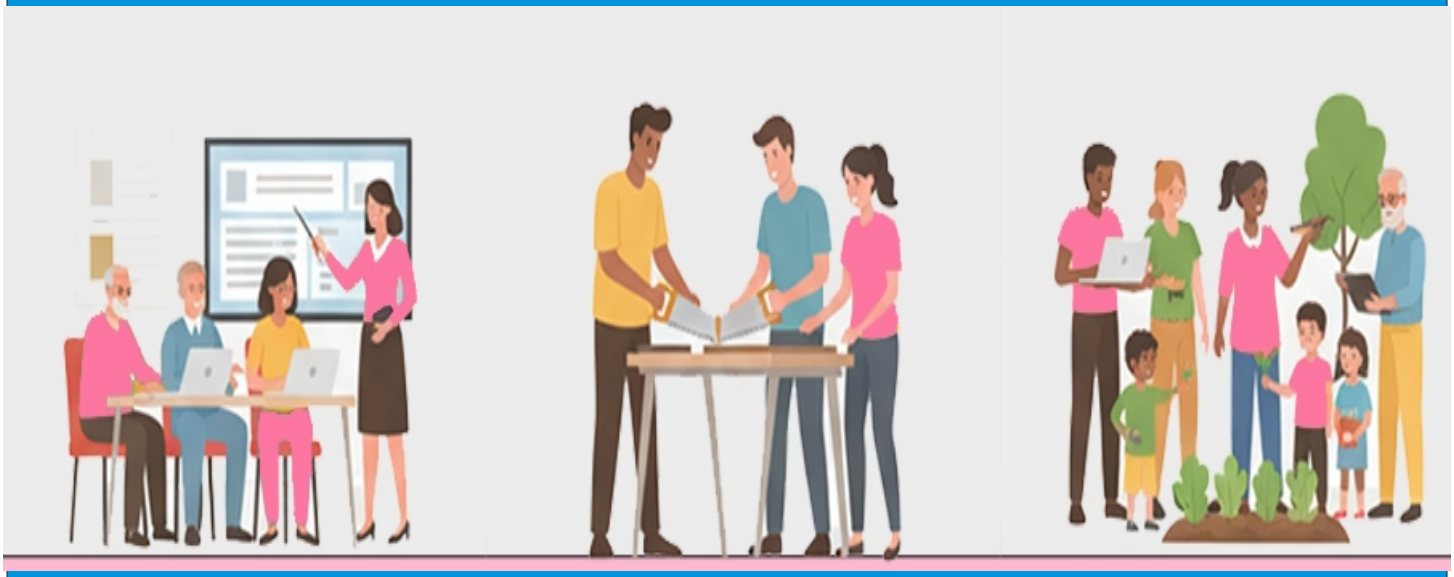
STUDY GUIDE
ON
EDUCATIONAL PSYCHOLOGY

Course Code: 6308
Units: 1-9



Department of Distance, Non-Formal &
Continuing Education Department
ALLAMA IQBAL OPEN UNIVERSITY,
ISLAMABAD

STUDY GUIDE
ON
EDUCATIONAL PSYCHOLOGY

Course Code: 6308
Units: 1-9

Department of Distance, Non-Formal &
Continuing Education Department
ALLAMA IQBAL OPEN UNIVERSITY,
ISLAMABAD

COURSE TEAM

Chairman:

Dr. Muhammad Ajmal Chaudhary
Chairman
Department of DNFCE
Faculty of Education
Allama Iqbal Open University, Islamabad

Members:

1. Dr. Amtul Hafeez ch.
   Assistant Professor
   DNFCE, AIOU, Islamabad

2. Dr. Muhammad Ajmal
   Lecturer
   Department of DNFCE
   Allama Iqbal Open University, Islamabad

3. Dr. Naila Naseer
   Lecturer
   DNFCE, AIOU, Islamabad

4. Dr. Zafar Iqbal
   Assistant Professor

5. Dr. Aftab Ahmed
   Lecturer

6. Ms. Mamonah Ambreen

Editor:

Mr. Salman Masood Akhtar

Reviewer:

Dr. Zulkaif Ahmed (1st Edition)
Dr. Muhammad Javed Iqbal (2nd Edition)

Course Coordinator:

Dr. Naila Naseer

ACKNOWLEDGMENTS

The Allam Iqbal University and the Dean is grateful to all scholars nationally and internationally and the publishers of various books, reports and journals whose work were used as reference material in this course. The quotations used from their works are gratefully asknow ledged.

It may be pointed out for general information of all whose work has been quoted in the course that the Allama Iqbal Open University is a non-commercial educational institution which provides educational facilities to underprivileged remote rural areas through its distance education approach.

The Dean is grateful to Vice-Chancellor, Allama Iqbal Open University, for his guidance, advice, encouragement and inestimable contributions throughout the revision of this task

It will be injustice if I do not acknowledge the efforts of Dr. Muhammad Javed Iqbal who revised this course provided feedback and fresh ideas in respect of its development.

Finally, thanks are due to all those who helped in developing and reviewing the course, particularly to all Faculty Board members for finalizing the course outline. I am also highly indebted to the assistance by Mr. Sohail Anjum and Mr. Muhammad Amin in logistic matters.

Dr. Nasir Mehmood
Dean
Faculty of Education
Feb, 2020

CONTENTS

		Page No.
Acknowledgements		v
Course Introduction		vii
Objectives of the Course		ix
		xi
UNIT-1	**THE NATURE OF EDUCATIONAL PSYCHOLOGY**	1
1.1	Introduction.	2
1.2	Objectives.	3
1.3	Significance of Educational Psychology	4
1.4	Various Methods of Educational Psychology	6
1.5	Activity.	12
1.6	Bibliography	13
UNIT-2	**GROWTH AND DEVELOPMENT DURING CHILDHOOD AND ADOLESCENCE-I**	14
2.1	Introduction.	15
2.2	Objectives.	16
2.3	Nature of Growth and Development.	16
2.4	Development and Education	19
2.5	Physical Growth and Motor Development.	20
2.6	Mental Growth and Development.	21
2.7	Language Development.	22
2.8	Activities.	23
2.9	Exercise.	23
2.10	Bibliography.	24
UNIT-3	**GROWTH AND DEVELOPMENT DURING CHILDHOOD AND ADOLESCENCE-II**	25
3.1	Introduction.	26
3.2	Objectives.	27
3.3	Social Development	28
3.4	Moral Development.	29
3.5	Adolescence and Development.	30
3.6	Emotional Development.	33
3.6.1	Emotion and Adolescence.	33
3.7	Activities.	34
3.8	Exercise.	34
3.9	Bibliography.	35

UNIT-4	**PERSONALITY**		36
	4.1	Introduction.	37
	4.2	Objectives.	40
	4.3	The nature of Personality and its Development.	40
	4.4	Theories of Personality.	42
	4.4.1	Trait Theory of Personality.	45
	4.4.2	Psycho-dynamic Theories.	46
	4.4.3	Individual differences.	47
	4.4.4	Behaviouristic Theories.	49
	4.4.5	Humanistic Theory of Personality.	50
	4.5	Stages of Personality development.	51
	4.6	Personality and Children adjustment problems.	52
	4.7	The role of Teachers.	53
	4.8	Activities.	53
	4.9	Exercise.	54
	4.10	Bibliography.	56
UNIT-5	**HUMAN NEEDS**		57
	5.1	Introduction.	58
	5.2	Objectives.	59
	5.3	Concept of needs.	60
	5.3.1	Educational implications.	61
	5.3.2	Psycho-Social motives or Secondary needs.	62
	5.4	Significance of needs.	68
	5.5	Types of needs.	69
	5.6	Activities.	71
	5.7	Exercise.	72
	5.8	Bibliography.	73
UNIT-6	**LEARNING**		74
	6.1	Introduction.	75
	6.2	Objectives.	78
	6.3	The nature of learning.	79
	6.4	The theories of learning.	82
	6.4.1	Trait and error theory of learning.	82
	6.4.2	Theory of behaviour.	86

	6.4.3	Gestalt field theory of learning.	89
	6.4.4	Lewin's field theory of learning.	91
	6.4.5	Tolman's theory of learning.	95
	6.4.6	Tolman's laws of learning.	95
	6.5	Bruner's model of concept learning.	96
	6.6	Piaget model of concept learning.	100
	6.7	The conditions of learning.	104
	6.8	Activities.	105
	6.9	Exercise.	106
	6.10	Bibliography.	107
UNIT-7	**MOTIVATION**		108
	7.1	Introduction.	109
	7.2	Objectives.	112
	7.3	The significance of motivation.	113
	7.4	Various Theories of motivation.	117
	7.5	Motivation and achievement.	120
	7.6	Techniques of motivation.	121
	7.6.1	Psychology self-psycho-analytical motivation.	123
	7.7	Activities.	131
	7.8	Exercise.	132
	7.9	Bibliography.	133
UNIT-8	**INTELLIGENCE**		135
	8.1	Introduction.	136
	8.2	Objectives.	138
	8.3	The concept of intelligence.	138
	8.4	Intelligence and environmental factors.	142
	8.5	Intelligence and Heredity.	143
	8.6	Theories of intelligence.	143
	8.7	Intelligence and aptitude tests.	145
	8.8	Intelligence tests and implication for teachers.	149
	8.9	Limitations of the intelligence tests.	152
	8.10	Activities.	154
	8.11	Exercise.	154
	8.12	Bibliography.	156

UNIT-9	**PSYCHOLOGICAL TESTING**		158
	9.1	Introduction.	159
	9.2	Objectives.	159
	9.3	Concept of testing.	160
	9.4	Use of tests.	161
	9.5	Types of tests.	162
	9.5.1	Achievement and aptitude tests.	162
	9.5.2	Personality test.	162
	9.5.2.1	Objective test.	164
	9.5.2.2	Projective tests.	165
	9.5.3	Intelligence tests	170
	9.6	Characteristics of a good psychological tests.	173
	9.7	Limitations of Psychological tests.	178
	9.8	Activities.	179
	9.9	Exercise.	179
	9.10	Bibliography.	181

COURSE INTRODUCTION

Psychology - an old subject but a new name. Though the name is fairly new yet the subject of psychology is very old. The word 'Psychology' was used for the first time in 1590 by Rudolf Geokle. It derives its origin from two Greek words, 'Psyche' and Logos'. 'Psyche' means 'soul' and 'Logos' means 'a word' or 'talk about'. Thus by derivation psychology means a 'talk' about soul or the science of soul. Gradually psychology was said to be a science of 'mind'. Both these terms 'soul' and 'mind' turned out to be equally intangible with the result that psychology had to lose the 'soul' and ''mind'.

