist. I might select doctor, lawyer, artist etc. and yes beggarman and thief regardless of their talents, tendencies, abilities, vocation and the race of the ancestors".

1.5.1.2 Main tenets of Watsonian behaviourism

The main tenets of Watsonian behaviourism as revealed from the above discussion are as follows –

1. The subject matter of psychology is the behaviour of man and other animals that can be systematically observed and measured.
2. The purpose of psychology is to predict the behaviour of man and other animals.
3. Consciousness, if at all exists, is not the subject of scientific study. The unit of study is the stimulus response bond.
4. Introspection cannot be the method of study of psychology because of its subjective nature.
5. Conditioning is the key to understand behaviour.
6. An individual acquires behaviour through constant interaction with his environment. Behaviourism also gives importance on controlling the environment in order to keep it conducive for acquisition of desired behaviour.

Check your progress - 2

1. Mention the main features of Watsonian behaviourism and explain each feature.
2. Do you agree with Watson's remark "Give me a dozen healthy infants, well formed and my own specified world to bring them up in and I will guarantee to take anyone at random to train him to become any type of specialist----- "

1.5.2 Neo-behaviourism

While Watsonian behaviourism explains behaviour in a mechanistic way, Neo-behaviourism explains behaviour that appears to be purposive. The psychologists within this group believe that our behaviour is not always initiated by external stimuli as stated by Watson.

Man is not a victim of the environment. In various situations in our life we don't wait for the things to happen in the environment. The individual often manipulates the environment with his own initiative. The organism itself initiates its behaviour. He does something, behaves in a manner and operates on the environment which in turn responds to the activity. The environment responds to the activity, rewards it or punishes it and determines whether behaviour will be repeated, maintained or avoided.

Let me give you one example. An infant sees a burning flame, proceeds to touch it. At its touch, the flame responds to his activity (i.e. touching) by burning his (infant's) finger. The infant cries and learns not to touch it in the future. Here the infant learns something. In other words he acquires a behaviour and this behaviour is a purposive behaviour. It is not

mechanical as stated by Watsonians. Neo-behaviourists are interested to explain such purposive behaviour. They believe that reinforcement is an impotent determinant of behaviour.

Some prominent Neo-behaviourists

In the above paragraph you have learnt about the features and notions of neo-behaviourism. Let me tell you some names of Neo-behaviourists and their works.

Hull and Tolman

Hull developed a hypothetical deductive method in his drive reduction theory of learning. He formulated explicit postulates about learning such as reinforcement, in the sense of reduction of drive and explains that such reinforcement is extremely important for any learning to occur. Tolman was concerned with molar behaviour. It was a more cognitive form of behaviour.

B.F. Skinner

He developed an objective approach known as operant conditioning in later half of twentieth century and states that the individual is not the slave of environment as stated by Watson, but he is purposive in acquiring a new behaviour. Behaviour is not initiated by merely external stimulus, but by the organism himself. In his words **“behaviour is shaped and Maintained by its consequences. It is operated by the organism and maintained by its results”*.

1.6 EDUCATIONAL IMPLICATIONS OF BEHAVIOURISM

Behaviourism has brought a revolution into the field the of education. Many fundamental thoughts have emerged

<p>* Advanced Educational Psychology S.K. Mangal Page no. 192</p>

following the experiments conducted by behaviourists. The educationists and all concerned with education stated to think in a new line leading to emergence of effective divergent approaches in forms of teaching learning process. Following are the significant contributions of behaviourism into the field of education.

- Behaviourism has discussed the human learning process and motivation thoroughly and as a result many prominent theories in regard to there processes have emerged.
- It has made significant contribution towards methods of teaching. It advocates the use of scientific and objective methods of teaching and learning.
- Behaviourism makes the teacher and all concerned with the process of educations, the need for an effective educational environment for realization of educational goals.
- Behaviourism has significantly influenced teacher's attitude. They are not now optimistic that through their best effort even the poor performer can be brought into satisfactory level.
- It advocates the use of modern technologies in the field of teaching-learning to stimulate and evoke responses from the students and to provide concrete experiences.
- The experimental findings of behaviourists brought a drastic change into the approaches to deal with delinquents backward, mentally retarded children. Subsequently, some new techniques and strategies emerged in these fields.
- It has given rise to new ideas or innovations in the field of learning technology i.e. programmed learning, Computer Assisted Instruction

- Behaviourism advocates the use of reinforcement and reward for acquisition of desirable behaviour.
- It has extended the scope of educational psychology to include the study of animals as a way to learn more about human nature.
- It gives special emphasis to the concepts like stimulus, response, habits, conditioning etc. and their importance in education.
- Behaviourism is an encouragement for the teachers to extend their endeavour from mere development of the subject knowledge to learning constantly about classroom management. In practical teaching-learning environment a teacher needs to learn how to arrange the physical environment i.e. where to keep the blackboard, how to foster co-operation among the students along with enhancing subject knowledge. In this regard the behaviouristic thought is helpful for him.

Check your progress – 3

1. Differentiate between Watsonian behaviourism and neo-behaviourism.
2. Identify the areas in the field of education in which behaviourism has important bearing and explain how.

1.7 LET US SUM UP

You have learnt in this section that as a school of psychology, behaviourism is an important school. It has created a revolution in the field of psychology giving it a scientific base. It has highlighted how external environment (stimulus) is related to our psychical activities in our day-to-day life. It has also explained exclusively the stimulus-response bond and the

process of conditioning. In the field of education, behaviourism has great bearings. It has inspired the teacher and all concerned with education to provide the students the best possible environment and to provide appropriate reinforcement and motivation.

1.8 KEY WORDS

Conditioning :

Classical conditioning : A form of learning in which a previously neutral stimulus is linked with a given response; Operant conditioning; a form of learning in which a given response becomes more likely to occur due to its being reinforced by reward.

Innate : Inborn, inherent.

Mentally retarded : Characterised by low intelligence – usually below 70 IQ – which may severely restrict individual's development.

Psychomotor : Involving both psychological and physical activity

Reinforcement : Process of following the conditioned stimulus by the unconditioned stimulus (according to classical conditioning of Pavlov); rewarding of desired response according to operant conditioning by skinner

Operant conditioning : Form of learning in which the correct response is reinforced and becomes more likely to occur

Response : Behaviour reaction brought about by the change in the environment.

Introspection : To see inward; analysing one's own mind or mental processes.

Suggested readings

- Sarma Mukul Kumar (Dr.) *Psychological foundation of education and educational statistics*, Banalata, Dibrugarh.
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- Chaplin J.P & Krawiec, T.S., *Systems and theories of psychology*, 3rd ed, New York : Holt, Rinehart and Winston, 1974
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Possible answers to check your progress

Check your progress -1

- Ans to que No. 1: Refers to different approaches of study in psychology
- Ans to que No. 2: Dewey, Angell, Thorndike etc.
- Ans to que No. 3: It is a school of psychology that deals with study of behaviour of individual with objectives observation

Check your progress - 2

Ans to que no 1 your answer should include

- a) Believes that behaviour is initiated by external stimuli
- b) Man is the slave of environment
- c) Conditioning is the key to behaviour development
- d) Answer to que : 2
- e) Give your own view (think)

Check your progress - 3

Ans to que No.1. Your answer should contain the following points.

- a) Difference in opinion about the learning of new behaviour
- b) Differences in method of acquisition of new behaviour.

Ans to que No 2 Your answer should contain the following points.

- a) Implication in method of teaching.
- b) Implication in the teaching profession
- c) Implication for delinquent, retarded children

References

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2. Mangal S.K., *Advanced Educational psychology*; prentice hall of India Pvt. New Delhi
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4. Skinner, B.F. *About Behaviourism*, New York, Alfred Knopf, 1974.

UNIT – II

GESTALTISM

STRUCTURE

1.0 Objectives

1.1 Introduction

1.2 Gestaltism

1.2.1 Meaning of ‘Gestaltism’

1.2.2 Historical background of Gestalt school

1.2.3 Birth of Gestaltism

1.2.4 Gestaltism in contrast to behaviourism

Check Your Progress - 1

1.2.5 Kochler’s experiment

1.2.6 Tenets of ‘gestaltism’:

1.3 Concept of Insight its steps

1.4 Gestaltists’ views on problem solving behavior

Check Your Progress - 2

1.5 Implications of Gestaltism in the field of Education:

Check Your Progress - 3

1.6 Let us sum up

Key Words

Suggested Readings

Possible answers to CYP - 3

References

Model Questions

1.0 OBJECTIVES :

After going through this unit you will be able to

- * define gestaltism
- * differentiate gestaltism from other school i.e. behaviorism
- * outline the features of gestaltism
- * find out the bearings of gestaltism in the field of education.

1.1 INTRODUCTION

In the previous unit you have learnt about 'Behaviourism'. You might have noticed that as a school of psychology, behaviourism has tremendous contribution to field of psychological thought and education as well. But still there are some limitations with this school and these limitations made the psychologists to think of a new approach of psychological study. Subsequently, a different school emerged in the field of psychology which is known as 'Gestaltism'. This new school has significant contribution to the field of education. Its fundamental postulates provided the educationists some valuable information about human learning and subsequently some innovative ideas emerged in the field of teaching method, curriculum construction any other fields that have relation with educational management. In this unit you will be acquainted with this school and its bearings in the field of education.

1.2 GESTALTISM

1.2.1 Meaning of ‘Gestaltism’

The word ‘Gestalt’ is a German word that has been carried over to English psychological literature which means configuration or united whole. It means that Gestalt school gives importance on molar approach instead of molecular approach to study behavior of an individual. According to Gestalt school, an individual perceives a thing as a whole not part by part. For example, when we look at an elephant we look the big animal as a whole and perceive it as a whole, we don’t perceive its leg, or ear separately. Even though the elephant consists of its constituents parts i.e. leg, ear, colour, teeth etc. but when perceived by the mind all these components become a pattern, or a gestalt. That is why it states that things cannot be understood by the study of its constituent parts but only by the study of it as totality or whole.

1.2.2 Historical background of Gestalt school

Gestalt school of psychology developed as movement against the theory of behaviourism that explains behavior in a mechanistic way. Although formally was developed in the last part of first decade of 20th century, but its beginning may be traced back to the initiatives at Wurzburg school (from 1901—1909). The Wurzburg school conducted a number of experiments on thought process which has direct relevance to gestalt school of psychology. The works of Ernst Mach (1838-1961) and Christian Von Ehrenfels (1859-1932) are also associated with the origin of this school. Mach was of the opinion that although the subject matter of psychology and

physics are same but psychology has to take one extra aspect into consideration and this extra aspect is the sensation that do not corresponds the physical reality before the viewer. **These non physical sensation are sensations of relationship.* Ehrenfels also conducted a number of studies worked on Act psychology introduced by his teacher Franz Brentano (1838-1917) at the University of Graz in Austria. On the basis of the experiments Ehrenfels was of the opinion that our perception is not mere sensation of physical item, but there is something that is non physical.

1.2.3 Birth of Gestaltism

In 1912, Max Wertheimer (1880-1943), a German philosopher and psychologist published his classic papers on “Phenomena”(apparent movement) leading to birth of Gestaltism. His idea expressed through his classics is that an organized whole is greater than the sum of its parts. The other psychologists related with the development of this school are Wolfgang Kohler (1887-1967), Kurt Koffka (1886-1941), and Kurt Lewin(1890-1947). All the four men migrated to America from Germany because of tyranny created Nazi force of Hitler. The new school caught the attention of the psychologists of throughout the world.

1.2.4 Gestaltism in contrast to behaviourism

Gestalt psychologists are not in favors of observing behavior from mechanistic view point as adopted by behaviourism. It does not agree with behaviorists’ idea that

<p>* psychological foundation of education & educational statistics; Dr. Mukul Kumar Sarma; page no- 5</p>
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behavior is the result of mere stimulus-response connection. It states that human behavior is an intelligent behavior rather than stimulus-response mechanism. Such an intelligent behavior involves discovery of the relationship of the elements of a perceptual field. The realization or discovery of the relationship of the elements adds something new or extra to the perception and this extra is more valuable than the original components (elements). Behaviorism states that sensation comes prior to meaning and considers these two acts as separate. But gestalt psychologists don't separate sensation of an object from its meaning. They state that unless a person sees some meaning in an object he will pay little attention to it. They are of the opinion that sensation or perception is always related with total situation and involves a problem of organization. When a person perceives a thing, a complex background involving his past experience and purpose (ambition, goal related to future etc) comes into work. Opposing behaviorists' notion that behavior is the product of habit formation, Gestaltism states that it is the result of application of processes involving mental faculties i.e. observation, analysis, synthesis and generalization

Check Your Progress - 1

1. Define Gestaltism.
2. How do Gestaltists differ from behaviourists in the idea of sensation and perception ?

1.2.5 Kohler's experiment

Kohler conducted a number of experiments on different animals. In one of his experiments he placed a chimpanzee named as Sultan inside a cage. Some bananas were hung from the roof of the cage. The experimental situation also contains a box. Seeing the bananas Sultan made some effort to

catch these by jumping but couldn't. The bananas were placed too high to reach them by jumping. Suddenly the monkey got an idea. He used the box as the jumping platform by placing it below the hanging bananas and it resulted in solution of the problem.

In another experiment the problem was more critical. Two sticks were kept in the experimental room along with the bananas. One stick had a hole at one end so that another stick could be put into to form a long stick. Bananas were kept at much height that could not be picked up either by jumping or by use of any one stick. The chimpanzee first tried to catch the bananas by jumping, then by using the sticks separately, but failed. Suddenly an idea came into his mind to put one stick into the hollow of another to make it long to reach the bananas. The idea responded him with the reward to grasp the bananas.

In these experiments it is seen that the chimpanzee looks at the situation as a whole, discovered the relationship among the elements that helped him to solve the problem.

1.2.6 Tenets of 'gestaltism'

The meaning of 'gestaltism', its historical background that has already been discussed above reveals the doctrines or the tenets ascribed to 'gestaltism'. But still for better clarification we feel it important to mention the tenets pointedly.

1. **Whole is important :** Gestalt school believes that it is the whole that determines the behavior of its parts. In this context the gestalt psychologists are in contrast with the elementalistic psychology which emphasized the importance of parts. Opposing elementarists idea that parts make a whole Wertheimer said " There are contexts in which , what is happening in the whole , cannot be deduced

from the characteristics of the separate pieces, but conversely ; what happens to a part of the whole is, in clear cut cases , determined by the laws of inner structure of its whole .”

2. **Phenomenological approach** : The gestalt school is phenomenological in its approach and hence it is anti-positivistic. It is a molar approach to behavior
3. **Opposing to quantification** : Instead of quantification of human behavior, Gestalt school emphasizes the importance of qualitative assessment of behavior.
4. **Psychophysical isomorphism** : It means that ‘gestalt’ is both physical and mental. The brain functions tend to take the form of specific molar events corresponding to those structures that are found in experiences.
5. **Insight** : We have already discussed insight as a concept of Gestalt psychologists. Gestaltists gave great importance on insight for perceptual development.

1.3 CONCEPT OF INSIGHT : ITS STEPS

Gestalt psychologists used the term insight to describe learning behavior of an individual. Insight refers to the process through which an individual can discover the interrelationship among the elements (that are originally separated from each other) of a perceptual field. In the words of Gestaltists insight means* *“a patterning of the perceptual field in such a way that the significant relations are apparent ;it is the formation of a gestalt in which the relevant factors falls into place with respect to the whole.”* Insight involves the following steps

<p>* psychological foundation of education & educational statistics; Dr. Mukul Kumar Sarma; page no- 54</p>

- a. Perception of the situation as a whole
- b. Seeing and judging the relationship between various factors involved in the situation
- c. Taking an immediate decision

The arousal of insight need not require a longer time. Kohler explains that it arises as a bolt of lightening. But there are certain factors that have great influence on insight. These are -----

1. **Experience** : Past experience is quite helpful in this regard. To solve a complicated problem of mathematic, a child has to be acquainted with the basics of mathematics – i.e. summation, subtraction, multiplication and division.
2. **Intelligence** : For insight the individual needs minimum level of intelligence. We cannot expect solution of a problem that requires high mental operations from a person belonging to mentally retarded group.
3. **Learning situation** : Situation in which the individual is placed also determines insight formation. The physical situation has to comprise all the necessary elements to solve the problem. In the kohler's experiment, if, two bamboo sticks were absent and only bananas were hung how the Chimpanzee can develop insight to get the bananas.
4. **Initial effort** : The individual needs to make effort initially that does not represent intelligent behavior. Such blind initial effort does not last for long time, but such effort is of quite necessary for initiation of insight. In kohler's experiment it was observed that before learning to solve the problem or realizing the relationship among the elements viz. banana, two sticks, and the box the monkey made some blind efforts i.e. jumping or crawling

- 5. Repetition and Generalization :** After attaining insight in a particular situation, if, the individual is confronted with another situation that has similarity with the first one it will be easy to form insight in this situation. In others words the solution found in one situation helps him to react insightfully in other identical situation.

1.4 GESTALTISTS' VIEWS ON PROBLEM SOLVING BEHAVIOR

The Gestalt psychologists are of the opinion that problem solving capacity of an individual depends on to what extent he is able to organize the separate elements of a problem. In fact the focus of Gestalt psychologists is in the idea of grouping. Such problem solving behavior is a purposive behavior. The individual perceives the problem situation as a whole, reacts to it as a whole, evaluates the relationship among the element of problem and takes proper decision intelligently. The process of grouping or organizing the scattered elements of a problem-situation is determined by certain primary factors. These are ----

- 1. Proximity :** Elements tend to be grouped together according to their nearness
- 2. Similarity :** items similar in some respect tend to be grouped together
- 3. Closure :** items are grouped together if they tend to complete some entity
- 4. Simplicity :** items tend to be organized in to simple figures according to symmetry, regularity and smoothness.

These factors are also called law of organization by gestalt psychologists and also called as Gestalt Laws.

Check Your Progress - 2

1. What is insight ? How does it develop during problem solving.
2. Explain the views of Gestaltists in regard to problem solving behavior.

1.5 IMPLICATIONS OF GESTALTISM IN THE FIELD OF EDUCATION

The tenets of the Gestalt school have benefited education process to a great extent. It's important bearing in the field of education are -----

1. The curriculum of study has been greatly influenced by Gestalt philosophy. It has emphasized the need of integration of the subject matter and made the educationists think the need of correlation of studies.
2. Gestalt psychology gives importance on inclusion of subject matters that lead to development of insight or perception, thus inspired the teachers and the educationists to give greater priority on concept rather than memory.
3. Stress is being laid on inter-disciplinary approach.
4. Gestalt psychology encourages purposive behaviour in the process of education and discourages mechanical approach in this respect. It encourages the teachers to present subject matter before the students in such a way that they can appreciate meaning and significance of the material in its entirety.
5. Gestalt psychology encourages cooperation among teacher parents and all other concerned with the process of education to work together to help the students. Its

underlying philosophy also fosters group work among students.

6. Gestalt psychology considers problem solving as one of the best methods of teaching-learning.
7. Gestalt psychology laid great emphasis on the role of motivation and definite goal and purposes in any type of learning. It has resulted in providing a central role to motivation in any scheme of learning and education. The emphasis of setting clear cut goals, defining them in definite behavioral terms and linking education with the needs and motives of the learner may be said to be some of the great implications of Gestaltism in the field of education.
8. This school has encouraged research in the field of organizational climate, institutional planning, group dynamics and so on, for organizing factors in environment of the learner into meaningful whole so as to put the best efforts to manage the affairs of education and welfare of individuals.

Check Your Progress - 3

1. Identify the areas of education where Gestaltism has implications and how.

1.6 LET US SUM UP

Gestalt psychology as a school of psychology that has given rise to some innovative ideas in the field of psychology and education. It states that the whole of a thing is always important than its constituent parts. The configuration or organization of a thing reveals an extra meaning to the thing which is very much important to perceive the thing properly.

This school has given great importance on reason, power of analysis or critical judgment, power of generalization in the process of learning. It has explained learning and education as processes having clear cut goals or purposes. This school has significant contribution to education that influenced curriculum, method of teaching and any other aspect that falls under education.

KEY WORDS

1. Gestalt : configuration or whole
2. Insight : understanding, seeing meaningful relationships in a phenomenon
3. Reasoning : refers to the mental process of drawing conclusion from a set of premises.
4. Generalisation : it refers to the ability to see the relationships among different elements and to draw conclusion
5. Perception : Sensation plus meaning; knowing the thing that has created sensation.

SUGGESTED READINGS

1. Sarma Mukul (Dr.), Psychological Foundation of Education & educational statistics,' Banalata', Dibrugarh.
2. Mangal .S. K., Advanced Educational Psychology, Prentise –Hall of India Private Limited, New Delhi.
3. Chauhan S.S., Advanced Educational Psychology, Vikas Publishing House PVT LTD, New Delhi.

4. Chaplin, J.P. and Krwiec, SYSTEM AND Theories OF psychology, 3rd ed., New York: Holt,Ribenhart &Winston,1974.

Possible answers to CYP - 1

1. Gestaltism is a school of psychology that gives importance on molar approach instead of molecular approach to study behavior of an individual. . It states that the whole of a thing is always important than its constituent parts.
2. Behaviorism states that sensation comes prior to meaning and considers these two acts as separate. But gestalt psychologists don't separate sensation of an object from its meaning .They state that unless a person sees some meaning in an object he will pay little attention to it. They are of the opinion that sensation or perception is always related with total situation and involves a problem of organization. When a person perceives a thing, a complex background involving his past experience and purpose (ambition, goal related to future etc) comes into work.

Possible answers to CYP - 2

1. Insight refers to the process through which an individual can discover the interrelationship among the elements (that are originally separated from each other) of a perceptual field. In the words of Gestaltists insight means* *“a patterning of the perceptual field in such a way that the significant relations are apparent ;it is the formation of a gestalt in which the relevant factors falls into place with respect to the whole.”*

It develops when a person discovers the interrelationship among constituent elements of a thing or a phenomenon

2. The Gestalt psychologists are of the opinion that problem solving capacity of an individual depends on to what extent he is able to organize the separate elements of a problem. In fact the focus of Gestalt psychologists is in the idea of grouping. Such problem solving behavior is a purposive behavior. The individual perceives the problem situation as a whole react to it as a whole, evaluate the relationship among the element of problem and takes proper decision intelligently.

Possible answers to CYP - 3

1. Following are the areas of education where Gestalism has implications :
 - a. Aims of education
 - b. Curriculum
 - c. Method of teaching
 - d. Role of teachers

Gestalt psychology encourages purposive behaviour in the process of education and discourages mechanical approach

in this respect. It emphasizes on setting clear cut goals, defining them in definite behavioral terms and linking education with the needs and motives of the learner. It encourages the teachers to present subject matter before the students in such a way that they can appreciate meaning and significance of the material in its entirety. It has emphasized the need of integration of the subject matter and made the educationists think the need of correlation of studies.

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1. Sarma Mukul (Dr.), Psychological Foundation of Education & educational statistics , 'Banalata', Dibrugarh.
2. Mangal .S. K., Advanced Educational Psychology, Prentise –Hall of India Private Limited, New Delhi.
3. Chauhan S.S., Advanced Educational Psychology, Vikas Publishing House PVT LTD, New Delhi.

MODEL QUESTIONS

1. Define Gestaltism. Identify the tenets of gestalt schools and explain them.
2. Explain Kohler's experiment and write about its implications in classroom teaching.
3. Write about educational implications of Gestalt school of psychology.

UNIT - III

PSYCHO-ANALYSIS

STRUCTURE

3.0 Objectives

3.1 Introduction

3.2 Psycho-analysis

3.2.1 Historical background of Psychoanalysis

3.2.2 Meaning of Psychoanalysis

3.2.3 Structure of the mind

Check your Progress - 1

3.3. The structural model of personality

3.4. Contribution of psychoanalysis to the field of Education

Check your progress - 2

3.5 Let us sum up

- Key words
- Suggested Reading
- Probable answers to check your progress
- References
- Model Questions

3.0 OBJECTIVES

After going through this unit, you will be able to :

- Explain the concept of psychoanalysis.
- Know the basic tenets of psychoanalysis.
- Describe the structure of mind.
- Explain the structural model of personality.
- Learn and differentiate different schools of psychology.

3.1 INTRODUCTION

In the previous classes, we have already discussed two schools of psychology – Behaviourism and Gestaltism. Their origin, main features and educational implications etc. have been already discussed systematically.

You are already aware of the fact that psychology owes its origin to philosophy & it studies human behaviour. As time passed, psychologists provided a scientific base to the subject for study of behaviour which gave birth to different schools of psychology. Today, I am going to discuss another important school of psychology –named “Psychoanalysis”.

3.2 PSYCHHOANALYSIS

3.2.1 Historical background of psychoanalysis

Psychoanalysis is a school of psychology development by Sigmund Freud (1856 – 1939), a viennse physician, Freud was born in Austria in 1856 of Jewish parents. He qualified himself as a doctor from Vienna in 1881. Most of his life he

stayed in Vienna. The great influence on his life originated for two sources -

- (a) his studies with Jean M. Charcot (1825 – 1893) in Paris involving hypnosis, hysteria and sexual basis of mental disturbances,
- (b) In 1880, another friend of Freud, Joseph Breuer, was treating a woman for symptoms of fainting and coughing. The treatment was transferred to Freud and he treated her successfully with this background and experience he developed his own method of psychoanalysis.

3.2.2 What is psychoanalysis ?

Psychoanalysis is a school of medical psychology developed by Sigmund Freud. The development of psychoanalysis is related with the treatment of mental patient. Therefore, we may also call it a school of psychological treatment. In order to explain human behaviour Psychoanalysis as a school of psychology put forward different views quite contrary to other schools of psychology like structuralism, behaviourism etc.

This school of psychology, for the first time, presented a beautiful blend of theory and practice on the theoretical side, it presented a theory to understand and explain human mind, and on practical side, it provided a method, known as psychoanalysis, for treating the mentally ill. As of today, the term psychoanalysis has three different meanings.

- i. Firstly, it means a method of treatment designed by Freud for the cure of certain mental disorders.
- ii. Secondly, it represents a system or school of psychology that emphasises the importance of

unconscious memories and impulses and childhood experiences that determine human behaviour.

- iii. Thirdly, psychoanalysis means specialised technique for investigation unconscious mental activities.

Here, we will discuss psychoanalysis as a school of psychology.

Tenets of psychosanalysis :

Freud was the first psychologist who systematically attempted to explore the unconscious part of human personality. He proposed a theory that greater part of our personality lies buried in unconscious. We cannot study a human being by observing his overt behaviour because most of repressed desires, thoughts and feelings remain unconscious and continually influence our behaviour. Freud gives some reason to show the existence of unconscious :

- i. Dreams prove the existence of unconscious.
- ii. Slip of tongue.
- iii. Forgetfulness.
- iv. Solution of problems during sleep.
- v. Somnambulism.
- vi. Post-hypnotic suggestions.
- vii. Neurosis and psychoses.

Freud attributed three qualities to a mental process -- conscious, pre-conscious and unconscious. Let us discuss in detail the concept of these three levels of mind.

3.3 STRUCTURE OF MIND ACCORDING TO FREUD

The conscious mind :

If we compare the human mind to a ocean or a pond, then the upper layer would represent the conscious mind, the

main bed would be identified with the sub-conscious or pre-conscious and the bottom would form the unconscious.

If mind can be divided in portions, the conscious mind constitutes only a tiny part of it. Freud conceptualised conscious as a type of special sensory apparatus concerned with registration of stimuli. The conscious mind consists of the mental events and memories that the individual experiences at a particular moment. This aspect of our mental processing enables us to talk about rationality.

The pre-conscious :

This region of the mind lies between the unconscious and the conscious, with access to both. The pre-conscious is the storehouse of all the memories and desires which are not always part of consciousness, but can be recalled at any time and brought to the level of consciousness whenever necessary. For example, what we had for breakfast or our parents' first name etc. The unconscious mental contents can reach the conscious only through the pre-conscious. The pre-conscious mental contents can easily become conscious with focusing of attention.

The unconscious :

The unconscious is the most important part of our mind and is related to the vast part of our mental life. Freud was the first psychologist who attempted to explore the unconscious part of human mind. The unconscious mind is a reservoir of feeling, thoughts, urges and memories that lie outside our conscious awareness. The contents of the unconscious come from two sources. A part which has never been conscious in the individual's life is inherited. This consists of primitive pleasure-dominated and somewhat brutal ideas and strivings. The other part consists of thoughts, memories and wishes that were once conscious but because of their being too shocking

painful or shameful to tolerate they were repressed into the unconscious.

Psychoanalytic theory of the conscious and unconscious mind is often explained by using an iceberg metaphor. Conscious awareness is the tip of the iceberg, and it occupies only one tenth of our total psyche or mental life. Just beneath the conscious layer lies the preconscious mind and the unconscious is represented by the ice hidden below the surface of the water. The nineteenth part of our mental life lies in unconscious.

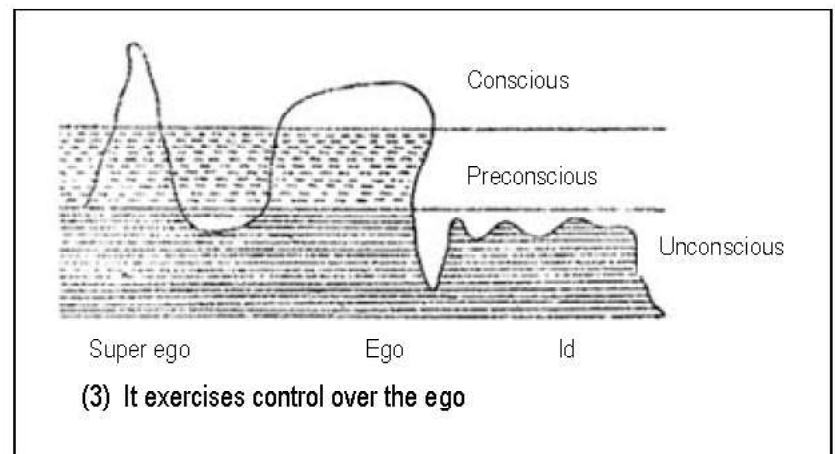


Fig. No. 1

This hidden treasure of the mind belonging to the unconscious is responsible for most of our behaviour and in fact, as Freud asserts, what we do and how we behave is always determined by the forces residing in our unconscious and not by the choices of conscious mind.

Check your progress - 1

1. Who is the pioneer of the school of psychology 'psychoanalysis' ? write a brief history of psychoanalysis, with special reference to Freud.

2. Mention and describe the three levels of the mind explained by Freud.

The concept of Id, Ego and super Ego.**The structural model of Personality :**

Freud further invented three more concepts, the Id, Ego and Super ego for explaining the structure of the psyche or mind.

The Id :

The Id represents the animal in man and is seated in the unconscious. It comprises all that is inherited or present at birth. It is the source of all mental and instinctive, energy of the individual. The powerful group of innate urges is essentially unconscious and the conscious is often ignorant of these urges.

The Id is guided by the pleasure principle, lacking any direct link with reality. Logic and reasoning has no place in the Id; it has no sense of social value. It only demands immediate gratification of all desires, wants and needs. If these needs are not satisfied immediately, the result is a state of anxiety or tension. For example, an increase in hunger or thirst should

produce an immediate attempt to eat or drink. Id can be thought of as a sort of storehouse of natural urges, for example the urge to eat, drink eliminate, and specially, to be sexually stimulated. The sexual energy that underlies these urges is called the libido.

Characteristics of Id :

- i. Id has no direct link with reality and is unconscious in nature.
- ii. It is abnormal in the sense that it contains no social values or mortality.
- iii. It is dominated by the pleasure principle.
- iv. It contains all repressed desires, feelings and thoughts.
- v. It is illogical.
- vi. It is the reservoir of libido. The life and death instinct pass through it.

The Ego :

The ego is primarily determined by the experience of reality and therefore guided by the reality principle. It is predominantly conscious though some parts are unconscious. Ego maintains a balance between the id and the super ego on one hand and the reality on the other. For example, the individual observes an object of pleasure, which according to societal name is prohibited barrier. The id wants immediate gratification without considering the restriction. The super ego, on the other hand, exercises the control prescribed in the societal regulations. The ego strikes a balance between the id and the superego.

Characteristics of Ego :

- i. Ego is largely conscious.
- ii. It is logical in nature.
- iii. It deals with the reality of the environmental conditions. It obeys the reality principle.

- iv. It acts as an intermediary between three sets of forces of instinctive pressure, the external worlds the reality and control on the part of the super ego.

Super Ego :

The super ego is the chief force that makes for socialisation of the individual. The super ego is the aspect of personality that holds all of our internalized moral standards and ideals that we acquire from both parents and society – our sense of right and wrong. The superego provides guidelines for making judgment. According to Freud, the super ego begins to emerge at around the age of five.

The super ego acts to mould our behaviour. It works to suppress all unacceptable urges of the id and struggles to make the ego act upon idealistic standards rather than upon realistic principles. The superego is present in the conscious, pre-conscious and unconscious.

The interaction of the Id, Ego & Superego :

With so many competing forces, it is easy to see how conflict might arise between the id, ego and super ego. Freud used the term ego-strength to refer to the ego's ability to function despite three dueling forces. A person ? with good ego strength is able to effectively manage these pressures, while those with too much or too little ego strength become too unyielding or too disrupting.

According to Freud, the key to a healthy personality is a balance between the id, the ego and the superego.

Check your progress - 2

1. What is meant by psychoanalysis any other ?
2. Explain the meaning of Id, Ego and Super-ego. Describe how these function in various situations.

3.4 THE CONTRIBUTION OF PSYCHOANALYSIS TO EDUCATION

We may now consider to what extent psychoanalysis helps the educator. In what ways can the knowledge of the theory of psychoanalysis be applied to education ? Should a teacher be a psychoanalyst and on that basis study with children a problematic behaviour ? Answer of such question help' us to understand the contribution of psychoanalysis to education.

- 1) Prior to Freud, behaviour was taken to mean conscious behaviour only. It was Freud who widened the concept & scope of the term behaviour by introducing unconscious and pre-conscious behaviour. Consequently, the sphere & the scope of psychology in general, and educational psychology in particular were expanded with the introduction of the mechanism of psychoanalysis.
- 2) Freud's system of psychoanalysis has provided a very good method for the study of human behaviour.
- 3) Psychoanalysis has laid great importance on the process of catharsis. Children should get enough opportunity to express their emotions, otherwise these would be repressed leading to harmful consequences.
- 4) Psychoanalysis has laid stress on the importance of the child and his early experiences in the process of education. Early experiences at home upto the age of five years determine the personality of a child. Love, affection and sympathy in early childhood develop positive attitudes in the child towards life, on the other hand, punishment and such other undesirable tendencies lead to problems.

- 5) The greatest contribution of psychoanalysis is that it has thrown light on the causes of maladjustment in children.
- 6) Psychoanalysis has helped to understand the importance of emotional aspects in the field of education.
- 7) Psychoanalysis has laid emphasis on freedom in education and advocated the importance of the development of the whole personality.
- 8) Psychoanalysis helps us to realise the importance of co-curricular activities in schools truth that every participation in such activities of diverse kinds will enable children to release many of their pent-up emotions.
- 9) Teacher plays a significant role in the life of students. He can influence the behaviour of his students in interpersonal relationship, and can form positive attitudes towards life. The teacher should emanate a positive attitude towards everything and concentrate on the capabilities and limitations of students.

Check your progress - 3

1. Mentions three ways in which of psychoanalysis contributes to the field of education.

3.5 LET US SUM UP

Psycho-analysis is a school of psychology advocated by Freud which represents a fine blend of theory and practice for understanding and shaping of human behaviour.

Structure of the psyche or mind

Freud provides a division of the psyche, first by breaking it into three layers as the conscious, sub-conscious and unconscious and second by postulating three more concepts of Id, Ego and super ego.

Id : Id is the source of mental energy in the individual. It is inherent in human beings. It is unconscious in nature.

Ego : Ego is largely conscious and logical in nature. It obeys the reality principle.

Super Ego : It represents the influence acquired from other persons, parents and society.

Contribution to education :

Psychoanalysis has made the following contributions to education:

- 1) It gives a good method for the study of behaviour.
- 2) It helps in the treatment of mental illness and abnormal behaviour.
- 3) The concept of Freud's 'unconscious' helps to understand the abnormal behaviour.
- 4) Psychoanalysis gives importance to good education & a healthy environment in the early years. It also emphasises on the role of childhood experiences.

KEY WORDS

Conscious : Thoughts and perceptions of which a person is aware.

Pre-Conscious : Memories which a person is not aware of at a particular time, but which may easily become conscious.

Unconscious : Memories and thoughts which are unavailable to conscious awareness.

- Neurosis : A psychological disorder.
- Psychosis : A severe psychological disorder.
- Analysis : The process of breaking up a complex situation into simpler components.
- Somnambulism : Sleep walking.

SUGGESTED READING

Advance Educational Psychology, Prentice Hall of India Private Limited, New Delhi -- S.k. Mangal.

Educational Psychology, Tusher Publishing House, Dibrugarh. -- Dr. Mukul Kumar Sharma.

PROBABLE ANSWERS TO CHECK YOUR PROGRESS

Check your progress - 1

- 1) Freud. For detail see the section 3.2. of this unit.
- 2) According to Freud, mind consist of three levels – conscious, pre-conscious and unconscious.

Check your progress - 2

- 1) It has three meanings-
 - a) It is a school of psychology.
 - b) It is a technique of investigating the unconscious mind
 - c) It is a method of treatment of mental illness.

Check your progress - 3

- a) It gives a good method for study of behaviour
- b) Helpful in the treatment of mental illness.
- c) It emphasizes on good education and healthy environment in the early yrs.

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PROBABLE QUESTIONS

1. What is psychoanalysis ? Discuss the major aspects of psychoanalysis.
2. Write about the contribution of psychoanalysis to the field of education.
3. Explain the concept to conscious, unconscious and pre-conscious mind.
4. Write short notes on id, ego, and super ego.

UNIT - IV
CONTEMPORARY SCHOOLS OF
PSYCHOLOGY

STRUCTURE :

- 4.0 Objectives
- 4.1 Introduction
- 4.2 Contemporary Schools
 - 4.2.1 Humanist Psychology
Check your progress
 - 4.2.2 Maslow
Check your progress
 - 4.2.3 Rogers
Check your progress
 - 4.2.4 Allport
Check your progress
- 4.3. Transpersonal psychology
Check your progress
- 4.4 Cognitive psychology
Check your progress
- 4.5 Let us sum up
- 4.6 Key Words
- 4.7 Check Your Progress- Probable Answers
- 4.8 Suggested Readings
- 4.9 References
- 4.10 Suggested Model Questions

4.0 OBJECTIVES

Upon completion of the reading this unit, you will be able to -

- List contemporary schools of psychology;
- explain the concept, principles and subject-matter of Humanistic psychology;
- give an elaborate account of Maslow as a founder of Humanistic and Transpersonal psychology
- study the Humanist Rogers, father of Psychotherapy his research and his contributions to this field ;
- describe briefly about the Humanist Allport as a ‘Trait Psychologist’ and his contributions to this field;
- list and describe the concept, goal and functions of Transpersonal Psychology;
- point out and discuss the meaning, nature, scope, functions and contributions of Cognitive Psychology;
- differentiate between Transpersonal Psychology and Cognitive Psychology.

4.1 INTRODUCTION

You have learnt about the schools of psychology in the three units preceding this one. Different psychologists at different times have expressed their views to explain the why and how of human behavior. This led to the establishment of different schools of psychology, affecting the process and product of education. This is the fourth unit of the course and is titled Contemporary Schools. The purpose of this unit is to acquaint you with the concept of Humanistic psychology. In this unit we will attempt to discuss the three famous Humanists namely Abraham Maslow, C.R. Rogers and Gordon Allport and their own contributions to Humanistic psychology. In the

second section we shall try to list and describe the concept, goals and functions of Transpersonal Psychology. At the end we shall discuss the meaning, nature, scope, functions and contributions of Cognitive psychology as contemporary school of psychology.

4.2 CONTEMPORARY SCHOOLS

It is known to you that behaviorism and Psycho-analysis are the major forces at work in the field of contemporary psychology. The other major forces in the field may be further termed as humanist psychology, transpersonal psychology and cognitive psychology. Now let us discuss them one by one.

4.2.1. HUMANIST PSYCHOLOGY

Humanist psychology is a psychological perspective which rose to prominence in the mid-20th century as a reaction to both behaviorism and psychoanalysis. Within the context of the three different approaches to psychology: behaviorism, psychoanalysis, and humanism it is sometimes referred to as "the third force". It adopts a holistic approach to human existence through investigations of creativity, free will, and human potential. It reflects the recent trends of humanism in psychology. Humanism is a 20th-century movement in psychology that believes that man, as an individual, is a unique being and should be recognized and treated as such by psychologists and psychiatrists. Humanism focuses on uniquely human issues and fundamental issues of life, such as self-identity, death, loneliness, freedom and meaning. Humanist psychology gives more value to the human being by considering him not merely as a sophisticated machine or a victim of the conflict between the ego and the id. It considers him as a purposeful being, capable of adapting himself to his

environment and choosing his own course of action in order to achieve the goals which he has selected for himself. These goals may be as simple as the satisfaction of a common physical need or as lofty as the attainment of self-realisation or personal fulfillment. The five basic principles of humanistic psychology are :

1. Human beings, supersede the sum of their parts. They cannot be reduced to components.
2. Human beings have their existence in a uniquely human context, as well as in a cosmic ecology.
3. Human beings are aware and aware of being aware—i.e., they are conscious. Human consciousness always includes an awareness of oneself in the context of other people.
4. Human beings have some choice and, along with that, responsibility.
5. Human beings have specific intentions aim at goals, and are aware that they cause future events, and seek meaning, value, and creativity.

CHECK YOUR PROGRESS - I

Note: (i) Write your answer in the space provided.

(ii) Check your answer with the possible answer provided at the end of the unit.