The literal meaning of psychology has been very much in the minds of both laymen and scholars ever since the dawn of civilization of found support and expression in the teachings and writings of both ancient and medieval thinkers and philosophers of Greece, Pakistan, China and Europe. Psychology, in fact, was regarded as a part of the philosophy till the turn of the last century and it had no separate existence as a science.

However, educational psychology is an applied branch of psychology. It applies psychological principles and techniques to human behaviour in educational situations, to the development of educational strategies and programmes and further to the solutions of educational problems.

Effort has been made in this course to highlight all the important aspects of educational psychology. Unit 1, provides the definitions and concept of educational psychology, its significance in teaching learning process. The unit further clarifies various methods of educational psychology. Unit 2, provides the nature of growth and development, physical growth and its impact on motor development.

Unit 3, classifies the growth and development such as social development, moral development, emotional development, growth and development during childhood and adolescence. Unit 4, deals with the concept of personality, its different theories and stages of personality development. It further discusses the role of teacher in personality development.

Unit 5, highlights the concept of needs, its significance and different types of needs. Similarly, the nature, important features of learning such as trial and error theory,

theory of behaviour, insight theory of learning and model of concept learning was discussed in Unit No.6.

The nature, significance and theories of motivation, its role in teaching learning process was discussed in Unit No.7. Whereas, Unit 8, provides the concept, theories of intelligence and limitation of intelligence tests. Unit 9, deals with the concept of testing, its uses and different types. It also discusses the characteristics and limitation of psychology testing.

However, the course of Educational Psychology is meant to remain open-ended. Any criticism, suggestions or improvements will be welcome. The course will be revised after some time and all suggestions/ recommendations and improvements will be considered for incorporation.

Dr.Muhammad Javed Iqbal
Assistant Professor

OBJECTIVES OF THE COURSE

Hopefully, on completion of the course, the student will be able to:-

1. Explain the significance of educational psychology.
2. Discuss the growth and development during childhood and adolscent.
3. Identify the tpes of personality.
4. Explain the concept of human needs.
5. Discuss the nature of learning and motivation.
6. Explain of concept of testing.

Unit No. 1

THE NATURE OF EDUCATIONAL PSYCHOLOGY

BY

PROF. DR. MUHAMMAD RASHID

1.1 INTRODUCTION

As it stands today, psychology is a scientific study of human and animal behaviour. We have hardly any psychologist today who thinks of it as a study of the soul or mind. There are reasons for this:

First, today, psychology is looked upon as a science like physics, chemistry or biology. Secondly, because of the tremendous progress in knowledge in the last two centuries, we are today in a better position to think of psychology in more precise terms than was ever possible earlier.

Educational psychology is an applied branch of psychology. It consists of the application of psychological principles and techniques to human behaviour in educational situations, to the development of educational strategies and programmes, and to the solutions of educational problems.

Although, educational psychology has drawn a great deal upon the main field of psychology for its techniques, strategies and solution of problems of education, yet, as a science, it is not merely a discipline made up of borrowed knowledge. It is a special field of study in its own right. It has built up its own data from its researches and investigations into the phenomenon of interpersonal relationships, influences of home, school and peer group on a child's development, and intellectual (mental abilities) and non-intellectual factors (anxiety, level of aspiration, also need for achievement, self concept, etc) in learning. It has developed a large number of testing and non-testing, techniques to measure achievement in various educational areas and of diagnosing weakness in learning. It has also developed detailed methodology of teaching various school subjects as well as special groups of students such as the gifted, the backward, the delinquent, the creative and the socially disadvantaged. Even the borrowed principles and laws are applied only after testing their efficiancy in real educational situations.

Educational psychology revolves around three areas: the learner, the learning process, and the learning situation. Their details are given below:-

1. **The Learner.** In this area educational psychology studies the abilities needs and motivational forces, like self-concept, life-goals, values, anxiety of the individual learner as well as the differences that exist among various individuals. This also includes the study of growth and development of the individual and the concept of maturity in various aspects of personality-physical, mental, social and emotional. Study of the learner deals with the influences of his family, social class and peer groups on his personality and behaviour. Social behavior and social norms of his peer group; emotional health and problem behaviour of the learner are also studied in detail from the mental hygiene point of view.

2. **The Learning Process.** In the second area - the learning process - educational psychology deals with the nature of learning and how it takes place. It considers the various theoretical viewpoints as well axperimental evidences to explain the role and nature of re-enforcement, forgetting, problem - solving, transfer of training and the learning of skills, concepts, and attitudes.

3. **The Learning situation.** In the learning situation, educational psychology studies such factors as class-room management and discipline, techniques and aids which facilitate learning, methods of teaching exceptional students, evaluation techniques and practices, guidance and counselling.

Questions like: when to teach?, what to teach? and how to teach? are very important in gathering data.For this, educational psychologists are more concerned with answer to these questions. The first question refers to the developmental processes that gradually mature as the child grows up. Similarly the problem of what to teach is important because of its close relationship with the process of maturation. Certain types of learning can be useful to the child only when he has matured sufficiently in certain faculties. We cannot think of teaching mathematics to a three year old though he may be taught to count simple things. The problem of how to teach is equally important because there are ways and means to teaching which can make the education of a child more effective, meaningful and useful.

An effort has been made in this unit to highlight the significance of educational psychology and its various methods used to make the teaching and learning process more effective and efficient.

1.2 OBJECTIVES.

After studying the unit, the students should be able to:-

1. explain the concept of educational psychology.

2. discuss the significance, scope and role of educational psychology in education.

3. identify different methods of educational psychology.

4. compare the clinical methods, psycho-physical methods, experimental methods and differential methods used in the teaching learning process.

5. Specify the most useful method for education.

1.3 SIGNIFICANCE OF EDUCATIONAL PSYCHOLOGY

Psychology in education is an attempt to recognize and draw on four features which we believe are now of major importance as regards contributions of psychology to education.

First is the broadening or what might be called the coming-of-age of research in child development. Initially often preoccupied with infancy and the pre-school years, child development is now tending to combine with the earlier somewhat separate work on adolescence. Thus the growth years are seen in larger and more consistent perspectives. Understanding of development has been variously enriched, as by minutely detailed studies of physical growth and the use of methods and material from sociology and cultural anthropology. And longitudinal studies that follow the growth of individuals, sometimes from infancy into adulthood, have revised certain earlier concepts--as in showing personality correlates of "early" and "late" maturing, and the possible substantial influence of environment on growth of ability

A second feature of the psycho-educational present is the seemingly heterogeneous mass of material on learning. Some educators have proceeded from recognizing individual dynamics in learning to advocating curricular content and methods that are sometimes so highly personal to each pupil in each class and for each teacher that, except when teachers have been especially adaptive and clever, the public and even the schools have been confused as to just what was or should be happening. Increasing emphasis has been put on the social aspects of learning. There are both advocacy and rejection of the position that the somewhat special types of learning involved in the building of social competence, leisure interests, character traits, and ideals are major concerns of the school. Meanwhile, somewhat in contrast, much of the extraordinary amount of recent psychological research on learning has become remote from classrooms and indeed from any other environment than the psychological laboratory.

A third feature of the current educational scene, to which psychologists have been major contributors, is the trend toward greater individualization of educational work, so that optimal stimulation is provided for each pupil in an effort to foster his total development. Such individualization is primarily the function of the teacher. At times, however, certain youngsters have problems that go beyond what a teacher has time or training for; so he needs help from such specialists as school psychologists; counsellors, speech and hearing therapists, etc. These specialists aid in three ways: by consulting with the teacher on psychological problems, by dealing directly with youngsters who have serious difficulties, and by arranging educational experiences of types not ordinarily provided by the curricula. When such specialists are available the teacher should know what services they can render, and how to coordinate his efforts with theirs. In case these

specialists are not available, a teacher should know enough about these types of services to enable him to do at least something for such pupils.

A fourth feature, although of increasing potential value to teachers can be touched on only briefly. Longitudinal studies of individuals are being continued from childhood into their twenties and beyond. Special phases of adult life are being investigated, often in relation to childhood and youth--Kinsey's famous work, for example, and Lehman's studies on age of achievement. Gerontologists are studying old age and seeking antecedents of problems that arise during this period. Adult education is an important an growing movement. In the research on adult life and its problems, teachers should find help in understanding themselves. Perspectives may then be gained on the total human development and change, and the outcomes and goals of education.

Modern education is described as New Education because it has been engulfed and enveloped by psychological approaches and true scientific interpretations of educational problems and solutions. Education has become child-centred and the teaching-learning situation is geared to the psychological needs of the child.Educators like Plato, Rousseau. Pstalozzi, Herbart, Froebel, Montessori and Dewey highlighted the psychological foundations of education. Knowledge of educational psychology is thus a 'must' for the teacher, because it is serving the cause of educational procedures and concepts and other problems confronting the educators and educational authorities of the world.

In short educational psychology is helpful in the following ways:

1. It assists the teacher to know the education.

2. It proves useful in the method of teaching.

3. It discusses the nature of learning theories and types of learning for different age levels and situations. It tells that learning is not possible if the child does not cooperate in the learning process.

4. It helps to understand the significance of individual differences of children.

5. It helps the teacher in providing educational and vocational guidance to his pupils.

6. It makes the educator more scientific in his educational practices.

7. It enables to change the outlook and attitude of the teacher towards his pupils and makes him more responsive to their needs.

8. It helps the teacher in his own mental adjustment.

9. It develops confidence in the teacher by equipping him with adequate knowledge needed for the profession.

For further details, please read the below referred book.

Skinner, Charles, E. (1993)	*Educational Psychology,* 4th ed., New Delhi, Prentice – Hall of India Private Limited, pp. 2–19	1–1

1.4 VARIOUS METHODS OF EDUCATIONAL PSYCHOLOGY

Educational psychology is being enriched by the methods employed by various systems of psychology. Psychology uses many methods which attain or approximate to the ideal of verifiability. Some methods are not purely scientific, nevertheless they supply us a lot of information about the complexity of human mind and behaviour. Educational psychology uses scientific methodology for the study of man. The main characteristics of scientific methodology are given below.

1. Assumes that the universe is an orderly one where cause and-effect relationship works.

2. Uses experimentation for gathering data, and

3. Employs devices, tools and apparatus to ensure exactness and objectivity.

4. Educational psychology uses this methodology for the study of man.

Some important methods used by educational psychologies are as follows.

- Clinical methods.
- Psychological methods.
- Experimental methods.
- Differential methods.

Details of each Method are given below:

1.4.1 Clinical Methods

The clinical method is the direct result of the finding that each individual is different from another and is therefore, a separate case. His problem has some definite causes and antecedents lying both within himself and in his environment. The problem in question does not arise all of a sudden but has a history behind it.

Clinical method employs both diagnosis and treatment, and, in doing so, it operates at the level of art as well as of science.

The types of problems under investigation are shyness, nervousness, thumb-sucking, speech defects, truancy, phobias, stealing, telling lies, sex disorders and sex offences, etc.

Diagnosis of the problem is the first step. To begin there is a careful physical examination. Then the case history is prepared to gain insight into the problem. It is followed by interview and psychological testing of the individuals' abilities and personality traits.

Treatment follows on the basis of the hypotheses developed and the influences drawn from the comprehensive diagnosis. It may involve change of environment (school or home). But more important is the attitude of the individual himself which must undergo a change. The child can be helped in this regard through play-therapy, psycholo-drama role-playing, or behaviour modification techniques which are based on the principle of conditioning.

In order to comprehend further the idea of Clinical Method, please read the below referred book.

Sheldon J. Korchin (1986)	Modern Clinical Psychology, Delhi. CBS Publishers & Distributors, pp. 48-79	1-2

1.4.2 Psycho-Physical Methods

Psycho-physics is the science that investigates the quantitative relationships between physical events and corresponding psychological events or the investigation of quantitative relationships between stimuli and responses. In

Educational Psychology they are used to study the problems of school noise, class-room illumination, fatigue, attention, perception, learning, remembering, forgetting and education of the children with sensory handicaps.

The main methods devised by the psycho-physicist are:

i) the method of limits or minimal changes.
ii) the method of adjustment, and
iii) the method of constant stimuli.

In the first method, an absolute threshold is determined by minimally changing the stimulation in successive trials along some physical dimension until the sensation is felt, or, conversely, is not felt. The differential threshold can be determined by holding the standard stimulus constant, and varying the comparison stimulus in minimal steps till a just noticeable difference is reported.

In the second method, the subject himself controls the stimulus until by increasing its intensity, it is just barely sensed or by decreasing its intensity, a sensation just barely disappears. A similar technique is used for determining a different threshold.

In the third method, the stimulus values are presented in regulated steps but in an irregular order. The subject responds to the stimulus, and the percentages of correct and incorrect responses are calculated. The absolute threshold value is that stimulus intensity that is detected 50 percent of the times. For determining differential threshold through this method, the subject responds to a series of comparison stimuli which are passed repeatedly with standard stimulus. The subject has to indicate which comparison stimulus has a greater sensory value in his judgement. The actual differential threshold is then statistically calculated.

For further detail, please read the below referred material.

Kundu, C.L. & Tutoo, D.N (1985)	Educational Psychology. New Delhi, Sterling Publisher Private Limited pp. 8-11	1-3

1.4.3 Experimental Method

An experiment involves hypothesis testing under rigidly controlled conditions. The hypothesis for the experiment involves an independent variable

and at least one dependent variable. The independent variable is defined as the factor which is manipulated, increased or decreased, by the experimenter, while the dependent variable is the factor which varies or changes as the result of manipulating the independent variable. It is only the independent variable which is manipulated. All other factors are kept constant.

An experiment may be conducted in a laboratory, or a class-room or other field situations. Most educational, psychological and sociological experiments in the classroom or in field are conducted with groups rather than individuals. Common group designs are : (a) One-group design; (b) Equivalent or parallel group design; (c) Rotation groups design; and (d) Factorial designs. The first design consists of comparison of the performance of a single group under two different sets of conditions. In the second design, the relative effects of two treatments are compared on the basis of two or more groups which are equated on all relevant factors. The rotation-group design takes equivalent groups, and the investigation is conducted by rotating the groups at periodic intervals. The factorial designs or multivariate analysis, make possible the simultaneous study or effects of a number of factors taken singly and in interaction with one another.

The idea of experimental research in the field of education has been borrowed from science and mathematics. The experimental method is generally regarded as the most sophisticated research method for testing hypothesis.

Despite its scientific vigour, experimentation is only one aspect of the scientific method, because the scientific method involves a great number of the activities of which experimentation is simply an important form.

However, experimentation is the name given to the type of educational research in which the investigator controls the education factors to which a child or group of children is subjected during the period of inquiry and observes the resulting achievement.

J.W. Best (1992) describes it as, "Experimental research is the description and analysis of what will be, or what will occur, under carefully controlled conditions." Thus the keywords in an experimental research are:

i) What will be
ii) What will occur.
iii) Carefully controlled conditions.

However, the essence of an experiment may be described as observing the effect on a dependent variable of the manipulation of an independent variable. The uses of experimentation in education are as under:-

1. Determining and evaluating the adequacy and effectiveness of educational aims and objectives through the measurement of outcomes.

2. Serving as basis for the formulation, execution and modification of educational policies and programmes.

3. Ascertaining the effects of any change in the normal educational programmes and practices.

Here it will be useful to know the characteristics of an experiment. It will certainly further elaborate the idea of experimental method.

An experiment calls for the satisfaction of three basic interrelated conditions, i.e. Control, Randomization and Replication.

1. **Control.** Control is the basic element in experimentation. The influence of extraneous factors that are not included in the hypothesis are prevented from operating and confusing the outcome which is to be appraised.

   The following types of controls are exercised in an experiment:
   - **i)** Physical control.
   - **ii)** Selective control.
   - **iii)** Statistical control.

2. **Randomization.** As it is very difficult to exercise complete control, efforts are made to assign cases in the experimental and control groups randomly.

3. **Replication.** This implies conducting a number of sub-experiments within the framework of an overall experimental design.

However, experimentation in education is not a perfectly precise method. There are many variables which are extremely difficult or even impossible to control. The basic condition of "other things being equal" is difficult for educational research. All experiments in education are ultimately experiments

with children who, for ethical reasons, must not be subjected to conditions that may harm them. There are boundaries of a normal character for experimentation which must not be infringed.

There are many areas in which experimental studies in education can approximate strictly empirical research. For example, the teaching of spelling through different methods, and the difference between the effect of the authoritarian and the democratic set-up in education are problems which have been handled in a scientific way through the experimental approach.

For further details, please read the below referred material.

Kundu, CF.L. & Tutoo, D.N (1985)	Educational Psychology, New Delhi, Sterling Publishers Private Limited, pp. 12-14	1-4

1.4.4 Differential Method

The differential methods employ individual differences as variables of investigation. The investigator selects his subjects according to certain criterion and then compares their growth or performance in the light of the criterion. For example the investigator may select his subjects on the basis of intelligence and then compare their achievement on various school subjects.

Among the various approaches and techniques employed in differential methods are, correlation techniques, longitudinal and cross-sectional approaches. They employ various statistical techniques to quantify their data and to test their findings and inferences under conditions of mathematical exactness.

The below referred pages of the book provide further details about differential method. Please read it for further comprehension.