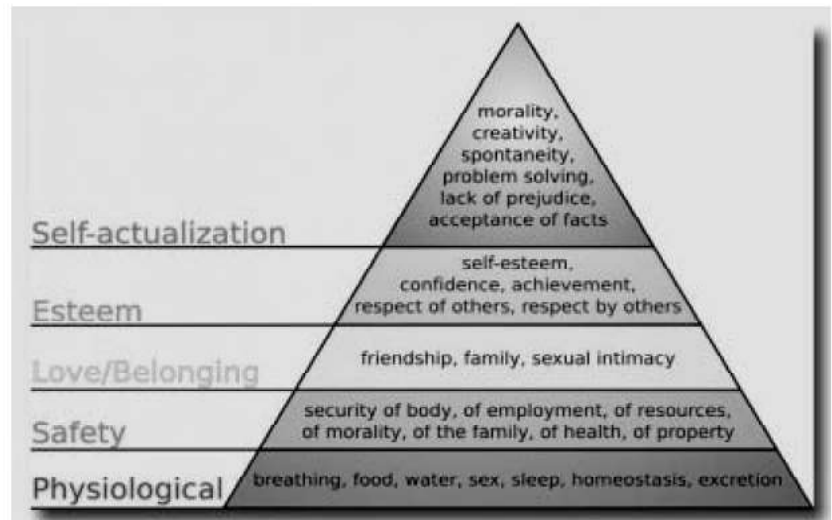
1. List the two major forces at work in the field of contemporary psychology.

2. Describe the meaning of Humanist psychology.

4.2.2 MASLOW (1908-1970)

Abraham Maslow was the founder of Humanistic Psychology. He was most known for his 'hierarchy of needs'. Maslow, and other humanistic psychologists, believed that people were free, creative individuals with an enormous capacity for growth and self-realization. He believed that all have a natural drive towards good health and self-fulfillment, which he called the quest for authenticity. Maslow assumed that every person has an actualizing tendency that promotes growth, direction, and productivity. According to Maslow, the hierarchy of needs contains four levels that are deficiency levels: physiological, safety, love/belonging, and esteem. It is only when these deficiency needs are fulfilled that one can experience self-actualization, a desire to realize potential for being an effective, and creative, mature human being.

Humanist Abraham Harold Maslow was probably best known for his self-actualization theory of psychology, which argued that the primary goal of psychotherapy should be the integration of the self. Maslow argued that each person has a hierarchy of needs that must be satisfied, ranging from basic physiological requirements to love, esteem, and, finally, self-actualization. As each need is satisfied, the next higher level in the Maslow argued that each person has a hierarchy of needs that must be satisfied, ranging from basic physiological requirements to love, esteem, and, finally, self-actualization. As each need is satisfied, the next higher level in the emotional hierarchy dominates conscious functioning; thus, people who lack food or shelter or who cannot feel themselves to be in a safe environment are unable to express higher needs. Maslow believed that truly healthy people have realised even the highest psychological needs and were self-actualizers, fully integrating the components of their personality, or self.



Maslow pyramid

CHECK YOUR PROGRESS - II

Note : (i) Write your answer in the space provided.

(ii) Check your answer with the possible answer provided at the end of this unit.

1. Draw and explain Maslow's hierarchical structure of needs.

CARL RANSOM ROGERS (1902–1987) :

Carl Rogers was an influential American psychologist and one of the founders of the humanistic approach to psychology. The person-centered approach, his own unique approach to understanding personality and human relationships, found wide application in various domains such as psychotherapy and counseling (client-centered therapy).

education (student-centered learning), organizations, and other group settings. Rogers was found to be the sixth most eminent psychologist of the 20th century and second, among clinicians, only to Sigmund Freud.

Rogers theory of the self is considered to be humanistic and phenomenological. His theory is based directly on the "phenomenal field" personality theory of Combs and Snygg. Rogers developed the Client-Centered Therapy and Psychotherapy. Rogers and his followers have demonstrated a humanistic approach to conducting therapy and a scientific approach to evaluating therapy. Rogers originally developed his theory as the foundation for a system of therapy. He initially called this "non-directive therapy" but later replaced the term "non-directive" with the term "client-centered" and then later used the term "person-centered". Even before the publication of Client-Centered Therapy in 1951, Rogers believed that the principles he was describing could be applied in a variety of contexts and not just in the therapy situation. As a result he started to use the term person-centered approach later in his life to describe his overall theory. The Person-centered therapy is the application of the person-centered approach to the therapy situation. Other applications include a theory of personality, interpersonal relations, education, nursing, cross-cultural relations and other "helping" professions and situations.

Person-centered therapy :

The first empirical evidence of the effectiveness of the client-centered approach was published in 1941 at the Ohio State University by Elias Porter, using the recordings of therapeutic sessions between Carl Rogers and his clients. Porter used Rogers' transcripts to devise a system to measure the degree of directiveness or non-directiveness which a counselor employed. The attitude and orientation of the counselor were

demonstrated to be instrumental in the decisions made by the client.

Learner-centered teaching :

Rogers' person-centered approach found wide application in education as student-centered learning . Rogers had the following five hypotheses regarding learner-centered education:

1. "A person cannot teach another person directly; a person can only facilitate another's learning" (Rogers, 1951). This is a result of his personality theory, which states that everyone exists in a constantly changing world of experience of which he or she is the center. Each person reacts and responds differently based on perception and experience. The belief is that what the student does is more important than what the teacher does. The focus is on the student (Rogers, 1951). Therefore, the background and experiences of the learner are essential to how and what is learned. Each student will process what he or she learns differently depending on what he or she brings to the classroom.
2. "A person learns significantly only those things that are perceived as being involved in the maintenance of or enhancement of the structure of self" (Rogers, 1951). Therefore, relevance for the student is essential for learning. The students' experiences become the core of the course.
3. "Experience which, if assimilated, would involve a change in the organization of self, tends to be resisted through denial or distortion of symbolism" (Rogers, 1951). If the content or presentation of a course is inconsistent with the preconceived information, the student will learn whether he or she is open to varying concepts. Being open to consider concepts that vary from one's own is vital to learning. Therefore, gently encouraging open-mindedness is helpful

in engaging the student in learning. Also, it is important, for this reason, that new information be relevant and related to existing experience.

4. "The structure and organization of the self appears to become more rigid under threats and to relax its boundaries when completely free from threat" (Rogers, 1951). If students believe that concepts are being forced upon them, they might become uncomfortable and fearful. A barrier is created by a tone of threat in the classroom. Therefore, an open, friendly environment in which trust is developed is essential in the classroom. Fear of retribution for not agreeing with a concept should be eliminated. A classroom tone of support helps to alleviate fears and encourages students to have the courage to explore concepts and beliefs that vary from those they bring to the classroom. Also, new information might threaten the student's concept of himself or herself; therefore, the less vulnerable the student feels, the more likely he or she will be able to open up to the learning process.
5. "The educational situation which most effectively promotes significant learning is one in which (a) threat to the self of the learner is reduced to a minimum and (b) differentiated perception of the field is facilitated" (Rogers, 1951). The instructor should be open to learning from the students and also working to connect the students to the subject matter. Frequent interaction with the students will help achieve this goal. The instructor's acceptance of being a mentor who guides rather than the expert who tells is instrumental to student-centered, nonthreatening, and unforced learning.

Nineteen propositions :

His theory (as of 1951) was based on 19 propositions :

1. All individuals (organisms) exist in a continually changing world of experience (phenomenal field) of which they are the center.
2. The organism reacts to the field as it is experienced and perceived. This perceptual field is "reality" for the individual.
3. The organism reacts as an organized whole to this phenomenal field.
4. A portion of the total perceptual field gradually becomes differentiated as the self.
5. As a result of interaction with the environment, and particularly as a result of evaluational interaction with others, the structure of the self is formed - an organized, fluid but consistent conceptual pattern of perceptions of characteristics and relationships of the "I" or the "me", together with values attached to these concepts.
6. The organism has one basic tendency - to actualize, maintain and enhance the experiencing organism.
7. The best vantage point for understanding behavior is from the internal frame of reference of the individual.
8. Behavior is basically the goal-directed attempt of the organism to satisfy its needs as experienced, in the field as perceived.
9. Emotion accompanies, and in general facilitates, such goal directed behavior, the kind of emotion being related to the perceived significance of the behavior for the maintenance and enhancement of the organism.
10. The values attached to experiences, and the values that are a part of the self-structure, in some instances, are values experienced directly by the organism, and in some instances are values interjected or taken over from others, but perceived in distorted fashion, as if they had been experienced directly.

11. As experiences occur in the life of the individual, they are either, a) symbolized, perceived and organized into some relation to the self, b) ignored because there is no perceived relationship to the self structure, c) denied symbolization or given distorted symbolization because the experience is inconsistent with the structure of the self.
12. Most of the ways of behaving that are adopted by the organism are those that are consistent with the concept of self.
13. In some instances, behavior may be brought about by organic experiences and needs which have not been symbolized. Such behavior may be inconsistent with the structure of the self but in such instances the behavior is not "owned" by the individual.
14. Psychological adjustment exists when the concept of the self is such that all the sensory and visceral experiences of the organism are, or may be, assimilated on a symbolic level into a consistent relationship with the concept of self.
15. Psychological maladjustment exists when the organism denies awareness of significant sensory and visceral experiences, which consequently are not symbolized and organized into the gestalt of the self structure. When this situation exists, there is a basic or potential psychological tension.
16. Any experience which is inconsistent with the organization of the structure of the self may be perceived as a threat, and the more are these perceptions, the more rigidly is the self structure organized to maintain itself.
17. Under certain conditions, involving primarily complete absence of threat to the self structure, experiences which are inconsistent with it may be perceived and examined, and the structure of self revised to assimilate and include such experiences

18. When the individual perceives and accepts into one consistent and integrated system all his sensory and visceral experiences, then he is necessarily more understanding of others and is more accepting of others as separate individuals.
19. As the individual perceives and accepts into his self structure more of his organic experiences, he finds that he is replacing his present value system - based extensively on introjections which have been distortedly symbolized - with a continuing organismic valuing process.

CHECK YOUR PROGRESS - III

Note :

- (a) Write your answer in the space provided.
- (b) Check your answer with the possible answer provided at the end of the unit.

1. List and describe Rogers five hypotheses of learner-centered teaching.

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Gordon Willard Allport (1897 – 1967)

Gordon Allport (1897 – 1967) was the first American psychologist to give thought to the uniqueness of the human personality. Allport is often referred to as one of the founding figures of personality psychology. He developed his 'trait' theory as a means to describe an image of personality rather than to try and understand its development. Allport was seen as

a humanist due to his radical views of individuality, which conflicted with the beliefs of the more conservative behaviorists' and psychoanalysts of the time. Allport was the first to offer a class in the field of personality psychology, which he undertook at Harvard University. Allport may not be as heavily referenced as other psychologists in his field, but he was the first to approach the theory of individual traits and he inspired many psychologists who adopted and developed his theory. He contributed to the formation of Values Scales to personality. He emphasized the uniqueness of each individual for understanding the personality.

Allport's trait theory

Allport is known as a "trait" psychologist. One of his early projects was to go through the dictionary and locate every term that he thought could describe a person. From this, he developed a list of 4500 trait like words. He organized these into three levels of traits. Allport's three trait levels are:

1. Cardinal trait - This is the trait that dominates and shapes a person's behavior. These are the ruling passions/obsessions, such as a need for money, fame etc.

2. Central trait - This is a general characteristic found in some degree in every person. These are the basic building blocks that shape most of our behavior although they are not as overwhelming as cardinal traits. An example of a central trait would be honesty.

3. Secondary trait - These are characteristics seen only in certain circumstances (such as particular likes or dislikes that a very close friend may know). They must be included to provide a complete picture of human complexity.

Genotypes and phenotypes

Allport hypothesized the idea of internal and external forces that influence an individual's behavior. He called these forces Genotypes and Phenotypes. Genotypes are internal forces related to how a person retains information and uses it to interact with the external world. Phenotypes are external forces, which relate to the way an individual accepts his surroundings and how others influence their behavior. These forces generate the ways in which we behave and are the groundwork for the creation of individual traits.

Motive and Drive

Allport was one of the first researchers to draw a distinction between Motive and Drive. He suggested that a drive formed as a reaction to a motive may outgrow the motive as a reason. The drive then is autonomous and distinct from the motive, whether it is instinct or anything else.

CHECK YOUR PROGRESS - IV

Note :

- (a) Write your answer in the space provided.
 - (b) Check your answer with the possible answer provided at the end of the unit.
1. Describe three levels of traits as stated by Allport.

4.3. TRANSPERSONAL PSYCHOLOGY

Transpersonal psychology is one of the latest approaches in contemporary psychology. Abraham Maslow was the founder of Transpersonal Psychology. The work of Maslow in terms of self-actualization theory may be said to be the cornerstone of Transpersonal Psychology. It focuses its attention on the study of personal experiences that seem to transcend ordinary existence. In other words, what we think and how we feel in our altered states of awareness is the subject area of Transpersonal Psychology. These states may be reached during states of severe stress and distress or in moments of great excitement and happiness. They may be aroused during periods of sleep or deep concentration. Experimentally, they may be induced with the help of some specific drugs, religious conversations, yoga and transcendental meditation etc.

CHECK YOUR PROGRESS - V

Note :

- (a) Write your answer in the space provided.
- (b) Check your answer with the possible answer provided at the end of the unit.
- (1) What is transpersonal psychology ? Describe briefly.

4.4. COGNITIVE PSYCHOLOGY

Cognitive psychology is one of the new schools of contemporary psychology. This branch of psychology deals mainly with the study of the processes and products of the growth and development of cognitive abilities and capacities of the human beings. It studies the behaviour of the individuals in relation to the development of his cognitive strengths and their use in the challenging circumstances. It emphasizes the role of one's cognitive abilities like reasoning and thinking , analysis and synthesis , inferring and generalizing, intelligence and insight etc. in the process of learning, problem solving, creative output and adjustment etc. The experts dealing with the study of the branch are named as cognitive psychologists.

The roots of this school of psychology may be found in the cognitive outlook of the gestaltists who advocated insightful learning for the study of human behaviour. The main theme of the school is cognitive revolution which implies that internal processes are the subject matter of psychology. It studies man's thinking, memory, language development, perception, imagery and other mental processes in order to take a peep into the higher mental functions like insight, creativity and problem solving.

Cognitive psychology is gaining popularity day by day. Edward Tolman, one of the founder cognitive psychologists has made notable contributions in the field of learning, thinking and creative functioning. Jean Piaget Swiss psychologist, who has been the most prominent among the contemporary cognitive psychologists, has shown keen interest in the study of development of cognitive abilities and operation of cognitive processes in children. He has outlined a definite pattern and

stages of development of cognitive abilities depending upon the biological readiness of the children.

You have also learnt that cognitive psychology is different from other psychological perspectives in two key ways. First, it accepts the use of the scientific method, and generally rejects introspection as a method of investigation, unlike symbol –driven approaches such as Freudian psychodynamics. Second, it explicitly acknowledges the existence of mental states-such as belief, desire and motivation-where behaviourism does not.

CHECK YOUR PROGRESS - VI

Note: (a) Write your answer in the space provided.

(b) Check your answer with the possible answer provided at the end of the unit.

1. Explain briefly the concept of cognitive psychology

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2. Justify how cognitive psychology is different from other psychological perspective.

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4.5 LET US SUM UP

In this unit you have learnt that behaviorism and Psychoanalysis are the major forces at work in the field of contemporary psychology. Humanist psychology advocated by

contemporary psychologists like Maslow, Rogers, Gordon Allport reflects the recent human trends in psychology. Humanist psychology considers man as a purposeful being, capable of adapting himself to his environment and choosing his own course of action in order to achieve the goals which he has selected for himself.

Next you learnt that Abraham Maslow was the founder of Humanistic Psychology. Maslow believed that all have a natural drive to good health and self-fulfillment, which he called the quest for authenticity. Maslow assumed that every person has an actualizing tendency that promotes growth, direction, and productivity. According to him, the hierarchy of needs contains four levels that are deficiency levels: physiological, safety, love/belonging, and esteem.

You have also learnt that Carl Rogers was an influential American psychologist. He is widely considered to be one of the founding fathers of psychotherapy research. His person-centered approach has found wide application in various domains such as psychotherapy and counseling (client-centered therapy), education (student-centered learning).

You have been familiarized with Allport as a "trait" psychologist. Allport's three trait levels are: cardinal trait, central trait and secondary trait. He contributed to the formation of Values Scales to personality.

You now know that transpersonal psychology focuses its attention on the study of personal experiences that seem to transcend ordinary existence. In other words, what we think and how we feel in our altered states of awareness is the subject area of Transpersonal Psychology.

In the last section you have learnt that cognitive psychology deals mainly with the study of the processes and products of the growth and development of cognitive abilities and capacities of the human beings. It emphasizes the role of

one's cognitive abilities like reasoning and thinking, analysis and synthesis, inferring and generalizing, intelligence and insight etc. in the process of learning, problem solving, creative output and adjustment etc.

4.6 KEY WORDS

- Humanistic psychology :** School of psychology emphasizing on the concept of the self and the person and the study of man's humanness in a integrated way by using from history, literature and religion etc.
- Self-actualization :** In Maslow's hierarchy of motivational needs, the desire to fulfill one's potentiality.
- Trait :** Enduring personality characteristic which leads an individual to be ready to respond to a variety of situations in a particular manner.
- Client-Centered Therapy :** Non – directive treatment of psychological disturbance, developed by Carl Rogers.
- Transpersonal psychology :** Transpersonal Psychology is a branch of contemporary psychology which focuses its attention on the study of personal experiences that seem to transcend ordinary existence.
- Cognitive psychology :** This branch of contemporary psychology deals mainly with the study of the processes and products of the growth and

development of cognitive abilities and capacities of the human beings.

4.7. POSSIBLE ANSWERS TO CYP

Check your progress - I

1. The two major forces in the field of contemporary psychology are humanist psychology and cognitive psychology.
2. Humanist psychology considers the human being as a purposeful being, capable of adapting himself to his environment and choosing his own course of action in order to achieve the goals which he has selected for himself. It is a school of psychology emphasizing on the concept of the self and the person and the study of man's humanness in an integrated way.

Check your progress - II

1. Maslow believed that each person has a hierarchy of needs that must be satisfied, ranging from basic physiological requirements to love, esteem, and, finally, self-actualization. As each need is satisfied, the next higher level in the emotional hierarchy dominates conscious functioning. Maslow believed that truly healthy people have satisfied even the highest psychological needs and are self-actualizers, fully integrating the components of their personality, or self.

Check your progress - III

1. "A person cannot teach another person directly; a person can only facilitate another's learning"

2. "A person learns significantly only those things that are perceived as being involved in the maintenance of or enhancement of the structure of self"
3. "Experience which, if assimilated, would involve a change in the organization of self, tends to be resisted through denial or distortion of symbolism"
4. "The structure and organization of self appears to become more rigid under threats and to relax its boundaries when completely free from threat"
5. "The educational situation which most effectively promotes significant learning is one in which (a) threat to the self of the learner is reduced to a minimum and (b) differentiated perception of the field is facilitated"

Check your progress - IV

1. Allport's three trait levels are: cardinal trait, central trait and secondary trait.

Check your progress - V

1. Transpersonal psychology focuses its attention on the study of personal experiences that seem to transcend ordinary existence. In other words, what we think and how we feel in our altered states of awareness is the subject area of Transpersonal Psychology.

Check your progress - VI

1. Cognitive psychology deals mainly with the study of the processes and products of the growth and development of cognitive abilities and capacities of the human beings. It emphasizes the role of one's cognitive abilities like reasoning and thinking , analysis and synthesis , inferring and generalizing, intelligence and

insight etc. in the process of learning, problem solving, creative output and adjustment etc.

2. Cognitive psychology is different from other psychological perspectives in two key ways. First, it accepts the use of the scientific method, and generally rejects introspection as a method of investigation; second, it explicitly acknowledges the existence of mental states-such as belief, desire and motivation.

4.8 SUGGESTED READINGS

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4.10. MODEL QUESTIONS

1. Justify, how cognitive psychology differs from Humanist psychology and Transpersonal psychology.
2. Describe nineteen propositions of Rogers's on which his theory is based.
3. Critically analyze Allport's trait theory.
4. Describe the nature and scope of transpersonal psychology.
5. Discuss the need and importance of cognitive psychology.
6. Give a comparative description of Maslow, Rogers and Allport's view in regards to Humanist psychology.

BLOCK - II

THEORIES OF LEARNING

INTRODUCTION :

In the first block (Block – I), we discussed the schools of psychology and their bearing on education.

Here, in this block, we shall discuss the different theories of learning and their implications in education. This block consists of three units.

In the first unit, we shall discuss the meaning and nature of learning. We shall also discuss Gagne's Hierarchy of learning along with its educational implications.

In the second unit, we shall study about some connectionist or behaviourist theories such as Thorndike's theory, Guthrie's contiguity theory, Pavlov's classical conditioning theory and Skinner's operant conditioning theory of learning.

In the third unit, we will deal with cognitive theories such as theory of insightful learning, Lewin's field theory, Tolman's sign gestalt theory and Banduras social learning theory.

Here, in this block each unit begins with an outline of the learning objectives followed by introduction to the topic of the unit. The detailed content is then presented in simple language and scattered with check your progress questions to enable the learner to test his understanding as and when he goes through each unit. At the end of each unit a summary is provided to help the learner in quick recollection. Some probable questions are also provided for further practice.

UNIT - I
LEARNING : MEANING AND NATURE,
GAGNE'S HIERARCHY OF LEARNING

STRUCTURE :

1.1 OBJECTIVES

1.2 INTRODUCTION

1.3 MEANING & NATURE OF LEARNING

* CHECK YOUR PROGRESS

1.4 GAGNE'S HIERARCHY OF LEARNING

1.4.1 EDUCATIONAL IMPLICATION OF GAGNE'S
HIERARCHY OF LEARNING

* CHECK YOUR PROGRESS

1.5 LET US SUM UP

1.6 KEY WORDS

1.7 SUGGESTED REGARDINGS

* POSSIBLE ANSWERS TO CHECK YOUR
PROGRESS

* REFERENCES

* MODEL QUESTIONS

1.1 OBJECTIVES

After going through this unit, you will be able to :

- i) State the meaning of learning.
- ii) Explain the nature of learning
- iii) Discuss Gagne's hierarchy of learning

1.2 INTRODUCTION

In block 1, we have already discussed the different schools of psychology such as Behaviourism, Gestaltism, Psycho-analysis, Humanism, Cognitive psychology etc. Perhaps you may like to go through block 1 before proceeding with this unit or immediately after reading this unit. You have already acquired some basic ideas. But do you have any idea about learning ? Do you know what learning actually is ? Whenever you think of the word 'learning' you think of school or college. Don't you? Perhaps you will agree with me that we have school or college in order to prepare children for different roles in society. In our mind schools and colleges are associated with learning. Do you know that learning does not always take place in formal set up or in an organized mode and it does not occur intentionally ? Learning is not occasional. It is a life-long and continuous process. The process of learning begins from the birth of the child and continues till his death. Do you feel that you have nothing to learn ?

In this unit we are going to discuss the concept or Meaning, nature and Gagne's hierarchy of learning. Let us discuss it.

1.3 MEANING AND NATURE OF LEARNING

Learning occupies an important place in our life. Most of what we do or not do is influenced by what we learn and how we learn.

Experience direct or indirect is found to play a dominant role in moulding and shaping our behaviour from the very beginning. For instance, when an infant touches a burning matchstick, he gets burnt. So the next time when it comes across a burning matchstick it loses no time in withdrawing from it. It learns to avoid not only the burning matchstick, but also all burning things or flame of fire. When this happens we can say that it has learnt that if one touches a flame, one gets burnt. In the same way from some other experience it may conclude, for instance 'sugar is sweet' salt is salty etc. All these conclusions derived from direct or indirect experience change our behavior. These change in behavior brought about by experience are commonly known as learning. In this way the term learning broadly speaking, stands for all those changes and modification in the behavior, which we undergo during our lifetime ?

Thus learning means to learn to make adjustment in the changing environment to live more effectively. It is a life long and continuous process. It starts right from birth and continues till the last breath of life. It means we start our process of learning just immediately after birth and it continues throughout the life. It is a process by which we alter our response and modify our behavior in order to adjust ourselves to the changing environment. It is seen that at the time of birth a child is helpless and depends upon others. But in course of time he learns to crawl, walk, run, eat, speak, dress etc and slowly learns to adapt himself to the environment around him. Have you noticed how a child learn ? You have to notice it.

When the child begins to learn his learning is crude and exploratory in nature. At the initial stage, his actions are undifferentiated and often his responses are wrong. When he is given proper training, he learns to reduce his errors. He gradually begins co-ordination in his efforts and the state of uncertainty is replaced by that of decision. As the child grows old, he learns to perform his task with ease.

Learning is a process of modification of instinctive behavior, which enables us to adjust properly and effectively with the new environment. We need to acquire new behavior, skill, action and new experience in order to adjust with the new environment. Suppose you have interest and desire to know about different cultural heritage of your country, you wanted to study the details about Manipuri culture, you have to acquire their behavior, skill, activity etc. to adjust with them. When you are able to acquire the same and adjust properly with them it is called learning.

Throughout our whole life we continue to change, modify and improve our crude instinctive behavior. Thus, learning means to bring changes and modification of our behavior to cope with the changing environment. Briefly speaking learning is modification of behavior and change of behavioural organisation through practice and training. Let us illustrate the learning process with the help of an example. Suppose there are two children in a class from two different areas and families. One is from an urban area and belongs to a rich family and the other is from rural area and from a cultured family. They greet the teacher in two different ways. The child coming from town area and rich family greets his teacher by 'saying good morning' and the child coming from rural area and cultured family by 'folding his hands and saying Namaskar', you see, why it is so? It is the result of their early training and practice in home. The early training has brought a

permanent change in behavior. This type of change can be termed as learning.

Our development is the result of learning, because every art and action of our life is connected with learning. Through learning we learn new ways of doing, thinking and feeling. Our entire existence depends upon learning. Our tastes and distastes, impulsive reactions, qualities and facts are the results of our learning. Some psychologists view that learning is the acquisition of knowledge and experience. But some others say that learning is not only acquisition of knowledge and experience but also the application of the same to solve the problem and to adjust effectively with the circumstances or situations.

Let us now endeavour to give some workable definitions of learning to make the meaning and nature of learning more clear.

According to Edward Gates, "Learning is the modification of behaviour through experience and training."

According to J.P. Guilford, "Learning is any change in behaviour, resulting from experience."

In the word of Colvine, "Learning is the modification of reaction of an organism through experience." Again he said, "Learning is the modification of readymade behaviour due to experience."

According to Robert S. Woodworth, "Any activity can be called learning so far as it develops the individual (in any respect good or bad) and makes his behaviour and experiences different from what that otherwise have been." He again said, "Learning is the reinforcement of a new activity." He defines, "Learning consists in doing something new provided the new activity is reinforced and can reappear in later activity."

According to Skinner, "Learning is both acquisition and retention of habit, knowledge and attitude." He said, "Learning

is a process of progressive behaviour adoption.” He also adds, “Learning is both acquisition and retention.”

According to Smith, “Learning is the acquisition of new behaviour or the strengthening and weakening of old behaviour as the result of experience.”

According to Gagne “Learning is change in human disposition and capability, which can be retained and which is not dependent only on the process of growth and development.”

So, we can say that learning is the key process in the behaviour of human beings.

Check your progress – 1

1. What do you mean by learning ?
2. Why is learning called modification of behaviour ?

1.4 GAGNE’S HIERARCHY OF LEARNING

Generally hierarchy means organisation of authority from lowest to highest. In educational context, it refers to different kinds of learning, arranged from lower to higher level.

In 1956, the American educational psychologist Robert M. Gagne first proposed a system of classifying different kinds of learning in terms of the degree of complexity of the mental processes involved. He identifies different types of learning and arranges these in a hierarchy. According to him the essence of learning is simply the development of a capability for change in performance. He also equated the performance change with learning. In his famous book *The Conditions of Learning* he identified eight basic types of learning and arranged these in the hierarchy shown in figure 1. In Gagne’s view learning of any new capability needs the prior learning of the subordinate capabilities, which are involved in the new capability for

example, learning of a higher order theory requires one's prior learning of simple theory on which it is based. Hence we can analyse learning gained by us to a progression from subordinate learning, such a progression of learning is considered by Gagne as 'learning hierarchy.'

Gagne developed this hierarchy of learning on basis of five major categories of human capabilities, which are the outcomes of learning. They are –

- i) Verbal information,
- ii) Intellectual skills
- iii) Cognitive strategies
- iv) Attitudes and
- v) Motor skills

According to Gagne, the higher orders of learning in this hierarchy built upon the lower levels, requiring progressively greater amount of previous learning for their success. The lowest four orders tend to focus on the more behavioral aspects of learning, while the highest four focus on the more cognitive aspects, such as discovery, inventiveness, adventure and perhaps even insight. Gagne states that at this level learning should be thought of as a human activity and not as a generic skill.

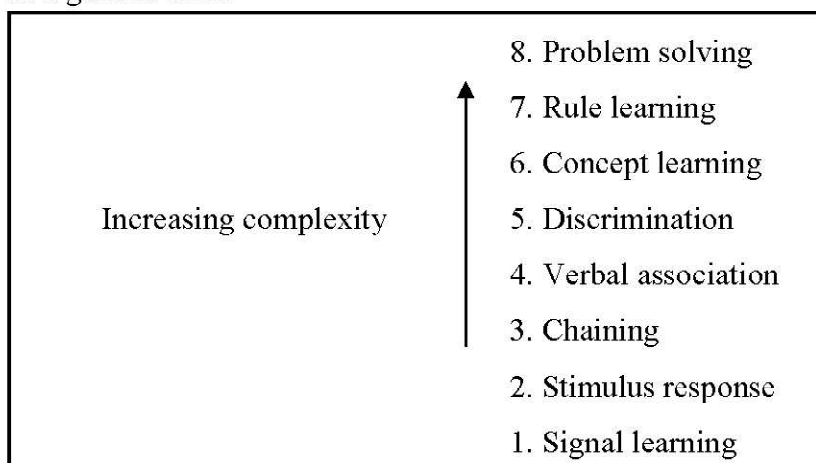


Figure-1 : Gagne's Hierarchy of learning

Let us now take a closer look at Gagne's eight categories of learning.

1. **Signal learning** : This is the simplest form of learning. It is a classical conditioning theory first described by the behavioural psychologist Pavlov in which the individual learns to make a partial response to a signal. For instance, when a car horn sounds as we are crossing the road, our eyes swivel towards the source of the noise and we quicken our steps.
2. **Stimulus – response learning** : This is somewhat a more sophisticated form of learning. The connectionism and operant conditioning was originally developed by Thorndike and Skinner respectively based on stimulus response learning. In this learning we learn to change our response by discriminating between stimuli. We learn to respond in a particular way by being reward or getting favourable results. For example, you earn praise from the accompanying adult when she or he stops at the edge of the road and waits for the lights to change. You might be able to learn to stop on red and go on green.
3. **Chaining** : Chaining is a more advanced form of learning in which the subject develops the ability to connect together two or more learnt responses into a sequence. It is the process whereby most complex psychomotor skills are learned. Riding a bike, riding a car, playing the piano etc. are the example of chaining. Gagne describes two kinds of chaining – motor chaining and verbal chaining.
4. **Verbal association** : Verbal association is a form of chaining in which the links between the items connected are verbal in nature. Role learning a regulation by rote or a recalling of the timetable is the example of verbal association. This is one of the key processes in the development of language skills.

5. **Discrimination learning** : This involves developing the ability to make identical responses to a series of stimuli that resemble each other, such that some inferences occur. This is the process in which we learn to discriminate between similar phenomena. The stimuli may resemble each other but we learn to distinguish one from the other each one. So we learn to distinguish between a square and rectangle.
6. **Concept learning** : This involves developing the ability to make a common response to a common class or category of stimuli. It forms the basis of the ability to generalize, classify etc. Gagne divides concept learning into concrete concept learning and abstract concept learning. In concrete concept learning we learn to form concept based on direct observation of phenomena in the world around us. So we observe coins and wheels and form the concept of circular. On the other hand justice is an example of abstract learning.
7. **Rule learning** : This is a very high level cognitive process that involves being able to learn relationship between concepts or make a chain of two or more concepts. This describes the ability to respond to a class of stimuli with a class of performance. For example we can demonstrate the ability to write nouns in the plural. Therefore, a rule allows us to behave in a consistent or regular way in the face of a variety of event or phenomena. However, it forms the basis of the learning of general rules, procedures etc.
8. **Problem solving** : Gagne considers it as the highest level of cognitive process. It involves developing the ability to invent a complex rule, procedure for the purpose of solving one particular problem. It involves thinking processes to solve other problems of a similar nature.

In his book, *The Conditions of Learning*, Gagne also points out eight phases of an act of learning. They are-

- i) Motivation
- ii) Apprehending
- iii) Acquisition
- iv) Retention
- v) Recall
- vi) Generalization
- vii) Performance and
- viii) Feed-back

1.4.1 Educational implications of Gagne's hierarchy of learning

Gagne's hierarchy of learning has great educational implication.

- i) It is useful in providing methods for formulating objectives and a hierarchy of learning to use in planning a progression of learning.
- ii) Gagne has had an enormous influence on the form in which trainers and educationalists express competencies and educational objectives.
- iii) His hierarchy grows more interesting for the union trainer as we move upward. He provides a guide for the ordering of the learning we organize for others.
- iv) His ideas have great influence in the development of competency-based training and performance based education in educational institutions.
- v) Gagne's hierarchy provides four general components of instruction such as the stimulation of recall of previously learned capabilities, the direct presentation of appropriate stimuli, the activation of desired mental sets and the provision of feed back, that are available for a teacher for influencing the learning process in his students. are available for a teacher for influencing the learning process in his students.

Check your progress – 2

1. What are the major categories of human capabilities on the basis of which Gagne developed his hierarchy of learning ?
2. What are the eight categories of learning according to Gagne's hierarchy ?

1.5 LET US SUM UP

Learning is a continuous process of adjustment to cope with the changing environment. It is the process, which determines our response and modification of behavior. It brings in relatively permanent changes in the behavior of the learner through experience and training. Through learning one can be able to learn new ways of doing, thinking and feeling. It is the acquisition of knowledge and experience and application of the same to solve the problem and to adjust properly with the situations.

In 1956, Robert M. Gagne developed a hierarchy of learning with classification of different types of learning in terms of the degree of complexity of the mental processes involved. According to him the higher order of learning in this hierarchy build upon the lower levels, requiring progressively greater amount of previous learning for their success Gagne's eight categories of learning identified in his hierarchy are-Signal learning, Stimulus response learning, Chaining, Verbal association, Discrimination learning, Concept learning, Rule learning and Problem solving.

1.6 KEY WORDS

Hierarchy : Organisation of kind of learning arranged from lower to higher level.

Attitude : Emotional tendency to respond in a specific way to a particular group, person, idea etc.

1.7 SUGGESTED READINGS

1. Educational Psychology – Dr. M.K. Sharma
2. Advanced Educational Psychology – S.S. Chauhan
3. Education – T. Saikia and R. Borah
4. Advanced Educational psychology – B. Kuppuswamy.

*** ANSWER TO CHECK YOUR PROGRESS NO. – 1**

1. Learning is modification of behavior through experience and training.
2. Learning is called modification of behavior because it changes and modifies our instinctive behavior to adjust properly with the changing environment.

*** ANSWER TO CHECK YOUR PROGRESS NO. – 2**

1. The major categories of human capabilities are- verbal information, intellectual skills, cognitive strategies, attitudes and motor skills.
2. The eight categories of learning according to Gagne's hierarchy are – signal learning, stimulus response learning, chaining, verbal association, discrimination

learning, concept learning, rule learning and problem solving.

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MODEL QUESTIONS :

1. Write about the meaning and nature of learning.
2. Discuss Gagne's Hierarchy theory of learning.
3. What are educational implications of Gagne's Hierarchy theory of learning ?
4. Discuss the Gagne's eight categories of learning ?

UNIT : II

THEORIES OF LEARNING

CONNECTIONIST OR BEHAVIOURIST THEORIES

STRUCTURE

- 2.1. Objectives
- 2.2. Introduction
- 2.3. Thorndike's theory of learning
 - 2.3.1. Thorndike's Theory
 - 2.3.2. Stages in Trial and Error Method of Learning
 - 2.3.3. Thorndike's Laws of Learning
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- * Check your progress
- 2.4. Guthrie's Contiguity Theory
 - 2.4.1. Contiguity Theory
 - 2.4.2. Principles of Guthrie's contiguity theory
 - 2.4.3. Educational implications of Guthrie's contiguity theory.
- * Check your progress
- 2.5. Pavlov's Classical Conditioning Theory
 - 2.5.1. Classical Conditioning Theory
 - 2.5.2. Principles of classical conditioning
 - 2.5.3. Educational implication of classical conditioning theory
- * Check your progress
- 2.6. Skinner's Operant Conditioning Theory
 - 2.6.1. Operant conditioning
 - 2.6.2. Operations in operant conditioning
 - 2.6.3. Respondent and operant behaviour
 - 2.6.4. Reinforce and reinforcement
 - 2.6.5. Schedules of reinforcement
 - 2.6.6. Educational implication of operant conditioning
 - 2.6.7. Difference between classical and operant conditioning
- * Check your progress
- 2.7. Let us sum up
- 2.8. Key words
- 2.9. Suggested readings
 - Possible answer to Check your progress
 - References
 - Model question

2.1. OBJECTIVES

After going through this unit you will be able to:

- state the meaning of Thorndike's theory of learning.
- understand different laws of learning.
- Draw educational implications of trial and error method of learning.
- Explain Guthrie's contiguity theory.
- Discuss principles of Guthrie's contiguity theory.
- Know the educational implications of contiguity theory.
- Explain Pavlov's classical conditioning.
- Discuss principles of classical conditioning.
- Draw educational importance of classical conditioning.
- Describe the theory of operant conditioning.
- Discuss the operations in operant conditioning.
- Draw the importance of operant conditioning in education.
- Draw the difference between classical conditioning and operant conditioning.

2.2. INTRODUCTION

We have already discussed the meaning and nature of learning in the previous unit. What does the procedure of learning comprise ? How much can an individual learn? To what extent can learning be induced through practice ? How does learning help an individual through a set of facts and figures, skills, habits, interests, attitudes and similar other things in life ? Such questions have always been a subject of

enquiry and investigation for psychologists. In the effort to answer the above questions, various theories of learning have been propounded by a number of the prominent psychologists.

You have already learnt about some theories of learning. The theories of learning may be divided into two broad categories – (i) Connectionist or Behaviourist and (ii) Cognitive theories.

In the previous Block (Block – I) we have discussed behaviourism and cognitive psychology. Connectionist or behaviourist theories belong to the school of behaviourism. Behaviourists, who are often called S – R psychologists, interpret learning in terms of connection or association between stimulus and response. They viewed environmental factors as stimuli and the resultant behaviour, as responses. They attempt to demonstrate that behaviour is controlled by environmental contingencies of external rewards or reinforcements, which form links between behavioural responses and their effects or stimuli. Under this category we may include the theories like Thorndike's theory, Guthrie's contiguity theory, Pavlov's classical conditioning theory, Skinner's operant conditioning theory of learning. Here, in this unit we are going to discuss these theories of learning.

Let us now discuss these connectionist or behaviourist theories of learning.

2.3 THORNDIKE'S THEORY OF LEARNING

Let us discuss about Thorndike's theory of learning.

2.3.1 Thorndike's Theory

You have already learnt that connectionism is nothing but connection or bond between stimulus and response.

Following this principle, the famous American psychologist Edward Lee Thorndike put forward his theory of learning, called 'trial and error' method of learning. According to Thorndike, "Learning is the establishment of bond between stimulus and response and it follows a mechanical process of blind trial and error". This mechanical process can be made under the condition of reinforcement. This theory emphasises that if the initial response to the stimulus is satisfactory we are to repeat the response again and again, and that increase the strength of our learning. On the other hand, if initial response is not satisfactory there may be no reinforcement for repetition of the responses while establishing of the bond between the stimulus and response. It can be better understood with the help of the following experiment done by Thorndike on a cat.

In the year of 1913 Thorndike carried out an experiment on trial and error learning with a cat. He placed a hungry cat in a puzzle box. A fish was placed outside the box. There was only a door for exit, which could be opened by catching and pulling a wire loop hanging inside the box, which was connected to the door latch over a pulley. The smell of fish worked as a strong motive for the hungry cat to come out the box. Consequently, the cat made every possible effort to come out. In order to reach at the fish, the hungry cat adopted the blind attempts of pushing the head between the bars or wire, thrusting the paw, actively scrambling around the box, scratching and clawing at the sides. In this way it made a number of random movements when put into the box for the first time. In its vigorous random movements the cat accidentally pulled the loop and the door was opened. The cat came out and got the fish.

For the second trial, the process was repeated. The cat was kept hungry and placed in the same puzzle box. Again the cat was found to scramble around, made some random movements frantic efforts. The cat accidentally pulled the wire

loop and escaping from the box and got the fish. But this time, it took less time in coming out than the first trial. Afterwards, Thorndike placed the cat in the box for many trials. In subsequent trials, such incorrect responses, biting, clawing, scratching and dashing were gradually diminished and the cat took less time on every succeeding trial. As the trials progressed, the cat took less and less time to pull the loop each time it was put back into the box. In this way, gradually the cat learned the art of opening the door. Eventually it escaped or came out almost as soon as it was put into the box. This is described as learning by trial and error.

From the above experiment, Thorndike found out that learning takes place due to the formation and strengthening of connections between stimulus or situation and response. The environment provides the stimulus (S) to which we make response (R) through the senses. As it is based on stimulus response learning it is also known as S – R theory of learning. The bond or connections between stimulus and responses are formed through trial and error.

According to him, repetition helps to eliminate the wrong and adopt the right attempt. So by dint of practice or repetition we can grasp the new things easily. At the initial trials there are large number of errors, but as the trials are repeated, the number or error is gradually decreased. In the same way, the amount of time taken in this regard is also gradually decreased and finally there is no error and as a result learning takes place.

2.3.2. Stages in Trial and Error Method of Learning

The trial and error method of learning involves the following stages :

(1) Drives : Drive refers to an energetic behaviour directed towards a goal and it is an internal state, which arouses lead to action. If an organism is placed in a problematic situation, then it repeatedly gets inspiration or stimulus because in the beginning it finds itself unable to adjust. In trial and error method of learning, Thorndike put a cat inside an uncomfortable problem box; it got stimulus to try to open the door of the box and come out.

(2) Goal : Goal is the end result aimed for in action. In order to learn, the individual or organism must have goal. When the need arises, the individual or organism gets inspired and drives for satisfaction of the need. Thus the need becomes the goal for movement of the organism. In trial and error method of learning, the goal is to get the food by getting out the puzzle box.

(3) Obstacle : Obstacle means barrier or hindrance in the way of goal. For learning, there should be some obstacle in the satisfaction of the drive and fulfillment of the goal. In trial and error learning, if the box were not puzzle then the cat could have come out of it without attempting anything, it would not have learnt anything.

(4) Random movements : Random movement implies movement without the knowledge of correct response on the part of the organism. In the beginning, the organism does not know the correct response and has to indulge in a variety of responses, each one of which is different from the other. In trial and error method of learning, the running, dashing, jumping etc. are considered as random movement of the cat.

(5) Chance success : While the organism indulges in random movements, success comes accidentally or suddenly. In trial and error method of learning, this step can be explained by the unaware and sudden movement of the knob of the box by the cat which made the door of the puzzle box open.

(6) Selection : Due to the continuous attempts on the part of the organism at random movement, it is able to respond correctly in less and less time. This is because the organism starts learning the correct response and his random movements start declining. In trial and error method of learning, the cat took much time to make the correct movement. It started selecting its most suitable actions amongst the random ones.

(7) Fixation : It is seen that after learning takes place, the organism does not commit mistakes. It becomes adept after sometime, and its responses fixed.

2.3.4. Educational Implications of Trial and Error Method of Learning

The educational implications of trial and error method of learning are as follows;

(1) Importance of readiness : Thorndike believes that readiness is essential for learning, and it is preparation for action. If you are ready to learn, you can learn more quickly, effectively and with great satisfaction. But if you are not ready to learn, you cannot learn effectively and with great satisfaction. Thus Thorndike warns us not to make the child learn till he is ready to learn.

(2) Importance of motivation : Thorndike emphasised the importance of motivation in learning. You must be properly motivated before you are taught, because motivation makes you ready for learning the subject matter, which you need to learn.

(3) Importance of experience : Thorndike recognises and emphasised the importance of previous experience in learning. He believes the understanding grows due to previous experiences and the best way to develop understanding is to develop a bond of connections appropriate to that understanding.

(4) Strengthening of bonds between stimulus and response :

According to Thorndike, the teacher must try to strengthen the bond between stimulus and responses, which are needed to be remembered or forgotten by you. The teacher is therefore needed to see what theories and generalisations would enable the students to remember or forget. Remembering could be induced through drill, repetition, practice and reward where as in the case of forgetting, teachers should make attempts to weaken the bonds through disuse and annoying students.

(5) Importance of repetition : Practice makes a man perfect.

This rule should be followed by you. More practice and repetition can help you to make your learning more effective and successful. Repetition becomes useful when the response is rewarded which strengthens the connection between stimulus and response.

(6) Role of reward and punishment : Trial and error method

of learning recognises the role of reward and punishment in our learning. Reward motivates and encourages us to proceed on the same path with more intensity and enthusiasm, while punishment of any type discourages us and creates distraction towards learning. Reward has more strengthening effect in learning than punishment.

2.3.5. Thorndike's Laws of Learning

We have already come to know about Thorndike's theory of learning on the basis of which he developed three laws of learning- law of readiness, law of effect and law of exercise. Let us know about these :

(1) Law of readiness : When you are physically and mentally

ready to learn or to act, you can learn or act more effectively and with great satisfaction than when not ready. Suppose, you are ready to memorise your lesson, you will be able to

memorise it easily. It implies that this law emphasises the importance of readiness to learn. Before actual learning, therefore, we must be mentally prepared and our mind must be mentally set.

In academic situation when you feel ready to learn your lessons, you can learn it effectively; otherwise dissatisfaction may be caused. According to Thorndike, readiness means preparation for action for learning. Your learning becomes rapid and easy if you are prepared to learn. Thus this law is indicative of our state to participate in the learning process. When you are prepared to learn, you display effectiveness along with a high level of satisfaction in comparison to the time when you are not inclined to learn. Hence, the teacher should make an attempt to motivate the students by stimulating their interest, motivation, attention and curiosity.

(2) Law of effect : According to Thorndike, “When a modifiable connection between a stimulus and response is made and is accompanied or followed by a satisfying state of affairs, that connections strength is increased. When made and accompanied or followed by an annoying state of attention, its strength is decreased.” In other words when learning outcome is satisfactory, it becomes a source of pleasure for the learner. In this situation when the learner fails to achieve the goal of learning, the development of learning is interrupted. According to this law, satisfying state of the result increases strength and dissatisfying state decreases it. According to this law learning can be effective when the outcome is satisfactory and it ensures pleasure for us. Otherwise it becomes painful. This law indicates that a thing, which gives pleasure is easily learnt, and a thing which poses a difficulty is not easily learn. Every pleasing occurrence has an impact that lasts long and this impact is retained in the mind for a long time. Thus satisfaction and dissatisfaction, pleasure and pain resulting from a learning

experience decide the degree of its effectiveness. This law of effect is sub-divided into two parts –

- (i) Law of reward and
- (ii) Law of punishment

Getting a reward strengthens learning, which motivates and encourages us to proceed with increased intensity and enthusiasm. On the other hand, punishment weakens learning and discourages us and creates aversion for that learning.

Thus the teaching-learning situation in the classroom should be made satisfactory and enjoyable for us as well as for the teacher, learning activities should be made more meaningful and understandable. Due recognition and reward should be given to good achievement, so that we are cheered up to march forward. Since punishment produces a negative effect and it causes discouragement, it should be avoided as far as possible.

(3) Law of exercise : There is a proverb that ‘practice makes a man perfect’. This law implies that learning takes place by repetition or exercising, by doing or actively participating in the performance. Repetition makes S – R connection very strong. According to this law, for strengthening the connection between stimuli and response, practice or repetition is very essential. According to Thorndike, “When a modifiable connection is not made between a stimulus and response, that connection’s strength is decreased.” It means due to repeated practice the connection’s strength is increased, but it decreases due to absence of exercise or practice for a long time. In other words, the process of learning and learning experience becomes strong and lasting if practice is continued. On the other hand, it may fade out due to absence of practice. It means if you have lack of practice, your learning experience may die out or you may be unable to make stimulus and response connection very

strong. This law has been, therefore, sub-divided into two –
(i) Law of use and (ii) Law of disuse.

Thus as students or learner you should have constant practice and devote much of your learning time to acquire all the facts, abilities, arts and skills which you will find useful.

Check your progress – 1

1. What is learning according to Thorndike ?
2. What are the stages of trial and error method of learning ?
3. What are the laws of learning ?

2.4. GUTHRIE'S CONTIGUITY THEORY

Let us discuss Guthrie's contiguity theory of learning.

2.4.1. Contiguity theory

Contiguity means association of stimulus with response.

Contiguity theory of learning was introduced by Edwin Ray Guthrie in 1920. He was an early behaviourist. He was a Professor of Psychology at the University of Washington. He was a leading advocate of S – R theory of association by contiguity. Guthrie's contiguity theory specified that a close temporal relationship between a stimulus and a response is the only necessary condition for an association between the two to be established. He states that, "a combination of stimuli which has accompanied a movement, will on its recurrence tend to be followed by the movement." According to Guthrie, all learning was a consequence of association between a particular stimulus and response. While he was influenced by some of the

theoretical findings of his contemporaries like Thorndike's selection, connection and association shifting and Watson and Pavlov's classical conditioning, he took a quite distinctive stand and propagated his own theory of learning. He contrived a new model of learning by synthesising his idea of temporal contiguity with the Pavlovian model of classical conditioning.

According to Guthrie, though learning is associating a particular stimulus with a particular response, this association, however, will only occur if stimuli and response occur soon enough one after the other.

Guthrie conducted a series of experiments on a cat in puzzle boxes, similar to that used by Thorndike in his experiments on cat. Through his experiments, Guthrie proved that for connection of S – R, only one trial was thought to be necessary in given the conditioned stimulus full strength. He said practice is useful because it helps knit S – R bond together to form the larger unit of behaviour, that we call acts.

According to Guthrie, the organism responds to various stimuli by contraction of muscles and secretion of glands, that responses are called movements. For example, a boy used to always throw his clothes around after coming back home from school even after repeated admonishment from his parents. One day his mother told him to go out of the house, re-enter and put the clothes in order. The hurling on the floor habit disappeared and the more recent habit of putting the clothes in order and cleaning up response became a new habit for the boy.

Guthrie stressed that organism response to various stimuli by contraction of muscles and secretion of glands. He said an act is a series of movements associated together by the law of contiguity. You can explain it with the help of walking. It requires a number of movements of muscles and senses, which combined together, make an act. Guthrie rejected the theory of Thorndike saying that he was concerned with acts, not with movements. Furthermore, he argued that stimuli and

responses affect specific sensory motor patterns; what is learned are movements, not behaviour. He explained his position on learning as “our position is that what is associated is a stimulus and response. It would be perhaps more exact to say what is more associated is some stimulation of sense organs and a corresponding muscular contraction or glandular secretion. By calling them associated we mean that the stimulation has become the association for the response because of a past association of the two.”

Guthrie’s contiguity theory is the real cornerstone of his unique theory of learning. He states, “What is being noticed becomes a signal for what is being done.” His concept can be better understood by following his experiment.

An experiment was conducted by Guthrie in collaboration with Horton in 1946. The experiment was conducted on cats in a puzzle box to prove that learning is a process of association of stimuli and response, nothing else. A cat was placed in a puzzle box with a small pole in the midst of the box as a release mechanism. The door of the box is opened by touching the pole from any sides or in any manner. A plate of food was kept outside the box. The cat could come out the box and eat the food. The cat found the solution immediately and whenever put into the box, it repeated its previous behaviour. After completing his experiment he concluded that what any animal would do at any movement was based on a record of what he did the first time in the past. He reduced all types of learning to association by contiguity in time.

In contiguity theory, reward and punishment play no significant role in learning. According to Guthrie repetition or reinforcement in terms of reward and punishment do not influence the strength of learning. Learning takes place in single trial. However, since every stimulus is a bit different, many trials may be necessary in order to form a general response. This was, according to Guthrie, the only type of

learning identifying him not as reinforcement theorist, but contiguity theorist.

Contiguity theory identified that forgetting occurs not due to time passage, but due to interference. As time passes, stimuli can become associated with new responses. Fatigue method, threshold method and incompatible stimuli method can help in forgetting an undesirable old habit and help in replacing it.

2.4.2. Educational Implications of Guthrie's Contiguity Theory

Do you know Guthrie's contiguity theory has wide implications in the field of education? Let us see how.

1. Guthrie's analysis of extinction, breaking of habit and other phenomenon had desirable impact on theory of education.
2. Guthrie states that 'we learn only what we ourselves do. So, learning must be active, but as such must involve both teachers' and students' activity in order to associate stimuli with a response within a time limit.
3. It enables us to introduce radical change in teaching-learning materials, processes and conditions. It helps in the associations made at the time of learning, to utilise to the maximum at the time of utilisation of the outcomes of learning.
4. The school programme of formal learning must be made functionable and natural to coincide with the real life setting so that what the students learning in the school may prove useful to them in real life.
5. A thing to be learned properly needs strengthening of bond between stimulus and response, when it is learned for the first time. Thus, for evoking a desired response

of the child we must have the support of as many stimuli as possible. For that we must look into all the ways and means for evoking that particular response. Reward and punishment must be utilised for evoking and then intensifying the response.

Check your progress – 2

1. What is learning according to Guthrie?
2. When did Guthrie introduce his contiguity theory of learning ?
3. Give an example of Guthrie's contiguity theory of learning.

2.5. PAVLOV'S CLASSICAL CONDITIONING THEORY OF LEARNING

Let us discuss Pavlov's classical conditioning theory of learning.

2.5.1. Classical conditioning theory

The theory of conditioning or conditioned response learning was introduced by Ivan P. Pavlov, a Russian doctor and psychologist.

Pavlov developed the theory of learning by conditioning, following his experiments on a hungry dog. He kept the hungry dog for a few days. At first, the dog was given food as single stimulus to which the dog responded by salivation in the mouth. Because sight of the food would naturally lead the dog to salivate. In the second step, the dog was presented another stimulus of sound of the bell along with food. To this the dog made the natural unlearnt response of listening to the sound. Pavlov would ring the bell before giving food to the dog. It meant the dog was presented the sound of

bell and a dish of food simultaneously to which the dog was found to respond by making salivation. He repeated this act for several days under similar conditions. After repeated presentation of the two stimuli 'bell' and 'food' Pavlov discovered that the dog would start salivating merely at the ringing of the bell even when the food was not served to him. This response of salivation to the sound of bell is learnt response and is the result of conditioning. Here the natural response of salivation to food had been shifted to the bell by making conditioned response. In other words, ringing of the bell as an artificial stimulus was conditioned to salivation – a natural response to a natural stimulus.

Pavlov's Experiment :

Stimulus	Response
S ₁ (food)	R ₁ (Salivation)
S ₂ (bell)	R ₂ (Hearing bell)
S ₁ + S ₂ (Food + Bell)	R ₁ (Salivation)
S ₂ (Bell)	R ₁ (Salivation)

Pavlov's theory of conditioning is called classical conditioning. From the example cited above it can be said that conditioning is modification of the natural response. Natural stimulus results in natural response. According to the conditioned response, natural stimulus is substituted by an artificial stimulus. In this way, a new connection between artificial stimulus and natural response is created. In this way, conditioning takes place.

Conditioning involves the substitution of one natural stimulus for another artificial one and forcing of an association between the artificial stimulus and the natural response.

2.5.2. Principles of Classical Conditioning

The theory of classical conditioning developed by Ivan P. Pavlov give birth to a number of principles. Let us analyse them one by one.

(1) Extinction : According to classical conditioning theory, an unconditioned stimulus should be presented only after the conditioned stimulus. From his experiment we can explain that if the conditioned stimulus i.e. ringing of the bell is presented to the dog a number of times without the unconditioned stimulus i.e. food, the magnitude of the conditioned response of salivation begins to decrease. This process is known as extinction.

(2) Spontaneous recovery : According to Pavlov, unconditioned stimulus must be of greater intensity. According to him, when a conditioned response is no longer evident, the behaviour often appears spontaneously but at a reduced intensity. In Pavlov's classical conditioning, the process of spontaneous recovery shows that learning is, somehow, suppressed rather than forgotten. As time passes, the suppression may become so stronger that there would be no future possibility of spontaneous recovery.

(3) Stimulus generalization : Stimulus generalisation means responding to the stimuli in a general way. It refers to a particular stage of learning behaviour in which an individual is once conditions to respond to a specific or an instance of similar nature. Pavlov's dog exhibited salivation not when he saw but when he reacted to every stimulus related to its feeding.

(4) Stimulus discrimination : We can learn by going through the mechanism of stimulus discrimination we get to learn how to reach the correct and appropriate stimulus out of a number of stimulus. We can distinguish and differentiate one from the

other out of the stimulus surrounding us. Instead of responding in a usual way, we learn to react differently in different situations.

2.5.3. Educational Implications of Classical Conditioning

Classical conditioning has great educational implications. We are usually exposed simple classical conditioning in our day-to-day life. It can be used to de-condition to anxiety and fear in maladjusted children. Let us take an example, suppose, you always rebuke and punish your child after coming home from office without trying to know the basic reasons that may definitely condition your child to fear you. Your child may further developed anxiety reactions at the time of your return to home. Your child may further develop a feeling of hatred towards you and developed maladaptive behaviour. Similarly, a teacher with his defective method of teaching or improper behaviour towards the students may conditions the student to develop distaste and hatred attitude towards him and hostile attitude toward school. On the contrary, loving attitude, affection and sympathetic treatment of parents and teachers to the children at home and at school may produce desirable impact on them through the process of conditioning.

Classical conditioning is useful for developing good habits in children. Conditioning can be used to develop favorable or unfavorable attitudes towards learning, teachers and schools. It emphasises the importance of the idea of association of learning which is very much helpful in learning and memorisation.

Check your progress - 3

1. What are the principles of classical conditioning ?
2. Mention some educational implications of theory of

2.6. SKINNER'S OPERANT CONDITIONING THEORY

Let us discuss Skinner's Operant conditioning theory

2.6.1. Operant Conditioning

You are already able to know about Thorndike's connectionism and Pavlov's classical conditioning. Both the theory emphasises on stimulus-response mechanism in the evolution of behaviour. Skinner revolted against 'stimulus and response' mechanism in the evolution of behaviour.

According to him, stimulus is not always an important factor of learning. It is the response which is reinforced and we learn by reinforcing. Skinner's theory of learning is known as operant conditioning as it is based on certain operations or actions, which we have to carry out. According to this theory, the reinforcing stimulus occurs not simultaneously with or preceding the response but follow the response. In the process of operant conditioning, operant responses are modified by reinforcement. Here a question arises what reinforcement actually is? Reinforcement is a special kind of (or aspects of) conditioning, within which the tendency for a stimuli to evoke a response on subsequent occasions is increased by reduction of a bond.

According to him, learning does not necessarily take place due to stimulus response relationship. Skinner conducted a series of experiments with rats, pigeons etc. He conducted an

experiment with rats by developing a simple apparatus, commonly known as Skinner box.

After conducting his experiments Skinner says that when a hungry cat is placed within the puzzle box, he gets food by pressing a button. When the pressing of the button is done again and again, that is, when the pressing is reinforced, the cat continues pressing the button even after he gets food. So Skinner believes that we can learn by reinforcement of the responses and not by noticing the relationship between stimulus and response.

On the basis of the outcome of his experiments, he came to decide that its consequences shape and maintain behaviour. Do you think that individuals can learn by reinforcement? Yes we can. Let us understand about it with the help of an example. Suppose you want to train a child for toilet training. Simply putting the child on the toilet seat is not enough, because when the child is placed on it, he would perhaps begin to cry. But if you give him a chocolate or things he likes most whenever he is placed on the toilet, then it has been observed that successful elimination follows. For the child chocolate is a reinforcement that can help the child to shape and maintain his behaviour. When this type of behaviour occurs it is known as operant behaviour and the process of learning that plays an important role in such behaviour is termed as operant behaviour or operant conditioning.

For understanding the basis of Skinner's theory of operant conditioning, let us define and explain some of the concepts used by him.

2.6.2. Operations in operant conditioning

Several operations are involved in the process of operant conditioning. Let us explain some of them –

(1) Shaping : Shaping is the most important mechanism used in operant conditioning. Shaping refers to the teaching of new skills or behaviour by reinforcing learners for approaching the desired final behaviour. Suppose you are taught the skill in playing football. You are taught step by step as to how to kick the ball, run, score goals, take penalty kicks. After each step, if praise is showered upon you for your success, then definitely you will learn better than when you are asked to learn all these skills in one game.

(2) Extinction : It consists simply of withholding the reinforcer when the appropriate response occurs. Withholding the reinforcer means extinction of previously established relationship.

Suppose, in the Skinner experiment, if the rat, kept in the box, presses the button but does not get the plate of food and if this is done repeatedly, the button pressing behaviour of the rat will stop.

(3) Spontaneous recovery : Spontaneous recovery refers to the fact that if you are removed from the situation for a while after extinction and then returned and again presented with stimulus your performance will be better than would be predicted from your performance at the end of preceding extinction. The number of reinforced occurrence of training trials prior to extinction also affects the degree of spontaneous recovery, more reinforcements are associated with greater recovery.

(4) The concept of reinforcement : The concept of reinforcement is central in operant conditioning theory of Skinner. It is identical to the process of presenting or removing anything that increases the chance of the repetition of a response.

2.6.3. Respondent and operant behaviour

According to Skinner there are two types of behaviour or responses- respondent behaviour and operant behaviour. Respondent behaviour is shown through known stimulus. In this behaviour, the stimulus preceding the response is responsible for causing the behaviour. On the other hand, one emitted by an unknown stimuli is called operant behaviour. In this behaviour, the stimulus causing operant behaviour is unknown and knowledge of the cause of the behaviour is not important. Operant behaviour is controlled by the strength of its consequence rather than by the stimuli. The arbitrary movement of your hands, arms or legs; a child abandoning one toy in favour of another; eating a meal; writing a letter; standing up and walking about and similar other every day activities are the examples of operant behaviour.

Operant : Skinner considers an operant as an action in which an individual or an organism performs an activity. Raising the hand and head, walking about etc. are the examples of operant behaviour.

2.6.4. Reinforce and reinforcement

According to Skinner the concept of reinforcement is identical to the process of presenting or removing the only thing that increases the chances of the repetition of a response. Skinner recognises two types reinforcement – positive and negative. Let us explain the two.

A positive reinforce increases the probability of the response when added to a situation. It is any stimulus which we shall work to obtain as food, money etc. In the educational context praise grades, models and other prizes awarded to the students are considered as positive reinforcers.

Negative reinforcers are any stimulus, the removal of which increases the likelihood of a particular behaviour. These are those unpleasant stimuli, which the learner will readily terminate if given the opportunity to do so. An electric shock, a loud noise etc. would act as a negative reinforce. In the educational context, one example may be teachers' saying to the students that whoever does drill work properly in the class would be exempt from homework. Whether it is positive or negative reinforce the probability of events occurring again is strengthened.

2.6.5. Schedule of reinforcement

Let us discuss the schedules of reinforcement.

The procedure of giving reinforcement is called conditioning, which may be given on regular or intermittent basis. If we observe our day-to-day activities we find that most of our behaviour is reinforced by some intermittent and partial reinforcement. There are various occasions when the intermittent schedule of reinforcement operates in our daily life.

For example our request for money from our parents are not always granted, we do not get good marks in the examination, phone calls by friends are not always answered etc.

It is needless to say that by skillfully manipulating various schedule of reinforcement, it is quite possible to shape the behaviour according to our desired goal. We can get a good deal more out of our friends or other persons by using reinforcement.

Skinner introduced the idea of planning the schedules of reinforcements for acclimatising the operant behaviour of an organism. Let us discuss the important schedules of

reinforcement and see how they apply and operate in developing and shaping our behaviour.

(1) Continuous reinforcement schedule : It is an arrangement of providing reinforcing or reward after every concrete response during the acquisition of learning. Suppose, you may be rewarded for every concrete answer that is given by you to the questions or problems put across by your teacher is an example of this schedule.

(2) Fixed interval reinforcement schedule : In this schedule, the organism is rewarded for a response made only after a set interval of time. For example, after every 2 minutes the rat in the Skinner box get food, laboures gets his wages after 8 hours of work, you need to appear in the examination etc.

(3) Fixed ratio reinforcement schedule : In this schedule, the reinforcement is given after a fixed number of responses. The performance of the learner is important in this schedule. Suppose, you have a little child and he responds correctly 3 questions and receives a chocolate, is fixed ratio reinforcement. Similarly, when the cat, after pressing the button 10 times in the Skinner box, gets a plate of food, is an example of this schedule.

(4) Variable reinforcement schedule : In this schedule reinforcement takes place at different intervals of time or after a varying number of responses. It means in this schedule the interval is randomly varied about some given time value. The common example of such a schedule in human behaviour is the reinforcement operation schedules of gambling derive. Here it is not possible to predict the rewards and keep the level of motivation high in players' through occasional returns.

Actually, large amount of our personal and social behaviour operates on this schedule. We do not definitely know or predict when the reinforcement will come.

2.6.6. Educational implication or significance of operant conditioning

Do you think that operant conditioning, which is already discussed by us, has educational significance ? Let us see.

(1) Successive approximation: Skinner's operant conditioning suggests the great potentiality of the shaping procedure for behaviour modification. It can be used for shaping behaviour of students through successive approximation in terms of small steps. The students can gradually learn complicated behaviour patterns through successive steps that are rewarding for them. Thus it can be said that for shaping behaviour of children the child must be rewarded by the teacher.

(2) Eliminating negative behaviour through extinction : For eliminating negative behaviour of students extinction procedure can be used by the teacher in the class.

(3) Reinforcement : Skinner's operant conditioning has valuable implications for reinforcement techniques in the classroom. To eliminate the element of fear from school atmosphere, the school can follow the principle of reward as positive reinforcement. To decrease the strength of negative behaviour, teachers can effectively use the principle of punishment as reinforcement.

(4) Behaviour modification : Operant conditioning of Skinner also implies the use of behaviour modification programmers to shape desirable behaviour and eliminate undesirable behaviour. The teacher can use the principle of behaviour modification such as identifying the consequence of the behaviour, specifying the goal behaviour, formulating and trying out the hypothesis, continuous reinforcement to partial reinforcement, attention to desirable behaviour, praising the behaviour,

keeping records of progress and checking the result etc to shape desirable behaviour of the students.

(5) Basis for programmed instruction : The principles generating from operant conditioning have revolutionized the training and learning programme and provides the basis for programmed instruction. As a result mechanical learning in the form of teaching machines and computer assisted instructions have replaced the usual or traditional classroom instruction.

(6) Behaviour therapy : This theory has also been used as a form of behaviour disorder by reinforcing socially adaptive behaviour and eliminating male adaptive behaviour.

2.6.7. Distinction between classical and operant conditioning

You have already learnt about the theory of classical conditioning and operant conditioning. Now, let us distinguish between the two.

1. Classical conditioning is based on respondent behaviour. In this type of learning, much emphasis is given on stimulus for eliciting the desired response such as blinking at the bright light, jumbling at an electric shock, salivation to the taste of food etc.

On the other hand, operant conditioning helps in conditioning or learning of operant behaviour that is emitted rather than elicited as classical conditioning. In this type of learning greater importance is placed on the response rather than the stimulus causing the response. In this type of learning we seem to initiate operant behaviour of our own without a single, explicit preceding stimulus.
2. Our participations in classical conditioning is passive, while in operant conditioning, we need to actively participate and perform some type of action in order to rewarded or punished.

3. In classical conditioning, strength of conditioning is usually determined by the magnitude of the conditioned response i.e. the amount of saliva as in the case of the classical experiment done by Pavlov with the dog.

On the other hand, in operant conditioning strength of conditioning is shown by the response rate i.e. the rate at which an operant response occurs as a result of some reinforcement.

4. In classical conditioning, the occurrence of the conditioned response is forced by unconditioned stimulus. Here individuals do not have control over behaviour. But in operant conditioning, response is more spontaneous and voluntary. Here individuals have control over behaviour.
5. In classical conditioning natural stimulus becomes associated with unconditioned stimulus, whereas in operant conditioning, consequence of behaviour influenced subsequent behaviour.
6. Classical conditioning is called type S– conditioning to emphasise the importance of the stimulus in eliciting desired response. On the other hand operant conditioning is called R– conditioning because of the emphasis on the response rather than stimulus.

Check your progress – 4

1. What are the operations in operant conditioning ?
2. What are the schedules of reinforcement ?

2.7. LET US SUM UP

- * According to Thorndike, learning is the establishment of bond between stimulus and response and it follows a mechanical process of blind trial and error. To prove this statement, he conducted an experiment on a cat. Through his experiment he found out that learning takes place due to the formation and strengthening of connection between stimulus and response. His theory of learning is known as S–R theory. Drive, goal, obstacle, random movements, chance of success, selection, fixation etc are the stages of trial and error method of learning. Thorndike had developed three laws of learning on the basis of his theory of learning. The laws are law of effect, law of readiness and law of exercise.
- * Contiguity means association of stimulus with response. Contiguity theory was introduced by Guthrie. He rejected Thorndike's theory of learning by saying that he was concerned with acts, not with movements. Reward and punishment play no significant role in learning. Guthrie identified that forgetting occurs not due to time passage, but due to interference. Fatigue method, threshold method and incompatible stimulus method can help in forgetting and understanding old habit and help replacing it.
- * Pavlov's theory of learning is called classical conditioning. Conditioning involves the substitution of one natural stimulus for another artificial one and forcing of an association between the artificial stimulus and the natural response. Extinction, spontaneous recovery, stimulus generalisation, stimulus discrimination etc. are the principle of classical

conditioning. Classical conditioning is useful for developing good habit in a child. It can be used to develop favourable or unfavourable attitude towards learning, teacher and schools.

- * According to Skinner, stimulus is not always an important factor of learning. It is the response, which is reinforced and the individual learns by reinforcing. Skinner's theory is known as operant conditioning as it is based on certain operations or actions, which an organism has to carry out. Shaping, extinction, spontaneous recovery, etc. are the operations in operant condition. Continuous reinforcement, fixed interval reinforcement, fixed ratio reinforcement, variable reinforcement etc are the schedule of reinforcement.

2.8. KEY WORDS

- Drive : an energetic behaviour directed towards a goal.
- Conditioning : the procedure of giving reinforcement.
- Reinforcement : chance of repetition of response.
- Operant : an action

2.9. SUGGESTED READINGS

1. Educational Psychology – Dr. M. K. Sharma
2. Advanced Educational Psychology – S. S. Chauhan
3. Education – T. Saikia and R. Borah
4. Advanced Educational Psychology – B. Kuppaswamy.

Answer to check your progress - 1

1. According to Thorndike learning is bond or connection between stimulus and response.

2. The stages of trial and error method of learning are drive, goal, obstacle, random movements, chance success, selection, fixation etc.
3. Law of readiness, law of effect and law of exercise.

Answer to check your progress - 2

1. Guthrie's contiguity theory specified that a close temporal relationship between a stimulus and a response is the only necessary condition for an association between the two to be established. He states that, "a combination of stimuli which has accompanied a movement, will on its recurrence tend to be followed by the movement." According to Guthrie, all learning was a consequence of association between a particular stimulus and response.
2. In 1920.
3. An experiment was conducted by Guthrie in collaboration with Horton in 1946. The experiment was conducted on cats in a puzzle box to prove that learning is a process of association of stimuli and response, nothing else. A cat was placed in a puzzle box with a small pole in the midst of the box as a release mechanism. The door of the box is opened by touching the pole from any side or in any manner. A plate of food was kept outside the box. The cat could come out of the box and eat the food. The cat found the solution immediately and whenever put into the box, it repeated its previous behaviour. After completing his experiment he concluded that what any animal would do at any movement was based on a record of what he did the first time in the past. He reduced all types of learning to association by contiguity in time.

Answer to check your progress - 3

1. Extinction, spontaneous recovery, stimulus generalisation, stimulus discrimination etc.
2. (i) It can be used to de-condition to anxiety and fear in maladjusted children.
 (ii) loving attitude, affection and sympathetic treatment of parents and teachers to the children at home and at school may produce desirable impact on them through the process of conditioning.
 (iii) It is useful for developing good habits in children. Conditioning can be used to develop favorable or unfavorable attitudes towards learning, teachers and schools.
 (iv) It emphasises the importance of the idea of association of learning which is very much helpful in learning and memorisation.

Answer to check your progress - 4

1. Shaping, extinction, spontaneous recovery, reinforcement etc.
2. Continuous reinforcement schedule, fixed interval reinforcement schedule, fixed ratio reinforcement schedule, variable reinforcement schedule etc.

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8. Kumar Dr, Applied Psychology, New Delhi.

MODEL QUESTIONS

1. Write about the Thorndike's theory of learning along with its educational implications.
2. Write about Guthrie's contiguity theory of learning. Explain its various principles.
3. Discuss the principles of classical conditioning.
4. What are the operations in operant conditioning ? Write about the importance of operant conditioning in education.
5. Distinguish between classical conditioning and operant conditioning.

UNIT - III

COGNITIVE THEORIES

STRUCTURE :

- 3.1. Objectives
- 3.2. Introduction
- 3.3. Theory of insightful learning
 - 3.3.1 Insightful learning
 - 3.3.2 Criterion or essential of learning by insight.
 - 3.3.3 Educational implication of the theory of insightful learning.
 - Check your progress
- 3.4. Lewin's field theory
 - 3.4.1 Concept of Lewin's field theory
 - 3.4.2 Components of Lewin's field theory.
 - 3.4.3 Educational implications of Lewin's field theory.
 - Check your progress
- 3.5. Tolman's sign Gestalt learning ?
 - 3.5.1. Tolman's theory of learning.
 - 3.5.2. Main features or thought and concept of Tolman's sign theory.
 - 3.5.3. Types of sign Gestalt learning.
 - 3.5.4. Educational implications of Tolman's theory of learning.
 - Check your progress
- 3.6. Bandura's social learning theory
 - 3.6.1. Social learning theory.
 - 3.6.2. The modeling process.
 - 3.6.3. General principles of social learning theory.
 - 3.6.4. Educational implications of social learning theory.
 - Check your progress
- 3.7. Let us sum up.
- 3.8. Key words.
- 3.9. Suggested readings.
 - Possible answers to CYP.
 - References.
 - Model questions.

3.1. OBJECTIVES

After studying this unit you will be able to :

- explain the meaning of insightful learning.
- describe the criterion of learning by insight.
- know the educational implications of insightful learning.
- explain Lewin's field theory along with its educational implications.
- describe sign Gestalt theory and its various types.
- draw educational implications of sign Gestalt theory.
- elucidate understanding of social learning theory along with its general principles.
- explain the modeling process of social learning.

3.2. INTRODUCTION

Cognitive theories belong to the school of Gestalt psychology that have been discussed in Block I. Cognition is understood as a general concept embracing all forms of knowledge. Cognitive theories emphasise the role of thinking, reasoning, conceiving, knowing, understanding and establishing relationship, purpose, insight, memory and other cognitive factors in the process of learning. Under this category, we may include theories like insightful learning, field theory, sign Gestalt learning, social learning theory etc. Here, in this unit, we are going to discuss the theory of insightful learning developed by Kohler, Lewin's field theory, Tolman's sign Gestalt theory and Bandura's social learning theory.

Let us discuss these cognitive theories of learning.

3.3. THEORY OF INSIGHTFUL LEARNING

Let us discuss insightful learning.

3.3.1. Insightful learning

An intelligent chimpanzee named ‘Sultan’ was hungry for some time and then was put in a large cage. Some bananas were hung from the ceiling and kept in a box. At the first stage, he tried to get the bananas by extending his bare hands and jumped again and again. But he could not reach the bananas. He had followed the method of trial and error in this regard. But he did not succeed at this method. After some time he looked around and saw the box and he placed the box under the bananas and climbed on it and got the bananas. He suddenly established relationship between the box and the bananas.

In another experiment, the chimpanzee (Sultan) was confined in a cage. Two sticks were placed inside the cage and some bananas were hung from the ceiling. In the first instance, on seeing the bananas, the chimpanzee showed restlessness and tried his best to reach the bananas. But he could not succeed without the help of the stick. Two sticks could be fitted with each other with some mechanism. He first tried to get the banana with the help of one stick but could not reach. He had spent some time without any attempt. After some time all of a sudden an idea came to his mind that the two sticks could be fitted by joining one end with other. He did it and could get the bananas. In this way Sultan was able to solve the problem by insightful learning.

This experiment was conducted by Kohler in an island in Africa during the years 1913 to 1917. He was one of the chief propagators of gestaltism, that was put forwarded by

Koffka and Wertheimer along with him. On the basis of the above experiment, we can sum up the theory of learning as –

Insight is often referred to as the end process of observational activity. Insight is the grasp of a situation that often goes deeper than words. Insight answers to question like how something is made up, what is related to what, how one does something, of what good a thing or action is and what one should be doing.

According to Kohler, learning involves the ability of observing the situation as a connected whole or in its totality. Learning is an intellectual activity that involves the power of observation, perception and insight of the learner and it takes place as a whole. Because the whole is greater than the parts. In learning situation or in the act of learning, the learner tries to comprehend the whole situation, but not as parts. When the inter relationship of the parts is known, the idea of the whole emerges in the mind suddenly just like a flash of new light. As a result learning is possible and the learner may be able to solve any problem through it. Thus it is totality of perception or observing the situation as a whole that makes learning possible. So, according to gestalt psychologists, learning is possible only through insightful method. This method is therefore called insightful learning.

3.3.2. Criterion or Essentials of Learning by Insight

Let us find out the criterion or essentials of learning by insight.

- (1) **Comprehension as a whole** : Insightful learning emphasizes that the whole is more important than the parts.
- (2) **Clear goal** : The goal must be clear to begin with.

- (3) **Power of generalization** : It emphasises on the power of observation, perception and insight of learning. Thus one must possess the power of generalisation along with those of differences.
- (4) **Suddenness of solution** : Suddenness of the solution is the hallmark of learning by insight. In insightful method, the solution flashes suddenly to our mind or learning occurs suddenly.
- (5) **Transfer** : Transfer of learning occurs as a result of insight.
- (6) **Intellectual level** : It is related to the intellectual level of human being and does not give stress on physical activities.
- (7) **Change in behaviour** : It changes our behaviour to the extent, which we have learnt through insight.

3.3.3. Educational Implications of the Theory of Insightful Learning

Do you know that the insightful learning has great educational value? The greatest contribution of the theory of insightful learning is that it has made learning a purposeful and goal-oriented task. It gives importance of viewing the situation as a whole and has given birth to the important maxim, from the whole to the part in the field of learning. Suppose, if we want or wish to learn or memorise a poem, it should be presented to us as a whole and after having read and understood as a whole, it may be broken into parts or stanzas for being effectively memorised. Similarly, we should consider a problem requiring solution as a whole and after being assessed as a whole, it may be tackled for solution on a rice meal basis. This has made significant contribution in the organisation of

curriculum, scheme of studies, work plan and procedure of planning the schedule of learning or teaching or a skill of behaviour. It provides us perception and organisation of the parts in solving the problem in learning situation. It encourages personal initiations and determination in approaching a problem. Our dormant qualities may be developed through this method. It is very helpful to make us self-dependent, for conducting creative and constructive activities and for scientific inventions and discoveries. It trains us how to proceed in a planned way in solving the problem and to understand a difficult subject. What we are seeing today in the form of an emphasis on unity and cohesiveness within the learning acts or experiences in any scheme of studies or learning is nothing but a pattern of learning borrowed from insightful theory of learning. Complex problems require higher learning and solutions are reached only by application of insight. All new ideas and concepts, inventions and discoveries are the result of insightful learning. Teaching and learning of mathematics and science demand higher intellectual exercises.

3.3.4. Difference between the trial and the error and insightful method of learning

You have already learnt that the trial and error method of learning was developed by Thorndike, and it stressed more on psychological efficiency. On the other hand the theory of insightful learning was developed by Kohler, and it stressed more on the brain functioning. Let us find out the differences between the two methods -

- (1) In the trial and error method of learning more stress is on psychological efficiency. On the other hand in insightful learning main stress is on the brain functions.

- (2) In the trial and error method, learning is a goal directed activity. Whereas insightful learning is done by the subconscious mind.
- (3) Trial and error method is more useful for the children of low intelligence. But in insightful method more intellectual ability is needed.
- (4) Trial and error method is best for reaction type learning and habit formation. On the other hand, insightful method is most suited for concept formation, problem solving and other higher processes involving dynamic interaction among the various elements of learning situation.
- (5) In trial and error method there is no transfer of learning. On the other hand, transfer of learning is possible in insightful learning.
- (6) In trial and error method learning depends upon efforts and labour of the learner. But in insightful learning, learning depends on nature, need, insight and intellectual level of the learner.
- (7) In trial and error method learning is based on sensory motor coordination. But in insightful method, learning is based on perception.

Check you progress - 1

- (a) What is insightful learning ?
- (b) What are the criteria of insightful learning ?

3.4. LEWIN'S FIELD THEORY OF LEARNING :

3.4.1. Lewin's Field Theory :

We have already discussed the Gestalt theory or insightful learning. While viewing the structure of the total background of insightful theory, we are able to perceive the inter-relationships existing between the various elements that go in constructing the structure. So we have inferred that learning is the understanding of relationship. Lewin's field theory is just like that of the gestalt theory. The only difference is that it gives more importance to behaviour and motivation and less to experience. Lewin does not regard learning as a rare phenomenon. According to him, learning is a process of perceptual organisation or reorganisation . Any type of learning involves insight and insight is a perceptual process. Lewin's theory represents sign gestalt theory of learning in contradiction to the S – R theories of learning.

Kurt Lewin explains the individual behaviour on the basis of life space. He regards the environment of individual as his life space. He regards life space to be a function of 'person and environment'. He proposed that human behaviour is a function of both the person and the environment in which the behaviour takes place including the social parameters. Thus, according to Lewin, both individual and environment constitute life space. Learning is behaviour, locomotion from one region of life space to another. When we move from one region to another, the structure of life space undergoes change.

There are many regions of the life space such as condition, things, space, activities, persons' drives, tensions, thought etc. which are of great psychological importance. The region that is attractive has a positive force or valence. The one, which creates an aversion, is negative in nature. A mutual

interaction goes on between the individual and his environment, i.e. one influences the other.

Lewin's theory of learning is called field theory as to a psychological world in which a person lives at a certain time. For Lewin, behaviour was determined by totality of an individual's situation. In his field theory, the totality of co-existing facts are conceived of as mutually interdependent. Individuals are seen to behave differently according to the self and to the environment that worked together. The whole psychological field or life space, within which people acted, had to be viewed, in order to understand behaviour. Within this individuals and groups could be seen in topological terms. Individuals participate in a series of life spaces and these were constructed under the influence of various force factors. It includes matters and events of the past, present and future, concrete and abstract, actual and imaginary. All of these are interpreted as simultaneous aspects of a situation. Lewin states that each person exists within a field of force to which the individual is responding or reacting and it is called his life space.

Lewin represents his theory through a diagram in which an individual is in the centre.

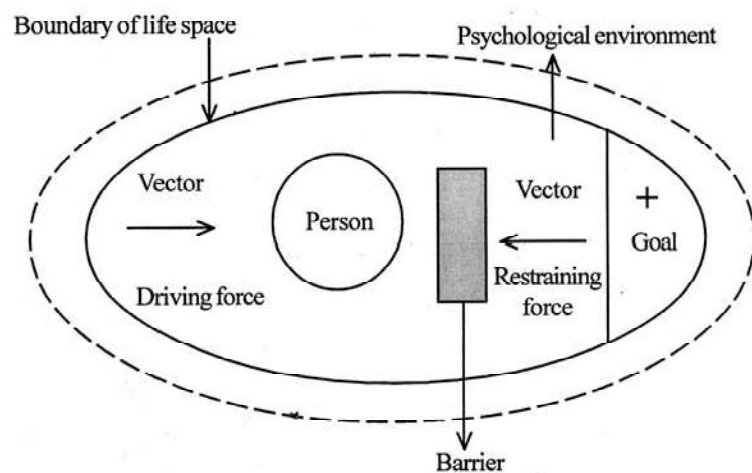


Fig. 1

Lewin's Theory of learning

Let us explain it. Suppose we move through our life space that consists of the totality of facts that determine our behaviour at a given time. A life space contains ourselves, the goal we are seeking or avoiding, the barriers that restrict our movements and the path we must follow to reach our goal. Desire to reach the goal creates tension in our mind and when tension comes to a balancing state and we start action. After the goal has been achieved, we return to a state of response until a new desire activates us. As for instance, you are moving towards a goal of getting social recognition. But to achieve the goal you have to apologise. Now asking for apology is the barrier coming in your way. The barrier may be a physical or psychological force preventing you from reaching the goal.