Kundu, CF.L. & Tutoo, D.N (1985)	Educational Psychology, New Delhi, Sterling Publishers Private Limited, pp. 15-19	1-5

1.5 ACTIVITIES

1. Write down the definition of educational psychology in your own words in the space given below.

_____

_____

_____

_____

2. Discuss the significance of educational psychology with any educationist of your acquintance and prepare a report of the outcome of your discussion.

3. Prepare a chart of comparison of each educational psychology method.

1.6 EXERCISE

Hopefully, you have read the unit, now please do the following tasks:

Q. 1 Discuss the term educational psychology.

Q. 2 Explain the concept, scope and potential role of education psychology in education.

Q. 3 Discuss the significance of educational psychology.

Q. 4 Describe the different methods of educational psychology.

Q. 5 "Educational psychology is being enriched by the methods employed by various systems of psychology." Discuss.

Q. 6 Discuss clinical method of educational psychology.

Q. 7 Critically examine the differential method.

Q. 8 "Psycho-physics is the science that investigates the quantitative relationships between physical events and corresponding psychological events or the investigation of quantitative relationship between stimuli and responses." Discuss.

Q. 9 What is experimental method in educational psychology? Explain with the help of an example.

Q. 10 Discuss the main types of experimental patterns employed in educational research.

Q. 11 Critically examine the common types of experimental designs used in educational research with illustrative examples.

Q. 12 "Despite its scientific vigour experimentation is only one aspect of the scientific method." Discuss this statement and bring out clearly the use of experimental method in education.

1.7 BIBLIOGRAPHY

1. Best, J.W. (1992) Research in Education, 6th ed. New Delhi Prentice - Hall of India Private Limited.

2. Judith Worell & William E.Stilwell (1981) Psychology for Teacher and Students, ed, New York McGraw-hill Book Company

3. Kkundi,C.L. & Tutoo, D. N(1985) Educational Psychology, 4th ed. New Delhi, Sterling Publishing Private Limited.

4. Skinner, Charles, E. (1993) Educational Psychology, 4th ed., New Delhji, Prentice-Hall of India, Private Limited.

5. Witting,Arno.F. & Gurney Williams III (1984) Psychology: An introduction, New York McGraw-Hill Book Company.

Unit No. 2

GROWTH AND DEVELOPMENT DURING CHILDHOOD AND ADOLESCENCE-I

BY

PROF. DR. MUHAMMAD RASHID

2.1 INTRODUCTION

The terms 'Growth and Development' mean the changes that take place in human behaviour particularly in a child after conception right from the womb to the tomb. These two terms thus mean the same thing and have been used interchangeably. But in reality and from the point of terminology, they are two separate terms having different meanings. Let us see the meaning and the difference of both growth and development.

Grwoth is external in nature. It can be directly measured. It means increase or addition in size and weight. Its chief concern is with the physical aspect of an individual. Growth stops at a particular age.

On the other hand, development is internal in nature. It can only be felt. It can indirectly be measured. It means working of the internal organs and their functions; like not only increase in the size of the brain but thinking process also. However, development as such is a comprehensive term. It is a life-long process.

Growth and development are inter-related. Both are inter-dependent and influence each other. When growth stops because of illness, or there is premature stoppage of growth, development is equally effected.

The important principles of growth and development include the following.

1. Growth is continuous. Here the entire life span has been divided into different stages like babyhood, early childhood etc. This division is for the sake of study only. Development is a life-long continuous process which goes on at a regular slow speed.

2. Development is a product of heredity and environment.

3. Development can be predicted.

4. Growth follows patterns such as caphalo caudal which proceeds from head downward, and proximo-distal which proceeds from spinal cord outward.

5. Development is rapid in early years of life.

6. Development proceeds from mass activity to differentiation or from the general to the specific.

7. Development is regressive. It means that sometimes the child goes back to earlier responses during growth. It is called going back in regression.

8. Growth/development is cumulative. Sometimes little things add up in life and influence the course of development.

There are various types of growth and development such as development and education, mental growth and development and lingual development. Effort has been make to highlight all the important aspects of growth and development in this unit.

2.2 OBJECTIVES

After studying the materials, it is hoped that you will be able to:-

1. discuss the nature of growth and development;

2. explain the term development and education;

3. describe physical growth and its impact of motor development;

4. identify the characteristics of language and development; and

5. discuss mental growth and development.

2.3 THE NATURE OF GROWTH AND DEVELOPMENT

Development is a series of orderly progression of changes towards the goal of maturity. 'Orderly' refers to the arrangement of the changes. That is, one change cannot occur without the concurrence of a certain preceding change.

'Progression' refers to the directionality of changes. The direction, of course is towards adaptation which is conducive to survival. However, growth is generally taken to mean dimensional augmentation, cellular multiplication or quantitative change in size, weight and number.

Growth and development are sometimes used synonymously. To differentiate between these two terms, growth is generally taken to be quantitative in nature whereas development is qualitative. We refer to the development of 'intelligence' and 'emotions' but growth of 'body and brain'. Development goes on into senility but growth stops at maturity. Development indicates more specifically than growth the changes in character that take place.

Growth does not always contribute to development. A child or adult may grow very fat and heavy, but such growth can hardly be considered development in the sense of advancement to a higher level of maturity. Actually a person has developed if he is physically healthier and/or has more sensorimotor skills so that his physical condition is conducive to greater personal effectiveness. Thus by improving his sensorimotor, skills and thereby utilizing better the capacities he has received from about two decades of growth, the person can develop even after physical growth stops. Physical growth is quantitative in nature and is usually measured in inches and pounds or their equivalents.

Physical development is both qualitative and quantitative and implies increasing capacities and abilities, maturing functional improvement, and progress towards higher levels of potentiality and effectiveness.

Growth can be 'measured', development can be observed by noting changes in shape as they occur, and modes of behaviour as their maturation is completed.

Development psychologists are not the only persons interested in the growth and development of human organism. There are others, such as embryologists and biologists, who are interested in the growth of the organism at the various stages of its development. Developmental psychologists however attach great importance to the development of behaviour than to physical structure and use their special methods to determine it. These methods are Cross-sectional method, Longitudinal method, Case study method, Observation experimental method etc.

Five important characteristics of human growth and development are discussed below.

1. **Development is continuous.** Development is a continuous process: it may be overt or covert. Disease or severe malnutrition may halt its continuity for a time.

2. **Development is orderly.** It proceeds from general to specific responses.

3. **Development is sequential.** It follows a pattern i.e. various steps follow one another e.g. puberty before full physical stature.

4. **Development is unique.** Children differ individually with regard to their time schedule. For example, all children will first sit up, crawl and stand before they walk. But individual children will vary in regard to timing or age at which they can perform these activities.

5. **Development is inter-related.** All the three types of development i.e. mental, social and emotional, are interrelated. Ultimately social development and emotional development are the two sides of the same coin. Social development is nothing but a reference of emotional development. An emotional development is nothing but a psychological reference of social behaviour.

Two Principles of Development and Growth

In addition to these general characteristics, growth and development are based on the following two principles.

1. **Interaction of heredity and environment.** The individual is the product of interaction between his heredity and environment. Though, the genes are important in determining the rate and quality of his growth and development, his social, cultural environment, physical surroundings and the emotional climates have their own impact.

2. **Interaction of maturation and learning.** Growth and development occur as a result of both maturation and learning. Maturation refers to changes in a development organism due to the unfolding and ripening of abilities, characteristics, traits and potentialities present at birth. Learning denotes the changes in behaviour due to activity training and/or experience. Maturation and learning are interactive.

Growth is very significant and includes changes in skeletal dimension, height and weight, body proportions and teeth.

Motor development is the development of strength, speed and precision in the use of speech organs, hands, fingers, arms and legs, and other bodily muscles. Motor behaviour serves as a vehicle for the child's social contracts. Growth in ability to perform motor acts seems to reach its maximum at the age of fourteen years for girls and seventeen years for boys. With increased strength boys develop competitive athletic skills whereas girls concentrate their efforts in developing skills like dancing, rope-skipping, knitting, painting, flower arrangement, embroidery, music, etc. The superiority of the boys in some motor performances seems to be due to in-born factors and cultural pressures.

For further details of growth and development, please read the below referred material.

George, J. Mouly, (1968)	Psychology for Effective Teaching, 2nd ed. New York, Holt, Rinehart and Winston, Inc. pp. 135-161	2-1

2.4 DEVELOPMENT AND EDUCATION

"Learning is modification of behaviour through experiences". There is a sort of inter-action always going on between the individual and his environment, both influencing and changing each other. He inherits only a few fixed patterns of responses. His interests, attitudes, appreciations, skills, and achievements are primarily the product of learning.

Growth and development basically occur as a result of both maturation and learning. Maturation refers to change in a developing organism due to unfolding and ripening of abilities, characteristics, traits and potentialities present at birth. Learning denotes changes in behaviour due to activity, training or experience. Maturation and the learning process are interacting.

Maturation is a process of growth and development which takes place regularly in the individual with special conditions of stimulation, such as training and practice. Learning on the other hand is a change of behaviour which depends on the stimuli provided by the environment outside the individual. It involves training and practice, e.g. at a particular age all children normally learn to crawl, walk or talk. They have not to put in much conscious effort to learn these activities. Whereas they have to learn the skill of cycling. Maturation and learning are actually very much interconnected with and inter-dependent upon each other. Both contribute to the development of the individual. Some functions like crawling, walking, etc, are mostly due to maturation and less due to learning. Functions like swimming, cycling etc, are more due to learning and less due to maturation.