In Lewin's theory, threat, goal and barriers are the main factors. An individual who has to achieve some goal has to cross a barrier, which may be psychological or physical. Because, of the changes in the barrier in the field life space of an individual, continuous reconstruction takes place.

Lewin contends that in order to understand how learning takes place we have to see how life-space is being recognised in view of numerous physical and psychological factors.

So if we understand the structure of the life space, learning will be easily understood.

3.4.2. Components of Lewin's Field Theory :

According to Lewin's field theory, learning is a relativistic process by which a learner develops new insight or changes old ones. Learning is not a mechanistic and atomistic process of insight that is concisely defined as a basic sense of feeling for relationship. Field psychology explains

developments of insight as a change in the cognitive structure of life space.

Let us discuss the main concepts used in Lewin's theory—

1. Topology : It is also called topological. Lewin developed this approach in 1930 in an effort to develop something practical. Connectedness and part whole relationship are the two basic components of topological space. Topological concepts are used to represent the structure of life space in such a way to define the range of possible perceptions and actions. This is accomplished by showing the arrangements of the functional parts of life space, which are shown as various regions and their boundaries. When an individual structures his life space, he divides it into regions. The boundaries and regions assigned to different components in a dynamic way, are the main tools to identify the tension system that drives behaviour. Suppose we are trying to resolve the tension produced by the dilemma of something to do versus something we want to do. The tension pattern is released when the person resolves the dilemma.

2. Vector : In Lewin theory vector represents a force, which is influencing movement towards a goal or away from it. If there is only one vector or force, there is movement in the direction of the vector. However if there are two or more vectors acting simultaneously in different directions, the movements of an individual is in the direction of the resultant force.

3. Life space : Life space is the psychological field, which is the space in which we move psychologically. The whole of our psychological reality and what we think of or what we gain from our physical and social environment contains life space. We have already discussed above in details about life space.

4. Valence : The regions of life space, which compels us to move towards that region, is called valence. Valence may be

positive or negative. If an object attracts us, that object is said to have positive valence and when we are repelled by an object then it is said to be negative valence. Positive valence tends us to move toward a region in life space and negative valence tends us to move away from a region in life space.

Lewin believed that behaviour was purposeful and visualised the individuals as existing in a field of force. Which included valence forces, which attract and repel us. The blending of these fields produced approach avoidance dynamic. According to Lewin's theory, learning is essential to cope with these opposing force fields.

3.4.3. Educational implications of Lewin's Field Theory :

Is there any educational implication of Lewin's field theory? Let us see. For the understanding of the whole situation at the beginning of the lesson or an activity, the teacher should preview the activities involved and the problem to be encountered. Thus, in the study of a subject, we should be told in advance i.e. at the initial stage; the questions of which we have to find out a solution. We have to note that in a classroom situation, the teacher, we, the class and the school constitute the total situation. Moreover from the point of view of a field theorist, the teacher should keep in mind that we, the teacher himself, other teachers, the school and the peer group are all the parts of the total situation.

The need for seeing the whole and details of the situation is very necessary. The teacher must assist us to perceive the goal and the barrier. In the context of this the learning process has to be organised keeping in view the changed perception, and the difference between of the stimuli and the response. It is a result of all these that we get an insight into the problem and succeed in achieving our goal. So, the goal must be presented in an easier and simplified way.

In this context we have to note that in the process of learning, the condition and the mode of the learner, proper motivation and the feeling of a challenge or realising the necessity of achieving some immediate goal are very important.

Check your progress - 1

1. What is life space?
2. Mention some regions of life space.
3. What are the components of Lewin's field theory ?

**3.5. TOLMAN'S SIGN GESTALT LEARNING/
TOLMAN'S SIGN THEORY OF LEARNING :**

You have already learnt about different stimulus response theories as discussed in the previous unit and some of cognitive field theories, discussed in this unit. Tolman's sign Gestalt theory belongs to cognitive theories. Though Tolman's theory belongs to cognitive theories, his system stands in between S – R and cognitive field theories. Let us discuss Tolman's theory of learning.

Edward C. Tolman's sign theory of learning, no doubt, is rooted in behaviourism but he was strongly opposed to S – R associationism. Tolman published his book 'Purposive Behaviour in Animals and Man' in 1932. His system is known as 'Purposive Behaviourism'. It is behaviourism in the sense that it rejected the idea of introspection as a method of studying human behaviour. On the contrary, he believed the objective method of collecting data, interest in precise measurement of behaviour and its faith in the improbability of man. He remarked that we do not only respond to the stimulus, but we also act on belief, expression, attitudes and strive toward goal. According to him behaviour can be modified by experience and training. He was opposed to the psychology of consciousness. When he made reference to consciousness, to inventive

ideation and the like, he was talking about interpretations of observed behaviour. According to him learning is not so simple an activity undertaken through simple S – R connections, but involves complex cognitive activities helped by the brain process. In his words, “The brain is far more like a map control room than it is like an old fashioned telephone exchange. The stimuli which are allowed in, are not connected by just simple one-to-one switches to the outgoing responses. Rather, the incoming impulses are usually worked over and elaborated in the central control room into a tentative, cognitive like map of environment. And it is this tentative map, indicating routes and paths and environmental relationships, which finally determines what responses, if any, the animal will finally release.” Tolman was the first to forcefully argue that all learning is purposeful and goal-oriented rather than response-oriented. According to his theory of learning we do not reach the goal in fixed sequence of movements but change our behaviour according to the variation in conditions.

Tolman’s theory of learning is known as ‘sign significance theory’, ‘expectancy theory’, ‘purposive behaviourism’ or ‘sign theory’.

3.5.2. Main Features or Thoughts and Concepts propagated by Tolman’s Sign Theory :

Tolman has advocated this theory in explaining learning. The main features of this theory are –

*** Molar vs Molecular Approach :** Tolman’s theory rejected the molecular approach to behaviour developed by Watson, Skinner, Guthrie and Hull. He developed molar approach to behaviour and hold that an act of behaviour has distinctive properties of its own, to be identified and described irrespective of the underlying muscular, glandular and neural process. Molar behaviour is goal-seeking and purposive, it is not

mechanical and stereotyped. It constitutes a whole instead of mere parts. Tolman emphasized studying of behaviour as a complete purposeful exercise instead of studying these acts in the form of certain sequences of muscle twitches.

*** Presence of intervening variables :** Tolman has defined behaviour on the basis of intervening variables. These intervening variables are of two kinds – independent variable (stimulus) and dependent variable (response). The intervening variables can be imagined on the basis of mutual relation between stimulus and response i.e. dependent and independent variables. Heredity, age, previous learning, drug or vitamin conditions, special endocrine, psychological drive, environmental stimuli etc are example of intervening variables, which altogether not objectively observed, are said to be strong determinants of behaviour. Intervening variables are not only physiological but also psychological. There is a place in them also for cognitive and purposive process. Demand and expectations are two main intervening variables. Tolman demonstrated this fact through his experiments in which hungry rats were found to take a longer journey through a maze to their food if the longer route happened to be more interesting.

*** Concept of Cognitive Maps and Sign-Gestalts :** Tolman developed his concept of map-making and sign learning on the basis of his experiment on rats. When a rat or a group of rats is placed in a puzzle box in which there is food in the centre, it learns the different sign to reach the food. Similarly at the end of the food it is able to find new routes when their initial routes are blocked. They do it not for making simple S – R connections or repeating the stereotype responses, but by constructing a mental map of their environment. It means by learning in this way, a cognitive picture of the situation is formed in its brain. Tolman said that an organism does not make some specified responses, but only response to specified signs.

*** Place learning versus response learning :** According to Tolman, in the process of learning, we try to learn about the place, where a thing actually lies instead of learning specific responses to specific stimuli as mentioned by S – R theories. We do not learn a fixed movement sequence but an overall path by visualising a total picture for reaching the desired goal. We then try to bring about changes in our movements and style of functioning in accordance with the needs of the environment. It can be better understood by the following experiment. Tolman had done an experiment, using a T-maze. A rat was first trained to get its food by turning to right. The direction was changed by allowing its entry from the lower end. As a result it had to change its movements from right to left for getting food. In another experiment the maze in which the rat had learned to run along the correct way was flooded with water. Even when faced with this obstacle, the rate was able to reach its goal by swimming along the correct path. Both the experiments demonstrated the truth of Tolman's findings that it is the place not the fixed responses that are learned by us as an outcome of our learning.

*** Reward expectancy :** Tolman maintained that our learning behaviour is purposive and goal oriented rather than response oriented. We learn to achieve something as a result of our efforts. As a result we may have an expectation that if we go to perform a certain act, we may get something, which is called reward. By not getting or getting less than the expected reward may lead to frustration. Tolman and his associates conducted a number of experiments to prove the importance of reward expectancy in the process of learning. According to Tolman, "learning is high when the sign significant expectation is strong. If our expectation is confirmed, through some special signs, the sign gets fixed in our brain. On the other hand, if the expectation, through some sign is non-confirmed, the sign becomes weak. In this way we recognize the importance of

some specified sign through confirmation and non-confirmation.”

*** Latent learning :** According to Tolman our learning remains dormant for a considerable length of time before it is displayed in our behaviour. So, we are capable of demonstrating our existence when suitable motivation and opportunity arise. The concept of latent learning leads us to conclude that reward or reinforcement is not much essential for learning. It can be better understood with the help of an experiment done by Tolman.

In his learning experiment, some hungry rats had to learn a puzzle. He divided the hungry rats into three groups. The first group was rewarded or provided food after they were taken out of the puzzle box. The second group was not provided food (reward) after they were taken out of the box. The third group was not provided food in some of the first attempt, but they were provided food in some of the last attempts. As the result of these experiments, it was seen that the rats of the third group did not demonstrate any sign of learning till the introduction some of food as reward. However, as soon as the food was introduced of these rats improved their performance rapidly and soon caught up with the group that had been continuously rewarded. The result of this experiment thus demonstrated the existence of learning prior to the introduction of reward in the form of food. The existence of such latent learning thus remains latent to us until a happening in the environment requires us to make use of this hidden stores.

3.5.3. Types of sign Gestalt Learning :

Let us discuss the types of sign Gestalt learning.

Tolman revised his theory of learning in 1949 and distinguished six types of learning.

1. Cathexis : This type of learning explains the final type of positive or negative objects of basic drives. It is a connection between certain objects and certain drive states. Suppose, you belong to a cold country where there is a lack of drinking water. You usually need to consume liquors for satisfying your thirst drive. You will certainly tend to seek such drink in preference to a simple glass of water mainly because of them. Water has not been associated with the satisfaction of the thirst drive.

2. Equivalence belief : It is a connection between a positively attached objects and a type of sub-disturbance of objects. Suppose you want to get a high grade along with love and appreciation. For you love and appreciation is the main goal and getting of high grade is sub-goal. Sometimes scoring of high grades may provide you the same motivation as might be provided by winning love and appreciation etc. Your learning in such a condition is said to be the equivalence beliefs learning.

3. Field expectancy : Field expectancy develops in the organism when certain environment setup is repeatedly represented to him. Upon seeing a certain sign, for instance, we expect that a certain other sign will follow. The only reward in such learning is the fulfillment of the expectation. Such learning as may be understood, is not the usual S – R learning but rather sign-sign learning based on the expectation of signs in our environment.

4. Field cognition modes : Field cognition modes of learning are new modes of remembering and perceiving the objects of

the environment. Suppose, you learn a way of approaching a problem-solving situation by arranging the perceptual field in a specific way with which you are presented.

5. Drive discrimination : There is a definite relationship between the type of drive and the mode of response in learning. In this type of learning you need to identify and determine your own drive state and respond accordingly. When you learn to identify and determine your own drive state by yourself and respond accordingly you can learn to discriminate your drive. As a result you can learn the behaviour needed for satisfying your thirst drive quite differently from the learning of the behaviour needed to satisfy your drive for love and affection.

6. Motor patterns : In such learning the motor patterns are conditioned by behaviour. Suppose, you greet your teachers by folding your hands and saying namaskar. Here the need to greet the teachers is a condition for you and folding your hand is your motor pattern.

3.5.4. Educational Implications of Tolman's Sign theory of learning :

We have already discussed in details Tolman's theory of learning. Do you think that his theory has any educational implications? Let us see.

As we see that this theory emphasises the importance of purpose in the task of learning, so that it should be purposeful. Thus, a teacher should keep in mind what is to be taught to the students to make them powerful and should lead them towards some clear-cut goals and objectives.

Tolman's theory believed that learning is neither S – R connection nor habitual as to be brought out through practice. He believes that practice or exercise cannot help us to select the right response to a certain stimulus. It is an intellectual task in

which we have to draw a cognitive map of the environment to find out proper solution of the problem faced by us. Teachers therefore, should not force the child to follow a routine and obvious path while learning. Teachers should encourage them to explore as many paths as possible for solving the problems and performing the task.

In Tolman's theory intervening variables like; previous learning, age, drug or vitamin conditions, environmental surroundings, drive etc. play the most significant role in influencing the learning process of the students. So, teachers should make proper use of these variables in any teaching-learning situation to enjoy the maximum benefit.

We can learn so many things in our day-to-day life for which we are reinforced by no other reward than satisfaction of the learning itself. Because, a reward or reinforcement is not essential at every step towards achieving the goal or learning a particular behaviour. So, emphasis should be given on instinctive motivation or value of the learning in the process of teaching and learning rather than some outside reward.

Check your progress - 3

1. What are the main features of Tolman's sign theory of learning ?
2. What are the types of sign Gestalt learning ?

3.6. BANDURA'S SOCIAL LEARNING THEORY :

Let us discuss Bandura's social learning theory.

3.6.1. Social learning Theory :

Observation of others' behaviour may play a leading role in learning and gaining various things concerning our environment. Social learning theory focuses on the learning that occurs within a social environment. It considers that "we learn from another, including such concepts as observational learning, imitation and modeling. The cognitive psychologists who appreciate the role of observation in learning are termed as social psychologists and the theory of learning propagated by them is known as the social learning theory. The social learning theory is proposed by Albert Bandura, a prominent American social learning theorist. The social learning theory is often designated as Bandura's social learning theory. Introducing this theory Bandura writes, "we do not blindly respond to environmental stimuli. Rather, we pick and choose from many environmental points, basing our decisions on our own insight and past experiences. This we do through various observational learning, by incorporating and imitating the behaviour of those around us".

Let us see how does learning take place according to social learning theory. According to Bandura, we learn through observations by incorporating and imitating the behaviours of others taken as models belonging to our social environment. According to Bandura, the steps or process of social learning are attending to and perceiving the behaviour, remembering the behaviour, converting the memory into action and reinforcement of the imitated behaviour etc.

Let us see how these steps may work in our learning. Suppose you want to be a dancer but you have no provision to learn from a dance master. You often watch T.V. programmes concerning dance performance displayed on T.V. screen. You take great interest and are greatly influenced by the

demonstrations and advices on different steps of different dance styles on T.V. screen such as classical dance, folk dance, modern dance and so on. You try to keep in your memory all the steps observed on the screen and then try to convert the remembered observation into action. By doing practice again and again you make a performance following demonstrations and advices of the dance masters and choreographers displayed on T.V. screen. The response you get from your family and other people who enjoy your dance performance may then reinforce your learning of the dance performance.

From the above example it can be said that you can learn by observing the behaviour of others and the outcome of those behaviours.

In this way, social learning is an effective means of learning many things concerning our behaviour. How we display our love and anger, show sympathy and prejudices, speak and write, dress and eat, take initiative or shy away, all depend on what has been observed, remembered, imitated and reinforced in the context of the model learning as propagated by the social learning theory.

3.6.2. The modeling process of Bandura's social learning theory :

The social learning theory of Bandura emphasizes the importance of observing and modeling the behaviours, attitudes and emotional reactions of others. He introduced his social learning theory in 1977 and states that "Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behaviour is learned observationally through modeling, from observing others one forms an idea of how new behaviours are performed and on later occasions this coded information serves as a guide for

action". Social learning theory explains human behaviour in terms of continuous reciprocal interaction between cognitive, behavioural and environmental influences. The modeling processes underlying observational learning are discussed below;

1. Attention : In order to learn, you need to pay attention. However, anything that puts a damper on attention is going to decrease learning, including observational learning. For example, if you are sleepy, groggy, drugged, sick, nervous or hyper, you will learn less well. Similarly, if you are being distracted by competing stimuli, anything that distracts your attention is going to have a negative effect on observational learning. If the model is interesting to you and if there is a novel aspect to the situation, you are far more likely to dedicate your full attention to learning.

2. Retention : What you have learnt by paying attention have to be retained in your mind. Retention is an ability to store information in mind. The ability to store information is an important part of the learning process. Retention can be affected by a number of factors, but the ability to pull up information-later and act on it is vital to observational learning. You might be able to retain, remember, what you have paid attention to. This is where imagery and language come in; store what we have seen the model doing in the form of mental images or verbal description. When so stored, you can later bring up the image or description so that you can reproduce it with your own behaviour.

3. Reproduction : Reproduction is an important step of modeling. Here reproduction refers to the ability to replicate the behaviour that the model has just demonstrated. This means that the observer has to be able to replicate the action, which could be a problem with a learner who is not ready to develop mentally and to replicate the action. Once you have paid attention to the model and retained information, it is time to

actually perform the behaviour you observed. Suppose, you are just sitting daydreaming, you have to convert the images or description into actual behaviour. So, you must have the ability to reproduce the behaviour in the first place. However, further practice of the learned behaviour leads to improvement and skill advancement. Our ability to imitate improves with practice at the behaviours involved and our abilities improve even when we just imagine ourselves performing. Most of the brilliant and curious students imagine their writing in their mind's eye prior to actually writing at the time of requirement.

4. Motivation : You have to be motivated to imitate the behaviour that has been modeled in order to make observational learning successful. You are still not going to do anything unless you are motivated to imitate i.e. until you have some reason for doing it. Reinforcement and punishment play an important role in motivation. Past reinforcement, promised reinforcements and vicarious reinforcement are the different kinds of reinforcement. On the other hand past punishment, threatened punishment and vicarious punishment are different kinds of punishment. While experiencing these motivators can be highly effective, so that we can observe in others' experience some type of reinforcement and punishment. For example, if you see your friend rewarded with extra credit for being in class on time, you might start to show up a few minutes early each day.

3.6.3. General principles of Bandura's Social learning theory :

Let us explain the general principles of Bandura's social learning theory.

1. We can learn by observing the behaviour of others and the outcome of those behaviours. It may be clear through Bandura's Bobo doll (a toy) experiment. Bandura, in his

famous Bobo doll experiment, demonstrated that children learn and imitate others' behaviour, they have observed. The children in Bandura's studies observed an adult acting violently towards a Bobo doll. When the children were later allowed to play in a room with Bobo doll, they began to imitate the aggressive actions they had previously observed. He, on the basis of his experiment, identified three basic models of observation. They are a live model, a verbal instructional model and a symbolic model.

2. Learning does not necessarily lead to a change in behaviour. Behaviourists believed that learning lead to a permanent change in behaviour. According to them because people can learn through observation alone, their learning may not necessary be shown in their performance. But according to Bandura, observational learning demonstrates that people can learn new information without demonstrating new behaviours.
3. Cognition plays a role in learning. Over the last thirty years social learning theory has become increasingly cognitive in its interpretation of human learning. Bandura noted that external environmental reinforcement was not only the factor to influence learning and behaviour. He described instinctive reinforcement as a form of internal reward. Pride, satisfaction, sense of accomplishment etc. are the example of internal reward. This emphasis on internal thoughts and cognitions helps connect learning theories to cognitive developmental theories. Bandura described his approach as a 'Social cognitive theory'. Awareness and expectations of future reinforcements or punishments can have a major effect on the behaviours that people exhibit.

Social learning theory can be considered as a bridge between behaviourist learning theories and cognitive learning theories.

3.6.4. Educational implications of Bandura's Social learning theory :

In addition to influencing other psychologists, Bandura's social learning theory has had important implications in the field of education. Today both teachers and parents recognise the importance of modeling appropriate behaviours. Social learning theory has numerous implications for classroom use.

1. Social learning helps the students to achieve high self-efficiency. Students with high self-efficiency tend to be better students and achieve more.
2. Students often learn a great deal simply by observing other people. So, teachers' behaviour in the classroom as well as in the educational institution should be appropriate and acceptable to the students.
3. Social learning theory emphasises more in self-regulation. It can effectively increase the appropriate behaviour and decrease inappropriate one. Self-regulation can be improved by discussing with students or learners about the rewards and consequences of different behaviour.
4. Social learning theory helps the learner in setting standards and goal, self-observation, self-judgement, self-reaction etc.
5. Modeling provides an alternative to shaping for teaching new behaviour. To promote effective modeling a teacher must make sure that the four essential conditions exist, i.e. attention, retention, reproduction and motivation.

6. To break down traditional stereotype teaching and learning, teachers should expose students to a variety of other models.
7. Teachers should help students set a normal realistic expectation of their academic accomplishments.
8. It is very important to develop a sense of self-efficiency for students, so that they become confident that they are capable of accomplishing school task. Therefore, teachers can promote such self-efficiency by having students receive confidence building messages, watch other being successful and experience such success at their own.

Check your progress - 4

1. Mention the processes of social learning.
2. What do you mean by social learning theory ?

3.7 LET US SUM UP :

- * Insightful learning means totality of perception or observing the situation as a whole that makes learning possible when the inter-relationship of the parts comes to be known and the idea of the whole emerges in the mind suddenly just like a flash of new light. As a result learning is possible and the learner is able to solve any problem through it. It is called insight.
- * Lewin's theory of learning is known as field theory of learning. For him behaviour is determined by totality of an individual's situation; the totality of coexisting facts, which are conceived of as mutually interdependent. Field psychology explains developments of insight as change in

cognitive structure of life space. Topology, vector, life space, valence etc. are the main concepts used in the field theory of Lewin.

- * Tolman's theory is rooted in behaviourism, but he strongly opposed to the bond between stimulus and response. He remarked that an individual does not only respond to the stimulus but he acts on belief, expression, attitudes and drive towards goal. According to him all learning is purposeful and goal-oriented rather than response oriented.
- * Bandura remarked that one could learn through observations by incorporating and imitating the behaviours of others taken as models belonging to one's social environment. According to him, the steps or processes of learning are attending to and perceiving the behaviour, remembering the behaviour, converting the memory into action and reinforcement of the imitated behaviour etc. Learning through observation and modeling proves to be an effective means of learning many things concerning our behaviour.

3.8 KEY WORD :

1. Topology – structure of life space.
2. Valence – attracting or repelling value of object.
3. Vector – force.
4. Cathexis – connection between a certain object and a certain drive state.

3.9. SUGGESTED READINGS :

1. *Educational Psychology* – Dr. M.K. Sharma
2. *Advanced Educational Psychology* – S.S. Chauhan

3. *Education* – T. Saikia and R. Borah

4. *Advanced Educational psychology* – B. Kuppyswamy.

POSSIBLE ANSWERS TO CYP :

Check your progress – 1

- (a) When the inter-relationship of the parts of the whole situation comes to be known, the idea of the whole emerges in the mind suddenly just like a flash of new light and the learner is able to get the totality of the perception and this is known as insightful learning.
- (b) The criterion of insightful learning are comprehension as a whole, clear goal, power of generalisation, suddenness of solution, transfer, intellectual level, change in behaviour etc.

Check your progress – 2

- (a) Every person exists within a field of force to which he is responding or reacting and it is called his life space.
- (b) Condition, things, activities, drives tension thought etc.
- (c) Topology, vector, life, space, valence etc.

Check your progress – 3

- (a) Molar vs Molecular approach, presence of intervening variables, concept of cognitive maps, place learning versus response learning, reward expectancy, latent learning etc.
- (b) Cathexis, equivalence belief, field expectancy, field cognition modes drive discrimination, motor patterns etc.

Check your progress – 4

- (a) Attention, retention, reproduction, motivation etc.
- (b) Learning by observing others' behaviour and the outcome of these behaviour which reinforce our behaviour is called social learning.

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MODEL QUESTIONS :

1. Explain the meaning of insightful learning with an example.

2. Write about application of insightful learning in education.
3. Discuss Lewin's theory of learning along with its various components.
4. Describe main features of Tolman's sign Gestalt Theory of learning.
5. Explain Bandura's social learning theory along with its modeling process.
6. Write about the general principles and educational implications of Bandura's social learning theory.
7. Describe the criterion of learning by insight.
8. Explain Lewin's field theory of learning along with its educational implications.
9. Write briefly about sign Gestalt theory of learning.
10. Explain the modeling process of social learning theory developed by Bandura.

SELF LEARNING MATERIAL

EDUCATION

COURSE – EDU : 102

ADVANCED EDUCATIONAL PSYCHOLOGY

BLOCK : 3, 4 & 5

**Directorate of Open and Distance Learning
DIBRUGARH UNIVERSITY
DIBRUGARH - 786 004**

EDUCATION
COURSE – EDU : 102
ADVANCED EDUCATIONAL PSYCHOLOGY

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EDUCATION
COURSE – EDU : 102
ADVANCED EDUCATIONAL PSYCHOLOGY

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BLOCK - III

INTELLIGENCE

UNIT – I

MEANING AND NATURE OF INTELLIGENCE

THEORIES OF INTELLIGENCE :

FACTOR THEORIES OF INTELLIGENCE

STRUCTURE

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Nature of Intelligence
 - 1.3.1 Meaning and Definition of Intelligence
 - 1.3.2 Some Established Facts about Intelligence
 - 1.3.3 What Intelligence is not
- 1.4 Factor Theories of Intelligence
 - 1.4.1 Unitary or Monarchic Theory
 - 1.4.2 Multifactor Theory
 - 1.4.2.1 Level
 - 1.4.2.2 Range
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 - 1.4.3 Spearman's Two Factor Theory
 - 1.4.3.1 Characteristics of "G"
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 - 1.4.5.1 Operations
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 - 1.4.5.3 Products
 - 1.4.5.4 Educational Implication of SOI
- 1.5 Let Us Sum Up
- 1.6 Key Words
- 1.7 Reference and Suggested Readings
- 1.8 Model Questions

1.1 INTRODUCTION

Man is superior to animals due to his ability to reason, discriminate, understand, adjust and face new situation. This ability is nothing but intelligence which is integral to human nature. It is one of the key factors which affects our ability to learn. Generally speaking, ‘alertness’ with regard to the actual situation of life is an index of intelligence.

It is true that the term “intelligence” is very commonly used by one and all. But the meaning of the term “intelligence” is vague and ambiguous. There are wide variations in lay people’s definitions of intelligence. Psychologists, too, differ from one another in their definitions of the concept. In recent years, psychologists have gathered so much materials on intelligence that it is very difficult to accept a simple and comprehensive meaning of the term. Different theories of intelligence depict the differences of psychologists on the interpretation of the meaning of intelligence. We may illustrate the theories into two groups. One group consists of the theorists who have studied the organization of mental ability called ‘factor theories’. The second group of theorists focus not on the component part of the intellect but on the processes involved in intellectual activity, known as process-oriented theories of intelligence. Both groups of the theories are important to understand the nature of intelligence.

In this unit, we describe the nature of intelligence with the help of various definitions followed by a discussion of different factor theories of intelligence. These theories are: unitary or monarchic theory, multifactor theory, Spearman’s two factor theory, group factor theory and Guilford’s structure of intellect.

1.2 OBJECTIVES

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

- define intelligence and highlight the complex nature of intelligence.
- discuss the unitary theory of intelligence and its limitations.
- explain the characteristics of Spearman's two factor theory and point out its limitations.
- identify the attributes of multifactor theory of intelligence and justify the significance of these attributes in intelligence test.
- illustrate the paradigm of Guilford's structure of intellect and discuss its educational implications.

1.3 NATURE OF INTELLIGENCE

Let us try to understand the meaning and nature of intelligence with the help of an analytical task. Imagine a classroom in which there are ten students, each with a distinctive characteristic highlighting his/her ability. You have been asked to state which one among them you consider to be the most intelligent and why. How will you proceed in your judgment? The profiles of ten students given to you are as follows :

- Jugananda always learns fast in the class.
- Surjya is not good in school, but he can draw well.
- Diganta is an ace chess player.
- Anjan can remember statistics about cricket from any time period.
- Kalyan always gives novel and unique answers to routine questions.
- Basnet is a wizard in mental mathematics.

- Gautam did not go to school, but he is expert in motor cycle repairing.
- Basanta sings and plays music very well.
- Sabita is very good in Satriya dance.
- Eligy is the most popular in her class.

In all probability, you will choose to identify some criteria which define intelligence and then, go case by case to consider who is the most intelligent. You will certainly feel the difficulty of how to select the criteria. How to prioritise their importance ? How to assign the rank ? In all likelihood, you will conclude that each student is intelligent in some way or the other, because some ability, competence or skill has been demonstrated by each one of them. Furthermore, this ability has optimized their performance or their existence in many ways. Thus, you will realize that there is no universal definition of the term intelligence and many possible definitions coexist.

1.3.1 MEANING AND DEFINITION OF INTELLIGENCE

According to Cyril Burt (1955), the term *intelligence* goes back to a Latin word “*intelligentia*”, a term introduced by Cicero to mean all cognitive processes. It is assumed that this cognitive process is something inherent in human nature and every human being is born with a general cognitive capacity which can conveniently be termed intelligence. The dictionary meaning of intelligence is “the capacity to acquire and apply knowledge.” We have already stated earlier that a number of definitions have been evolved by the psychologists according to their own concept of the term intelligence. Boring defined, “intelligence is what intelligence tests test.” As such, intelligence means all those mental abilities which are measured by intelligence tests.

According to Spencer, “intelligence is the capacity of an organism to adjust itself to an increasingly complex

environment.” We may say this as biological approach to intelligence which views that intelligence is an innate capacity.

Galton, puts forward the view that “there is a kind of ‘super faculty’ called the general cognitive ability, which is quite different from special abilities like memory and imagination and the term intelligence can be used for these general cognitive abilities.” Similarly, Stern defines, “intelligence is a general capacity of an individual consciously to adjust his thinking to new requirements. It is the general mental adaptability to new problems and conditions of life.” Colvin has defined intelligence as ability to adjust to an environment. To Wagnon, “Intelligence is the capacity to learn and adjust to relatively new and changing conditions.” Woodworth has defined intelligence “as intellect put to use.” In simple words, intelligence means intellect as is applied in practice. Thus, we may say that intelligence is an indicator of the ability to cope successfully with novel situations. We may also say that intelligence is the capacity to learn.

Terman defines intelligence as “the capacity to carry on abstract thinking.” Alfred Binet defines in this way: “To judge well, to understand properly, to reason well, these are the essential springs of intelligence.” David Wechsler provides a broad and comprehensive definition of intelligence. He states, “Intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment.”

Besides the above definitions, you will find several other definitions of intelligence if you go through the literature of intelligence. However, most of the definitions are more in nature of hypothetical descriptions of the word in which intelligence is supposed to operate.

The nature of intelligence may be highlighted as follows :

- Intelligence is general mental ability.
- It is an innate ability, but environment plays an important role in the growth of intelligence.
- Intelligence is the ability to learn or acquire new knowledge.
- It is the ability to carry out abstract thinking.
- Intelligence is the general adaptability to new situations.
- It is the capacity of reasoning or problem solving.
- Intelligent behavior may be divided into two categories : theoretical and practical, concrete and abstract.

1.3.2 SOME ESTABLISHED FACTS ABOUT INTELLIGENCE

Usually, questions arise :

- Is there any relation of intelligence with nature and nurture ?
- Is intelligence equally possessed by all individuals ?
- To what age intelligence continues to grow ?
- Is there any sex difference with regard to intelligence ?
- Is there any racial or cultural difference ?

Let us to find the answers to these questions on the basis of conclusions drawn by studies conducted by psychologists :

1. The relation of intelligence with nature and nurture :

Intelligence is the product of heredity and environment. Both are necessary for the intellectual growth of an individual, neither can be considered more important than the other.

2. **Distribution of intelligence** : There are individual differences with regard to the distribution of intelligence. This distribution is governed by a definite principle that is 'the majority of the people are on the average, a few very bright and a few very dull.'
3. **Growth of intelligence** : As the child grows in age, so does the intelligence as shown by intelligence tests. In majority of cases, intelligence reaches its maximum, somewhat at the age of 16-20 years in the individual. After that the vertical growth ceases, but the horizontal growth - accumulation of knowledge and acquisition of skills continues throughout the life span of an individual.
4. **Intelligence and Sex Differences** : There is no significant difference between male and female with regard to intelligence. The studies show that differences in sex do not contribute towards difference in intelligence.
5. **Intelligence and racial or cultural differences** : Several studies have established that intelligence is not the birth right of a particular race or group. The 'bright' and the 'dull' can be found in any race, caste or cultural group and the differences which are found can be explained in terms of environmental influences.

1.3.3 WHAT INTELLIGENCE IS NOT

Alongwith the established facts, you should be clear about what intelligence does not mean. Let us to highlight these in below:

1. Intelligence is not knowledge though acquisition of knowledge depends to a great extent on intelligence or vice-versa.
2. Intelligence is not memory; a very intelligent person may have a dull memory or vice-versa.

3. Intelligence is not skill which is acquired through practice. A so called skilled worker may or may not have so much intelligence.
4. Intelligence is no guarantee against abnormal behavior, backwardness and delinquency in spite of the fact that it is one of the factors contributing towards achievement, adjustment and character formation.

Check Your Progress - I

Note: Write your answers in the space given below.

Think of ten of your friends. Identify and enlist the abilities they show in different areas.

1. Give a definition of intelligence on the basis of abilities you enlisted about your friends.

.....

2. Highlight the nature of intelligence from your definition.

.....

1.4 FACTOR THEORIES OF INTELLIGENCE

Is intelligence a single characteristic, or is it a collection of specific distinguishable abilities? This question has been a centerpiece of discussion and debate among the factor theorists for many years. But it is not easy to answer the question, because it involves underlying intellectual capacities that we cannot see. However, the factor psychologists have been struggling to know the “structure” of intelligence. Their primary interest lies in identifying

the factor or factors which constitute intelligence. In this section, we shall discuss different factor theories viz. unitary or monarchic theory, multifactor theory, Spearman's two factor theory, group factor theory and Guilford's structure of intellect.

1.4.1 UNITARY OR MONARCHIC THEORY

This is the oldest theory regarding the nature of intelligence. Unitary or monarchic theory believes that intelligence is one unitary faculty or ability. Ebbinghaus defines this theory as unifactor theory and calls intelligence a single function. Intelligence consists of one factor, simply fund of intellectual competence, which is universal for all the activities of the individual.

According to this theory, if a person has a fund of intelligence he can utilize it to any area of his life. If a person can be successful in one area he would be successful in other areas too depending upon his fund of intelligence. As for instance, if a student is bright in Mathematics, he will be equally good in Civics, Language learning, or any other subjects due to his fund of intelligence. But the questions arise :

Does a student very good in conducting Science experiments find himself equally competent in learning language ?

Is a person very good at playing cricket equally good in chess, football, or in all other fields of his life ?

You think over these questions and try to find out such a person who is equally an expert in all subjects of education and all fields of his life. After your search, you will find that a person who is very good in one area may be very poor in other areas of his life; a student very good in language may be very poor in mathematics, mechanical ability and so on. Thus, we may conclude that there is no such single unitary factor in

intelligence. Therefore, psychologists rejected this theory for describing nature of intelligence.

Check Your Progress - II

Note: Write your answers in the space given below.

Mr. Saikia's neighbours think of him as good person with a wholesome personality; they say he understands everything/neighbours. Mr. Saikia, who is the head of a department in a large store, did excellent scholastic work in his student days and also learned to play several musical instruments. These abilities, of course, call for both abstract and motor skills since abstract intelligence is required in order to understand and interpret the written music, and motor and mechanical abilities are involved in manipulating the keys or strings. Mr. Saikia also knows how to deal with motors. When, on a fishing trip, his outboard motor was not working very well, he took out its parts and cleaned, reassembled, and adjusted it, after which it operated perfectly. He is good shot with both rifle and shotgun, and he can play a good game of tennis, baseball, or basketball.

Mr. Saikia has many friends who visit him at his home and whom he calls on. Those who work under his supervision at the store have better morale than those who work in other departments.

1. Find out the intellectual abilities of Mr. Saikia.

.....

2. On the basis of Mr. Saika's intellectual abilities, do you support unitary theory of intelligence ? Justify your answer.

.....

1.4.2 MULTIFACTOR THEORY

Multifactor theory of intelligence is at one extreme of the interpretations regarding the nature of mental organization. This theory was developed by E. L. Thorndike, an American psychologist. He opposed the theory of general intelligence. As the name of the theory indicates, intelligence is constituted of a multitude of separate factors, or elements each one being a minute element of ability. According to this theory, any mental act involves a number of these minute elements operating together. Any other mental act also involves a number of elements in combination. If performances of these two mental tasks are positively correlated, degree of correlation is due to the number of common elements involved in both the acts. We can understand this theory by the following diagrammatic representation :

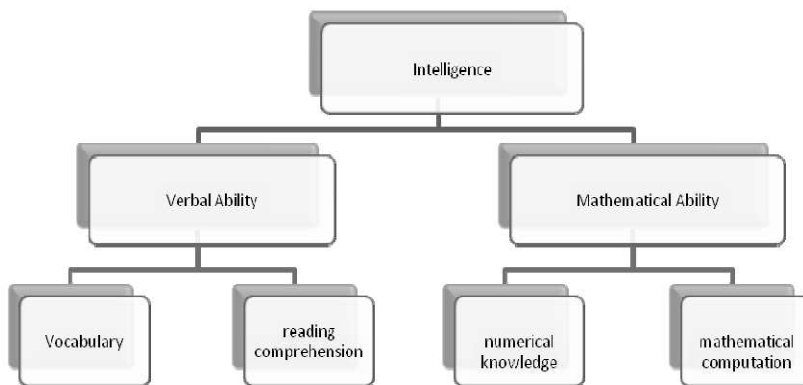


Fig. 1.1 : Multifactor Theory of Intelligence

According to this theory, there is no general intelligence. Thorndike was an associationist. He proposed that there are specific stimuli and specific mental responses. To him, intelligence is an almost infinite number of actual or potential specific connections or associations between these stimuli and responses. To understand one's intelligence, Thorndike has suggested four distinct attributes :

1.4.2.1. Level

This attribute refers to the difficulty of task. Level is an important factor of intelligence, but we cannot measure it separately. In an intelligence test, task or test items are arranged sequentially, i.e. from easy to difficult. In this sequence, upto which task or item we completed determines our level of intelligence.

1.4.2.2. Range

This refers to the number of tasks at any given degree of difficulty that we can solve. All the items in a given level represent the range of intelligence. It means that if we can solve the whole range of task (all the items) at certain level, we possess that level of intelligence. We cannot measure level without range of intelligence.

1.4.2.3. Area

This refers to the total number of situations at each level to which we are able to respond. Area is the summation of all the ranges at each level of intelligence. In an intelligence test, several tasks may be given at different levels. All the tasks put together refer to the area of intelligence. Area helps to determine the highest level or altitude of intelligence.

1.4.2.4. Speed

This is the rapidity with which we can respond to test items. It is the time factor to complete the tasks of intelligence test. Speed and altitude are positively correlated. That means, more is the difficulty level of items more is the time taken to

respond. Therefore, we should not give more emphasis on speed in conducting intelligence test.

Now, let us frame a clear understanding of these four attributes. When we conduct an intelligence test, we give a certain number of tasks (**arca**). These tasks vary in difficulty (**level**). There is a certain number of items at each level of difficulty (**range**). These items are to be responded at a given time (**speed**). You should keep in mind that every intelligence test consists of these four attributes.

Check Your Progress - III

Note : Write your answers in the space given below.

1. Why did Thorndike oppose the concept of general intelligence ?

.....

2. "Every intelligence test consists of four attributes" – Discuss.

.....

1.4.3 SPEARMAN'S TWO FACTOR THEORY

An English psychologist Charles Spearman advanced this theory of intelligence in 1904. This theory was based on a general mental factor which is designated as "g" and specific factors designated as "s". The "g" factor represents the general mental energy or power that functions in person's over all mental activities. Above the limit of "g" factor, his

performance depends on “s” factors. Thus, Spearman’s two factor theory states that all mental activities have in common some of the general factor, and each mental activity also has its own specific factors. We may have a clear understanding of this theory with the help of the following diagrammatic representation :

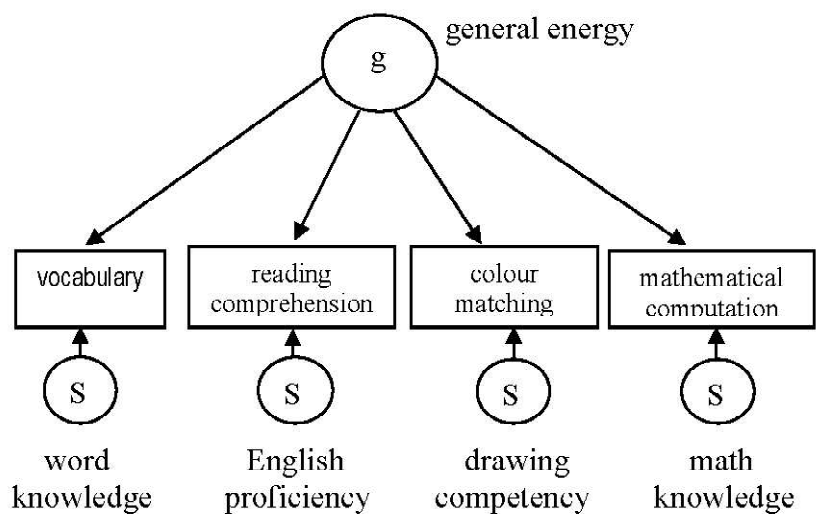


Fig. 1.2 : Two Factor Theory of Intelligence

In order to understand “g” and “s” factors, now, let us to consider both the factors separately.

1.4.3.1 CHARACTERISTICS OF “G”

Think of a student who is very good in many areas of studies: mathematics, science, philosophy, literature, language, and others. He deals effectively with ideas in all fields that he studies and also with various abstract symbols, and pictorial forms. This student has a large “g” factor. Another person, whose “g” is only average, will tend to be only average in his fields of study. A student whose general mental capacities are very limited has a small “g”.

However, the characteristics of “g” factor may be highlighted as follows:

- It is possessed by all individuals, but in different degrees. Because, people differ in their mental ability.
- It is an innate ability.
- It is general mental energy. It operates in all mental activities, though in varying amount.
- The larger the size of the “g” in an individual, the greater the success in life.

1.4.3.2 CHARACTERISTICS OF “S”

The concept of the “s” factors explains the special capacities a person may have which are above the general capacity. When a person is especially good in language, music, mathematics, building design, his capacities in these specific fields accounted for by “s” factors in it extends of the “g” factor. The characteristics of “s” factors are:

- It is learned and acquired by an individual while dealing with the environment.
- It is different for different mental activities in the same individual.
- Individuals differ in the amount of “s” ability.

In this way, Spearman suggested that intelligence is constituted of two factors, i.e. general mental capacity and specific capacities. Any mental activity is due to general intelligence and one or more specific factors of intelligence. As for example, performance of a student in English is partly due to his general intelligence and partly due to some kind of specific ability in language which he might possess, i.e. $g + s_1$, or in Mathematics his performance will be due to $g + s_2$, and so on. The factor “g” (in lesser or greater degree) will enter in all specific activities.

However, Spearman’s two factor theory of intelligence is not free from criticism. Because, he suggested only two factors of intelligence, but he mentioned several factors, such as g, s_1, s_2, s_3 , etc. In fact, the factors s_1, s_2, s_3, s_4 , etc. are not

mutually exclusive. They overlap and give birth to certain common factors.

Check Your Progress - IV

Note : Write your answers in the space given below.

A young man of college age visited a college. But he was not a college student. He demonstrated to the professors in mathematics that he could multiply numbers of several digits mentally and get the correct answer quickly. Also without the use of paper and pencil, he could give almost instantly the square roots of large numbers. In short, his, mental ability was phenomenal.

The professors asked him some questions about his interests and abilities in algebra, geometry, and trigonometry and found that he did not have any general interest in mathematics. Indeed, he had low general capacity for mathematics and for the other subjects of college education.

1. What does this indicate about the size of his “g”?

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2. Differentiate between ‘g’ and ‘s’ factors of intelligence suggested by Spearman.

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1.4.4 GROUP FACTOR THEORY

At an Intermediate level between theories of Spearman and Thorndike, Thurstone suggested a theory known as group factor theory or theory of primary mental ability (PMA). Thurstone believed that intelligent activity is not an expression of innumerable highly specific factors as Thorndike proposed. Nor it is the expression primarily of a general factor that pervades all mental activities as claimed by Spearman. Instead, Thurstone concluded that certain mental operations have in common a “primary” factor that gives them psychological and functional unity. It differentiates them from other mental operations. These mental operations constitute a group. So there are a number of groups of mental abilities each of which has its own primary factor. Each of these primary factors is said to be relatively independent. Thurstone and his associates suggested six primary factors :

- Number factor (N) : Ability to do numerical calculations rapidly and accurately.
- Verbal factor (V) : Found in test involving verbal comprehension.
- Space factor (S) : Involved in any task in which the subject manipulates an object imaginably in space.
- Memory (M) : Involving ability to memorize quickly.
- Reasoning (R) : Found in tasks that require the subject to discover a rule or principle involved in series or groups of letters.
- Word Fluency (W) : Ability to think of isolated words at a rapid rate.

We should keep in mind that although primary mental abilities (or factors) were originally said to be functionally independent to each other, it was found in subsequent intelligence tests that they are positively and significantly interrelated. There must be some other factors, or factor common to correlated groups of primary mental abilities. Therefore, Thurstone concluded that in addition to the primary abilities, there is “second-order general factor.”

Check Your Progress - V

Note : Write your answers in the space given below.

1. What is primary mental ability in group factor theory of intelligence?

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.....

2. “Thurstone’s group factor theory is considered as intermediate between Thorndike’s multifactor and Spearman’s two factor theory of intelligence” – why ?

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1.4.5 GUILFORD’S STRUCTURE OF INTELLECT (SOI)

J. P. Guilford and his associates proposed the structure of intellect (SOI) model in 1966. This model is based on factor analysis of many tests of intelligence. He organizes

the various primary mental abilities into three – dimensional model which provides three-way classification of intellectual abilities, namely operations, contents and products. According to Guilford, each dimension of intellect is sufficiently distinct which may be detected by factor analysis. In this structure, every intellectual ability is characterized in terms of the type of operation, the content and sort of product which results.

The cubic model of the SOI may be represented in the following diagram :

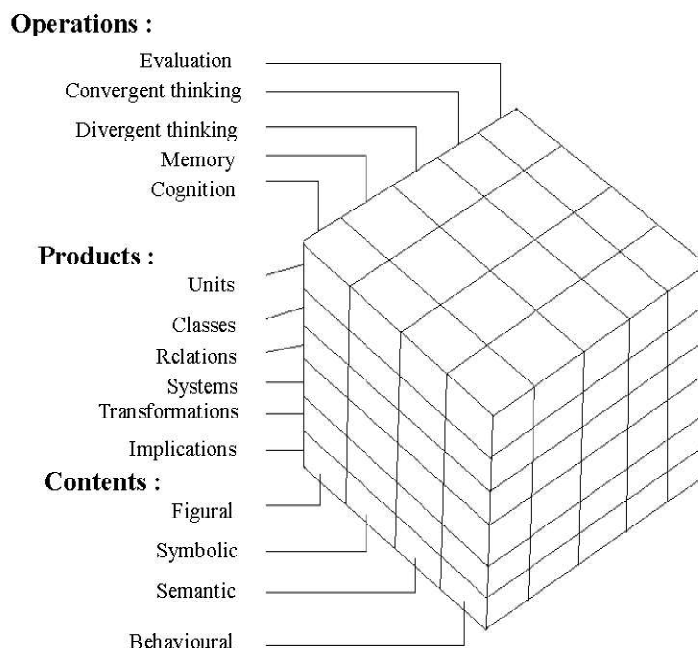


Fig. 1.3. : The Cubical Model of Intelligence. Each of the 120 small cubes represents a primary mental ability that is some combination of operations, products and contents. (Guilford, 1967)

Now, let us to understand the three dimensions of intellect one by one.

1.4.5.1 OPERATIONS

Operations refer to the kind of operational abilities involved in mental activity. This dimension has five major groups of intellectual abilities. These operations are :

- 1) **Cognition** : This category includes immediate discovery, awareness, rediscovery, or recognition of information in its various forms, comprehension or understanding.
- 2) **Memory** : This category involves the fixation of newly acquired information in storage.
- 3) **Divergent thinking** : This operation is most clearly involved in aptitude of creative potential. In divergent thinking operation, we think in different directions, searching and seeking some variety and novelty.
- 4) **Convergent thinking** : This operation involves the generation of logical conclusions from given information.
- 5) **Evaluation**: Evaluation refers making judgments in terms of criteria like correctness, identity, consistency, suitability, etc.

1.4.5.2 CONTENTS

The second way of classification is in terms of content or area of information within which the operations are performed. Guilford suggested four kinds of contents involve in intellectual activity. These are :

- a) **Figural content** : Figural contents refer to information in concrete form which can be perceived by our senses. This type of content has properties as size, form, colour, etc.
- b) **Symbolic content** : It is composed of letters, digits and other conventional signs usually organized in general patterns such as the alphabet or the number system.

- c) **Semantic content** : The verbal words that we use or any picture meaningful to us are semantic contents which convey information in the form of conceptions or mental constructs.
- d) **Behavioural contents** : Behavioural contents refer to information involving human interactions in the form of attitudes, needs, desires, moods, intentions, perceptions, thoughts, etc.

1.4.5.3 PRODUCTS

The third way of classification is in terms of products. When we apply a certain operation to certain kind of content we may have six general kinds of products. These are:

- i) **Units** : Units refer to information in the form of segregated entity.
- ii) **Classes** : These refer to conceptions underlying sets of items of information according to their common properties.
- iii) **Relations** : Relations refer to the connections between items of information based upon variables or points of contact.
- iv) **Systems** : Systems are the organized or structured aggregates of items of information.
- v) **Transformations** : Transformations involve changes of various kinds of existing information.
- vi) **Implications** : Implications refer to circumstantial connections between items of information.

If we observe Guilford's model in the cubic diagram, we may have 120 cells, each representing a specific kind of mental ability. An ability in any cell is unique by virtue of its own combination of one category of operation, one category of content and one category of product.

Though the SOI model suggests 120 specific mental abilities, it should not be thought that the number is final covering the whole range of mental abilities. Further investigation in the field may add more and more abilities to the list.

Similarly, though the abilities are separate and distinct logically and can be segregated by factor analysis, we should not think that they function in isolation in the mental activities of the individual. The abilities, in most cases, operate together in different combinations in various mental activities.

1.4.5.4 EDUCATIONAL IMPLICATIONS OF SOI

So far we have got Guilford's structure of intellect in terms of three dimensions of intellectual abilities, i.e. 5 basic kinds of operations, 4 kinds of contents and 6 formal kinds of products. But the question arises: How this model is helpful to a teacher ? In other words, what are its implications in education? Now let us to consider educational implications of the SOI.

The most significant implication of the structure of intellect is that it helps to change the concept of learner and learning process. We know that traditionally, the learner is considered to be the device of stimulus and response. You put a stimulus in front of the learner and in turn he immediately responds just like an electronic computer sets different programmes to respond. But the concept of the learner has changed today. Now he is not just like the computer to store and retrieve information. Besides this, he uses information to generate new information either by divergent or convergent thinking. Learner can evaluate his own results or products of his operations.

This concept of the learner leads to the idea that learning is discovery of information and not merely the

formation of associations (S-R bondage). The SOI model suggests that in order to understand human learning and higher order mental processes of thinking, problem solving and creativity etc. some important modifications are to be made in our curriculum and method of instruction. We should plan our curriculum in such a way that a certain combination of content, operation and product is made for the improvement of intellectual abilities. The educators may perceive that every intellectual factor can be developed at least to some extent by learning.

The model of intellect has explored 120 intellectual abilities, which enables us to find out if any of the general intellectual ability is being neglected in our curriculum. The SOI model is very helpful to devise enrichment programme for the gifted and creative children.

Check Your Progress - V

Note : Write your answers in the space given below.

1. Why is Guilford's structure of intellect called as three dimensional model?

.....

2. Mention the major intellectual operations suggested by Guilford.

.....

3. Name any two types of contents and point out in which intellectual activities do these contents involve.

.....

4. Highlight the products of Guilford's structure of intellect.

.....

1.5 LET US SUM UP

In this unit we have discussed the meaning and nature of intelligence followed by the factor theories of intelligence. Intelligence is an innate general mental ability. It is the ability to learn, to carry out abstract thinking, and the ability to adjust to new situations. The psychologists have not agreed upon a single definition of intelligence. So, it is very difficult to describe the nature of intelligence. We have learnt that factor theories of intelligence mainly focus upon the factors or elements that constitute intelligence. Unitary factor theory is the oldest one. This theory believed that intelligence consists of one factor, simply fund of intellectual competence, which is universal for all the activities of the individual. In the multifactor theory, Thorndike suggested that there is no general intelligence, mental acts involve a number of minute specific factors. In order to measure intelligence, we have to consider four attributes of intellectual activity such as level, range, area and speed in conducting intelligence tests. In contrast, Spearman developed two factor theory of intelligence- one is general intellectual ability designated as “g” and specific abilities designated as “s”. General factor is involved in all mental activities while specific factors are specific to particular mental act. Another important factor theory was advocated by Thurstone which is popularly known as group factor or primary mental ability theory of intelligence. Thurstone and his associates suggested six primary mental ability, viz. number factor, verbal factor, space factor, reasoning factor, memory factor and word fluency of which each group is independent to other. Last but not the least, we have discussed the structure of intellect forwarded by Guilford in which intellectual abilities are illustrated in three dimensional classification. You must have understood how 5 kinds of operations, 4 kinds of contents and 6 kinds of

products are involved in intellectual activities. In the subsequent unit, we shall learn about the cognitive theories of intelligence.

1.6 KEY WORDS

- Intelligence** : Intelligence refers to the general mental ability involved in mental activity.
- Factor Theory** : Factors refer to characteristics or elements which constitute the structure of intelligence. Factor theories are those which are interested to describe intelligence in terms of the factors underlying intellectual behavior.
- Mental Energy** : General intelligence or mental ability is regarded as mental energy in Spearman's two factor theory.
- SOI** : Structure of intellect suggested by Guilford. It is the three dimensional model constituted of 5 operations, 4 contents and 6 products.
- PMA** : Primary mental ability consists of similar specific factors independent to each other as suggested by Thurstone.

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1.8 MODEL QUESTIONS

1. Define intelligence. Describe the nature of intelligence.
2. What do you mean by factor theory of intelligence? Compare Spearman's two factor theory with the multifactor theory of intelligence.

3. What do you mean by primary mental ability? Describe the group factor theory of intelligence.
4. Describe the structure of intellect suggested by Guilford. Discuss its educational implications.

BLOCK - III

INTELLIGENCE

UNIT - II

COGNITIVE THEORIES OF INTELLIGENCE

STRUCTURE

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Cognitive Theories of Intelligence
- 2.4 Cattell and Horn's Theory
 - 2.4.1 Concept of Fluid Intelligence
 - 2.4.2 Concept of Crystallized Intelligence
 - 2.4.3 Fluid vs Crystallized Intelligence
 - 2.4.4. Later Development of Fluid and Crystallized Model
- 2.5 Jensen's Theory of Mental Functioning
 - 2.5.1 Two Level- Theory of Mental Functioning
 - 2.5.2 Intelligence and Academic Achievement
 - 2.5.3 Evaluation of Jensen's Theory
- 2.6 Sternberg's Information Processing Theory of Intelligence
 - 2.6.1 Componential / Analytical Subtheory
 - 2.6.2 Experiential / Creative Subtheory
 - 2.6.3 Contextual / Practical Subtheory
 - 2.6.4 Evaluation of Sternberg's Theory
- 2.7 Gardner's Theory of Multiple Intelligence
 - 2.7.1 Criteria or Signs of Intelligence
 - 2.7.2 Multiple Intelligences Suggested by Gardner
 - 2.7.3 Educational Implication of Gardner's Theory of Multiple Intelligence
- 2.8 Let Us Sum Up
- 2.9 Key Words
- 2.10 Reference and Suggested Readings
- 2.11 Probable Answers of the CYPs
- 2.12 Model Questions

2.1 INTRODUCTION

In the earlier unit we have discussed the meaning and nature of intelligence. You have understood that there are wide variations among the psychologists in defining intelligence, and therefore, it is very difficult to draw out the nature of intelligence. You have also got how the factor psychologists view intelligence in terms of the organization of mental ability or the “structure” of intelligence. Many of the important factor theories, such as unitary or monarchic theory, multifactor theory, Spearman’s two factor theory, group factor theory and Guilford’s structure of intellect have been described. However, it is equally important to know the processes involved in intellectual activities which have been described by the cognitive theories or the process oriented theories of intelligence.

In this unit, we shall describe the cognitive theories of intelligence. These theories are: Cattell and Horn’s Theory, Jensen’s Theory of Mental Functioning, Sternberg’s Information Processing Theory of Intelligence, and Gardner’s Theory of Multiple Intelligence.

2.2 OBJECTIVES

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

- differentiate between fluid intelligence and crystallized intelligence.
- discuss Jensen’s theory of mental functioning.
- explain Sternberg’s information processing theory of intelligence and identify its different components.
- illustrate Gardner’s theory of multiple intelligence.

2.3 COGNITIVE THEORIES OF INTELLIGENCE

The theories of intelligence discussed in the preceding unit are attempts to find the component parts of intelligence and describe how those parts fit together. This is not the only path to an understanding of intelligence. An alternative approach taken by several theorists is to focus on cognition or intellectual processes i.e. the patterns of thinking that people use when they reason or solve problem. Cognitive psychology assumes that intelligence comprises a set of mental representations of information and a set of processes operating on them. A more intelligent person, therefore, will have a better representation of information and can operate on them faster. Whether processes are executed serially or parallel hasn't been decided yet. Cognitive theorists are often more interested in *how* people go about solving problems and figure out answers than in *how many* right answers people get. So, these theories tend to focus on the development of intellectual processes – how the processes change as individuals mature.

2.4 CATTELL AND HORN'S THEORY

In the previous unit, we have come across Spearman's two factor theory of intelligence where there is a general mental factor or "g" factor that represents the general mental energy or power that functions in all a person's mental activities. Raymond Bernard Cattell, a mechanical engineer turned psychologist, of England worked on his Ph.D. with Charles Spearman, where he was involved in creating the new method of factor analysis in the study of Spearman's two factor theory of intelligence. Cattell opposed both Thorndike's multi-factor theory of intelligence and unitary g factor and advocated a mix viewpoint in developing his own theory of intelligence. He clarified his theory of fluid versus crystallized intelligence,

which he presented at the APA convention in 1942. Concepts of fluid and crystallized intelligence were further developed by John L. Horn, the primary student of Raymond Cattell.

We think that intelligence seems to decline as the age crossed over 18 or 20 years, research suggests that while fluid intelligence begins to decrease after adolescence, crystallized intelligence continues to increase throughout adulthood. The Cattell-Horn's theory of fluid and crystallized intelligence suggests that intelligence is composed of a number of different abilities that interact and work together to produce overall individual intelligence. Raymond B. Cattell rejected the unitary *g* factor model and divided *g* into two broad, relatively independent domains: fluid intelligence (*Gf*) and crystallized intelligence (*Gc*).

2.4.1 CONCEPT OF FLUID INTELLIGENCE

Cattell defined fluid intelligence as "...the ability to perceive relationships independent of previous specific practice or instruction concerning those relationships."

Fluid intelligence is the power to reason and use information. This includes the ability to perceive relationships, solve unfamiliar problems, to think and reason abstractly and gain new types of knowledge. It relates to the ability to process quickly large amounts of information in working memory. Fluid reasoning includes inductive reasoning and deductive reasoning. This ability is considered independent of learning, experience, and education. Examples of the use of fluid intelligence include solving puzzles and coming up with problem-solving strategies.

2.4.2 CONCEPT OF CRYSTALLIZED INTELLIGENCE

Crystallized intelligence involves knowledge that comes from prior learning and past experiences. Situations that require crystallized intelligence include reading comprehension and vocabulary exams. This type of intelligence is based upon facts and rooted in experiences. As we advance in age and accumulate new knowledge and understanding, crystallized intelligence becomes stronger.

Crystallized intelligence is the ability to use skills, knowledge, and experience. It should not be equated with memory or knowledge, but it does rely on accessing information from long-term memory. Crystallized intelligence is one's lifetime intellectual achievement, as demonstrated largely through one's vocabulary and general knowledge. This improves somewhat with age, as experiences tend to expand one's knowledge.

Check Your Progress - I

Note : Write your answers in the space given below.

1. What is the main focus of cognitive theories of intelligence ?

.....

2. Briefly describe the two types of intelligence suggested by Cattell and Horn ?

.....

2.4.3 FLUID VS CRYSTALLIZED INTELLIGENCE

Now, let us to consider whether Fluid (*Gf*) intelligence has any relationship with Crystallized (*Gc*) intelligence. As we know that *Gf* is conceptualized as a capacity to figure out novel problems, and it is best assessed with tests with little cultural or scholastic content, such as Raven's matrices. While, *Gc* may be thought of as consolidated knowledge, reflecting the skills and information that an individual acquires and retains throughout his or her life. *Gc* is dependent on education and other forms of acculturation, and it is best assessed with tests that emphasize scholastic and cultural knowledge. *Gf* can be thought to primarily consist of *current* reasoning and problem solving capabilities, while *Gc* reflects the outcome of *previously* executed cognitive processes.

Both types of intelligence increase throughout childhood and adolescence. Fluid intelligence peaks in adolescence and begins to decline progressively beginning around 30 or 40 years of age. Crystallized intelligence continues to grow throughout adulthood.

Both types of intelligence are equally important in everyday life. For example, when taking a psychology exam, you might need to rely on fluid intelligence to come up with a strategy to solve a statistics problem, while you must also employ crystallized intelligence to recall the exact formulae you need to use.

We may say that people with a high capacity of *Gf* tend to acquire more *Gc* knowledge and at faster rates. Thus, *Gf* and *Gc* are closely related to each other. But the question arises, why are they separated from each other ?

The rationale for the separation of *Gf* and *Gc* was to explain individuals' cognitive development over time. While *Gf* and *Gc* have been found to be highly correlated, they differ in the way they change over a lifetime. *Gf* tends to peak at around

age 20, slowly declining thereafter. In contrast, *Gc* is stable or increases across adulthood. Cattell argued that *Gf* reflected individual differences in the efficiency of the central nervous system. *Gc* was, in Cattell's thinking, the result of a person "investing" his or her *Gf* in learning experiences throughout life.

2.4.4. LATER DEVELOPMENT OF FLUID AND CRYSTALLIZED MODEL

Cattell, together with John Horn, later expanded the *Gf-Gc* model to include a number of other broad abilities, such as *Gq* (quantitative reasoning) and *Gv* (visual-spatial reasoning). While all the broad ability factors in the extended *Gf-Gc* model are positively correlated and thus would enable the extraction of a higher order *g* factor, Cattell and Horn maintained that it would be erroneous to posit that a general factor underlies these broad abilities. They argued that *g* factor computed from different test batteries are not invariant and would give different values of *g*, and that the correlations among tests arise because it is difficult to test just one ability at a time.

However, several researchers have suggested that the *Gf-Gc* model is compatible with a *g*-centered understanding of cognitive abilities. For example, John B. Carroll's three-stratum model of intelligence includes both *Gf* and *Gc* together with a higher-order *g* factor. Based on factor analysis of many data sets, some researchers have also argued that *Gf* and *g* are one and the same factor and that *g* factor from different test batteries are substantially invariant provided that the batteries are large and diverse.

Check Your Progress - II

Note : Write your answers in the space given below.

1. Highlight the relationship between Fluid intelligence and Crystallized intelligence.

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2. Write briefly expansion of Cattell and Horn's theory of Gf – Gc model of intelligence.

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2.5 JENSEN'S THEORY OF MENTAL FUNCTIONING

We have already understood the Spearman's two factor theory along with the Fluid and Crystallized intelligence advocated by Cattell and Horn in which a general mental factor or "g" factor occupies the central position in explaining intelligence. Another psychologist Arthur Jensen, University of California, Berkley, also accepts Spearman's idea of a general factor in human intelligence. Advocating the hereditarian approach in explaining intelligence, Jensen states that :

"A working definition of intelligence, then, is that it is the g factor of an indefinitely large and varied battery of mental tests... We are forced to infer that g is of considerable importance in 'real life' by the fact that g constitutes the largest component of total variance in all standard tests of intelligence or IQ, and the very same g is by far the largest component of variance in scholastic achievement."

2.5.1 TWO LEVEL-THEORY OF MENTAL FUNCTIONING

Arthur Jensen (1969) proposed a theory of two-levels of mental functioning in his controversial essay published in the “Harvard Educational Review” in 1969, which sparked a debate on the association of heredity versus environment with intelligence. In the article, Jensen presented evidence that racial differences in intelligence test scores may have a genetic origin.

On the basis of his experiment, Jensen suggested that two genetically based levels of intelligence exist, i.e. Level I ability and Level II ability.

The Level I ability is associative learning ability, which consists of short-term memory, rote learning, attention and simple associative skills. He argued that Level I ability, i. e. associative learning ability is equally distributed across all racial and national groups.

The Level II ability is called cognitive learning ability, which consists of abstract thinking, symbolic thought, conceptual learning, and use of language in problem solving. The Level II ability, cognitive learning is concentrated in more the middle class Anglo- American populations than in the lower class black populations. Since Level II abilities appear to be more important for success in school, white and Asian children are at an advantage (Fencher, 1985).

According to him, genetic differences in intelligence exist among people coming from different races, nationalities, and social classes. Jensen conducted studies on comparing intelligence of identical and fraternal twins. Identical twins have identical genetic dispositions for that their IQs are assumed to be similar. Fraternal twins like ordinary siblings genetically less similar, which results in the assumption that their IQs less similar. Jensen found support for his views in these findings. Studies with identical twins produced an

average correlation of 0.86, whereas studies of ordinary siblings produced an average correlation of 0.47.

Check Your Progress - III

Note: Write your answers in the space given below.

1. What are the Level I and Level II intelligence suggested in the Jensen's theory of intelligence?

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2.5.2 INTELLIGENCE AND ACADEMIC ACHIEVEMENT

Now, let us discuss the intelligence and academic achievement with the help Jensen's interpretation of two-levels of ability. Jensen showed his interest to the extensive testing of school children when one of his graduate students noted that the white special education students he was working with appeared to be more genuinely "retarded" than the students from minority groups who had been placed in special education. In fact, it seemed to Jensen's student that whereas the white children functioned at a low level both inside and outside the classroom, the minority children sometimes appeared "quite indistinguishable in every way from children of normal intelligence, except in their scholastic performance and in their performance on a variety of standard IQ tests (Jensen, 1974)".

The results led him to distinguish between two separate types of learning ability. Level I, or associative learning, may be defined as retention of input and rote memorization of simple facts and skills. Level II, or conceptual learning, is

roughly equivalent to the ability to manipulate and transform inputs, that is, the ability to solve problems. Jensen concluded that Level I abilities were distributed equally among members of all races, but that Level II occurred with significantly greater frequency among whites and Asian-Americans than among African-Americans and Mexican-Americans.

Later, Jensen became an important advocate in the mainstream acceptance of general intelligence factor, a concept which was essentially synonymous with his *Level II* conceptual learning. General intelligence factor, or *g*, is an abstraction that stems from the observation that scores on all forms of cognitive tests correlate positively with one another. On the basis of his studies, Jensen believed that genetic factors are more important than environmental factors for one's learning.

Jensen claimed, on the basis of his research, that general cognitive ability is essentially an inherited trait and determined predominantly by genetic factors rather than by environmental conditions. He also contended that while associative learning or memorizing ability is equally distributed among the races, conceptual learning or synthesizing ability occurs with significantly greater frequency in Asians than in whites. He suggested that from the data one might conclude that, on average, Asian Americans are more intelligent than white Americans. In Jensen's estimation, 80% of the variance in IQ in the population studied was the result of genetic factors and the remainder was due to environmental influences.

2.5.3 EVALUATION OF JENSEN'S THEORY

Jensen's theory has sparked off a huge academic controversy. After the paper was released, students and faculty staged large protests outside Jensen's U.C. Berkeley office. Jensen was denied reprints of his work by his publisher and was not permitted to reply in response to letters of criticism—both extremely unusual policies for their day. They criticized

that many studies that purport to be both science-based and attempt to influence public policy have been accused of scientific racism.

Paleontologist and evolutionary biologist Stephen Jay Gould, attacked Jensen's work in his 1981 book *The Mismeasure of Man*. Gould writes that Jensen misapplies the concept of "heritability", which is defined as a measure of the variation of a trait due to inheritance *within* a population (Gould 1981). According to Gould, Jensen uses heritability to measure differences *between* populations.

In a 1982 review of *The Mismeasure of Man*, Jensen gives point-by-point rebuttals to much of Gould's critique, including Gould's treatment of heritability, the "reification" of *g*, and the use of Thurstone's analysis. While Jensen recognizes the validity of some of Gould's claims, in many places, he criticizes Gould's general approach. Jensen adds that Gould made a number of misrepresentations, whether intentional or unintentional, while purporting to present Jensen's own positions. In a later article, Jensen (1981) argued that his claims had been misunderstood :

...nowhere have I "claimed" an "innate deficiency" of intelligence in blacks. My position on this question is clearly spelled out in my most recent book: "The plain fact is that at present there exists no scientifically satisfactory explanation for the differences between the IQ distributions in the black and white populations. The only genuine consensus among well-informed scientists on this topic is that the cause of the difference remains an open question."

In 2005, Jensen's article, co-written with J. Philippe Rushton, named "Thirty Years of Research on Race Differences in Cognitive Ability", was published in the journal *Psychology, Public Policy and Law*. Jensen and Rushton present ten categories of evidence in support of the notion that IQ differences between whites and blacks are partly genetic in origin.

In years since the publication of the 1969 *Harvard Educational Review* article, Jensen has published a large body of empirical research demonstrating that genetic factors are a substantial source of the variance in individual differences in IQ (Fancher, 1985). Despite the controversial nature of his claims, in 2003 Jensen won the prestigious Kistler Prize for original contributions to the understanding of the connection between the human genome and human society.

2.6 STERNBERG'S INFORMATION PROCESSING THEORY OF INTELLIGENCE

Robert J. Sternberg of the Yale University, USA is one of the most prominent cognitive psychologists, who formulated the information processing theory of intelligence - popularly known as the **triarchic theory of intelligence**. Sternberg (1982) asked people to identify the characteristics of an intelligent person. The most frequently given answers were:

Check Your Progress - IV

Note : Write your answers in the space given below.

1. Establish the relationship between academic achievement and Jensen's Level I and Level II intelligence.

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2. Point out the views of Jensen's opponents with regard to genetic origin of IQ.

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(a) He reasons logically and well; (b) He reads widely; (c) He keeps an open mind and reads with high comprehension. On the basis of his observation, Sternberg (1986) formulated the triarchic theory of intelligence.

Robert Sternberg defines intelligence as *“the cognitive ability to learn from experience, to reason well, to remember important information, and to cope with the demands of daily living.”* He further states that human intelligence is *“a mental activity directed toward purposive adaptation to, selection and shaping of, real-world environments relevant to one’s life”* (Sternberg, 1985). It means that intelligence is how well an individual deals with environmental changes throughout their lifespan.

Sternberg’s triarchic theory includes three facets or sub-theories which may be illustrated with the help of the following diagrammatic representation :

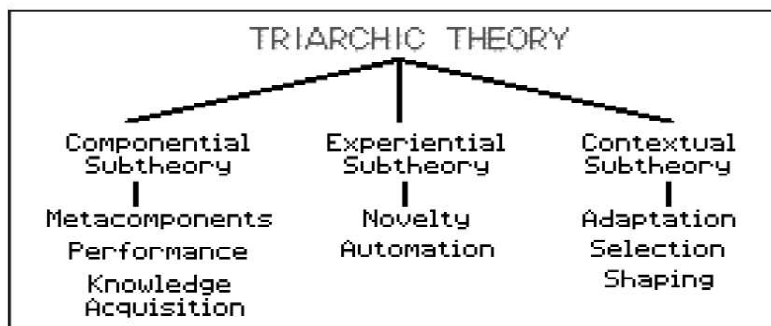


Fig. 2.1: Sternberg’s Triarchic Theory of Intelligence

2.6.1 COMPONENTIAL / ANALYTICAL SUBTHEORY

Sternberg associated the componential subtheory with analytical giftedness. This is one of three types of giftedness that Sternberg recognizes. This is the information processing subtheory of intelligence that is based on mental steps or components used to solve problems.

Sternberg believes that Analytical Intelligence is associated with academic problem-solving skills. He theorized that intelligent behaviour consists of a series of components.

Each component is a basic unit of information processing. According to him, such components consist of activities to acquire or store information, to develop problem-solving strategies, and to use strategies according to a plan to solve problems, and monitor one's progress. So, these components are also considered as the components of information processing. These components he labeled the metacomponents, performance components, and knowledge-acquisition components (Sternberg, 1985).

i) Metacomponents : The *metacomponents* are executive processes used in problem solving and decision making. They tell the mind how to act. Metacomponents control, monitor and evaluate cognitive processing. These are the *executive* functions to order and organise performance and knowledge acquisition components. They are the higher-order processes that order and organise the performance components. They decide what to do and the performance components actually do it.

ii) Performance Components : Sternberg's next set of components are *performance components*. These are the processes that actually carry out the actions which metacomponents dictate. These are the basic processes that allow us to do tasks, such as perceiving problems in our long-term memory, perceiving relations between objects, and applying relations to another set of terms (Sternberg, 1997). They are the basic operations involved in any cognitive act. They are the cognitive processes that enable us to encode stimuli, hold information in short-term memory, make calculations, perform mental calculations, mentally compare different stimuli, and retrieve information from long-term memory.

iii) Knowledge Acquisition Components : The last sets of components, knowledge-acquisition components, are the processes used in gaining and storing new knowledge or information - i.e. capacity for learning. These components complete tasks that involve selectively choosing information

from irrelevant information. These components can also be used to selectively combine the various pieces of information they have gathered. Gifted individuals are proficient in using these components because they are able to learn new information at a greater rate (Sternberg, 1997).

Sternberg explains that the basic information processing components underlying the three parts of his triarchic theory are the same, but different contexts and different tasks require different kind of intelligence (Sternberg, 2001).

2.6.2 EXPERIENTIAL / CREATIVE SUBTHEORY

Sternberg's second stage of the theory is experiential subtheory. This stage deals mainly with how well a task is performed with regard to how familiar it is. This component of intelligence focuses on experience. It is involved in using the past experience creatively to solve new problems. Thus, experiential intelligence is reflected in creative performance. For example, scientists use their experiences to develop novel scientific theories. Artists draw mass attention by drawing commonplace things in extraordinary ways.

Creative Intelligence involves insights, synthesis and the ability to react to novel situations and stimuli. Sternberg considers the creative facet to consist of the ability which allows people to think creatively and that which allows people to adjust creatively and effectively to new situations. The experiential subtheory also correlates with Sternberg's "synthetic giftedness" which is seen in creativity, intuition, and a study of the arts. People with synthetic giftedness are not often seen with the highest IQ's because there are not currently any tests that can sufficiently measure these attributes, but synthetic giftedness is especially useful in creating new ideas to create and solve new problems.

Sternberg believes that more intelligent individuals will also move from consciously learning in a novel situation to

automating the new learning so that they can attend to other tasks. So, he splits the role of experience into two parts: novelty and automation.

i) Novelty : A *novel* situation is one that you have never experienced before. People that are adapt at managing a novel situation can take the task and find new ways of solving it that the majority of people would not notice (Sternberg, 1997).

ii) Automation : Automation is a process that has been performed multiple times and can be done with little or no extra thought. Once a process is automatized, it can be run in parallel with the same or other processes. The problem with novelty and automation is that being skilled in one component does not ensure that you are skilled in the other (Sternberg, 1997).

Check Your Progress - V

Note : Write your answers in the space given below.

1. Highlight the different components of information processing suggested by Sternberg.

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2. What is creative intelligence? How is it reflected in novelty and automation?

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2.6.3 CONTEXTUAL / PRACTICAL SUBTHEORY

Sternberg's third subtheory of intelligence, called practical or contextual, "deals with the mental activity involved in attaining fit to context" (Sternberg, 1985). This involves the ability to grasp, understand and deal with everyday tasks. Practical intelligence involves the practical management of day-to-day life affairs like how to get rid of trouble, how to face the environmental demands, and how to get along with the society. This is the contextual aspect of intelligence and reflects how the individual relates to the external world about him or her. This type of intelligence is often referred to as "street smarts." Persons high in this component exercise greater influence in controlling their environment, and therefore, turn out to be successful.

Through the three processes of adaptation, shaping, and selection, individuals create an ideal fit between themselves and their environment.

Adaptation occurs when one makes a change within oneself in order to better adjust to one's surroundings (Sternberg, 1985). For example, when the weather changes and temperatures drop, people adapt by wearing extra layers of clothing to remain warm.

Shaping occurs when one changes their environment to better suit one's needs (Sternberg, 1985). A teacher may invoke the new rule of raising hands to speak to ensure that the lesson is taught with least possible disruption.

The process of **selection** is undertaken when a completely new alternate environment is found to replace the previous, unsatisfying environment to meet the individual's goals (Sternberg, 1985). For instance, immigrants leave their lives in their homeland countries where they endure economical and social hardships and go to other countries in search of a better and less strained life.

So this practical intelligence is a combination of :

- (a) adaptation to the environment in order to have goals met.
- (b) changing the environment in order to have goals met
- (c) or, if (a) and (b) don't work moving to a new environment in which goals can be met.

The effectiveness with which an individual fits to his or her environment and contends with daily situations reflects degree of intelligence. Sternberg's third type of giftedness, called practical giftedness, involves the ability to apply synthetic and analytic skills to everyday situations. Practically gifted people are superb in their ability to succeed in any setting (Sternberg, 1997).

Sternberg also acknowledges that an individual is not restricted to having excellence in only one of these three intelligences. Many people may possess an integration of all three and have high levels of all three intelligences. However, individuals considered intelligent in one culture may be looked on as unintelligent in another.

2.6.4 EVALUATION OF STERNBERG'S THEORY

Recent researchers have focused more on Sternberg's contextual aspect of intelligence. They have put emphasis on practical intelligence which is related to overall success in living rather than intellectual and academic performance. Sternberg believes that such intelligence is generally predictive of success in a chosen field no matter whether it is tailoring, business or medicine etc. Career success requires a type of intelligence, which is very different from that which is required in academic success. But practical intelligence is learned mainly through observation.

But, psychologist like Linda Gottfredson (2003) criticizes the unempirical nature of triarchic theory and argues

that what Sternberg calls practical intelligence is not a broad aspect of cognition at all but simply a specific set of skills people learn to cope with a specific environment (task specific knowledge).

As for the creative component of Sternberg's model, critics suggest that certain aspects of creativity (i.e. Divergent thinking) are separable from analytical intelligence, and are better accounted for by the cognitive process of executive functioning.

Check Your Progress - VI

Note : Write your answers in the space given below.

1. What is meant by practical intelligences ? What are the contextual processes of adjustment to environment ?

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2. "Sternberg's theory of information processing is not free from criticism" – why ?

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2.7 GARDNER'S THEORY OF MULTIPLE INTELLIGENCE

I want my children to understand the world, but not just because the world is fascinating and the human mind is curious. I want them to understand it so that they will be positioned to make it a better place. Knowledge is not the same as morality, but we need to understand if we are to avoid past mistakes and move in productive directions. An important part of that understanding is knowing who we are and what we can do... Ultimately, we must synthesize our understandings for ourselves. The performance of understanding that try matters are the ones we carry out as human beings in an imperfect world which we can affect for good or for ill. (Howard Gardner 1999)

Imagine a classroom where a teacher has assigned the students to read a novel and then develop a project of their choice based on the book. One student immediately decides to draw a comic strip depiction of several different scenes from the novel. Another student in the class decides to compose a brief musical interpretation of the book, while yet another student opts to write a creative essay from the point of view of one of the characters in the story.

The tendency to choose such widely varied projects based on the same novel can be understood by looking at each student's individual strengths. Students who are good with visual information often prefer to work with visual imagery, such as drawing a scene or image. Students who are strong with tone or rhythm might prefer to do a project that incorporates music, while students who are good with words might prefer to write about their thoughts and ideas.

Psychologist Howard Gardner suggested that each of these preferences actually represents a different type of intelligence. On the basis of this proposition, Gardner put

forward his “*Theory of Multiple Intelligences*”, a theory that challenged the dominant definition of intelligence as limited to mathematical and linguistic abilities (verbal and computational intelligences). The famous book the *Frames of Mind* (1983) is the Howard Gardner's first full-length statement of his theory of multiple intelligences. Gardner proposed that intelligence is not just a single intellectual capacity. Instead, he suggested, there are multiple kinds of intelligence that people can possess.

2.7.1 CRITERIA OR SIGNS OF INTELLIGENCE

When you hear the word intelligence, the concept of IQ testing may immediately come to mind. Intelligence is often defined as our intellectual potential; something we are born with, something that can be measured and a capacity that is difficult to change. But in recent years, different views of intelligence have emerged.

Starting from a feeling that traditional views of intelligence (especially the measurement of IQ) were neglecting the arts completely, Howard Gardner viewed intelligence as *'the capacity to solve problems or to fashion products that are valued in one or more cultural setting'* (Gardner & Hatch, 1989). Support from experimental psychology and psychometric findings, Gardner articulated several criteria or signs for a behavior to be intelligent. http://en.wikipedia.org/wiki/Theory_of_multiple_intelligences

- cite_note-1 These are :

- Potential isolation by brain damage.
- The existence of idiots savants, prodigies and other exceptional individuals.
- An identifiable core operation or set of operations.
- A distinctive development history, along with a definable set of 'end-state' performances.

- An evolutionary history and evolutionary plausibility.
- Support from experimental psychological tasks.
- Support from psychometric findings.
- Susceptibility to encoding in a symbol system.

If you label a person as 'an intelligence' he has to satisfy a range of these criteria and must include, as a prerequisite, the ability to resolve 'genuine problems or difficulties' within certain cultural settings. However, Gardner admitted that his view is 'more of an artistic judgment than of a scientific assessment'.

2.7.2 MULTIPLE INTELLIGENCE SUGGESTED BY GARDNER

In order to capture the full range of abilities and talents that people possess, Gardner suggests that people do not have just an intellectual capacity, but have many different intelligences including musical, interpersonal, spatial-visual and linguistic intelligences.

This theory suggests that traditional psychometric views of intelligence are too limited. Gardner suggested that all people have different kinds of "intelligences." Starting from seven different intelligences based on psychological, anthropological, and medical evidence, he later added an eighth intelligence i.e. naturalistic. Now let us discuss each category of intelligence suggested by Gardner one by one:

i) Verbal -Linguistic Intelligence (*"word smart" or "book smart"*)

Linguistic intelligence involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals. This intelligence includes the ability to effectively use language to express oneself rhetorically or poetically; and language as a

means to remember information. Writers, poets, lawyers and speakers are among those that Howard Gardner sees as having high linguistic intelligence.

If this is a strong intelligence for you, you have highly developed skills for reading, speaking, and writing and you tend to think in words. You probably like various kinds of literature, playing word games, making up poetry and stories, engaging in involved discussions with other people, debating, formal speaking, creative writing, and telling jokes. You are likely to be precise in expressing yourself and irritated when others are not. You love learning new words, you do well with written assignments, and your comprehension of anything you read is high.

ii) Mathematical -Logical Intelligence (*"math smart" or "logic smart"*)

Logical-mathematical intelligence consists of the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically. In Howard Gardner's words, it entails the ability to detect patterns, reason deductively and think logically. This intelligence is most often associated with scientific and mathematical thinking.