Learning is possible only when the organism has reached a certain level of maturation essential to facilitate the sort of learning. For example, a child is not too mature to learn the abstract principles of algebra before he has learnt to deal with concrete things in arithmetic. Similarly the child cannot be made to learn walking before he is mature enough to stand. Training in motor skills may, to some extent, show superiority over other children before maturation, but this soon vanishes when maturity takes place. For example if a child is given training in climbing a staircase before he is mature enough for this act, he will show this superiority over other children of the same level of maturity. But when maturity is achieved both the children will climb the stairs

with the same efficiency. In this case training before maturity is of little use. Thus maturation is an important factor in learning.

For further details, please read the below referred material.

Skinner, Charles E. (1993)	Educational Psychology, 4th ed., New Delhi, Prentice-Hall of India Private Limited, pp. 161-193	2-2

2.5 PHYSICAL GROWTH AND MOTOR DEVELOPMENT

Rate of growth differs among adolescents. In some cases the change is relatively gradual and in others it seems almost "as they go to bed one night as children and awaken the next morning as adults."

1. **Skeletal growth**
   - (a) Girls are about two years ahead of boys at this age.
   - (b) Bone growth is completed with sexual maturity.
   - (c) The face and body are attaining adult contours.
2. **Dentition**
   - (a) A few children cut wisdom teeth at the end of this period.
   - (b) Dental correction continues to be one of the greatest needs of childhood.
3. **Muscular development**
   - (a) There is improvement in co-ordination.
   - (b) The muscles of girls remain soft while those of boys become hard and firm.
   - (c) Control and grace are displayed in postures.
4. **Organic development**
   - (a) The heart increases greatly in size.
   - (b) In majority of cases, puberty cycle is completed.
   - (c) Ailments of this age are headache, nose bleed, nervousness and palpitation.
   - (d) Tuberculosis increases in teen-agers.

A renowned psychologist writes about the adolescent girl: "All the vagaries of young girls which are so trying to their elders, their extravagances of dress, their high-pitched voices, their giggling and simpering, the emotional instability and changes of mood, the defiance of authority and disrespect for age and experience, their boldness and self-assertiveness, are part of the age-old process of growing up...Parents who attempt forcibly to restrain her, who upbraid her indifference to their wishes or gibe at her efforts to assert her own personality only succeed in confirming her opinion of their inability to understand her and in widening the breach which must invariably separate one generation from another. The mother who is too sweet and loving, indulging the child's every whim and ruling her by appeals to her love and sympathy for her, does no better."

For further details, please read the below referred material.

Skinner, Charles E. (1993)	Educational Psychology, 4th ed., New Delhi, Prentice-Hall of India Private Limited, pp. 195-216	2-3

2.6 MENTAL GROWTH AND DEVELOPMENT

Intellectual growth begins with rapid sensory and perceptual development in the early years of life. By this third year the child develops skillful perceptual ability in exploration of his world. For about ten years he builds it, reaching his maximum capacity in adolescence when his senses and perceptions are as sharp and keen as they will not be again. General ability shows a steady and continuous growth from childhood through adolescence. The maximum intellectual capacity seems to develop in the period from fifteen to seventeen.

Thurston discovered that different mental abilities measured at different ages. He found that of the seven primary mental abilities the perceptual speed factor was the first to mature. Space and reasoning attained maximum level at the age of fourteen. The memory and number factors matured at sixteen. The factors which mature the latest were word fluency and verbal comprehension.

The concepts of distance and space develop quite early. Concepts of number, time and cause and effect relations develop rather gradually. Heredity sets the limits which environment cannot transcend. These limits are not easily known. The schools should provide such an environment as well as release the intellectual abilities of children especially those who belong to the lower socio-economic classes. The method of teaching should also aim at developing understanding, thinking and reasoning.

The below referred material provides information about mental growth and development. Please read for further comprehension of the topic.

Skinner, Charles E. (1993)	Educational Psychology, 4th ed., New Delhi, Prentice-Hall of India Private Limited, pp. 217-237	2-4

2.7 LANGUAGE DEVELOPMENT

A child uses sounds as a means of communicating with others long before he is able to articulate words. He can respond to the language of others before he uses words himself. Normally a child produces babbling sound at the age of two months. At 2-4 months he can use single syllables. At six months he starts associating certain sounds with emotions. After 13 months he can repeat sounds. By 18 months he points out objects by name. At two years the use of same words gets stabilised. From two years onward there is an immediate and tremendous increase in vocabulary. The important feature of language development is the gain in precision in using words, the ability to select terms and phrases to denote different shades of meaning.

Language development is sensitive to environment and the conditions and experiences provided to the child. Children of high socio-economic status tend to learn meaningful communication earlier because of guidance and attention given to them. The child's environment will have a notable effect on his learning of correct pronunciation, good usage and correct grammar. Also children who associate themselves with adults are precocious in language development. In schools we must develop positive attitude in children towards learning languages.

For further details, please read the below referred material.

Judith Worell William E. Stilwell (1981)	Psychology for teachers and students, New York, McGraw-Hill Book Company, pp. 172-183	2-5

2.8 ACTIVITIES

1. Discuss the term "growth and development" with your colleagues and write down its significance on the space below.

_____

_____

_____

_____

2. Prepare a chart of difference between growth and development and place that chart in the classroom.

3. Write down the importance of lingual development in the space provided below.

_____

_____

_____

_____

2.9 EXERCISE

Hopefully, you have studied the unit, now please answer the following questions.

Q. 1 What do you understand by growth and development?

Q. 2 Differenciate growth and development. give examples in support of your answer.

Q. 3 Describe in your own words the general principles of growth and development.

Q. 4 Discuss the general characteristics of physical and motor development.

Q. 5 How is learning influenced by maturation?

Q. 6 Discuss the characteristics of language and development.

Q. 7 Write short notes on the following.

(a) Development and education.

(b) Mental growth and development.

(c) Growth and development.

2.10 BIBLIOGRAPHY

Mouly, George J. (1968) — Psychology for effective teaching, 2nd ed., New York Holt, Rinehart and Winston, Inc.

Skinnur, Charles, E. (1993) — Educational Psychology, 4th ed., New Delhi, Prentice-Hall of India Private Limited.

Worell, Judith & William E.Stilwell(1981) — Psychology for teachers and students, New York, McGraw-Hill Company.

Unit No. 3

GROWTH AND DEVELOPMENT DURING CHILDHOOD AND ADOLESCENCE-II

BY

PROF. DR. MUHAMMAD RASHID

3.1 INTRODUCTION

The growth and development of the personality of an individual follows certain principles. Parents and teachers should know these principles. They are as under:-

1. Principle of continuity.

2. Principle of individual differences.

3. Principle of maturation.

4. General to specific development.

5. Principle of integration, interrelation, uniform pattern of development.

6. Principle of different rate of growth and development.

7. Influence of heredity and environment on growth and development.

8. Principle of developmental direction.

There are many factors which affect physical growth and development. These include food, functions of glands, intelligence, physical exercise, fresh air and sunlight and sex defferences.

The infant of today who is the adult of tomorrow has to pass through the various stages in the process of his development. This also involves the development of his physical, intellectual, social and character side of the personality. There are certain period of development. They are termed as stages. Psychologists have given different states of development. It is, therefore, desirable that for proper understanding of individuals we may divide their life span into different stages. The division of development includes infancy period (birth to 5 years), childhood period (5-12 years), adolescence period (12-17 or 19 years) adulthood period (beyond 17 to 19 years). Many psychologists regard the age 4 to 5 years of the child as the formative age for what he/she has to grow into the coming life. Hence, we can say that infancy is an important stage of life.

Likewise, the development of language interests, power of memory, imagination, understanding, reasoning, thinking, intelligence, sensation, perception and problem-solving, all come under intellectual development.

Similarly, during the pre-childhood stage, child is between 5 to 12 years, many changes take place in the personality of an individual. During this period he has already been going to the school and most of his time is spend outside the home, so his contacts with environment are enlarged. The changes that take place during this period include physical development, intellectual development, emotional development and social development.

Childhood period is important for the various development stages. Therefore, these stages should be given maximum attention such as:-

1. Teacher should manage sports for children for their proper physical development.

2. Teacher should offer maximum opportunities to the children for their intellectual development.

3. A proper motivation should be provided for the development of hobbies of the children.

4. The environment of the school and home should be favourable to the emotional development of children.

5. Special attention should be paid to the company that children enjoy.

6. The curriculum should be flexible and interesting.

Effort has been made in this unit to highlight important aspects, such as social development, moral development, adolescence development, emotional development.

3.2 OBJECTIVES

After studying the unit, it is hoped that the student will be able to:-

1. discuss the nature of social development;

2. explain the characteristics of moral development;

3. specify the important aspects of adolescence development;

4. discuss emotional development and its educational implications;

5. evaluate growth and development during childhood and adolescence.

3.3 SOCIAL DEVELOPMENT

It depends on the interaction of the organisms and the environment. Environment plays a more active part. Physical, mental, intellectual and emotional growth are predominantly genetic. But in the social group it is the social environment which is predominant. The process of socialization starts right from birth whereas emotional conditions can be created in the foetus by some bright light or loud sound.