If you happen to be a logical-mathematically inclined person you tend to think more conceptually and abstractly and are often able to see patterns and relationships that others miss. You most likely enjoy working with numbers and mathematical formulas and operations, and you love the challenge of a complex problem to solve. You are probably systematic and organized, and you are likely always to have a logical rationale or argument for what you are doing or thinking at any given time.

iii) Musical-Rhythmic Intelligence (*"music smart" or "sound smart"*)

Musical intelligence involves skill in the performance, composition, and appreciation of musical patterns. It

encompasses the capacity to recognize and compose musical pitches, tones, and rhythms. According to Howard Gardner musical intelligence runs in an almost structural parallel to linguistic intelligence.

If you are strong in this intelligence area you likely have a love of music and rhythmic patterns. You are probably very sensitive to sounds in the environment; you can often reproduce a melody or rhythmic pattern after hearing it only once. You probably like to create music and you enjoy listening to a wide variety of music. You may be skilled at mimicking sounds, language accents, and others' speech patterns, and you can probably readily recognize different musical instruments in a composition.

iv) Bodily-Kinesthetic Intelligence (*"body smart" or "movement smart"*)

We often talk about "learning by doing." This way of knowing happens through physical movement and through the knowing of our physical body. Bodily-kinesthetic intelligence entails the potential of using one's whole body or parts of the body to solve problems. It is the ability to use mental abilities to coordinate bodily movements. Howard Gardner sees mental and physical activity as related.

If you have strength in this intelligence area you tend to have a keen sense of body awareness. You like physical movement, dancing, making and inventing things with your hands, and role playing. You probably communicate well through body language and other physical gestures. You can often perform a task much better after seeing someone else does it first and then mimicking their actions.

v) Visual-Spatial Intelligence (*"art smart" or "picture smart"*)

We often say "a picture is worth a thousand words" or "seeing is believing". This intelligence represents the knowing that occurs through the shapes, images, patterns, designs, and textures we see with our external eyes, but also includes all of

the images we are able to conjure inside our heads. So, spatial intelligence involves the potential to recognize and use the patterns of wide space and more confined areas.

If you are strong in this intelligence you tend to think in images and pictures. You are likely very aware of object, shapes, colors, textures, and patterns in the environment around you. You probably like to draw, paint, and make interesting designs and patterns, and work with clay, colored markers, construction paper, and fabric. Many, who are strong in visual-spatial intelligence love to work jigsaw puzzles, read maps and find their way around new places.

vi) Interpersonal Intelligence (*"people smart" or "group smart"*)

Interpersonal intelligence is concerned with the capacity to understand the intentions, motivations and desires of other people. It allows people to work effectively with others. Educators, sales people, religious and political leaders and counsellors all need a well-developed interpersonal intelligence.

If this person-to-person way of knowing is more developed in you, you probably have lots of friends; show a great deal of empathy for other people and exhibit a deep understanding of other points of view. You probably love team activities of all kinds and are a good team member; you are sensitive to other people's feelings and ideas; and are good at piggybacking your ideas on others' thoughts. And you are likely skilled at drawing others out in a discussion.

vii) Intrapersonal Intelligence (*"self smart" or "introspection smart"*)

Intrapersonal intelligence entails the capacity to understand oneself, to appreciate one's feelings, fears and motivations. In Howard Gardner's view it involves having an effective working model of ourselves, and to be able to use such information to regulate our lives.

If this intelligence is one of your strong points you may like to work alone and sometimes you may shy away from others. You are probably self-reflective and self-aware and thus you tend to be in tune with your inner feelings, values, beliefs, and thinking processes. You are frequently bearers of creative wisdom and insight, are highly intuitive, and you are inwardly motivated rather than needing external rewards to keep you going. You are often strong willed, self-confident, and have definite, well-thought out opinions on almost any issue. Other people will often come to you for advice and counsel.

viii) Naturalist Intelligence (*"nature smart" or "environment smart"*)

The naturalist intelligence involves the full range of knowing that occurs in and through our encounters with the natural world including our recognition, appreciation, and understanding of the natural environment. It involves such capacities as species discernment, communion with the natural world and its phenomena, and the ability to recognize and classify various flora and fauna.

If the naturalist intelligence is one of your strengths you have a profound love for the outdoors, animals, plants, and almost any natural object. You are probably fascinated by and noticeably affected by such things as the weather, changing leaves in the fall, the sound of the wind, the warm sun or lack thereof, or an insect in the room. At a young age you were likely nature collectors, adding such things as bugs, rocks, leaves, seashells, sticks, and so on to your collections. You probably brought home all manner and kinds of stray animals and today you may have several pets and want more. You tend to have an affinity with and respect for all living beings.

In *Frames of Mind* Howard Gardner treated the personal intelligences 'as a piece'. Because of their close association in most cultures, they are often linked together. However, he still argues that it makes sense to think of two forms of personal intelligence. Gardner claimed that the seven intelligences rarely

operate independently. They are used at the same time and tend to complement each other as people develop skills or solve problems.

In essence Howard Gardner argued that he was making two essential claims about multiple intelligences. That :

- The theory is an account of human cognition in its fullness. The intelligences provided 'a new definition of human nature, cognitively speaking' (Gardner 1999). Human beings are organisms who possess a basic set of intelligences.
- People have a unique blend of intelligences. Howard Gardner argues that the big challenge facing the deployment of human resources 'is how to best take advantage of the uniqueness conferred on us as a species exhibiting several intelligences'.

These intelligences, according to Howard Gardner, are amoral - they can be put to constructive or destructive use.

2.7.3 EDUCATIONAL IMPLICATION OF GARDNER'S THEORY OF MULTIPLE INTELLIGENCES

Howard Gardner's theory of multiple intelligences has not been readily accepted within academic psychology. However, it has met with a strongly positive response from many educators. It has been embraced by a range of educational theorists and, significantly, applied by teachers and policymakers to the problems of schooling. The theory can also be found in use within pre-school, higher, vocational and adult education initiatives.

Mindy L. Kornhaber (2001), a researcher involved with Project Zero, said that :

... the theory validates educators' everyday experience: students think and learn in many different ways. It also provides educators with a conceptual framework for organizing and

reflecting on curriculum assessment and pedagogical practices. In turn, this reflection has led many educators to develop new approaches that might better meet the needs of the range of learners in their classrooms.

Howard Gardner did not, initially, spell out the implications of his theory for educators in any detail. Subsequently, he has looked more closely at what the theory might mean for schooling practice. From Gardner's thinking, three approaches in education entails:

A broad vision of education : All seven intelligences are needed to live life well. Teachers, therefore, need to attend to all intelligences, not just the first two that have been their traditional concern. Seven kinds of intelligence would allow seven ways to teach, rather than one. As Kornhaber (2001) has noted it involves educators opting 'for depth over breadth'.

Developing local and flexible programmes : Howard Gardner's interest in 'deep understanding', performance, exploration and creativity are not easily accommodated within an orientation to the 'delivery' of a detailed curriculum planned outside of the immediate educational context. 'An "MI setting" can be undone if the curriculum is too rigid or if there is but a single form of assessment' (Gardner 1999). In this respect the educational implications of Howard Gardner's work stands in a direct line from the work of John Dewey.

Looking to morality : 'We must figure out how intelligence and morality can work together', Howard Gardner argues, 'to create a world in which a great variety of people will want to live'. While there are considerable benefits to developing understanding in relation to the disciplines, something more is needed.

Thus, we may say that Gardner's thinking of multiple intelligences is significant for teachers as well as policy makers. It helps educators in classroom teaching and

assessment. Similarly, it has great implication in curriculum planning too.

Check Your Progress - VII

Note : Write your answers in the space given below.

1. State the type of intelligences related to (a) ability to recognize and use spaces appropriately, (b) ability to create and enjoy wide variety of music, (c) ability to creative writing, (d) ability to express through body language, (e) ability to compute mathematical operation quickly, (f) ability to recognize various flora and fauna, (g) ability to establish social relationships, and (h) ability to recognize one's own strengths and weaknesses.

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2. Differentiate between interpersonal and intrapersonal intelligences.

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3. Bring out the educational implications of Gardner's theory of multiple intelligences.

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2.8 LET US SUM UP

In this unit we have discussed the cognitive theories of intelligence which focus on intellectual processes operating in solving problems or representing information. We have learnt the Fluid and Crystallized theory of intelligence that are based on *g* or general intelligence and suggested by Raymond B. Cattell and John L. Horn. *Gf* is the power to reason, solve unfamiliar problems, and gain new knowledge. *Gc* involves knowledge that comes from prior learning and past experiences. It is the ability to use skills, knowledge, and experience. Both *Gf* and *Gc* are closely related. Fluid intelligence peaks in adolescence and begins to decline progressively beginning around age 30 or 40. Crystallized intelligence continues to grow throughout adulthood.

Another theory believed on *g* factor was proposed by Arthur Jensen who explained intelligence from the genetic point of view. Jensen claims genetic difference of cognitive abilities between Anglo-American and Black African. On the basis of his experiment, Jensen suggested two genetically based levels of intelligence i.e. Level I ability and Level II ability. The Level I ability is associative learning, which consists of short-term memory, rote learning, attention and simple associative which is equally distributed across all racial and national groups. The Level II ability is called cognitive learning, which consists of abstract thinking, symbolic thought, conceptual learning, and use of language in problem solving which is concentrated more in the middle class Anglo-American populations than in the lower class black populations.

We have also discussed the Information Processing Theory of Intelligences suggested by Robert Sternberg. Sternberg proposed a three dimensional subtheory involve in cognition or processing of information and so it is also known as triarchich theory of intelligence. Componential subtheory,

also known as analytical intelligence consists of three components of information processing, i.e. metacomponents, performance components and knowledge acquisition components. The second is experiential subtheory known as creative intelligence which involves the processes of novelty and automation in solving new problems. Sternberg's third subtheory of intelligence, called practical or contextual involves the practical management of day-to-day life affairs like how to get rid of trouble, how to face the environmental demands, and how to get along with the society. It also involves adaptation, shaping and selection in the process of adjusting with the day to day environmental demands.

At last but not the least, we have come across the Howard Gardner's theory of multiple intelligence who believed that it is not just a single intellectual capacity but people have different kinds of intelligence such as verbal – linguistic intelligence, mathematical – logical intelligence, musical – rhythmic intelligence, bodily – kinaesthetic intelligence, visual – spatial intelligence, interpersonal intelligence, intrapersonal intelligence and naturalist intelligence. You must have understood that these intelligences are based on eight criteria or signs for labeling a person as intelligent. Gardner's theory is significant for teachers as well as curriculum planners.

2.9 KEY WORDS

Cognitive Theories : Cognition is a process of thinking or processing information at mental level. The theories of intelligence that involve thinking process and information processing in describing intelligence on the basis of intellectual operations are called as cognitive theories of intelligence.

- Fluid Intelligence :** The dictionary meaning of fluid is able to flow easily or capable of flowing liquid, not fixed or rigid. Fluid intelligence in the Cattell and Horn's theory refers to the ability to reason abstractly and gain new types of knowledge.
- Crystallized Intelligence :** The word crystallize means to give definite or concrete form, to make or become definite or clear. Crystallized intelligence in this text implies the ability to use past skills, knowledge, and experiences.
- Level I ability :** Level I ability in this text implies Jensen's interpretation of ability for associative learning which is equally distributed among people of all races and nations.
- Level II ability :** Level II ability may be defined as the ability of cognitive learning which, according to Jensen, is genetic and vary from white American to black African.
- Componential :** Intelligence which is based on components. Componential intelligence in Sternberg's theory of intelligence refers to analytical intelligence involved in processing information.
- Experiential :** Anything based on experience is called experiential. Experiential intelligence in Sternberg's theory refers to the creative intelligences involving insight and ability to react to new situation.
- Contextual :** Contextual means situational. Here, contextual intelligence refers to the

practical intelligence used in handling day-to-day task.

Triarchich theory : The word triarchich implies anything consisting of three dimensions. Sternberg's theory of intelligence is known as triarchich theory of intelligence which is based on three dimensional sub theory of intelligence.

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2.11 PROBABLE ANSWERS OF THE CYPs

Check Your Progress - I

1. The main focus of cognitive theories of intelligence is on cognition or intellectual processes that people use to reason or solve problems. They are more interested on *how* people solve problems and figure out answers than *how many* right answers people get.
2. Cattell and Horn suggested two types of intelligence – (i) fluid intelligence (Gf), i.e. the ability to perceive relationships, solve unfamiliar problems, to think and reason abstractly and gain new types of knowledge; and (ii) crystallized intelligence (Gc), i.e. the ability to use past skills, knowledge, and experiences.

Check Your Progress - II

1. Fluid intelligence (Gf) and Crystallized intelligence (Gc) are closely related to each other. A high capacity of Gf tend to acquire more Gc knowledge and at faster rates. But Gf tends to peak at around age 20, slowly declining thereafter. Gc is stable or increases across adulthood.
2. Cattell, together with John Horn, later expanded the Gf-Gc model to include a number of other broad abilities, such as Gq (quantitative reasoning) and Gv (visual-spatial reasoning).

Check Your Progress - III

1. The Level I ability in Jensen's theory of mental functioning refers to associative learning, which is equally distributed across all racial and national groups.

The Level II ability refers to cognitive learning, which is concentrated more the middle class Anglo-American populations than in the lower class black populations.

Check Your Progress - IV

1. Level I ability is directly related with the associative learning which is distributed equally among members of all races. But Level II ability involve in conceptual or abstract learning which is genetic and occurred greater frequency among whites and Asian-Americans than among African-Americans and Mexican-Americans.
2. Stephen Jay Gould criticized Jensen's claims of genetic origin of IQ and alleged that Jensen misapplies the concept of "heritability". Gould disagrees with Jensen's belief that IQ tests measure a real variable, *g*, or "the general factor common to a large number of cognitive abilities" which can be measured along a unilinear scale.

Check Your Progress - V

1. Different components of information processing suggested by Sternberg are (i) metacomponents, i.e. executive processes used in problem solving and decision making; (ii) performance components, i. e, the processes that actually carry out the actions which metacomponents dictate; and (iii) knowledge-acquisition components, i.e. the processes used in gaining and storing new knowledge or information - i.e. capacity for learning.
2. Creative intelligence is called experiential intelligence which involves insights, synthesis and the ability to react to novel situations and stimuli.

People who adapt to a novel situation can take the task and find new ways of solving with the help of creative

intelligence. Experiential intelligence helps in performing a task multiple times and when the process is automatized it can be run in parallel with the same or other processes.

Check Your Progress - VI

1. Practical intelligence involves the ability to grasp, understand and deal with everyday tasks. This is the contextual aspect of intelligence and reflects how the individual relates to the external world about him or her.

Individuals adjust with new environment through the contextual processes of (i) adaptation to the environment, (ii) changing or shaping the environment and (iii) selection or moving to a new environment.

2. “Sternberg’s theory of information processing was criticized as the unempirical nature of triarchic theory and argues that what Sternberg calls practical intelligence is not a broad aspect of cognition at all but simply a specific set of skills people learn to cope with a specific environment.

Check Your Progress - VII

1. (a) Visual – Spatial intelligence, (b) Musical – Rhythmic intelligence, (c) Verbal – Linguistic intelligence, (d) Bodily – Kinesthetic intelligence, (e) Mathematical -Logical intelligence, (f) Naturalist intelligence, (g) Interpersonal intelligence, and (h) Intrapersonal intelligence.
2. Interpersonal intelligence is concerned with the capacity to understand the intentions, motivations and desires of other people. On the other hand, intrapersonal intelligence entails the capacity to understand oneself, to appreciate one's feelings, fears and motivations.
3. Howard Gardner's theory of multiple intelligences provided (i) a broad vision of education - seven kinds of intelligence would allow seven ways to teach, rather than one; (ii) developing local and flexible programmes; and (iii) looking to morality. Gardner’s theory of multiple intelligences is

significant for teachers, policy makers, evaluator and curriculum planning too.

2.12 MODEL QUESTIONS

1. What is the basis of cognitive theories of intelligence ? Describe Cattell and Horn's theory of intelligence and discuss the relationship between Fluid and Crystallized intelligence.
2. "There is a difference between black African and white American people in terms of intellectual functions" – Illustrate Jensen's theory of mental functioning in the light of the above statement.
3. What do you mean by information processing ? Describe Sternberg's triarchic theory of intelligence in information processing and highlight its educational implications.
4. Discuss Gardner's theory of multiple intelligences and justify its educational significance.

BLOCK - IV
PERSONALITY

UNIT-I

MEANING AND CONCEPT OF PERSONALITY

THEORIES OF PERSONALITY : TYPE

**THEORIES AND TRAIT THEORIES OF
PERSONALITY**

STRUCTURE :

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Meaning and Concept of Personality
 - 1.2.1 The Origin
 - 1.2.2 Definitions of Personality
 - * Check your Progress
 - 1.2.3 Determiners of Personality
 - 1.2.4 Personality and Education
 - 1.2.5 Methods of Studying Personality
 - * Check your Progress
- 1.3 Theories of Personality
 - 1.3.1 Type Theories
 - 1.3.2 Trait Theories
 - * Check your Progress
- 1.4 Let us sum up
 - * Keywords
 - * Suggested Readings
 - * Probable Answers to the CYPs
 - * Model Questions

1.0 OBJECTIVES

In this unit, we introduce the concept of personality. By the end of this unit you will have gained useful insights into two theories of personality, namely the type and the trait theories. Besides, you will be able to:

- define personality;
- describe the meaning of personality;
- describe the concept of personality;
- describe the type and trait theories of personality.



1.1 INTRODUCTION

When you talk about someone's personality, what do you really mean? Have you ever heard someone say, "He is very aggressive" or "She is so smart" or "My mother is very sweet"? Or how about "He is very much dependent" or "She has got a tremendous personality! ". When the average person uses the term, "personality", it has a variety of meanings, each unique to the situation in which it appears. Many different descriptions are possible, but when most people use the term "personality," they use it for either of the following two purposes :

- **Personality with its prominent features :** We describe someone as sweet, or introverted, or shy, or aggressive. Among the many features that a person possesses, we often identify him or her in terms of the most prominent characteristic. Personality of a person is labeled upon the impression he or she makes on the people's mind.
- **Personality arising from ability :** There is another way in which most of us use the term "personality", and that is to indicate a more general kind of ability or skill

in representing ourselves to others. Someone who works as a receptionist or public relation officer is often thought qualified for the job because he or she has "a lot of personality." Here personality is being used as a general label for the amount of social skill and elegance.

1.2 MEANING AND CONCEPT OF PERSONALITY

We divide this section into some subsections in order to give you a detailed idea of the meaning and concept pertaining to Personality.

1.2.1 The Origin

The meaning and the definition of personality has evolved over time with different perspectives kept in mind. To arrive at its meaning, we have to trace the origin of the term. The word personality has been derived from the Latin word "*Persona*". The term *persona* means a mask. In Greek theatres, actors used to put on masks in order to play different roles. In our country also, you have probably seen actors in Bhaona or Ramleela using masks when they perform the role of a particular character. According to G.W. Allport, four different meanings of *persona* are found in the writings of Cicero (106-43B.C.). They are :

1. as one appears to others (but not as one really is);
2. the part someone(e.g. a philosopher) plays in life;
3. an assemblage of personal qualities that fit a man for his work;
4. distinction and dignity (as a style of writing).

The different aspects of human personality can be seen in the above meanings of *persona*. Later on, the philosophical, sociological and psychological descriptions of personality reveal its meaning in many forms.

1.2.2 Definitions of Personality

There are several definitions of personality and for convenience they have been classified into five categories. Let us discuss these definitions :

1. **Personality as a Stimulus** : Some psychologists define personality in terms of its social stimulus value. For example, how an individual affects other persons with whom he comes in contact, whether he is impressive or repulsive, whether he has a dominating or a submissive personality. From this point of view, you can infer that personality becomes identical to reputation and impression, mostly in terms of physical appearance, clothing, conversation and etiquette. Generally, we use this concept in selecting applicants for various jobs and courses. The interviewer takes into consideration the total picture of an individual's organized behavior.
2. **Summative Approach** : This approach emphasizes the importance of sum total of different processes and activities of the individual as, for example, innate dispositions, habits, impulses and emotions etc. This approach does not give stress on the concept of organization and integration of parts into a total whole. So the Gestalt psychologists criticized this theory and rejected the idea of aggregation or sum total of parts.
3. **Integrative Approach** : This approach highlights the integrative aspect of personality and its specific pattern of organization. Warren's dictionary defines personality as "Personality is the integrative organization of all the cognitive, affective, conative and physical characteristics of an individual as it manifests in focal distinction from others".
4. **Totality View** : According to this approach, more emphasis should be put on integration to define personality. This approach defines personality as the

general characterization or pattern of an individual's total behavior. A man's personality is the total picture of his organized behavior, especially as it can be described by his fellowman in a consistent and stable way.

5. **Personality as Adjustment** : Since birth, an individual tries to adjust with his or her environment. The adjustment of an individual with his environment can be called the behavior of that individual. Every individual develops his own unique way of adjustment in the society. According to this approach, personality is an individual's unique pattern of behavior. Through his continuous reaction, an individual tries to adjust himself with his environment. In other words, you can say that the sum of the individual's actions that he adapts to adjust with his environment is his personality.

We have already described the various approaches to define the concept of personality. Next we will discuss some important definitions of personality.

Allport (1961) who devoted most of his time for research on personality defines personality as the dynamic organization within the individual of those psychophysical systems that determine his unique adjustment to his environment.

This definition is very comprehensive and it includes all the aspects of an individual's personality. In this definition, *dynamic* means constant organized change in personality. It involves two aspects : psycho (mental) and physical. These two aspects interact with the environment (both internal and external). The term *determine* emphasizes that the psychological system of an individual activates him or her for action. Again, the *unique adjustment* of the individual to his or her environment means that each individual tries to adjust with his or her environment in a different way or in a unique way.

Guilford (1959) defines personality as “Personality is the unique pattern of traits which distinguishes one individual from another.”

According to Cattell, “Personality is that which permits a prediction of what a person will do in a given situation”.

Eysenck defines personality as “It is the sum total of actual behavior pattern of the organism. It is more or less stable and enduring organization of a person’s character, temperament, intellect and physique, which determine his unique adjustment to the environment.”

According to Robert Park and Earnest Burgess, personality is the sum and organization of those traits which determine the role of the individual in the group. Linton defines personality as one which embraces the total organized aggregate of psychological processes and status pertaining to the individual. According to Lundberg the term personality refers to the habits, attitudes and other social traits that are characteristic of a given individual’s behavior. By personality, Ogburn means the integration of the socio-psychological behavior of the human being, represented by habits of action and feeling, attitudes and opinions. Davis considers personality as a psychic phenomenon which is neither organic nor social but an emergent from a combination of these two.

Thus we see that there are various approaches to define personality but none is universally accepted. Even if there is diversity in views, however each definition has certain common basic characteristics. For example, no two individuals, even two identical twins, have similar personality. Secondly, personality is the product of its own functioning. Our accumulated past experiences determine what we do today. The experiences accumulated day by day shape our personality by uninterrupted interaction with the environment. The third common characteristic is the need of understanding the meaning of individual differences. Personality is that feature

which makes an individual unique. Thus we study personality to identify or to know the differences among individuals.

Hence we can conclude that personality is unique and specific. It is dynamic, never fixed and rigid and it includes all the behavior patterns, i.e. cognitive, conative and affective. It is the combination of inner qualities as well as the outer qualities of an individual. So it cannot be judged by only looking at the physical appearance, rather it is the study of totality.

Check your own progress – 1

i. Identify the different approaches of defining personality.

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ii. List three common basic characteristics in all the definitions of personality.

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1.2.3 Determiners of Personality

You have already come to know that personality is a set of qualities or attributes that make a person distinct from another. It is the pattern of long-lasting characteristics that differentiates a person from other persons. The unique pattern of behavior makes each individual unique. Personality of an individual is depends highly on his or her heredity and the environment or simply, you can say that personality development is the product of heredity and the environment.

- **Heredity** : Heredity is the genetic transmission of characteristics from parents to offspring. It refers to those factors that were determined at conception. Physical structure, facial attractiveness, gender, temperament, muscle composition and reflexes, energy level, and biological rhythms are some examples of characteristics that are generally considered to be either completely or significantly influenced by the parents of an individual. Heredity also includes aptitude or the capacity to learn a skill or inclination for a particular kind of knowledge. For example, the son of an actor is expected to inherit the genes of his father. His acting capacity is immense because he is born with that ability.
- **Environment** : The environmental factors that influence your personality formation are the culture in which you are brought-up, the norms among your family, friends and social groups, and many others that you experience. The environment to which we are exposed plays a substantial role in shaping our personalities.
- **Situation** : A third factor, the situation, influences the effects of heredity and environment on personality. Generally, an individual's personality is stable and consistent, but it changes in different situations. The different varying situations demand different aspects of one's personality. We should not, therefore, consider personality patterns in isolation.

1.2.4 Personality and Education

Why is the concept of personality important in education? Healthy and appropriate development of individual and his personality may be considered as one of the aims of education. To achieve this aim, Education has to be well-rounded and not just concerned with the subject matter. Education has to be so arranged that it helps the processes of personality development.

Personality enters into three aspects of education, namely *administration, instruction and achievement*. You know that, *Administration* involves relationships among persons and the relationships are not only within one level, but between different levels in the hierarchy of an educational institution. Supremacy of one over another and enmity to win the praise of boss or students frequently bring about stressful situation. How individuals handle such stress depends on their personalities.

Again, *Instruction* is a social situation of a classroom in which the teacher occupies the leader's position. In a classroom, a teacher requires certain personality traits as he or she has to perform some special role. During teaching, certain kinds of events take place between teacher and students which involves give and take. This involves emotions which may create anxiety for both the groups-teacher as well as students. The whole situation is dependent on the personality of the teacher, how he/she handles the young students.

It is known to you that *Achievement* is highly influenced by personality factors in students. The fear before examination is crippling, the subjects may be tedious due to dislike of teacher, and hence failure to recall; such situations happen frequently with students. Due to lack of application, most of the students are unable to achieve according to their ability. So, it is necessary to build up one's own personality in

order to face such situations and *Education* is expected to play the guiding role in achieving this.



1.2.5 Methods of Studying Personality

The methods of studying personality can be clustered, broadly into three classes, namely, Clinical, Case studies and Self-report and Experimental methods. They are described below -

- **Clinical method** : Clinical research relies upon information gathered from clinical patients over the course of treatment. Many personality theories are based upon this type of research, but because the research subjects are unique and exhibit abnormal behavior, this research tends to be highly subjective and difficult to generalize.
- **Case studies and Self-report method** : These methods involve the in-depth analysis of an individual as well as information provided by the individual. Case studies depend heavily on the interpretation of the observer, while self-report methods depend upon the memory of the individual concerned. Hence, these methods tend to be highly subjective and it is difficult to generalize the findings to a larger population.
- **Experimental method** : Experimental methods are those in which the researcher controls and manipulates the variables and measures the results. This is the most scientific form of research, but some aspects of personality such as motivations, emotions, drives etc can not be experimented. These aspects are internal,

abstract, and extremely difficult to measure. As such, experimental method is not applicable in such cases.

Check your own progress - 2

i. What are the determiners of personality ?

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ii. Fill in the blanks.....

- a. Instruction is a social situation of a classroom in which the teacher occupies the _____ position.
- b. Administration involves relationships among persons between different levels in the hierarchy of an _____.
- c. Achievement is highly influenced by the _____ factors in students.

1.3 THEORIES OF PERSONALITY

Why are theories of personality important ? The reason is that its definition depends upon which theory you are using. Theories are of central importance in studying personality. Theories serve several purposes. First of all, they organize what is already known or assumed about a total set of data. Secondly, theories also serve what is called a heuristic function. That is, they suggest, by organizing the important facts, exactly what kind of research is needed to fill in missing facts. Finally, theories provide a formal statement of the central principles of its subject matter.

Psychologists have developed several theories of personality to study the structure and growth of it. These theories try to describe the basic structure and underlying entities involved in personality along with the processes by

which these entities interact. These theories of personality in general can be classified into the following broad categories:

- **Theories adopting the Type Approach :** The view point of Hippocrates, Kretschmer, Sheldon and Jung belong to this category.
- **Theories adopting the Trait Approach :** Theories like Allport's and Cattell's theory of personality are based on the trait approach.
- **Theories adopting the Type cum Trait Approach :** Eysenck's theory of personality belongs to this category.
- **Theories adopting the Psycho-analytical Approach :** The psycho-analytical theory of Freud, theory of individual psychology by Adler, analytical theory of Jung, social relationship theory of Horney and Erickson's theory of psychological development may be included in this category.
- **Theories adopting the Humanistic Approach :** Theories like Carl Roger's self theory and Maslow's self actualization theory belong to this category.
- **Theories adopting the Learning Approach :** Dollard and Millar's learning theory and Bandura and Walter's theory of social learning can be put in this category.

Here we will discuss only two types of theories, namely type and trait theories of personality. Personality type refers to the psychological classification of different types of individuals. Types are sometimes said to involve *qualitative* differences between people, whereas traits might be interpreted as *quantitative* differences. For example, according to type theories introverts and extroverts are two fundamentally different categories of people, whereas, according to trait theories, introversion and extraversion are part of a continuous dimension, with many people in the middle. Let us discuss these two theories elaborately.

1.3.1. Type Theories

Type theories are the early perspective on personality. These theories suggest that there are a limited number of "Personality Types" which are related to biological influences.

You are all aware of the fact that, it has been the nature of the people from the ancient times, to name and classify objects of his environment and human being into different categories as "Types". The old system of typology still continues and even in modern times, psychologists have developed various typologies which will be described in this unit. Greek physicians were the first in the fifth B.C., who classified people into four broad categories on the basis of emotional and temperamental characteristics. Many more scholars and psychologists tried to divide people into different types depending upon their own specific criteria.

You know that in ancient India, we had an advanced system of Ayurveda. In this advanced system, our ancient physicians broadly categorized all human beings on the basis of three elements in the body. The three elements that the Indian physicians theorize were Pitta (bile), Vata (wind) and Kapha (mucus). The dominance of one of these three elements determines the category of the person. It becomes visible that the systems of Hippocrates and Indian physicians were, more or less, similar.

- **Ancient Indians (Ayurvedic) Classification :**

As we have mentioned above, Ayurveda classifies man based on the presence of combination of elements of nature. According to this theory, the entire universe (living and non-living) is made up of five elements: air, fire, water, earth and ether (space), collectively called "Panchamahabhuta". These elements are the components of the Human body and depending on the composition of these elements in human

being; individuals are differing from one another. Some are loaded with the combination of air and ether (space), some are with increased amount of the combinations like water and space, or water and earth and so on. These types are shown in the Table-I as follows :

Table - I
Ayurvedic's Classification of Personality Types

Dominance of the Elements in the Body	Personality Types	Physiological/ Somatic Characteristics	Personality Characteristics
Air & ether (space)	Vata	Slightly built a little pigeon chested with dull dark hair and eyes, have dry rough and chapped skin, suffer from stiff joints, rheumatic problems and constipation.	Restless with active minds, Indecisive and emotionally insecure, poor in memory, tendency towards insomnia depression and night marish dream, good artists and enjoy travelling, solitary and rebellious.
Water & Earth	Kapha	Big boned, often overweight with a pale, smooth complexion, hairs are lustrous and wavy and eyes are wide and attractive, suffer from sinus problems, lethargy and nausea.	Need a lot of sleep, rational speak and move slowly. Calm and loyal, emotionally secure, experience romantic and sentimental dreams.
Fire & Water	Pitta	Average build, have a ruddy complexion or red hair, with moles, freckles or acne, tendency to go grey and bald early in life and often have green or very piercing eyes.	Intense, argumentative and precise with a critical sharp intelligence, make good leaders, at their worst they can be passionately angry, enjoy sports, hunting and politics and have vivid dreams

- **Hippocrate's Classification :**

According to Hippocrates, the human body consists of four types of humor or fluids. One pupil of Aristotle theorized that human body consist four fluids. The personality of an individual is typed by the dominance of one of them in the body. The four types are shown in the Table-II as follows :

Table - II
Hippocrates Classification

Sl. No	Humor	Temperament	Characteristics
1.	Blood	Sanguine	Active, hopeful
2.	Yellow bile	Choleric	Irritability, quick to anger
3.	Phlegm (mucus)	Phlegmatic	Calm, temperamentally sluggish
4.	Black bile	Melancholic	Depressed, slow and pessimistic

- **Kretchmer's Classification :**

Kretchmer classified all human beings into certain biological types according to their physical structure and had chosen following (Table-III) to define personality characteristics which are associated with physical make-up :

Table - III**Kretchmer's Classification**

Personality Types	Personality Characteristics
Pyknic (having fat bodies)	Sociable, jolly, easy-going, good-natured.
Athletic (balanced body)	Energetic, optimistic and adjustable
Leptosomatic (lean and thin)	Unsociable, reserved, shy, sensitive, pessimistic

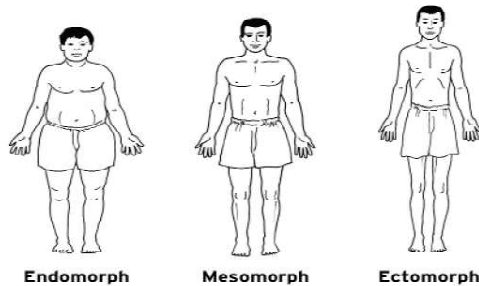
- **Sheldon's Classifications :**

Dr. William H. Sheldon, an American surgeon, classified all human beings into three types according to their physical structures and their corresponding temperamental characteristics. The three types are shown in the following table (Table - IV) :

Table – IV**Sheldon's Classifications**

Personality Types	Somatic Description	Personality Characteristics
Endomorphic	Person having highly developed viscera but weak somatic structure (Like Kretschmer's Pyknic type)	Easy-going, sociable and affectionate
Mesomorphic	Balanced development of viscera and somatic structure.(Like Kretschmer's athletic type)	Craving for muscular activity, self-assertive, loves risk and adventure.
Ectomorphic	Weak somatic structure as well as undeveloped viscera (Like Kretschmer's leptosomatic)	Pessimistic, unsociable and reserved.

According to Sheldon, the three body types are based on the three tissue layers of human body: endoderm, mesoderm and ectoderm. Each of these associated with personality characteristics, representing a correlation between physique and temperament.



Sheldon's three basic somato-type

The word *Somato* means a body-type which is based on Selfdoms' method of classifying the human physique.

Carl Jung's classifications :

In his book *Psychological Types*, Carl Jung had classified human beings on two behavioral dimensions: extrovert and introvert; in accordance with their social participation and social interest.

The extrovert is directed outward, toward people and objects, and the introvert is directed inward, toward concepts and ideas. Contrasting characteristics between extraverts and introverts include the following:

- Extroverts are *action* oriented, while introverts are *thought* oriented.
- Extroverts seek *breadth* of knowledge and influence, while introverts seek *depth* of knowledge and influence.
- Extroverts often prefer more *frequent* interaction, while introverts prefer more *substantial* interaction.
- Extroverts recharge and get their energy from spending time with *people*, while introverts recharge and get their energy from spending time *alone*.

Thus extrovert means “outward tuning” and introvert means “inward tuning”. First one draws liveliness from action; they are inclined to act, then reflect and then act further. The second one acquires energy through action; they prefer to reflect then act and reflect again.

Check Your Own Progress - 3

i. Write two features of type theories and trait theories.

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ii. Match the following (on the basis of Hippocrate’s Classification) :

Humor	Temperament
a) Blood	Melancholic
b) Yellow bile	Sanguine
c) Phlegm (mucus)	Choleric
d) Black bile	Phlegmatic

iii. Define Extroverts and Introverts as described by Jung.

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1.3.2. Trait Theories

The trait approach to personality is one of the major theoretical areas in the study of personality. Trait theory suggests that individual personalities are composed of broad dispositions. Consider how you would describe the personality of a close friend. Probably you would list a number of traits,

such as *outgoing*, *kind* and *even-tempered*. A trait can be defined as a relatively consistent and relatively permanent characteristic or behavior patterns that causes individuals to behave in certain ways. These patterns are said to be fundamental units of one's personality that can be discovered through observing one's behavior in different situations. For example, if a person behaves honestly in several situations, his behavior may be generalized as honest behavior and honesty is then said to be the behavioral trait of his personality. According to this approach, Personality of an individual is the combination of or sum total of these personality or behavioral traits which can be discovered through the continuous and objective observation of one's behavior. Trait theories viewed personality as the result of internal characteristics that are genetically based.

Unlike many other theories of personality, such as psychoanalytic or humanistic theories, the trait approach to personality is focused on differences between individuals. The combination and interaction of various traits forms a personality that is unique to each individual. Trait theory is focused on identifying and measuring these individual personality characteristics. Two personality theories namely, Allport's and Cattell's theories are said to be the best examples of the trait approach.

- **Gordon Allport's Trait Theory :**

In 1936, psychologist Gordon W. Allport (1897-1967) found that one English-language dictionary alone contained more than 4,000 words describing different personality traits. He was the first theorist who rejected the notion of a relatively limited number of type theory and adopted the trait approach for the description of individualized personalities. According to him traits are the basic units of personality. Each of us builds up a unique set of such organized predispositions termed as

traits in course of our continuous and gradual developments. He categorized these traits into three levels :

- **Cardinal Traits :**

These traits are primary traits that dominate an individual's whole life, a person becomes known specifically for these traits. People with such personalities often become so known for these traits that their names are often synonymous with these qualities. Do you know, it is not necessary that these traits are always present in an individual? Even if it is found hardly one or two are present in an individual. For example, if a person has humorousness as cardinal trait, he will bring a sense of humor into almost all situations irrespective of its actual demands. We know Lata Mongeskar for her melodious voice, Sachin Tendulkar for his cricketing excellence and so on. But some people like Sri Sri Sankardeva, Jyoti Prasad Agarawala, Bishnu Rabha, Bhupen Hazarika etc have many cardinal traits. Allport suggested that cardinal traits are rare and tend to develop later in life.

- **Central Traits :**

These are the general characteristics that form the basic foundations of personality. Although these central traits are not as dominating as cardinal traits, they are the major characteristics that you might use to describe another person. Traits like *intelligence*, *kindness*, *submissiveness*, *honesty*, *shyness* and *anxiousness* are considered central traits.

- **Secondary Traits :**

These traits are not as dominant as cardinal or central traits. These traits are related to attitudes or preferences and often appear only in certain situations or under specific circumstances. Some examples would be getting anxious while

communicating with a group or impatient while waiting in a queue.

According to Allport, cardinal traits are fundamental to one's personality. These traits combined with a few central traits forms the core of characteristics traits responsible for giving uniqueness to one's personality. The other remaining traits that one has may be common with other people. Thus trait theory propagated by Allport emphasized that despite differences in traits, individuals usually possess some common traits which are restricted by some cultural norms.

Allport's focus was on large number of behavioral traits to describe personality rather than explaining it like other psychological theory. For him, the dynamic organization of all the behavioral traits that an individual possess could be named as personality and it was that organization which could be responsible for his behavior in a particular way.

According to Allport, although traits lead towards the consistency in one's behavior these do not mean that trait of the personality must be considered as fixed and stable in all occasions. Again inconsistency does not mean the non-existence of a trait. Allport's theory of personality gives stress not only on traits but also on concepts like functional autonomy, individualized approach in the study of personality, and the discontinuous nature of the development of personality etc. That is why his theory so well-known and popular.

- **Raymond Cattell's Theory :**

Another significant trait theory is Cattell's (1973) theory. He was a British born American researcher. He had defined trait as a structure of the personality inferred from behavior in different situations. He described four types of traits namely :

- **Common traits :**

There are certain traits that are found widely distributed in general people or among all groups. Traits like honesty, aggression and cooperation can be called common traits.

- **Unique traits :**

These traits are possessed by particular persons as temperamental traits, emotional reaction and energy etc.

- **Surface traits :**

These traits can be recognized by overt manifestation of behavior like curiosity, dependability, tactfulness etc.

- **Source traits :**

These traits are the underlying structures or sources that determine the behavior of the individual. They are inferred from behavior. Dominance, emotionality etc are some examples of source traits.

The theory propagated by Cattell features certain definite dimensions to personality so that the human behavior related to particular situation, can be predicted. Cattell reduced Allport's main personality traits from initial list of over 4,000 to 16 personality traits. Can you imagine how he reduced these 4,000 traits to 16 traits? First he reduced Allport's main 4,000 personality traits down to 171, by removing uncommon traits and combining common characteristics. Then, he provided rating to a large sample of individuals for these 171 different traits. After that, he identified closely related terms using a statistical technique known as factor analysis and finally he arrived at the 16 key personality traits. According to Cattell, these 16 traits are the source of all human personality and he named these 16 basic or source trait dimensions as factors. For your convenience, these 16 basic trait dimensions are listed in the next page along with their illustrative descriptions of the related dimensions :

Trait Dimensions or Factors

Reserved, unfriendly (detached, critical, aloof, stiff)	Vs.	Outgoing, friendly (warm- hearted, easy going, participating)
Less intelligent (concrete thinking)	Vs.	More intelligent (abstract thinking)
Affected by feelings (emotionally less stable, easily faces reality, calm)	Vs.	Emotionally stable (mature, upset, changeable)
Submissive (humble, easily led, accommodating)	Vs.	Dominant (assertive, aggressive docile, stubborn, competitive)
Serious (sober, taciturn)	Vs.	Happy-go-lucky(enthusiastic)
Expedient(disregards, rules)	Vs.	Conscientious(persistent, moralistic)
Timid(shy, sensitive, fear bold)	Vs.	Venturesome (uninhibited, socially threat)
Tough-minded (self-reliant, clinging, over protected)	Vs.	Tender-minded(sensitive, realistic)
Trusting (accepting conditions)	Vs.	Suspicious(hard to fool)
Practical (down to earth concerns)	Vs.	Imaginative(bohemian, absent-minded
Forthright(unpretentious, genuine clumsy)	Vs.	Shrewd(socially aware, but socially astute)
Self-assured(secure, placid insecure, worrying, troubled)	Vs.	Apprehensive(self-critical, complacent)
Conservative(respecting traditional thinking)	Vs.	Experimenting(liberal, free-ideas)
Group oriented (a "joiner" and followers)	Vs.	Self-sufficient(resourceful, sound prefers own decision)
Undisciplined (careless of rules, follows own argues)	Vs.	Self-disciplined (socially precise, social exercising will power, compulsive.
Relaxed (tranquil, un-frustrated, composed)	Vs.	Tense(frustrated, driven overwrought)

Source : Cattell (1973)

Cattell made use of his 16 factors of basic dimensions in the measurement of personality by developing a personality

inventory known as Cattell's Sixteen Personality Factors Inventory (16PF). The inventory consists of multiple choice questions like :

- I generally prefer persons who are
 1. Somewhat reserved
 2. Somewhat outgoing
 3. moderate

Thus, Cattell tried to illustrate and predict the behavior of individuals on the basis of their personality traits. By applying factor analysis technique to the observable behavior; he identified the basic dimensions of personality and then developed instrument to measure these dimensions.

Like all the other theories, this theory also has some limitations. Cattell's Sixteen Personality Factor theory has been greatly criticized by many researchers, mainly because of the errors occurred in computation. As you know, computer programs for factor analysis did not exist during Cattell's time and hence calculations were done by hand; so there may be possibility to occur some errors.

Check Your Own Progress - 4

i) Write true or false :

- a. Cardinal traits are the primary traits that dominate an individual's whole life.
- b. It is not true that the central traits are the general characteristics that form the basic foundations of personality.
- c. Secondary traits are the most dominant among all the traits.
- d. Despite differences in traits, individuals usually possess some common traits which are restricted by some cultural norms.
- e. Traits lead towards the consistency in one's behavior, hence trait of the personality must be considered as fixed and stable in all occasions.

ii) Identify the different traits given by Cattell

.....

1.4 LET US SUM UP

In this unit you have learnt that whenever we talk of a person, we generally talk about his/her personality. We have mentioned several definitions of personality and among them Allport's definition is very comprehensive and it includes all the aspects of an individual's personality.

Again, personality is the product of heredity and the environment and a third factor, the situation, influences the effects of heredity and environment on personality. Education has to be well-rounded and not just concerned with the subject matter so that it can achieve its aim: *the all round development of an individual*.

Although psychologists have developed several theories of personality to study the structure and growth of it, here you have studied only two types of theories, namely type and trait theories of personality. Types are said to involve qualitative differences between people, whereas traits might be interpreted as quantitative differences among them. .

KEY TERMS

1. **Trait** : A trait can be thought of as a relatively stable characteristic that causes individuals to behave in certain ways.
2. **Type** : Personality category in which broad collections of traits are loosely tied together and interrelated"
3. **Personality** : the enduring characteristic of an individual that describes patterns of thinking, feelings and behavior
4. **Temperament** : The distinguishing mental and physical characteristics of a human.

SUGGESTED READINGS

1. Babladelis, G. : *The Study of Personality: Issues and Resolutions*, CBS College Publishing. 383 Madison Avenue, New York. (1984)
2. Chauhan, S.S. : *Advanced Educational Psychology*, Vikas Publishing House Pvt. Ltd., Masjid Road, Jangpura, New Delhi-110014.(2003)
3. Kupuswamy, B. : *Advanced Educational Psychology*
4. Mangal, S.K. : *Advanced Educational Psychology*

PROBABLE ANSWERS TO THE CYPs

CYP -1

- i. The different approaches of defining personality are:
 - Personality as a Stimulus,
 - Summative Approach,
 - Integrative Approach,
 - Totality View and
 - Personality as Adjustment.
- iii. The three common basic characteristics in different definitions are:
 1. No two individuals have similar personality.
 2. Personality is the product of its own functioning. That means the accumulated past experiences of one, shapes his / her personality by continuous interaction with the environment.
 3. All the definitions give stress on the need of understanding the meaning of individual differences. Personality is that feature which

- i. The determiners of personality are : heredity, environment and situation.
- ii. Answers of fill in the blanks :
 - a) Educational Institution,
 - b) Leader's
 - c) Personality.

- i. Two features :
 1. Types are qualitative differences between people and traits are quantitative differences.
 2. According to type theorist introverts and extroverts are two different categories of people but trait theorist says that introversion and extraversion are part of a continuous aspect, with many people in the middle.
- ii.

Humor	Temperament
a) Blood	Sanguine
b) Yellow bile	Choleric
c) Phlegm (mucus).....	Phlegmatic
d) Black bile	Melancholic
- iii. An extrovert is someone who likes to be social. His/her interests mostly lie with the other people and the physical environment. He/she takes pleasure in activities like parties, community activities, public demonstrations, political groups etc. On the other hand, an introvert person is reserved and less outspoken in groups. He/she often takes pleasure in solitary activities like reading, writing, fishing, hiking etc.

CYP - 4

- i. a) T, b) F, c) F, d) T, e) F
- ii. The various traits given by Cattell are source traits, surface traits, unique traits and common traits.

MODEL QUESTIONS

- 1. What is meant by personality? Write a brief note on Ayurvedic's classifications of personality types.
- 2. Write short notes on
 - a. Determiners of personality,
 - b. Sheldon's Classifications,
 - c. Carl Jung's Classification
 - d. Hippocrates Classifications
 - e. Personality traits.
- 3. Explain in detail Gordon Allport's Trait Theory.
- 4. Describe Raymond Cattell's Theory of personality.

BLOCK – IV
PERSONALITY
UNIT - II
ASSESSMENT OF PERSONALITY
PROJECTIVE TECHNIQUES
(Word Association Test, Rorschach Test, TAT)

STRUCTURE

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Meaning and Nature of Projective Techniques
- 1.4 Classification of Projective Techniques
- 1.5 Word Association Test
 - 1.5.1 Analysis of Word Association Test
- 1.6 Rorschach Ink - Blot Test
 - 1.6.1 Test Materials
 - 1.6.2 Administration
 - 1.6.3 Scoring
- 1.7 Thematic Apperception Test (TAT)
 - 1.7.1 Test Materials
 - 1.7.2 Administration and Instruction
 - 1.7.3 Scoring and Interpretation
- 1.8 Evaluation of Projective Techniques
- 1.9 Let Us Sum Up
- 1.10 Key Words
- 1.11 Reference and Suggested Readings
- 1.12 Model Questions

1.1 INTRODUCTION

In the previous unit you have learnt the meaning and concept of personality, and its different theories. You have come to know that personality is a complex concept and there is no general agreement of the concept among the psychologists. But they believe that personality is the totality of an individual's behavior. You have also understood that theories of personality are categorized as type and trait theories.

In this unit, we shall discuss the techniques of personality assessment. This is personality assessment is very important to know the human behavior, and proper techniques may be able to provide the criterion of personality assessment. It is very important for the teachers and parents to know their students and children in a better way.

Since, the very concept of personality is a complex issue, it is very difficult to assess personality by adopting one or other kinds of techniques. Therefore, we have a number of techniques of personality assessment which are broadly divided into three categories, viz. subjective techniques or self report inventories like interview, questionnaire, etc.; objective or observational techniques like observation, rating scale, etc.; and projective techniques.

In this unit, only the projective techniques will be discussed. They are the latest techniques of assessing personality. Our discussion in this will be restricted to three projective techniques only. They are Word association Test, Rorschach Ink Blot Test and Thematic Apperception Test (TAT).

1.2 OBJECTIVES

After going through this unit, you will be able to:

- Explain the meaning of projective technique.

- Describe the features of projective technique.
- Classify the projective techniques.
- Describe the word association test.
- Describe the Rorschach Inkblot test.
- Differentiate between Word Association test and Rorschach test.
- Describe Thematic Apperception Test.
- Find out the basic differences of Rorschach and Thematic Apperception Tests.
- Examine the applicability of projective techniques in personality assessment.

1.3 MEANING AND NATURE OF PROJECTIVE TECHNIQUES

Projective techniques of personality assessment are the indirect measures of personality. Frank (1939) introduced the term 'projective method' for describing a category of tests for studying personality with unstructured stimuli. In projective tests, the individual is given an unstructured situation to which he has to respond. The most important assumption of the projective technique is that while responding to an unstructured situation, an individual projects his own feelings, needs, emotions, motives without being aware of doing so. Thus, in a projective test, the individual has ample opportunity to project his own personality attributes that are mostly latent and unconscious in the interpretation of an unstructured situation.

A very comprehensive definition of projective techniques has been given by Frank as a kind of "x-ray" into those aspects of personality which subjects either cannot, or will not openly reveal. "Presumably the test format allows the subject to expose core ways of organizing experience and structuring life inadvertently as meanings are imposed on and reactions made to a stimulus having relatively less structure and cultural patterning."

From the above description, we may draw out the main features of projective techniques as follows:

1) Ambiguous materials : In projective techniques, materials used are ambiguous and unstructured in nature. Ambiguous, vague and unstructured materials mean that it has no definite meaning.

2) Evoke responses from the unconscious : It is based on the assumption that the test materials evoke responses from the unconscious of the subject. The subject projects his inner feelings in the test situations.

3) Multidimensionality of responses : The subject can respond to the material in a variety of ways, viz. physical, intellectual, social, emotional, etc. There is freedom to respond on the part of in their subjects own ways.

4) Freedom to respond : The subject is not restricted as regards the nature of responses. The subject is provided full freedom to respond to the test materials.

5) Holistic approach : In projective techniques, attempt is made to study the totality of behavior. They emphasize the molar approach to understand personality.

6) Answers are not right or wrong : Here the responses of the subjects are not scored or evaluated as right or wrong. They are evaluated qualitatively.

7) Purpose of the test is disguised : The purpose of the projective test is not disclosed to the subject so that the subject will not become test conscious and hide his real feelings.

1.4 CLASSIFICATION OF PROJECTIVE TECHNIQUES

There are different types of projective techniques, and different psychologists have classified them into different ways. The earliest classification of projective techniques was done by Frank (1939). The basis of Frank classification was the nature of response evoked by the materials of projective techniques.

He classified it in as constitutive – constructive, interpretative, refractive and cathartic.

Lindzey (1959) classified projective techniques into five categories, viz. association technique, construction technique, completion technique, expressive technique and choice technique. He classified these techniques on the basis of the responses of the examinees.

Best (1978) also classified projective techniques into four categories viz. association, completion, role – playing and creative or constructive.

If we compare the classifications of projective techniques suggested by Frank, Linzey and Best, we will be very clear that the different categories are overlapping. In order to reduce the confusion and overlapping, we may classify all the projective techniques into three broad categories, such as the pictorial techniques, verbal techniques and the expressive techniques.

1) Pictorial Techniques

The techniques include all those situations where the unstructured situation consists of vague and ambiguous pictures and the examinee is to respond towards those pictures. Examinees response may be in terms of a few words as is done in Rorschach test, or in terms of a series of sentences as is done in the TAT.

2) Verbal Techniques

In this technique, the stimulus materials are presented in verbal form, such as, in terms of words or incomplete sentences. The word association test and the sentence completion test are the best examples of this kind.

3) Expressive Techniques

This technique incorporates all those situations whereby the examinee is given an opportunity to express his personality

through some manipulation and objective tasks. Painting, drawing, playing with dolls, role-playing are some common expressive techniques for personality assessment.

Check Your Progress - 1

Note : Write your answers in the space given below.

1. Examine the meaning of projective technique.

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2. State the nature of projective techniques.

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3. Mention the type of projective technique.

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1.5 WORD ASSOCIATION TEST

Word association test is a verbal technique of projective techniques. Verbal techniques are those techniques in which stimulus materials are verbal and where the examinees are also required to give their responses verbally towards those stimulus materials.

The word association test is one of the popular projective device for assessing personality. This test requires

the examinee to tell the very first word that comes to his mind after listening to the stimulus word. The examiner notes down the response and the reaction time taken to respond towards each stimulus word.

Word association test was first devised by Galton in 1879. Later on, early experimental psychologists like Wundt and Cattell introduced this technique to study thinking processes. The Clinical psychologists also became interested in the technique and started using it as a means of exploring emotions, conflicts and anxieties. Krepelin used the technique in the exploration of personality of mentally ill persons. However, Jung in 1910 made a systematic effort to introduce the technique in his psychoanalysis. Jung presented a standard list of 100 words (some neutral and some emotionally toned).

1.5.1 ANALYSIS OF WORD ASSOCIATION TEST

Jung's main analysis included the analysis of time taken in responding (reaction time) and the content of the responses.

A larger time taken is indicative of some conflict, anxieties, repressed experiences and signs of emotional embarrassment. Delays indicate that those words touched off painful experiences and threatened to bring to light the anxiety-provoking or guilt-laden materials or closed to the repressed experiences.

The content of the response is analysed from the angle of contrast (black-white, day-night), being unusual (chair-sea, road-bird), suparordinate (cow-animal), clang association (land-hand, village-college), etc. A large number of unusual responses such as 'pen – bear', etc. are taken to be indicative of mental illness.

Jung also studied the retest behavior in the word association (which included both neutral and emotional words) and then, the examinee was again administered the test with the instruction to recall the response given previously. Changes in

the response were taken as important clues for further exploration of emotional complexes of the individual.

Check Your Progress - 2

Note : Write your answers in the space given below.

1. Write a brief note on development of word association test.

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2. Name the different aspects of analysis of word association test.

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1.6 RORSCHACH INK - BLOT TEST

Rorschach test or Rorschach inkblot test comes under the type of pictorial techniques of projective techniques of personality assessment. It is one the most popular and widely used projective technique. It was developed by a Swiss psychologist named Herman Rorschach in 1921. He developed it to make a diagnostic investigation of personality as a whole. We should keep in mind that the Rorschach test is a measure of both intellectual and non-intellectual traits of personality.

1.6.1 TEST MATERIALS

Rorschach investigated with a large number of inkblots out of which only 10 inkblots that differentiated most between various psychiatric syndromes were finally selected to constitute the test. The Rorschach test consisted of ten cards, each of which contained a bilaterally symmetrical printed inkblots and 11 x 9 inches in size.

Five inkblot cards (cards I, IV, V, VI & VII) are made in shades of black and gray, two cards (cards II & III) contain bright patches of red in addition to the shades of black and gray and the remaining three cards (cards VII, IX & X) contain several pastel shades. An inkblot like that used in the Rorschach test is illustrated in Figure 1.1 given below :

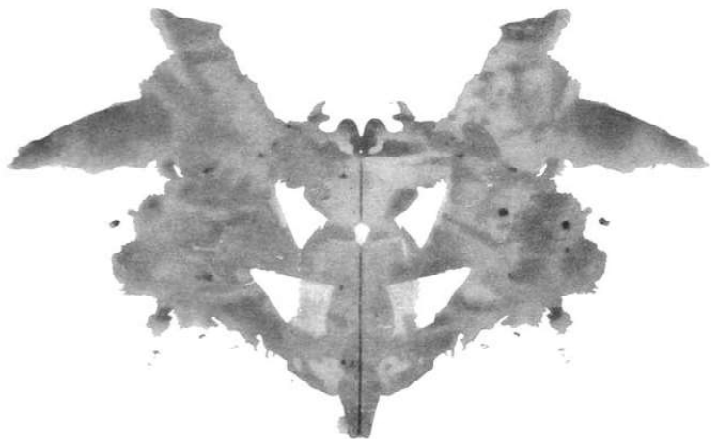


Fig. 1.1 : Inkblot Used in Rorschach Test

1.6.2 ADMINISTRATION

Rorschach test is used individually as well as collectively. The administration of this test is conveniently divided into three stages :

First stage : The performance proper

Here, the examinee is given to seat and the examiner develops a close rapport. Afterwards the examinee is given the instruction on the test. The basic instruction of this test is like this: “What might this be?” Klopfer and Kelley modified and extended the basic instruction of Rorschach as, “People see all sorts of things in these inkblots, now tell me what you see, what it might be for you, what it makes you think of.”

The examiner carefully notes down the following events :

1. The examiner notes down the reaction time.
2. He systematically notes down the position of the card when the response is being given.
3. The responses are recorded verbatim.
4. The examiner records the total time for which the subject keeps each card.

Second stage : Inquiry

It is the second stage. It usually follows after all the 10 cards have been administered during the first stage. The basic purpose of inquiry is to provide all the information necessary for scoring the response accurately. It consists of asking the examinee questions about each of his response. Inquiry is basically made to allow the examiner to obtain further information regarding the examinee’s responses and to help the examinee to clarify his responses by adding and expressing more about what had already been said. The examiner should follow the following principles of inquiry.

1. The examiner must frame appropriate questions. Questions should be asked only when the examiner is in doubt of its location or meaning.
2. The inquiry questions should be framed in a non-direct way.
3. Inquiry question should be brief, precise and helpful in scoring.

Third Stage : Testing-of-the-Limit

The third stage is not required for all examinees. When the examinee gives responses which are uncommon and not ordinarily found in most of the Rorschach protocols, then it is required. In such a situation, testing-of-the-limit is done through adequate encouragement by the examiner in order to see whether the examinee is capable of changing the response in order to evoke the responses found in most of the protocols.

1.6.3 SCORING

In the Rorschach test, ‘scoring’ refers to the classification of responses into the different categories so that the product may reveal the personality of the examinee as a whole.

From the point of view of scoring, there are four main categories of classification of responses. These four categories are :

1. Location
2. Determinants
3. Contents
4. Popular responses and original responses.

Now let us to discuss these categories one by one.

1. Location : Location is the first and easiest system in Rorschach interpretation. It refers to the part of the blot, which produces a particular response. The scoring based upon location of the response is represented with symbols. A summary showing the symbols, their descriptions and the criteria of scoring on location of the Rorschach test is given below :

Symbols	Description	Criterion
W	Whole response	When all portions of the blot are used in giving a response
DW/DdW	Confabulated whole response	When secondary emphasis is given to the interpretation of the blot as a whole and the primary emphasis is on a detailed
D	Usual or common detail response	When response is given on the basis of frequently or commonly identified area of the blot
Dd	Usual or uncommon detail response	When response is given on the basis of frequently or uncommonly identified area of the blot
S	White space response	When response is given on the basis of white space area of the blot (usually scored in combination with W, D and Dd)
DdD	Confabulated detail response	When secondary emphasis is given upon a usual detail area and primary emphasis is given upon uncommon or unusual detail area

2. Determinants : Determinants refer to the features of the blot which have produced the particular response. It is the second most important phase of the scoring the Rorschach test. This scoring in system is the most complex of all the phases.

Originally, Rorschach (1921) suggested five symbols for the scoring of determinants, i.e. F for form, M for human development; and three for colour response – FC for form – colour, CFC for colour – form, and C for colour response. But in the subsequent revision, he extended it to nine categories. Let us to understand this system of scoring in the following description.

Table : Symbols, Category and Description of Rorschach Determinants

F	Form	Description
M FM M	Movement	Human movement response Animal movement response Inanimate or inorganic movement response
C CF FC Cn	Colour (Chromatic)	Pure colour response Colour – form response Form – colour response colour – naming response
C' C'F FC'	Colour (achromatic)	Pure achromatic colour response Achromatic colour-form response Form-achromatic colour response
T TF FT	Texture (shading)	Pure texture response Texture – form response Form- texture response
V VF FV	Dimensionality Depth or vista (Shading)	Pure vista response Vista – form response Form – vista response
Y YF FY	General Diffuse (shading)	Pure shading response Shading – form response Form – shading response
FD	Dimensionality (based on form)	Form based dimensional response
rF Fr (2)	Reflection and pairs	Reflection – form response Form – reflection response Pair response

3. Contents : A final task in scoring response on the Rorschach test is to select the appropriate content. It is done by appropriately selecting the symbols to represent the content.

Originally, Rorschach in 1921 used only six symbols for the scoring of the content. They were H (human), Hd (human detail), A (animal), Ad (animal detail), I.S (landscape) and Obj (inanimate objects). After Rorschach several psychologists found that these six categories did not provide an

adequate distinction among the content categories. As such, they developed their own symbols based upon Rorschach's original symbols to represent the content categories in detail. The longest list containing of 35 content categories was provided by Beck (1944) and the shortest list consisting of 23 contents was provided by Klopfer and Davidson (1962).

The most common categories of content which are acceptable to most of the psychologists are given below :

H, (H), Hd, (Hd)	for human response
A, (A), Ad, (Ad)	for animal response
(An)	for anatomy
(Na)	for nature
(Bt)	for botany
(Bl)	for blood
(Cg)	for clothing
(Fd)	for food
(Fi)	fire
(Hh)	for household
(Ls)	for landscape
(Sx)	for sex
(Xy)	for X-ray

4. Popular and original response : The popular or P responses are those which occur frequently in the Rorschach protocols. Originally, Rorschach (1942) made no mention of the popular responses – vulgar responses. According to him a popular (P) response indicates the ability for conventional perception. Any response to be recognized as a P response should occur at least once in every three protocols. Klopfer and Davidson (1962) have developed a list of popular response on the basis of their clinical experiences using one in three criteria.

Rapaport (1946) defined the P response as that which occurs at least once in every four or five protocols.

Rorschach suggested scoring for the original response. He defined the original or O response as a response that occurs no more than once in one hundred protocols. Therefore, original responses are rare and creative responses. On the basis of the form quality, the O response is divided into two categories. An original response having a clear and distinct form is scored as O+, whereas O- is scored for vague and indistinct original response.

Klopfer and Kelley (1942) consider the scoring of the original response as 'helpless enterprise' because the number of such responses is unlimited.

Check Your Progress - 3

Note : Write your answers in the space given below.

1. Mention the activities followed in the administration of Rorschach inkblot test.

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2. State the main aspects of scoring of the Rorschach test.

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3. Write a brief note on popular and original response.

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1.7. THEMATIC APPERCEPTION TEST (TAT)

The Thematic Apperception Test, popularly known as TAT, is another projective test commonly used in clinical and non-clinical setting for personality studies. The TAT was first published by Murray in 1935, under the head “A Method for investigating fantasies: the Thematic Apperception Test” in Archives of Neurology and Psychology. Later on, Murray and Morgan (1938) working at the Harvard Psychological clinic, published a book viz. Exploration in Personality in which the detailed analysis of TAT appeared. TAT is to reveal “some of the dominant drives, emotions, sentiments, complexes and conflicts of personality. Special value resides in its power to expose the underlying inhibited tendencies which the subject or the patient is not willing to admit or cannot admit because he is unconscious of the theme.”

In the TAT, two terms are used, viz. Thematic and Apperception. The term thematic has been derived from the term “thema” which refers to a subject or topic on which a person thinks, speaks or writes. Murray defined thema as an interaction of the need and press variable. Need means a hypothetical process within the organism which stimulates for covert or overt action. Press refers to a force in the environment which may facilitate or interfere in the satisfaction of the need of the organism.

The second term of the test ‘apperception’ refers to a clear perception involving definite recognition or identification. Apperception is different from perception in the sense that perception sometimes can be vague or indistinct.

1.7.1 TEST MATERIALS

The standard TAT consist of 19 cards containing vague or ambiguous pictures in black and white plus one blank card.

There are 31 cards (30 pictured cards plus one blank card) in a series and these cards are used in a various combinations depending upon sex and age. The maximum number of cards to be administered to any one individual is 20. Cards for a specific sex group are distinguished by letter symbols:

F for adult female

M for adult male

B for boys under 14

G for girls under 14

BM for both boys under 14 as well as adult males

GF for both girls under 14 as well as adult females

BG for both boys and girls under 14

Cards have none of these symbols such as 1, 2, 4, 14, 15 etc. which are meant for both sexes and all ages.

1.7.2. ADMINISTRATION AND INSTRUCTION

TAT pictures are administered individually as well as collectively to a group of subjects. The experimenter first establishes close rapport with the subject and does not disclose the purpose of the test. After establishing close rapport, the examiner provides instruction to the subject. The test is administered in two sessions. Instructions are different for the first and second sessions, normal adults, children under 14, poorly educated adults and psychotics. Murray (1971) recommended an interval of at least 24 hours between the two sessions. Cards to be used are different from first session to the second session. In a clinical setting most clinicians use only 10 cards selected according to the purpose at hand.

Card no. 16 which is a blank card is preceded by a special instruction like “see what you can see on the blank card. Imagine some picture here and describe the story.”

The responses of the examinee are recorded verbatim and comments by the examiner are allowed after the story for the first card is completed. Following the same procedure for other 9 cards, the first session is to be completed. After a gap of 24 hours, the second session starts which is allowed to be completed in the same way.

When all the 20 cards have been given, Murray recommends a process of interview which may be held either immediately or after a few days. The purpose of the interview is to know what sources or associations the examinee used for the stories- whether the source of the ideas of the stories is his private experience, or novels or the experiences of relatives and friends.

1.7.3 SCORING AND INTERPRETATION

The scoring and interpretation of the TAT stories is the next important task to be accomplished by the examiner. The scoring is not separable from the interpretation in the TAT. There is no formal scoring (except Hero, Need, Press, Thema and outcomes) of any kind by the TAT users. The purpose of the TAT is to reveal the contents of the personality such as drive, need, fantasies, complexes, conflicts, etc.

In interpreting TAT stories, Murray makes the following two basic assumptions:

1. The characteristic of the hero of the story broadly represents the tendencies of the examinee's personality.
2. The situation which surrounds the hero of the story represents the various facets of the examinee's life situations containing his past, present and future environment.

Some TAT interpreters like Tomkins, Wytt, Rapaport, Bellak, Arnold, etc. have suggested different techniques for analyzing the stories. Among all the different techniques,

Murray's techniques with some modifications are popular and frequently used. The most widely used categories for analyzing the TAT stories are hero, need, press, outcomes and thema. Now let us discuss them separately.

The Hero : The hero of the story is the central character about whom the entire events revolve. The interpreter recognizes the hero of the story by his principal traits like superiority, inferiority, leadership, belongingness, mental abnormality, criminality, quarrelsomeness, etc. A story may have more heroes.

Motives, Trends and Feelings of the Heroes : Under this head, Murray explains that the interpreter should carefully analyze overt behavior of the hero. These overt behaviours reflect the needs and emotions of the hero. Those needs whose total scores are very high or very low, should be carefully analysed in relation to each other.

Forces of the hero's environment : Under this head of the TAT stories, emphasis is placed upon environmental variables or forces (called press) which can either facilitate or interfere with the gratification of the needs of the hero. It includes details of objects and persons.

Outcomes : Outcomes refer to how the story concludes. There may be a happy ending or unhappy ending. In assessing outcomes, the comparative strength of the forces emanating from the hero and the strength of the forces emanating from the environment are compared and analyzed.

Themas : Themas refer to the interaction of need(s) of the hero with environment of forces, i.e. press combined with the successful or unsuccessful outcomes arrived at by the hero of the story. The thema is a synthesis of factors analyzed into hero, need and outcome. Thema may be simple or complex.

Interests and sentiments : Under this heading, choice of topics of the story and ways of handling them are analyzed. The fundamental assumption here is that the hero's interests and

sentiments as revealed and by which they are handled are the examinees's own interests and sentiments.

Check Your Progress - 4

Note : Write your answers in the space given below.

1. Write a brief note on administration of the Thematic Apperception Test.

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2. Write the different aspects of scoring and interpretation of TAT.

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1.8 EVALUATION OF PROJECTIVE TECHNIQUES

Let us evaluate the projective techniques, used as a personality assessment techniques as stated under :

1. Fakability : In projective techniques, answers given by the examinee do not hurt or pose any threat to their self image. They never try to conceal or distort true answers. There is evidence to support the fact that examinee can provide fake response even on standard projective techniques.

2. Objectivity : It is said that projective techniques are less objective than other techniques of personality assessment. There is no objective procedure of scoring and interpreting the responses.

3. Standardization : Most projective techniques are not standardized. They lack uniformity in scoring and interpretation. The examiners have a free play in scoring and interpreting the responses.

4. Reliability : The reliability of most of the projective techniques is usually very low. There is no uniform standard way of scoring and interpreting the response and the tests do not yield consistent scores from retesting upon the same subject.

5. Validity : Like reliability, the validity of the most projective techniques is unsatisfactory. In reality, most of the traits measured by the common and standard projective techniques are such that they require construct validity which has not been obtained.

Check Your Progress - 5

Note : Write your answers in the space given below.

1. Briefly evaluate the projective techniques of personality assessment.

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1.9 LET US SUM UP

So far, we have discussed that projective techniques of personality assessment refer to an indirect measure of personality. These techniques are widely used in personality assessment.

Projective techniques possess some distinct features. They are used for ambiguous materials; capacity of evoking responses from unconscious; multidimensionality of responses; freedom to respond; holistic approach; and disguising the response. These techniques can be classified in the pictorial, verbal, and expressive techniques.

Word association test is the oldest technique of the projective techniques. It was first devised by Galton in 1879.

Another popular and widely used projective technique is Rorschach Test or Rorschach Inkblot Test devised by Herman Rorschach in 1921. 10 Inkblot cards are used in this test. It can be used individually as well as collectively. The process of conducting the test is divided into three phases, i.e. the performance process, inquiry and testing of the limit. Scoring of the Rorschach test is based on the criteria of location, determinants, content and popular response and original response provided by the subject.

Thematic Apperception Test, popularly known as TAT was devised by Morgan and Murray in 1935. The term 'thema' means a subject or topic on which a person thinks, speaks or writes. Apperception means a clear perception involving definite recognition or identification. TAT consists of 19 picture cards and one blank card. This test can be administered individually as well as collectively. Before administering the test, instruction is given to the subject. Instructions given are different in different categories of individuals. The cards are administered one by one. The most widely used categories for analyzing the TAT stories are hero, need, press, outcomes and themes. However, projective techniques are criticized due to lack of objectivity, validity and reliability.

1.10 KEY WORDS

- Validity :** It refers to truthfulness of the test. If the test measures what it intends to measure it implies having validity of a test.
- Reliability :** It implies the consistency of results of a test.
- Objectivity :** Objectivity implies free from personal views.
- Association :** Association refers to the relation or connection between two or more objects, events, or any phenomena.
- Subject :** Testee or examinee upon whom a test is conducted, or the person who responds to the test items.
- Response :** Reply or answer to a question or test item.

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1.12 MODEL QUESTIONS

1. Give the meaning of projective techniques and describe its features.
2. Describe Word Association Test as a technique of assessing personality.
3. Describe the procedure of administration and scoring of Rorschach Test.
4. Describe the procedure of administration, scoring and interpretation of TAT.
5. Critically evaluate projective techniques of personality assessment.

BLOCK – V
PSYCHOLOGY OF ADJUSTMENT

UNIT – I
ADJUSTMENT AS ACHIEVEMENT
ADJUSTMENT AS PROCESS
ADJUSTMENT MECHANISM

STRUCTURE :

- 5.0 Objectives
- 5.1 Introduction
- 5.2 Meaning and nature of adjustment
 - 5.2.1 Psychology of adjustment
 - Check your progress
- 5.3 Adjustment as Achievement
 - 5.3.1 Criteria for good/Ideal Adjustment
- 5.4 Adjustment as a process
 - 5.4.1 Areas of adjustment
 - 5.4.2 Theories or models of adjustment
 - Check your progress
- 5.5 Adjustment Mechanisms
 - 5.5.1 Characteristics of adjustment Mechanisms
 - 5.5.2 Classifications of Adjustment Mechanisms
- 5.6 Some common Mental Mechanisms
 - Check your progress
- 5.7 Let us sum up
 - Key Words
 - References
 - Probable Answer to CYP
 - Model questions

5.0 OBJECTIVES

After studying this unit you will be able to –

- Understand the concept and aspects of adjustment
- Able to analyze the process of adjustment and the criteria of good/ideal adjustment mechanisms
- Define the characteristics of adjustment mechanisms
- Name some common adjustment mechanisms

5.1 INTRODUCTION

In the last chapter you have studied about personality, about the meaning and concept of personality, theories of personality and traits of personality, assessment of personality and its assessment techniques. Now we will discuss an important factor of personality development which is called ‘psychology of adjustment’. Various techniques, mechanisms responsible for personality development will acquaint you to comprehend the idea about the mental state of a person and how he adapts himself to a situation. Adaptation or adjustment plays a key role to form and develop a good mental health.

5.2 MEANING AND NATURE OF PSYCHOLOGY OF ADJUSTMENT

The dictionary meaning of the word ‘adjustment’ is to fit oneself to make suitable for adopt and accommodate in a situation. When we make an adjustment to a situation it means we mould ourselves in the best possible way for a harnessed being. “Cut your coat according to your cloth” is an appropriate proverb for adjustment. As an example we can say, modern

technology has made it possible to adjust the temperature inside dwelling house with air condition machines. The very word ‘adjustment’ is commonly used in ‘zoology’ and ‘psychology’ in their own terms. Let us discuss.

Adjustment is a word, basically used in ‘zoology’ to define as a conformation to the environment achieved by an organisms’ structure, function, organs and cells. ‘homeostasis’ is the main goal of adjustment process, which means to restore the original balance after changing the various physical process.

In ‘Educational Psychology’ adjustment indicate a healthy, energetic participation in group activity, grasping of responsibility at times to the point of leadership and above all, avoidance of any self deception in the process of adjusting. The well-adjusting child adopts himself to school environment with an initiative amounting to a full sharing of best fits – with others and the optimum development of himself.

Another interpretation of adjustment is essentially a process of re-learning. Although a variety of factors influence adjustment directly or indirectly, many cases of mal-adjustment are primarily the result of unfavourable learning experiences. Adjustment has both a negative and a positive aspect. From the negative side, we may say, the elimination or reduction of emotional maladjustment is sought; whereas, from the positive side the focus is upon healthy, realistic way of thinking and acting. So, adjustment is a learning process and because of it, the well-adjusted teacher by accepting each individual learner as he is tries to helping the learner towards what he become. In each and every form of development of a child, experiences and fashions are particular habits or devices of adjustment.

James Drever (1952)

“Adjustment means the modification to compensate to meet special conditions.”

Webster (1951)

“Adjustment is the establishment of a satisfactory relationship, as representing harmony conformity, adaptation or the like.”

Carter V. Good (1959)

“Adjustment is the process of finding and adopting modes of behaviour suitable to the environment or the changes in the environment.”

From the above mentioned definitions we can say –
“Adjustment involves the gratification of a person’s need as governed by the demands of various environmental situations.

5.2.1 PSYCHOLOGY OF ADJUSTMENT

Let us now discuss how adjustment has become a part of psychology. From the above discussion we see that, adjustment involves the various activities of individual’s life, e.g., in vocational, social and economic problems of the environment. Adjustment is attached to human life and it is as old as human race in earth.

Gates and others (1948) mentioned that adjustment in one sense, is a continual process by which a person’s behaviour varies in order to produce a more harmonious relationship between himself and his environment. It is a state, a condition of harmony arrived at by a person whom we call as well adjustment has direct relation to human behaviour and human behaviour is the subject matter of psychology. Hence, it is psychology of adjustment.

Systematic emergence of this concept starts from Darwin (1859). At that time the concept was purely biological and he used the term adaptation. The adoptability to environment at hazards goes on increasing as we proceed on phylogenic scale from the lower extreme to the higher extreme

of life. Many species of animals, insects and germs perish as the environment changes.

Man is blessed with a great capacity to adapt to new situations. He as a social animal, can not only adapt, to the physical changes, but also adjust with the social pressures. Thus, we see that adjustment means the response to the demand and pressures of social environment imposed to his individual yearnings. For example, a child is born and brought up in the society. He is bound by many social rules and norms. His personality develops in the continuous process of interactions with his family and his environment. He also has his natural instinct like hunger, thirst and weariness etc., for a healthy life, these instincts also should be addressed. As a result of the conflict, the two types of demands, adjustment becomes a complicated process for the individual. Conflicts among various demands on a person create special problems of adjustment. If you justify one of the conflicting needs, another one will produce frustration and lead sometimes to the abnormal behaviour.

Psychologists discuss adjustment from two important points of view – these are – (i) Adjustment as an achievement, and (2) Adjustment as a process. The first one emphasizes the quality or efficiency of adjustment and the other lays emphasis on the process by which an individual adjusts to his external environment. These two points of view of adjustment may be called as the aspects of adjustment. Let us discuss the aspects of adjustment below.

CHECK YOUR PROGRESS

- a. Give a brief description of the meaning and nature of adjustment.
- b. Why does individual face problems while adjusting to the environment ?

5.3 ADJUSTMENTS AS ACHIEVEMENT

As it is mentioned that adjustment has two aspects, one of which you know that, is adjustment as achievement. How efficiently an individual can perform his duties, problems in different circumstances are known as achievement. Business, education, military and other social activities need efficient and well adjusted personnel for the progress of the nation. Public related services need balanced persons and they can perform all sorts of work efficiently. As we discuss adjustment as an achievement, then, there should be some criteria to judge the quality of adjustment.

“Adjustment as achievement indicates the effectiveness with which an individual can function in changed circumstances and is as such, related to his capacity and then regarded as an achievement that is accomplished either badly or well” (Lazarus, 1976)

5.3.1 CRITERIA FOR IDEAL ADJUSTMENT

As you know that, no universal criteria can be set forth towards a value generated judgement. Adjustment is also like a value generated judgement and there is no strict demarcation among different criteria. The psychologists evolved some criteria to judge the adequacy of adjustment as achievement. The criteria are as follows :

1. **Sound health** : A well adjusted person is free from any kind of physical ailment. All ailment influences the body and the work at hand. So, sound health is an ideal criterion for adjustment.
2. **Psychological comfort** : A well adjusted person must be free from any kind of psychological complexities as obsession, Compulsion, anxiety and depression etc. All

these psychological discusses may hamper the smooth performance of adjustment.

3. **Work efficiency :** the person who makes full use of occupational or social skill may be termed as a well adjusted person in social set up.
4. **Social acceptance:** Everybody wants social acceptance, person who obeys social norms, beliefs and self values, is a socially adjusted person. But the values generated judgements' are not equally accepted in all society. So, the person has to make a balanced behaviour as acceptance of the society.

5.4 ADJUSTMENT AS A PROCESS

Now we deal with adjustment as a process – the other aspect of adjustment. We know that process is a course of action, so, adjustment as a process indicates the ability of a person to adapt to a situation or the environment. The outcome of the process, i.e., the obtaining of end-result, is achievement. When a poor child studies under the street light; as he has no light arrangement at home it is said to be a process of adjustment.

Adjustment as a process describes and explains the ways and means of an individual's adaptation to his personal and social environment without reference to the quality of such adjustment or its outcome in terms of success or failure. It only shows how individual or group of people cope under changing circumstances and what factors influence this adjustment.

Now-a-days psychologists target adjustment process as a risk factor for the achievement and want to analyze it. Piaget, Adler, Jung, and Freud studied adjustment processes from various perceptions.

Piaget used the term “accommodation” and “assimilation” to represent the alteration of oneself or environment as a means of adjustment. A person who carries

his values and standards of conduct without any change and maintains these in spite of major changes in the social climate is called assimilation. The man who takes his standard of habit from social context and changes his belief in accordance with the approved values of the society is called accommodation.

Adler attaches the principles of hedonism and the sex impulses. He advocated quite a different approach to understand human behaviour. He found that people can restrain their sexual impulses in order to attain the goal they set for themselves. He criticized Freud for his undue emphasis on the gratification of sexual impulses and interpreting human behaviours as been directed towards seeking pleasure. Adler concluded that the desire for superiority is the universally accepted goal of human behaviour and neurosis is a device to dominate in various works of life.

The child is born helplessly and is unable to meet his needs and lastly, finds himself inferior. Adler gives the feelings of inferiority as the primary cause of stress. The child struggles hard to overcome the feelings of inferiority and tries to become master of his environment. He has to strive for the feeling of inferiority and helplessness to attain personal power or superiority. All persons are striving for excellence in different fields using a variety of approaches. The desire to dominate is the central core of human behaviour in the choice of profession, vocation and friends etc.

Jung accepting the views of Adler and Freud advocates against sex or mastery as the only factor for human motivation. To Jung, man is more than a creature desiring sexual gratification and desiring superiority over others. He is a member of an intricate local environment. The conflicts within the individuals are the manifestation of larger conflicts within society. Neurosis is thus, nothing less than an individuals' effort, however, unsuccessful to work out a solution for universal problems. The specific pattern of child's emotion is influenced by his social environment and biological needs. The

manifestation of maladjustment varies in different social groups.

Let us now consider some salient features of adjustment as an interaction between a person and his environment.

Continuous Process : The process of adjustment is continuous. It starts at one's birth and goes on without stop till one's death. A person as well his environment is constantly changing as also are his needs in accordance with demands of the changing external environment. Consequently, the process and terms of an individuals' adjustment can be expected to change from situation to situation. According to Arkoff (1968) there is nothing like satisfactory or complete adjustment which can be achieved once and for all time. It is something that is achieved by us.

Two-way Process : Adjustment is a two-way process not only indicating the process of fitting oneself into available circumstances but also the process of changing the circumstances to fit one's needs. Emphasizing this two-way nature of adjustment process R.W. White writes : (1956)

“The concept of adjustment implies a constant interaction between the person and his environment, each making demands on the other. Sometimes adjustment is accomplished which the person yields and accepts the conditions which are beyond his power to change. Sometimes it is achieved when the environment yields to the person's constructive activities.”

5.4.1 AREAS OF ADJUSTMENT

Adjustment in the case of an individual should consist of personal as well as environmental components. These two aspects of adjustment can be subdivided into smaller aspects of personal and environmental factors. Adjustment although

seeming to be a universal characteristic or quality may have different aspects and dimensions.

Although the numerous efforts at measuring adjustment through inventories and other techniques, these aspects have been identified and various tests have been constructed to assess their dimensions. For example, Bell (1958) has taken five areas or dimensions in his adjustment inventory namely, home, health, social, emotional and occupational.

Joshi and Pandey (1964) in their research study covering school and college students, have given eleven (11) areas or dimensions of an individual's adjustment.

1. Health and physical development
2. Finance, living conditions and employment
3. Social and recreational activities.
4. Courtship, sex and marriage
5. Social, psychological relation
6. Personal psychological realtions
7. Moral and religion
8. Home and family
9. Future – vocational and educational
10. Adjustment to school and college work
11. Curriculum and teaching

In this adjustment of a person is based on the harmony between his personal characteristics and the demands of the environment of which he is a part.