The process of preparing children to live in society, to assimilate its culture and to be its functioning members is called socialization. Every culture has some plan, a system of positive and negative sanctions, formal and informal agencies, in harmony with its moral, religious, economic and other values for accomplishing this goal. Socialisation is also learning of one's social role, of role-taking. A role is a pattern of behaviour which is expected of an individual by others in a social system. The individual's social efficiency and happiness depends to a large extent on the understanding of these roles and on the ease and flexibility with which he shifts from one role to another.

According to F.S. Powers social growth is actually progressive improvement through directed activity. This definition emphasises four things:

1. Social growth is progressive and not a product of any one time in life.

2. Social growth is brought about by the directed activity of society. There are both formal and informal agencies to influence a child's induction into the cultural heritage. The most important formal agencies for this purpose are the family, religion and the school. The informal include the playground, the club, cinema, radio and television, newspapers and the market.

3. Socialisation proceeds through increasing understanding of the cultural heritage, social customs, mores, folkways, or ways of living and acting, traditional values, etc.

4. Socialisation results in certain behaviour patterns which no doubt conform to social values but are flexible enough to a limit of deviations and variations. Independent way of thinking and behaving is a social value by itself in a democratic society.

School should perform at least three clear functions in regard to a child's social development.

1. It should enlarge its knowledge about his social heritage through the study of science, mathematics, languages, history, geography, literature and folklore.

2. It should develop appropriate social skills, attitudes, interests and understandings which help him to adjust in society.

3. It should prepare children for change. In this context it must enable children to perceive and be sensitive to centuries - old fossils and cobwebs of social traditions which are of no value in the modern times. It should also make children open-minded, democratic, responsible and creative in their behaviour, outlook and loyalties.

For further details please read the below referred book.

Skinner, Charles, E. (1993)	Educational Psychology, 4th ed., New Delhi, Prentice-Hall of India Private Limited. pp. 290-324	3-1

3.4 MORAL DEVELOPMEN

The term morality stands for following the moral code of society or conformity in behaviour to the manners, values and customs of the social group. Ethical understanding stands for an individual's knowledge of differences between right and wrong. Character stands for at least four things: (1) consistency in behaviour, (2) thoughts, attitudes, sentiments or ideals, (3) concept of idealised self, (4) functioning or behaving in a social setting. According to Havighurst there are five levels of character development:

1. **Amoral stage.** At this stage the performer is unaware of the effects his act has on others.

2. **Self-centred level.** At this level the child chooses to gratify his own wishes although he knows that his act might have a bad effect upon others. A self-centred act is done more with a view to satisfying one's impulses or desires than to disregard a moral rule.

3. **Conforming or conventional level.** At this level the child may ignore his own impulses and act only in the manner which is normal in his group.

4. **Irrational conscientious level.** Conscience is used for internal self-criticism which makes a person reject an act because it conflicts with his ideals even

though it may attain his external goals. Behaviour is irrational and conscientious when an individual acts in the light of the values which are held emotionally rather than rationally, e.g. always speak the truth even if it results in some body being hanged.

5. **Rational, altruistic level.** Here the values are not founded in emotional conditioning but in rational judgement. At this level he acts and decides on the basis of reasoning and the best consideration for others. In school, the teacher should help children develop self discipline and a regard for the welfare of others. Moral instruction in the classroom is desirable. But more important is to provide social and group situations in which children get practical opportunity for the development of co-operation, honesty, fair-play, courage and the ability to contribute to the joy and comfort of others. Good work habits are wholesome, social attitudes can be developed in the classroom. Activities like games, camping, clubs and so forth help the child to live and co-operate with others and also to know how others think, feel and act. The character problems of an individual child should be solved through counselling and guidance.

In order to further comprehend the idea of moral development, please read the below referred material.

Elizabeth B. Hurlock, (1985)	Child Development, 7th ed:, Singapore, McGraw-Hill Company, pp. 386-413	3-2

3.5 ADOLESCENCE AND DEVELOPMENT

The age at which the child enters the period of adolescence as marked by physiological, intellectual and psychological factors, varies greatly from individual to individual. It is very difficult to define exactly the period of life which constitutes adolescence. No sharp chronological boundaries may be fixed to this period. Generally speaking, it covers a period of seven or eight years, normally from 12 to 18 or 20 with large variations in many cases. Some children may manifest traits of its advent as early as the 10th year while others may manifest it till the fifteenth or sixteenth year. Twelve or thirteen may be considered as the normal period for boys in subcontinent and even for girls when adolescence begins.

Adolescence is best defined in relation to puberty. It is the period which begins with puberty and ends with the general cessation of physical growth; it emerges from the

later childhood stage and merges into adulthood. Importance of this period is given below.

a) This is the most critical period of a student's development with which the teacher has to deal. It is a period of day-dreams, of adventures, intense affections and stirring of the "heart". Some educationist think it to be a period of great 'stress and strain', 'storm' and 'strife'.

b) According to Rabindra Nath Tagore, "In the world of human affairs there is no worse nuisance than a boy at the age of fourteen. He is neither ornamental nor useful. It is impossible to shower affection on him as a little boy; and he is always getting in the way".

However, the adolescent is "an odd, awkward, graceful, respectful, selfish, altruistic, idealistic, narrowminded, sympathetic, cruel individual."

The following are the main characteristic of adolescence:

1. The child of this period lacks experience though he may exhibit a 'know-it-all' attitude.

2. He is intensely emotional. He fluctuates between two extremes. He may be active and happy at one time and moody and dull at another.

3. He is seeking his own place in the life around him.

4. He responds more readily to the influence of the teacher than of the parents.

5. There is ultimate admiration of some adult whom he considers to be outstanding. An adolescent is essentially a hero-worshipper.

6. There is interest in and emphasis on physical attractiveness and good grooming.

7. Girls are more interested in boy than boys are in girls; of course both are interested in the opposite sex.

8. In extreme cases homo-sexuality is established.

9. He is a combination of opposities. Sometimes he is an altruist and sometimes a miser. On the one hand, he behaves like a child in many ways, and on the other he likes to be treated like an adult. He wants to have the privileges of adulthood but does not want to undertake obligations and responsibilities.

10. An adolescent exhibits an over-active imagination. This period is characterized as a period of day-dreams.

11. He wants to form small groups or gangs.

12. There is a strong tendency of self-assertion which is prominent owing to the new orientation which sets in life.

13. The adolescent wants to free himself from bondage. There is a tendency to revolt against authority.

14. The growth of intelligence reaches its maximum during this period.

15. The adolescent is extremely passionate for expressing his own opinions and for appreciation.

16. He regards himself as more suited than the adults and grown-ups to frame rules, laws, codes and morals which will be just and true.

17. A group of adolescents gets down to practical work with great zeal and works patiently.

- **Needs.**

1. A balance between security and freedom is needed.

2. Children of this age need noble causes in the promulgation of which they may utilize their excess emotion and energy.

3. Separate physical education programmes for boy and girls need to be planned.

4. Rest needs are about eight hours.

5. Different types of co-curricular activities are needed for providing new experiences and utilising energy.

6. Sex education on a scientific basis may help to avoid traumatic problems.

7. Unobtrusive adult guidance is advised.

For further details, please read the below referred material.

Kundu, C.L. and Tutoo, D.N. (1985)	Educational Psychology, New Delhi, Sterling Publishers Private Limited, pp. 450-462	3-3

3.6 EMOTIONAL DEVELOPMENT

Emotions involve a combination of feelings and impulses physical and physiological reactions. The emotional surges can be either constructive or disruptive. There are three general features of emotional development:

1. There is differentiation in emotional responses from a sort of general excitement. Bridges found general agitation and excitement in the infant. He noticed that this general excitement entailing the whole body develops into feelings of distress and delight by six months and jealousy by twelve months. Delight develops into elation, affection by twelve months and joy by twenty-four months.

2. The effective stimuli tend to evoke a specific emotional change from direct tangible and concrete in childhood to indirect signs and symbols in adulthood. For example, the idea of an atomic war keeps many an adult on tenter hooks. An old person may gladden his heart by the memory of his past successes. The process by which the number of affective stimuli increases or they become complex, indirect and symbolic, is due to learning maturation, manipulation, language and reasoning.

3. It is the decline in immediate, overt and explosive expression of emotions. As the child grows older, his emotional expression becomes more subtle, subdued, distinguished, delayed and complex. For example, a person may just use wit, humour, irony or satire to show his anger, jealousy and hostility.

3.6.1 Emotion and Adolescence

In the words of Richmond "The restlessness, the changing moods, the flaming enthusiasms, often short-lived, the romantic fancies and the tendency to day-dreaming, the self-conceit and self- assertion characteristics of the girl in her teens arise from the deepest recesses of her nature. Adolescence is the heyday of the emotional life, the blossom time of all those feelings and emotions which depend at bottom upon sex." This is equally true in the case of boys.

History is full of stories of the boldness and self-assertion of youngmen in their teens, and of their reckless and daring exploits, some of which have resulted in great good, and others in evil.

Finally this is the period of more complex emotions such as, admiration, awe, reverence, gratitude, scorn, contempt, hatred, joy, grief, pity, shame, as well as aesthetic feelings, and sentiments of moral approval and disapproval.

However, in order to comprehend further the idea of adolescence and emotional development, please read the below given material.