Now, you have studied the areas of adjustment and adjustment as a process. This will expand your view about the psychology of adjustment and I like to inform you about the theories of adjustment. It will extend your knowledge more brighter about the adjustment. Here theories are projected as model.

5.4.2 THEORIES OR MODELS OF ADJUSTMENT

You will be curious to know as to, why do some people adjust to their environment and others do not. There are some theories and models describing the pattern of adjustment for answering such questions. Let us discuss some of the important models.

1. **The Moral Model** : This represents the oldest view point about adjustment or mal-adjustment. All adjustment and maladjustment should be judged in terms of morality that is absolute norms of expected behaviour. The supporters of this model advocates that the supernatural Gods, Goddess, saintly great souls were responsible for making one happy, healthy, prosperous person and they became adjusted; evil supernatural forces like demons, devils, etc., were blamed for making one indulgent in behaviour against the norms and became maladjusted. However, as the medical and biological sciences advanced and scientific reasoning gained a firm footing in the 19th century, the moral model was replaced by medico-biological model.
2. **The Medico-biological Model** : this model supports genetic, physiological, bio-chemical and hygienic functions which are responsible for a person being adjusted. Disease, injury, infection, hormonal imbalance are the causes of mal-adjustment. This model is still unduly accepted. However, it is not correct to assign physiological or organic causes to all mal-adjusted. For this situation, another model has come up.
3. **The Psycho-analytic Model** : This model begins from the psycho-analytic works of Freud, Adler, Jung and other neo-Freudians. These psychologists theorized mind and its three layers – conscious, sub-conscious and unconscious. In the context of the layers of mind man can adjust the situation or mal-adjust with it.

4. **The Sociogenic or Cultural Model :** Man is a social animal and the impact of the social or generations influence him directly. So, according to this model, the society in general, and cultural in particular affects one's way of behaviour and turns one into adjustment and mal-adjustment.

CHECK YOUR PROGRESS :

1. Explain adjustment as achievement. What are the criteria for ideal adjustment?
2. Justify adjustment as a process.

5.5 ADJUSTMENT MECHANISM

Now we, shall discuss an important topic which relates to some mental techniques. These techniques help an individual to defend himself from unexpected situation, in terms of adjustment to a situation. Here, we will discuss the meaning, characteristics and classifications of adjustment. After study of this chapter you will be able to comprehend an idea about the adjustment mechanisms.

Meaning, Can you adopt or adjust to all situations in your life with equal mental strength ? Absolutely not, but why ? The answer is that you are not equipped with the some mental strength to accept all events due to various reasons. But you are to whether everything with some mental techniques. These mental techniques which people adopt are almost same. These techniques are like readymade spare parts of the machine. You can use these where these are necessary. So these techniques are termed as mental mechanism. They are used to overcome creating unbearable mental situations. Individuals use these techniques to defense or escape from conflicts and frustration. And are known as defend or adjustment mechanisms are habitual methods of overcoming mental blocks, reaching goals,

satisfying motives, relieving frustrations and maintaining equilibrium. Each person uses his own mechanism to maintain balance in his personality in the involvement. You may suppose, “grapes are soul” is a good example for adjustment.

5.5.1 CHARACTERISTICS OF ADJUSTMENT MECHANISM

Let us try to know some characteristics of adjustment mechanism, adjustment mechanisms are universal :

1. Adjustment mechanisms are almost used by all people. Things constitute is inferred from the behaviour of the individuals. They have protective orientation, because they protect the individuals' personality, self esteem, from the danger of anxiety, and frustration and any denial.
2. **Unconscious and fearful** : Adjustment mechanisms are of unconscious manners and therefore, they are accompanied by lot of apprehension. The mental risk is always with the person. He fears his own motive. As it is unconscious so fear and danger are manifest in adjustment mechanisms, as for example – repression. Repression is a mental state accompanied by fear.
3. **Temporary in Nature** : Mechanical adjustments are temporary in nature. Because its main object is to refrain from unexpected situation for the moment. So the influence of the adjustment mechanism does not last long.

5.5.2 CLASSIFICATION OF ADJUSTMENT MECHANISMS

Psychologists classified the adjustment mechanisms. Gate and others () classified into three. (i) Mechanisms of denial, (ii) Mechanisms of escape (iii) Mechanisms of shift and substitution. All adjustment mechanisms may be brought under

the classifications. In the following pages we will explain the various adjustment mechanisms. Before it check your progress.

5.6 SOME COMMON MENTAL MECHANISMS

Fantasy : Efforts to reduce our frustration, to make an impossible to be possible are called fantasy. Fantasy is a mechanism of wishful feeling. Fantasy is at its peak during adolescence. When our thoughts can be realistic effort to remove the obstacles that make us anxious, the mental situation is called fantasy. Harassment the part of higher authority the urge to take revenge lies at dream and maintain a mental balance is an example of fantasy.

Simple Denial : Simple Denial is the easiest way to maintain balance of personality. The fact that could create in the mind is not bearable and by the simple denial, individual tries to a void situation. When children are playing attentively, if parents call them, the children will say they heard nothing. Adults are not always ready to admit frankly failures in their daily lives.

Aggression : Aggression is typical adjustment mechanism used as an attempt to hurt or destroy the source of frustration. Fearing of the result sheet in the notice-board by an unsuccessful student is an example of aggression. It is classified into two broad categories (i) Extra punitive, (ii) intro punitive.

Extra punitive responses are those in which the individual aggressively attributes the frustration to external persons or things. It may be a physical attack upon the source of obstacle a thing. Intro punitive responses are those – sometimes the person feels that he himself is the source of frustration. He criticizes himself and may inflict physical punishment on himself.

Compensation : Compensation is a tendency of every person to make up for the deficiency of one trait, in some then area. When a person feels weak and fails in one area, he compensates

in another field. He works hard to become strong and successful. The boy who is weak in studying compensates in sports. There is more interesting exam. All the compensation as Lord Byron compensates his physical weakness to verbal expression and become the best speaker of his time. Compensation is of five types.

1. **Direct compensation** : Direct compensation as understood with a good example. When an individual removes his specific weakness and frustration in the same field by unusual efforts. The boy who is weak in English in compensating when he tries to become strong by hard labour in the same field.
2. **Over compensation** : over compensation is called the process when an individual understands his outstanding weakness into an outstanding strength. For example a lame boy becomes an outstanding dancer in future.
3. **Substitute compensation** : When a person is weak in one area and sees no scope for improvement in that area the person attempts to become outstanding in another area. A weak student may compensate by becoming an outstanding athlete.
4. **Indirect compensation** : The most common form of indirect compensation is that sought by parents through their children, the father who wanted to be an engineer but failed, enjoys his son's success as an engineer. This compensatory mechanism used by parents, sometimes pushes into unsuitable programme.
5. **Neurotic Compensation** : when normal compensatory mechanism fails, then, starts neurotic compensation. The mentally weak attempts to get first division but his ability are not equal to it. He fails in his attempt again and again. He develops neurotic compensation, he falls ill and develops symptoms stay at home and become the centre of attention.

Sublimation : Sublimation is the most advanced, highly developed and constructive mechanism. Through the use of sublimations, the energy of personally or socially interfere able impulses and drives in successfully directed into consciously acceptable channels. Their direct aims thus become deflected and redirected toward substitute goals. It contributes to charter and personality development. Sublimation plays an important role in the preservation and resolution of emotional conflict, anxiety and in the maintenance of emotional and mental health. Sublimation creates an outlet for the blocked and intolerable drives.

Alport defines sublimation, “As a device by which an individual’s anti-social impulses are made socially acceptable.”

Coleman , “The gratification of sexual desires in non sexual activities that serve as a substitute.”

Sublimation is a healthy practice. It plays a major role to develop traits like studiousness, research ability, curiosity and literary interest. Sublimation can be done through denying, music, arts and crafts etc.

Identification : Identification is a mental mechanism which operating outside and beyond conscious awareness through which an individual in varying degree, makes himself like someone else, he identifies himself with another person. Adolescents identify themselves with some political leaders, or actors and actress and attempts to acquire heir characteristics. This results in the unconscious taking over.

Projection : one of the most common adjustment mechanism is projection, which is used by all people in day to day life. When we defend ourselves against our pre-pressed guilt feelings by projecting them into other things and people, then this process of adjustment is called projection. Freud used projection as a process or mechanism by which we ascribe the external world the reject impulses of the id. It is a mechanism which relieves frustration of the individual.

Projection Mechanism has a wide reality inside the classroom. Children, who are poor in studies, often become very critical of the teacher. They frequently act as if they were expecting a teacher or another child to display towards them the hatred,, love or contempt which they themselves feel.

Projection is helpful for the unsatisfactory solution to frustration. It may also harm the person because it involves distorting an important part of the world.

Rationalism : when individual justifies his belief and action by giving reasons other than those which activated or motivated him is called rationalism. It is a compensation of reality that falsified circumstances. The child, who fails in the examination, blames the paper setters or the evaluating system.

Rationalization may be called as a mild form of repression in which facts are distorted rather than forgotten. There are two types of rationalization – (i) sour grapes (ii) Sweet Lemon.

Regression : It is a ‘back tracking’ process, what is going to the past either in memory or in behaviour. The frustrated adults in fulfilling his needs may return to more primitive modes of behaviour. The child-like cry by an adult is an example for regression. Some psychologists call regression the process of fixation. The old man who always talks of his youth, shows the mechanism of regression. Sometimes the old man tries to turn again in his ‘good old days’.

Some regression is normal for maintaining mental balance in the social environment. Ability to regress is an asset of teachers and leaders of youth groups to enjoy youthful jokes and similar times of juvenile guilt. So, regression may be called as a rapport between the present and the future like of a person.

Repression : Repression is a mental form of effort to forget, so it is called motivated forgetting. Freud and White had done a lot of work on repression. Repression is a dynamism which is fundamental in Freudian theory of personality and as White

said, “Repression is the forgetting or ejecting from awareness of impulses in oneself that might have objectionable consequences.” It is an attempt by the individual to push into the unconscious those expressions and thoughts which are in conflict with his moral standard or which are painful to contemplate. Repression is caused due to forces active within ourselves. We try to forget what makes us feel inferior, ashamed, guilty and anxious.

Repression and suppression both are differentiated by the mechanism used. In repression painful and anxiety producing experiences are unconsciously and automatically excluded from the conscious thinking process whereas in suppression consciously decide to exclude an idea from our thought, our action and conversation.

Reaction Formation : Reversal formation of behaviour is reaction formation. It is to substitute of the causes of anxiety formation. Repression is accompanied by behaviour and feeling exactly opposite to the represented tendency. For example, a boy fearing the graveyard, singing loudly, an extremely aggressive man, afraid of his own destructive impulses, acts humble.

CHECK YOUR PROGRESS

1. What do you mean by adjustment mechanism?
Discuss.
2. Discuss the classification of adjustment mechanism

5.7 LET US SUM UP

The typical word ‘adjustment’ means fit, make suitable, adapt, arrange in dictionary. The word in ‘zoology’ to define

conformation to the environment achieved by an organism structure, functions organs and cells. In 'Educational Psychology' adjustment is interpreted as healthy, energetic, participation in group activity, grasping of responsibility at times to the point of leadership and avoidance of any self deception in the adjusting.

Adjustment involves various activities of individual life. Adjustment is, in one sense, continuous process by which a person varies his behaviour to produce a more harmonious relationship between himself and his environment.

Psychologists consider adjustment as a continuous process and analyze it as a factor of behavioural change. Behavioural changes may create problems in the formation of personality. Maladjustment leads to anxiety, frustration and other psych-neurotic problems. To make an ideal society, its individuals must be well adjusted.

Adjustment leads to achievement. Achievement means how efficiently an individual performs his duty in different circumstances. Society needs efficient and well adjusted personnel for the progress of the nation. Public related services need adjusted persons. There are some criteria (i) Sound health, (ii) Psychological comfort, (iii) Work efficiency, (iv) Social acceptance.

Adjustment as approach describes the ways and means of the adaptation of the environment for the individual himself and for the situation. As adjustment is a risk factor for achievement, this process must produce good result. Adjustment process is a two-way process, (i) continuous process and (ii) two-way process. The areas of adjustment are identified by psychologists. Bell identifies five areas, as for example, home, health, social, emotional and occupational. Joshi and Panday have shown eleven areas of adjustment. The psychology defines four theories or models of adjustment, namely, (i) the moral model, (ii) The medico-biological model.

(iii) the psycho-analytic model (iv) the psychological or cultural model.

Important adjustment mechanisms are (i) Fantasy, (ii) Simple denial, (iii) Aggression, (iv) Compensation, (v) sublimation, (vi) identification, (vii) Projection, (viii) Rationalism, (ix) Regression (x) Reaction formation, (xi) Negativity (xii) compensation.

KEY WORDS

Phylogenic :

Psycho analysis : A method of study psychology advocated by S. Freud.

Psychoses : Preliminary stage of mental disorder.

Psycho Neurosis : Mental-neurological stage of disorder

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PROBABLE ANSWER TO CHECK YOUR PROGRESS

Q. Give a brief description of the meaning and nature of adjustment.

Ans. : The dictionary meaning of the word 'Adjust' is fit, make suitable, adapt, arrange, But this particular word is used in zoology and educational psychology with specific meaning. In zoology, adjustment means process of conformation to environment achievement by an organism structure.

The matter of adjustment, as the psychologists propose is as a continual process by which a person varies his behaviour to produce more harmonious relationship between himself and his environment.

Q. Why is an individual prone to react to the environment ?

Ans. : An individual is surrounded by the environment. He is amidst the environment. So an individual has to adapt to his environment for his existence.

Q. Explain adjustment as achievement. Write some criticism for ideal adjustment.

Ans.: Adjustment means how efficiently an individual can perform his duties in different circumstances. Business, military, education and other social activities need efficient and well-adjusted men for the progress of the nation. Adjustment as achievement means the effectiveness with which the individual can function in changed circumstances and is, as such related to his adequacy and regarded as achievement, that is, accomplished either dissatisfactorily or efficiently.

Q. Justify Adjustment as process

Ans. : Adjustment as a process describes and explains the ways and means of individual adaptation to his self and his environment without reference to the quality of such adjustment or its outcome in terms of success or failure.

Q. What do you mean by Adjustment Mechanism

Ans. : Frustrated persons may react against the sources of frustration in different ways. He may physically attack the source in order to reduce his mental tension or

hostility; he may distract or destroy the object of frustration. There are some common ways which the individuals are to defend or escape from the sources of conflict or frustration which are known as adjustment mechanisms.

MODEL QUESTION

1. Explain adjustment as a process leading to achievement.
2. Define adjustment mechanisms. What are their main features?
3. Write short notes on sublimation, Repression.
4. Explain aggression and projection with examples.

BLOCK – V
PSYCHOLOGY OF ADJUSTMENT

UNIT – II

**CONCEPT OF MENTAL HEALTH, CAUSES OF
MALADJUSTMENT, MENTAL HEALTH
HAZARDS, FRUSTRATION & CONFLICT,
OPERATIONS OF FRUSTRATION,
TREATMENT : FOLLOW UP SERVICES**

STRUCTURE :

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Concept of Health and Hygiene
- 1.3 Meaning of Mental health and Mental Hygiene
- 1.4 Characteristics of a mentally healthy person
- 1.5 Mental Health hazards
- 1.6 Maladjustment-concept
 - 1.6.1 Causes of maladjustment
 - 1.6.2 Symptoms of maladjustment
 - 1.6.3 Detection of maladjustment
- 1.7 Frustration and conflict
 - 1.7.1 Causes of frustration
 - 1.7.2 Operation of frustration
 - 1.7.3 Meaning of conflict
 - 1.7.4 Types of conflict
- 1.8 Treatment and follow up services
 - 1.8.1 Medical or somatic therapy
 - 1.8.2 Psychotherapy
 - 1.8.3 Sociological therapy
 - 1.8.4 Counselling and guidance
- 1.9 Let us sum up
 - Key words
 - Reference
 - Probable Answers
 - Model Question

1.0 OBJECTIVES

A healthy individual is not only physically healthy but also mentally balanced. The modern concept of health extends beyond the proper functioning of the body. It includes a sound and efficient mind and controlled emotion. So mental health today is recognised as an important aspect of one's total health status.

Here in this block we will discuss the various aspects of mental health and hygiene.

After going through this unit you will be able to --

- Describe the concept and meaning of mental health and hygiene.
- Describe the characteristics of mentally healthy person.
- Analyze the causes and symptoms of maladjustment.
- Find out the causes of frustration.
- Discuss about the operations of frustration.
- Analyse the meaning and types of conflict.
- Discuss the treatment, follow up services of frustration and conflict.

1.1 INTRODUCTION

Mental health is a basic factor that contributes to the maintenance of physical health as well as social effectiveness. A person is healthy when his body and mind are working efficiently and harmoniously. He is skillful enough to be able to adapt to new situation and can make personal and social adjustment. On the otherhand, adjustment results in happiness if it implies that emotional conflicts and frustration have been resolved and relieved.

Keeping this in mind we shall discuss in this unit the concept and meaning of mental

health, mental health hazard, causes of maladjustment, causes and operations of frustration and the meaning and types of conflict. We shall also discuss about the treatment and follow up services.

1.2 CONCEPT OF HEALTH AND HYGIENE

Health : Health means the state of the body or mind. Now a days the concept of health of an individual indicates the total health status i.e. physical health as well as social effectiveness. A healthy person consists of a sound body and a sound mind. He is free from physical as well as any kind of mental disorder. Man is a psychophysical organism. So health is the positive state of all psycho-physical elements of an individual.

Hygiene : Hygiene means a science of cleanliness, free from germs, ailments etc. It includes not only the techniques of keeping a good physical health, but also the means by which we can keep ourselves mentally healthy and balanced. It is a study about causes, prevention and treatment of all kinds of psycho-physical disorder and problems.

1.3 MEANING OF MENTAL HEALTH

Man is an integrated psychosomatic unit so the behaviour of an individual is determined by both physical and mental factors. Now-a-days the modern concept of health includes proper efficient and harmonious functioning of body and mind. It means a healthy individual is not only physically healthy but also mentally healthy.

Mental health is recognised as an important aspect of one's total health status. It is a basic factor that contributes to the maintenance of physical health as well as social

effectiveness. It includes a sound efficient mind and controlled emotions. Let us now have a look at a few definitions of mental health. According to Hadfield “Mental health is the full and harmonious functioning of the whole personality”. In the words of Johns, Sutton and Webster “It is a positive but relative quality of life. It is a condition which is characteristic of the average person who meets the demands of life on the basis of his own capacities and limitations”. It is a positive, active quality of the individual’s daily living.

From this it can be said that mental health has two important aspects – individual and social. The individual aspect connotes that the individual is internally adjusted. He is self-confident, efficient and free from internal conflicts and tensions or inconsistencies. On the other hand, he is able to adapt himself to the new situations. He has social efficiency or he is acceptable as the member of the society.

Mental Hygiene : We have already discussed about mental health and its meaning. But it is felt very important now-a-days about how to keep and maintain health. The science which studies about mental illness, its causes and prevention along with the treatment is called mental hygiene. For a better understanding of the concept, let me provide you a few definitions. According to Crow and Crow “Mental Hygiene is a science that deals with human welfare and pervade all fields of human relationship” According to Hadfield “Mental hygiene is concerned with the maintenance of mental health and prevention of mental disorders” Thus, we have seen that, mental hygiene facilitates an individual to know all about his problems and adjust properly with them and lead a balanced and healthy mental life. It aims at preventing the mental health of an individual and developing such a personality in the individual so that he can adjust properly to his environment and face only minor conflicts and mental tension. Actually mental hygiene is not only related with the prevention and treatment of

mental disorders but it also concerned with the healthy and normal personality.

1.4 CHARACTERISTICS OF A MENTALLY HEALTHY PERSON

Generally we see the following characteristics of a mentally healthy person ---

- i. **Adaptability or resilient mind** : The individual who is adaptable to the changing conditions of his environment, receptive and not rigid in his behaviour can be said as mentally healthy.
- ii. **Socially adaptability** : A mentally healthy person is socially adaptable. He can participate in different social activities. His personality can function properly under strain and stress of emotional disturbances.
- iii. **Emotional control** : The emotions of a mentally healthy person are well trained and controlled. He is free from persistent emotional tensions in his life.
- iv. **Desires are in harmony and socially approve goals** : A mentally healthy person doesnot indulge in antisocial activities. His goal of life is in accordance with social norms. He fulfils his needs in harmony with other people.
- v. **As Insight into his own conduct** : A mentally healthy person can evaluate himself and has insight into his own conduct. He improves his behaviour on the basis of his self-analysis.
- vi. **Enthusiastic and reasonable** : A mentally healthy person has enthusiasm in life. He is devoted to his works and duties. He is reasonable in his actions and can accept criticisms sportingly.
- vii. **Good habits** : A healthy person has good habits. He is balanced and not easily irritated or annoyed.

- viii. **Philosophy of life :** The healthy person has his own philosophy of life. He develops balanced and healthy attitudes towards life. He feels the values related to life. It is said that a healthy person is in conscious control of his life.

In brief it can be said that mental healthy is a condition which permits the maximum development of physical, intellectual and emotional states of the individual so that he can contribute maximum to the welfare of the society and can also realise his ideas and aim in life.

1.5 MENTAL HEALTH HAZARDS

It is seen that mental health sometimes affected by physical, psychological or social barriers and it leads to mental illness and mental retardation, personality disorder, maladjustment etc. Let us have a look at some of the factors that are responsible for blocking mental development or are the causes of mental hazards are as follows --

- **Biological factors :** It includes some genetic factors that lead to psychosomatic disorders. Physical inadequacy, suffering from major diseases play an important role in psychosomatic disorders and adversely affect in the development of mental health and healthy personality.
- **Psychological factors :** Psychological factors like mental rigidity, high sensitivity to threat, stress, frustration and conflicts inadequate coping patterns, feeling emotional insecurity leads to mental hazards an individual.
- **Sociological factors :** Some social factors or social environment may also sometimes block the mental health development of an individual parents wrong handling, feeling of inferiority, improper interaction

with family members, over protection, over restriction and competition in the school as well as in the society leads toward mental health hazard of an individual.

Check your progress - 1

- I. Health means the total state of body and
- II. The science which studies about mental illness, its causes and prevention is called
- III. A mentally healthy person is emotionally controlled (True / False)
- IV. Mentally healthy persons can easily indulge in antisocial activities (True / False)
- V. Social environment may also sometime block mental development. (True / False)

1.6 CONCEPT OF MALADJUSTMENT

Literally, a maladjusted person means incapable of forming normal relationship with people owing to one's psychological problems. All of us know that man among all the living beings has the highest capacities to adapt to new situations. Man as a social being not only adapts to physical demand but he also adjusts to social pressures in the society. But sometimes he may not react properly towards the demands and pressures imposed upon him externally or internally. Such situation leads him towards the problem of maladjustment.

1.6.1 Causes of maladjustment

Maladjustment is a complex problem of human behaviour and no single factor can be pin-pointedly named as its cause. There are numerous factors in home, society and

school which lead to maladjustment. In this chapter we will discuss various conditions that lead to maladjustment.

- (a) **Physique** : The physique and appearance play an important role in the social development of a child. If the child is physically weak and ugly and has some sensory handicaps, he may be avoided by others. Comments from parents, siblings and strangers affect the behaviour of such children and they develop a number of problems resulting in maladjustment.
- (b) **Long sickness and injury** : Long sickness of a child affects his social and academic development and also affect his physical growth and leads to maladjustment.
- (c) **Poverty** : There is a positive correlation between poverty and maladjustment in children. Highest percentage of maladjusted children come from low socio-economic condition. The crucial factor in poor home is that the parents cannot even fulfill the legitimate needs of their children frustration of needs leads to maladjusted behaviour.
- (d) **Broken home** : Children in broken homes do not get the affection, love, sympathy and security. They are emotionally disturbed. Homes which are not broken but where there are constant conflict among all members also provide condition which affect the security, affection and mental stability. Children coming from such homes are often maladjusted than other children.
- (e) **Personal inadequacies** : Inadequacies in children frustrate their needs and create constant anxiety. The parents who are ambitious and set high goals for their children irrespective of their physical and mental abilities create frustration in their children and leads to maladjustment.
- (f) **Parental attitude** : The attitude of parents towards their children affects the adjustment process of child. The child who is rejected by his parents develops the feelings of

insecurity, helplessness and loneliness. Rejection, lack of affection may lead to maladjusted behaviour. On the other hand over protection of the child which lead to lack of responsibility, aggressiveness is also a factor of maladjusted behaviour.

- (g) **Value placed on sex of the child :** It is specially in India, parents differentiate between son and daughter. This partial treatment may lead their children to maladjustment.
- (h) **Adoption :** Generally, adopted children are maladjusted when they come to know the fact.
- (i) **Emotional shock :** Children who experience emotional shocks such as death, accident, riots flood etc. may manifest maladjustment in their behaviour.
- (j) **Social conditions :** Besides all these, some social condition like religious beliefs, lack of clubs, playgrounds and libraries to fulfill children's physical and mental needs, mobility i.e. whose family moves from one place to another, class differences, employment security etc. also make oneself restless, frustrated and maladjusted.

1.6.2 Symptoms of Maladjustment

It is very difficult to differentiate between adjusted and Maladjusted person only on the basis of observation in a particular situation. There are certain symptoms which give some indication of maladjustment. These symptoms are divided into following three categories ---

- (a) **Physical symptoms :** Stuttering, stammering, scratching head, facial twitching, biting nails, rocking feet restlessness, drumming with fingers and vomiting.
- (b) **Behavioral deviations :** Aggression hyperactivity, lying, negativism, bullying poor school achievement, sex disturbances etc.

1.6.3 Detection of Maladjustment

Actual detection of maladjustment requires professional skills of psychiatrist but one can help in detecting maladjustment in the following ways.

- i. **Observation and interview :** Behaviour of children can be observed in different situation like in playground classroom, library, club etc. and can reach a definite conclusion regarding individual cases of maladjustment.
- ii. **Use of test :** There are a number of psychological tests, inventories and rating scales which have been developed by psychologists to screen maladjusted children. Some of them are --
 - a) Huggerty-olson wickman behaviour rating schedule. It may be used to rate various traits of the behaviour
 - b) The Bell Adjustment Inventory” This inventory measure the adjustment of an individual in major life situations such as home, physical, emotional, school and social situations.
 - c) The Moony Checklist.
 - d) The Roger’s test of personality adjustment which is prepared to screen adjusted and maladjusted children.
 - e) Taylor’s anxiety scale : The scale may be used to screen children who have excessive anxiety.

Through these tests have already been developed yet it is felt a great need for developing more inventories or other measure that can screen adjusted and maladjusted children and adults.

Check your progress - 2

- i. A maladjusted person cannot easily..... with any new situation.
- ii. Stammering may be a symptom of
- iii. may be a crucial socio-economic factor of maladjustment.
- iv. Maladjusted children can be identified with the help of different tests. (True / False)
- v. Inadequate physical growth is not a cause of maladjustment. (True / False)

1.7 FRUSTRATION OF CONFLICT

Frustration : We all know that man is ambitious by nature. He has aspirations and desires to be fulfilled. He plans and strives hard for their realisation but it may be possible that despite his best planning and efforts he may not get the desired success. At times he finds himself in a state of confusion with all the paths ahead blocked with repeated failures he reaches a state or condition of frustration. So we can say that frustration is the unpleasant feelings that result when motive satisfaction is blocked or delayed. In order to have a clear understanding of it, let us go through a few definitions.

According to Carroll “A frustration is the condition of being thwarted in the satisfaction of a motive”.

According to Coleman “Frustration results when our motives are thwarted either by some obstacles that block or impedes our progress towards a desired goal or by the absence of an appropriate goal.

According to Gilmer “when there is some interference with our goal directed behaviour the result is frustration”.

These definition reveal that frustration is that stage or condition in which failure dominates the attempts or one feels a major obstacles in satisfying needs or reaching desires goals.

The causes of frustration – The causes of frustration may be studied under major heads – external factors and internal factors.

External Factors : The external factors can also be called environmental factors. These factors are generally present in one's environment and affect the individuals from outside. Let me tell you what the main external factors are ---

- i. **Physical factors :** Natural calamities obstacles present in the physical world like hailstorms, floods, droughts, earthquake fire accident etc. causes frustration in an individual.
- ii. **Social factors :** Social forces and social environment may also block the path of an individual either in the attainment of some important goal or in the satisfaction of one's basic needs and desires. In this way, they become the potential source for frustrating motivated individual. For example, a youngman of bright carrier may feel frustrated when he cannot take admission to a course because of his father's death.
- iii. **Economic factors :** Economic and financial factors contribute much in frustrating individuals. For instance a youngman may committ suicide as a result of frustration suffered by a long interval of unemployment.

Internal Factors : Internal factors are those which frustrate an individual from within these are also called as personal factors as the person himself is the cause of such frustration. Some of the internal factors of frustration are as follows ---

- i. **Physical abnormality on defects :** Some kinds of physical abnormality or defects like heavy or very lean and thin body an ugly face or dark complexion may constitute a source of frustration. Deficiency in one's

intelligence or backwardness in a particular subject may also frustrate an individual.

- ii. Conflicting desires of aims :** Frustration is also caused by the mutually conflicting desires of aims. To make a choice of one at the cost of other may become a cause of frustration. For example, a young woman who wishes to become a mother but avoids it due to the fear of losing her job may feel frustrated.
- iii. The individuals morality and high ideals :** An individual's moral standards, code of ethics high ideas may become a source of frustration to him. He is always caught between his superego and Id. At the same time when his ego fails to maintain a balance between the two he becomes frustrated. For example, a young man likes to become friends by with a girl but his moral standard does not allow him to do so.
- iv. Level of aspiration too high :** One may aspire very high inspite of one's in capabilities or human limitation. For example, a young man may aspire to become the captain of a cricket team but the fact is that he does not know how to play this game such aspirations are bound to result in frustration.
- v. Lack of persistence and sincerity in effort :** Frustration may be caused by one's own weakness in putting persistent continuous efforts in work. A person may remain inadequate if the does not put sincerity, attention and continuity in doing the work and that ultimately lead to frustration ?

1.7.2 OPERATION OF FRUSTRATION

The operation of frustration involves preventing the organism from making some response to attain the goal.

Prevention of response can be accomplished in several ways. Let me explain the important of them in the following ---

- i. **Withholding Reinforcement** : The first operation of frustration refers to withholding of the reinforcement that ordinarily occurs from an organism that has already been conditioned in a particular way. When a response is regularly reinforced and then extinguished, this operation is called as frustration by delay. Frustration by delay is very common in our life. The chain of responding is broken at some point by withholding of a reinforces, either primary or conditioned. The break can occur anywhere in the chain or just before the final reinforcement. The consequences of this kind of operation are frequently emotional anger or aggression. I am giving here an example, where a Child is impatient while waiting for his candy or one becomes annoyed when people are late for their appointment.

This operation of frustration has been experimentally studied by seers Hovland and Miller in 1940 and conducted an experiment to know the reaction to frustration by withholding reinforcement. It will fascinate you that a group of college students was kept awake through out the night (withholding sleep as reinforcement). During this period the students were subjected to a series of further frustration, such as forbidding to smoke, to converse and withholding food. The students show aggression towards the experimenter.

- ii. **Thwarting** : Second operation involves mechanically preventing a response from occurring. This operation is called frustration of thwarting. It means that at some point of an organism's activity a barrier is introduced and behaviour is prevented the chain of behaviours is broken and an obstacle is introduced that prevents the response to occur. The obstacles may be of many kinds.

Now, let us focus on some of the common obstacles which prevent organism to reach his goal and ultimately lead to frustration of needs.

- a) Physical obstacles like preventing some one to go somewhere, lock a door to block entry in the room etc.
- b) Socio-economic barrier like religious economic social and educational barriers.
- c) Sources from self : The source of thwarting may come from the person himself as limited intellectual abilities physical handicaps or lack of training.
- d) Authority : The behaviour of other people may operate as a constant source of frustration for most of us. Sometimes parents' attitude towards children creates tension and anxiety. Sometimes people in authority are autocrats. This type of behaviour on the part of administrator may cause frustration in his colleagues.
- e) Natural calamities : Natural calamities may prevent the individual to fulfill his motive such as flood, draught, epidemic, partition, fire, earthquake and war etc.

iii Conflicts : The third operation of frustration involves placing the organism in a conflict situation by making reinforcing stimuli simultaneously available for two incompatible responses. A conflict may be formally defined as the simultaneous arousal of two or more incomputable motives. Sometimes two motives coincide each other and satisfaction of one of the motives leads to the blocking or frustration of the other. Conflicting situation create tension and a feeling of restlessness in our mind. Continuous conflicting situation may lead to mental disturbance.

So after going through this discussion we can say that all these operations of frustration i.e. withholding reinforcement, thwarting and conflict prevent an organism to reach his or her goal and lead towards frustration.

1.7.3 MEANING OF CONFLICT

The term conflict is variously used. Here are a few usages of the term. According to Douglas and Halland conflict means a painful emotional state which results from a tension between opposed and contradictory wishes” According to Barrey and Lehner “Psychological conflict is a state of tension brought by the presence in the individual of two or more opposing desires”. Coleman stated “conflict is the anticipated frustration entailed in the choice of either alternative.

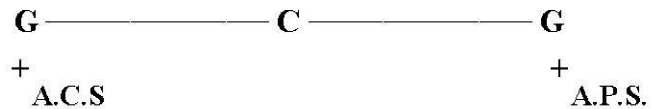
So conflict in the light of the above definition may be said as a painful state or condition of an individual which is the result of the presence of two or more desires or wishes in the individual and due to the individual being at the cross roads, not able to choose between the two opposing desires, and becomes tense and restless. Actually conflict in the present day is a natural psychological phenomena and each individual passes through the state of conflict several times in his life. I hope, by now, you have acquired a clear understanding of the term conflict. Now let me familiarise you with the different types of conflict.

1.7.4 TYPES OF CONFLICT

Conflicts may be classified into the following three categories --

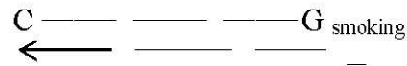
- i. **Approach** - approach conflict : When an individual has two equally attractive goals to achieve he temporarily

experiences a conflicting situation. For example, a boy who is selected for A.C.S and A.P.S. may be involved in conflict. This kind of conflicting situation may be shown by the following diagrams.

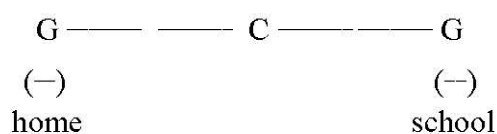


Here 'G' shows the goals and 'C' indicates conflicts. Here equal distance is seen to goal on both left and right side of 'C'.

- ii. Approach- avoidance conflict :** Sometime both negative and positive motives are involved. Very often a single goal may have both positive and negative attributes. For example, smoking may be enjoyable but it is a threat to health.



- iii. Avoidance – avoidance conflict :** When two unattractive alternatives operates simultaneous the individual attempts to avoid the situation. For example, a boy who is weak in studies and does not like to go to school but if he stays at home is rebuked by his parents. Then the boy tries to avoid both the negative situations. He stays between home and school.



Check your program – 3

- i. In frustrationdominates the attempts.
- ii. Physical May be a cause of frustration.
- iii. Conflict may be called as an for frustration.
- iv. Conflict is a painful state.
- v. There are mainly types of conflict.

1.8 TREATMENT AND FOLLOW UP SERVICES

We are very much aware of the fact that the undesirable behaviours are harmful to the individual as well as to the society. In order to serve the welfare of the individual every care should be taken to avoid the occurrence of such behaviour. Mental illness or abnormality in behaviour is an individual as well as situational problem and it is not possible to lay down a general treatment. For the treatment of a behavioural problem, efforts are to be made to bring about a change in the behaviour of the individual by his adjustment with himself and with his environment and thus ultimately restore his normal mental health. On the other hand a complete modification of the individual philosophy of life is required for bringing about a change in his behaviour. He must be made to harmonise his thinking, feeling and doing. For this the following measures may be adopted ---

- Medical or somatic therapy
- Psychotherapy
- Sociological therapy
- Counselling and guidance.

Let me explain these therapeutic measures in the following lines ---

1.8.1 Medical or somatic therapy

Medical therapy concerns with the physiological treatment of in this therapy measures like drug therapy and shock therapy are used. There are some psycho-therapeutic drugs like major and minor tranquilizers, anti-depressives which has widespread use and found useful the patients who are not benefited form drug therapy are recommended for shock therapy.

1.8.2 Psychotherapy

The majority of the cases of behavioural disorders or mental illness are the products of severe maladjustment caused by psychological factors. Physical or medical treatment in such cases does not prove much useful. Such patients need psychological treatment for solving their psychological difficulties and achieving better personality adjustment. This form of psychological treatment is known as psychotherapy. This therapy is done by a trained person known as therapist by establishing a psychological relationship with the patient for solving the patient's emotional difficulties and promoting adequate personality growth and adjustment.

1.8.3 Sociological therapy

The socio-cultural environment of the individual needs to be modified in such a way that he may not be subjected to further disharmony and maladjustment. Rather he should be able to get a pleasant and encouraging environment by establishing harmonious relationships with other social beings and opportunity to fulfill his basic needs. For this purpose the following measures may be adopted.

- ▶ He may be physically removed from one situation and placed in another like a boarding house.
- ▶ The attitude of the parents teachers and other toward him may be changed.
- ▶ More adequate recreational facilities, better living conditions, work placement and working condition may be provided
- ▶ The sociological therapy is considered as one of the best therapy for the treatment of behavioural problem of an individual.

1.8.4 Counselling and guidance

Counselling and guidance are the measures that frequently referred to treat properly the behavioural problems of an individual. Through counselling the client is given assistance in analysing his problem and assist him to solve his problem independently. Counselling is the easier means of recognising the state of conflict, depression, maladjustment or any kind of behavioural state. Generally counselling is considered as a professional task done by a professionally trained people, and it is expected that the counsellor should maintain a perfect control over his feelings while counselling.

Like counselling guidance is also a process of helping a person to overcome maladjustment and behavioural problems. Guidance involves two fold process, the process of developing in individual an understanding of his own conditions his strength and weakness and the process of assisting the individual to understand the influence of his environment. Guidance, further involves the process of helping to relate these two types of data -- the facts about oneself and the facts about one's environment and assist to lead a balanced life.

Check your progress -- 4

- i. Mental disorders can be removed through proper
- ii. Family environment is needed to be for treatment of a person with undesirable behaviour.
- iii. Counselling and is one of the most useful means of treating behavioural problems.
- iv. Medical treatment is not means of treating a mentally ill person (True/False)
- v. The Socio-cultural environment should be modified for the treatment of a frustrated person (True/False).

1.9 LET UP SUM UP

In this unit we have discussed about the issue of mental health which is recognised as an important aspect of one's total health status. On the other hand mental hygiene is the science that studies about how to maintain a balanced and healthy mental life. We have also learnt that there are some characteristics of a mentally healthy person like adaptability, a resilient mind, socially adaptability, emotional control, harmonious desires and socially approved goals, insight into his own conduct, enthusiasm and good habits and healthy philosophy of life etc. when a person becomes incapable of forming normal relationship with surroundings lead to maladjustment. We have analysed the many causes of maladjustment like physical inadequacy long sickness and injury, poverty, broken home, personal inadequacy, parental attitude, discriminating attitude on the basis of sex, adaptation etc. Frustration as we have discussed is the unpleasant feelings that result when motive satisfaction is blocked or delayed. There are so many external and internal factors that leads to

frustration. The internal factors are physical, social and economic. The internal factors are physical abnormality, conflicting desires or aims the individual morality and high ideals, higher levels of aspiration lack of persistence and sincerity in efforts etc. There are mainly three operations of frustration – withholding Reinforcement, thwarting and conflict. A conflict can be defined as the simultaneous arousal of two or more incompatible motives. It is a painful situation around because of two or more equally opposing desires and motives. There are mainly three types of conflicts -- The approach - approach conflict, the approach - avoidance conflict and the avoidance - avoidance conflict. The abnormality in behaviour and mental illness can be cured through proper treatment. Some of the measures which can be adopted are – medical or somatic therapy psychotherapy, sociological therapy counselling and guidance.

Keywords

Reinforcement :	Strengthening
Resilient :	Capable of recovering from shock injury
Persistent :	Continuing without interruption
Psychosomatic :	Psychophysical.
Enthusiastic :	Favourable.

Suggested Readers

- Educational Psychology and Guidance : B.D. Bhatia,
R.N. Safaya
- Advanced Educational Psychology : S.S. Chauhan.
- Advanced Educational Psychology : S.K. Mangal
- Educational Psychology : C.L. Kundu.,
D.N. Tutoo.

- **Answer to the check your progress – 1**
 - a) Mind
 - b) Mental hygiene
 - c) True
 - d) False
 - e) True.
- **Answer to the check your progress – 2**
 - a) Adjust
 - b) Maladjustment
 - c) Poverty
 - d) True
 - e) False
- **Answer to the check your progress – 3**
 - a) Failure
 - b) Abnormality
 - c) Operation
 - d) Three
- **Answer to the check your progress – 4**
 - a) Treatment
 - b) Modified
 - c) Guidance
 - d) False

Reference

- i. Mangal S.K. (2002), Advanced Educational Psychology (2nd ed.), published by PHL learning Pvt. Ltd, New Delhi.
- ii. Chauhan S.S. (2001), Advanced Educational Psychology, published by Vikas publishing house Pvt. Ltd. New Delhi.

- iii. Tiwari, Dr. Govind (1984), Abnormal Psychology a dynamic Approach, published by Vinod Pustak Mandir, Agra.
- iv. Mangal S.K (1989), Abnormal Psychology, published by Sterling publishers Pvt. Ltd. New Delhi.
- v. Nanda S.K (1992), Introductory applied Psychology, Kalyani publishers, New Delhi.
- vi. Websites related to the theme of the unit.

Model Question

- i. What is mental health ? Write the characteristics of a mentally healthy person.
- ii. Define Mental Hygiene, Write the factors that lead to mental health hazards.
- iii. What is maladjustment ? Write some causes of maladjustment.
- iv. What are the symptoms of maladjustment ? How can maladjustment be detected ? Discuss.
- v. Write three causes of frustration. Discuss about the operations of frustration.
- vi. “Conflict is a confused state of mind” -- Discuss. What are the three main types of conflict ?
- vii. Discuss about some measures that can be adopted to overcome behavioural problems of an individual.