Skinner, Charles, E. (1993)	Educational Psychology, 4th ed., New Delhi, Prentice-Hall of India Private Limited. pp. 238-289	3-4

3.7 ACTIVITIES

1. Prepare a chart comparing social development, moral development, emotional development and adolescence development.

2. Write the significance of emotional development below.

_____

_____

_____

_____

3.8 EXERCISE

Hopefully, you have studied the unit, now please comply with the following directions:

Q. 1 Discuss the characteristics of social development.

Q. 2 Describe the nature of moral development.

Q. 3 Discuss the role of adolescence development. Also describe the possible results if special care is not taken during this period.

Q. 4 "Emotions involve a combination of feelings and impulses, physical and physiological reactions." Discuss the statement.

Q. 5 Discuss the characteristics of the period of adolescence. Also explain the difficulties that are faced by Pakistani adolescents.

Q. 6 Describe the term adolescence. What are the problems of boys and girls faced by them during the period of adolescence? Explain.

Q. 7 Write short note on the following.

a) Emotional Development.

b) Moral Development.

c) Social Development.

Q. 8 Describe the emotional development in adolescence with special reference to secondary school students. Also give its educational implications.

3.9 BIBLIOGRAPHY

Hurlock, Elizabeth B, (1985) — Child Development, 7th ed., Singapore, McGraw-Hill Co.

Kundu, C. L. & Tutoo, D. N. (1985) — Educational Psychology, 4th ed., New Delhi, Sterling Publishers Private Limited.

Skinner, Chales, E. (1993) — Educational Psychology, 4th ed., New Delhi, Prentice-Hall of India Private Limited.

Worell, Judith. & William E.Stilwell (1981) — Psychology for teachers and students, New York McGraw-Hill Company.

Unit No. 4

PERSONALITY

BY.

PROF. DR. MUHAMMAD RASHID

4.1 INTRODUCTION

The study of personality is the apex of all psychology. In fact, one of the aims of education is to develop the personality of the student. Each one of us has a personality which determines our behaviour in a situation. There are many approaches to the definition of personality.

There is considerable stress on personality in the modern age. In the field of education it is considered as the central point. To develop the various aspects of personality is the main objective of present day education. However, in defining personality, there are some misconceptions. In common language the term is used to indicate physical beauty or physique. We tend to associate personality with good looks and an impressive bearing, and dismiss an ugly person as devoid of personality. This cannot be a complete meaning of personality looks are only a part of personality. From the psychological point of view, it would not be proper to consider it the correct meaning of the term. If applied merely to looks and physique it might give us a completely wrong assessment of a person.

Various scholars have given different definitions to make clear the meaning of personality. According to Jerome (1971, p. 5) "Personality is the sum of activities that can be discovered by actual observation over a long enough period of time to give reliable information".

Likewise, Eysenck (1953, p. 12) says, "Personality is the more or less stable and enduring organization of a person's character, temperament, intellect, and physique which determine his unique adjustment to the environment."

Due to the mention of various aspects of personality including the "organization" of a person's traits, this definition is considered comprehensive, although it leaves a person's behaviour which is as important as the other aspects metnioned by Eysenck. It main shortcoming may be that it considers personality definite and static.

In addition to the above mentioned description there are more views regarding the meaning given to personality by scholars of different categories.

Philosophical view. The meaning of personality according to David, R. S. (1988, p. 2) is a philosophical view and he calls it "completeness". This ideal of completeness of a human being denotes his personality.

- **Social view.** According to many sociologists, people are images of the society they live in. According to Faris, personality is the subjective side of a man's culture, his social effectiveness.

- **Bio-physical view.** Whatever an individual possesses inside him represents his personality, because the external behaviour of the individual only expresses his internal characteristics.

- **Psychological view.** According to this view, all the aspects of an individual's development represent his personality. These are the physical, mental, emotional and social facets of his individuality. Woodworth says that "Personality is the total quality of individual behaviour,"

In the various aspects of an individual personality, his physical, intellectual, emotional, social, volitional and moral sides are included.

Characteristics of the nature of an individual's personality include self-consciousness, uniqueness, sociability, adjustability, persistency, dynamism, unity and integrity and goal orientation, while consciousness and an objective attitude develop in the individual with time. This is his personality. Every individual possesses one or the other quality which is unique or specific to him. As a result of social experience, social adjustability develops in one's personality. If this persistenly occurs it means that the personality is not static but dynamic. The personality or behaviour of a person is goal oriented. All the aspects of a persons personality exhibit unity and integrity such as physical social, emotional and mental. We call this unity as personality. In other words the whole personality is affected by all its aspects.

Personality analysis approaches:

As the organism grows and interacts with the environment, it acquires an organized system of structure. There are at least three approaches, which are relatively more known than others for analysis of the personality structure and what it is made up of. These are, the trait approach, the structural approach and the field theory approach.

1. The trait approach postulates that personality is made up of a number of traits. Traits are general qualities of social and emotional behaviour by which we describe people, such as honest, sincere, friendly, aggressive, dominant, etc. Traits are exhibited in the behaviour of an individual consistently and habitually. A trait is a report of an observed consistency in the acts of general behaviour of

persons. Some psychologists have prepared a list of 177 traits which was finally reduced to the number of 12, as many of them were overlapping in meaning. Some of these are: Co-operative vs hostile, trustful vs suspicious, humorous vs dry, warm heated vs cold, indifferent etc. The major weakness of the trait approach is that it shows neither the relationship between the traits nor how the traits are related to the individual's adjustment to the environment. The trait approach does not tell us how the traits are organized or how they are used.

2. The structural approach emphasizes the organizational aspect of the biological organism of a person. It studies the person in relation to the whole in which the parts are organized. Unlike the trait approach, it does not ask how a particular person's behaviour differs from the behaviour of other persons. Rather it asks how that person's behaviour is internally organized. According to **Freud, (1973, p. 21)** personality is made of the id, the ego and the super ego. The id represents those parts of the personality that are born with: inherited potentialities, instincts and physiological body processes. The ego is reality- oriented part of the personality that is guided by the intellect; it makes decision and thinks and plans for the future. The super ego represents the consciousness of normal values that develop through the learning processes in childhood.

Freud (1973, p. 26) felt that behaviour is always the product of an interaction among these three systems with ego trying to reconcile the conflicting demands of the id, the super ego and the external world.

Although the structural approach lays stress on the balanced and interdevelopment aspects of personality, it tends to pay more attention to the internal organization of personality and less to the environment to which the personality may adjust.

3. The **Field** Theory approach emphasizes the structure of the personality and the interaction between the two. It stresses that the way a person acts is determined by the structure of his environment as well as by his own internal structure i.e. there is a unity between a person's behaviour and the environment in which it occurs. According to **Maddi** (1976, p. 41) behaviour is a function of the life spaces. The life space is made up of the person plus his psychological environment. The person is differentiated into a perceptual motor region, and inner personal region. The first represents the abilities and the second the needs. The life space is surrounded by a foreign hull. Anything which appears to be in

a child's physical environment but of which, he is totally ignorant, is in the foreign hull. If he responds or reacts to that thing either positively or negatively, it remains no longer in the foreign hull but enters the life space proper.

Regions of the person and the environment are separated by boundaries which may either be permeable and allow influences to flow. They are said to be connected when a fact in the environment can influence facts within the person or vice versa.

However, effort has been made in this unit to highlight the nature of personality and its development, with theories of personality, stages of personality development, and the role of the teacher.

4.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:-

1. discuss the concept of personality.
2. explain the nature of personality and its development.
3. identify different theories of personality.
4. specify the stages of personality development.
5. evaluate personality and children adjustment problems.
6. discuss the role of teacher in development of personality of learners.

4.3 THE NATURE OF PERSONALITY AND ITS DEVELOPMENT

Various people have defined personality by using various approaches. In simple terms, personality consists of the following approaches.

1. The way we look.
2. The way we dress.
3. The way we talk.
4. The way we act.
5. The skill with which we do things.
6. The way we maintain our health.

In fact, personality is derived from the **Greek** word **'Persona'**. In the writings of **Cicero,** there are at least four distinct meanings of persona. These include:-

1. As one appears to others.
2. The part that one plays in life.
3. An assemblage of personal qualities that fits a man for his work.
4. Distinction and dignity.

After passing through different stages in the course of time, this word ultimately became personality.

Personality is the dynamic organization within the individual of those psycho-physical systems that determine his unique adjustment to his environment. The word dynamic means that personality is growing and changing and not something fixed or static. The word organization means that personality is not a haphazard collection of traits or tendencies but a unified system where parts are related to each other and to the whole. Character is often used synonymously with personality but is usually a term which is evaluative in nature. It refers to those traits of personality which are approved such as honesty, truthfulness, self-control and their opposites. Temperament is also to be distinguished from personality. Temperament is limited to those underlying factors of personality which are constitutional and in-born such as instinctive drives and certain general tendencies, partly determined by heredity, like urgencies of drives, excitability versus placidity, and emotional instability.

General characteristics of personality are as under:

1. It is continuous.
2. It is a product of heredity and environment.
3. It is a product of inner aspects and outer ones.
4. It is unique.
5. It has two functions--overt and covert.
6. It is dynamic.
7. It has certain conscious and certain unconscious motivation.
8. It is the end product of learning.

As far as personality development is concerned, it results from a combination of inherited and environmental factors. At birth we are endowed with a complex set of genes that provide for potential development. Although this potential has its limits which no environment can transcend, these limits may be attained in an improvished

environment. Twins brought up in separate environments show a greater equality of scores in intelligence test than unrelated children reared in separate environments. The greater similarity of intelligence between twins is explained on the basis of their greater similarity in heredity. But environmentalists point out that the equality of intelligence scores is not as high as between the twins reared at the same place, which points to the influence of the environment.

For further details about the nature and development of personality, please read the material indicated below.

Jerom Kargan (1971)	Personality Development, New York, Harcourt Brace Jovanovich, Inc, pp. 4-11	4-1

4.4 THEORIES OF PERSONALITY

Many psychologists attribute the acquisition of personality characteristics to learning. These psychologists have shown that low classical conditioning and instruction are useful to understand the nature of personality by scanning through various theories. These are the following theories of personality.

1. Jung's Theory of Personality

Jung (1933, P.19) classified all individuals on the basis of their social participation and psychological characteristics into two categories: extroverts and introverts.

i) **Extroverts** are social, adventurous, co-operative, bold, optimistic, risk-takers and change seekers.

ii) **Introverts** are shy, sensitive, aloof, self- centered, less social and less adventurous.

Though **Jung** (1933. p. 21) categorized individuals into two categories, no straight line can be drawn between extroverts and introverts. Some persons may behave as extroverts in one situation and as introverts in other situation. Such persons are known as "ambiverts".

2. **Theories adopting trait approach**

Traits are considered as key to personality. Traits are basic elements of personality and vital to predict behaviour. We cannot see the traits, but we can infer them from the behaviour which an individual shows in different situations of life.

Cattell (1950) classified traits into four categories.

a. **Common traits.** Traits which are found widely distributed in the general population are known as common traits. General mental ability is a common trait. Everyone possesses it, although some are more intelligent while other as less.

b. **Unique traits.** These traits are possessed by a particular person and they are unique to that individual. According to Cattell unique traits are particularly apparent in the areas of interest and attitude i.e. person takes interest in planting flowers whereas, the other is interested in collecting stamps.

c. **Surface traits.** Traits which can be easily recognized by manifestation of behaviour are called surface traits; such as honesty, tactfulness, sincerety, truthfulness, etc.

d. **Source traits.** These are the basic structures which Cattell regards as constituting the core of personality. According to him, the underlying sources that are responsible for inter-correlation of traits are known as source traits. Source traits are always small in number than surface traits but they are better indicators of behaviour.

However, further details are given in the subsection 4.4.1.

3. **Eysenck's theory of personality**

Eysenck (1953) tried to divide people into four types on the basis of organization of traits which in turn represent behaviour. He recognized four levels of behaviour organization which are as follows:

a) **Specific response level.** The lowest level of behaviour organization is a specific response. These are individual behaviours that may or may not be characteristic of an individual. For example, an employee coming late (by chance) in the office is an example of specific response level.

b) **Habitual response level.** The second level is habitual response or combination of specific response that re-occur in similar conditions. For example, if an employee frequently comes late to office that is his habitual response.

c) **Trait level.** Several related habitual responses form a trait. If a person goes late to the office, works slowly at home and delays every activity, we can say that he has a trait of **"In-activity".**

d) **Type.** At the fourth level is type. A type is an inter-related organization of traits. For example In-activity is related to aloofness, social shyness, coolness and several other traits forming the introvent type.

Eysenck derived the following general type.

i) **Extroversion.** Characterized primarily by sociability, impulsiveness, optimism, going and activeness, etc.

ii) **Introversion.** Characterized by opposite traits such as quiet, passive, unsocial, careful, reserve and pessimistic, etc.

iii) **Psycholoicism.** People high on this dimension tend to be solitary, insensitive and uncaring about others and are opposite to accepted social standards.

iv) **Neuroticism.** People high on this dimension tend to be emotionally unstable, moody, anxious, etc.

Based upon this theory, Eysenck developed a widely used personality inventory known as Eysenck Personality Inventory (EPI), which measures Extroversion (E) and Neuroticism (N)

4. **Theory adopting development approach:(Psycho-Analytical Theory of Freud)** According to Freud (1973) personality is composed of three inter-related systems, namely id, ego and super ego.

i) **ID:** Id is the basic store house of energy. It is completely unconscious. It operates on "Pleasure principle". Id represents animal instincts and immoral tendencies. Id knows no laws, follows no rules and solely considers the satisfaction of needs.

ii) **EGO:** Ego works on "Reality principle". If id is left to itself the results can be disastrous. Ego controls the functioning of Id. Ego being rational, prohibits Id from going against realities of life. Ego formulates a plan for the satisfaction of needs and executes it keeping in consideration the reality principle.

iii) **Super Ego:** Whereas ego represents "Reality Principle" super ego represents "morality and ethics".

If ego is more powerful than Id in an individual, he is bound to have strong and balanced personality. If the ego is weak it results in maladjusted personality. According to **Freud,** there is a continuious conflict between id, ego and super ego.

4.4.1 Trait theory of personality

The trait theory classifies people according to the degree in which they possess a number of psychological or behavioural characteristics known as traits. A trait is a dimension of personality which can be measured and must describe the consistent behaviour of an individual. A trait as a dimension is conceived quantitatively as a continuous scale of measurement from extreme positive end to the extreme negative end. A trait, in order to be a meaningful measure of the human personality, must be a distinctive and 'enduring' characteristic of an individual. According to the trait theorists, if we confine ourselves to a few basic characteristics which are consistent and distinctive of the human personality, the problem of describing it should become simpler.

Theorists often distinguish between the traits which are readily observed and those which are 'deeper' and nearer to the core personality. One of the approaches to the trait theory describes the readily observable traits as 'surface traits' and the deeper ones as 'source traits'. The source traits are assumed to be the basic influence in personality, and are mostly derived by factor analysis.

Trait theories assume that personality can be characterized by knowing a person's traits. The 'trait profile' indicates an individual's standing on each of the primary traits which emerges from his score. This provides description and measurement of personality.

Moreover, trait appraisal method may be regarded as a straight-forward approach to the measurement of personality. The trait theory employs appropriate methods like correlation and factor analysis. It lends itself to correction, refinement and also experimentation. By using the techniques of factor analysis, the stability of the source traits from childhood to adulthood has been studied.

There are two major weaknesses of the trait theory. The first is that the trait profile which indicates an individual's standing on each of the primary traits which emerges from his scores, is not an adequate description of personality even though it may be a true one. When behaviour is broken down to traits, we have no way of knowing how they are actually expressed in real life.

Secondly, a person's traits are his ways of behaving under environmental provocation and, as such, the very expression of traits depends upon the interaction between the person and his environment. A person may be aggressive in certain circumstances or in relation to some situations or persons but may show no aggressive tendency even when he is provoked in some other circumstances. Thus the mere knowledge that a person possesses some traits may not help us at all in predicting his behaviour in a real situation. This is a very serious defect in trait theory of personality.

However, for further detail, please read the below referred material.

Kundu, C.L. and Tuton D.N. (1985)	Educational Psychology, 4th ed., New Delhi, Sterling Publishers, Private Limited, pp. 381-382	4-2

4.4.2 Psycho dynamic theories

Sigmund Freud's (1973) theories viewed personality as a pattern of behaviour to resolve psychological conflicts. Maddi (1976, P.21) regards Freud's theories as 'conflict model". They contain three major contributions to the study of personality. These are:

1. A theory of the structure of personality.

2. Suggestions on how defence mechanisms are used to resolve inner conflicts.

3. An analysis of the stages of development of personality in childhood.

While discussing the structure of personality, Freud (1973) proposed that passion, energy, idealism and constant power struggles are energies and conflicts which were generated among three components of the personality. He called these the id, the ego and the super ego. Their details have already been given in sub-section of 4.4. of this unit.

However, for further detail, please read the below referred material.

Shaffer, David, R. (1988)	Social and personality Development, 2nd ed., California, Brooks / Code Publishing Co. pp. 28-34	4-3

4.4.3 Individual differences

In old days, people differed on the basis of age, i.e. different people are born on different dates and hence they are different. Some are older, some younger. This was the earlier concept. Since then the concept has been considerably broadened. People differ not only with reference to age but also according to their height, weight and general physique. This enlarged concept again did not serve the purpose. Today, the concept is very broad. People can differ and they do differ on any measurable trait of personality. In the words of Charles E.Skinner:

> " Today we think of individual differences as including any measurable aspect of the total personality". This is the broadest definition.

Individual differences are of various types:

1. **Differences in physique** which means tall, thin, or fat, fair or black, etc.

2. **Differences in health** which means healthy or ill, weak or strong.

3. **Differences in intelligence.** People differ with reference to their intelligence. Here the range is very wide--from almost nil intelligence to 140 or above. On the basis of one's I.Q. one can be classified to fall in any of the dull through genius"2 categories.

4. **People differ with reference to their achievements.** From achievement in school subjects to their efficiency in vocation.

5. **Differences in motor ability.** This means control over muscles. The performance of some people in mechanical task is superior, the performance of others is inferior.

6. **People differ in interests.**

7. **Then there** are sex differences--Some of us are men, some are women and this influences the performance in various fields.

8. **People differ with reference to their learning ability and their speed of learning.** This is evident from daily examples. Take a class room. Some boys learn things quickly, other take days to learn it and some do not learn at all.

9. **People differ** with reference to their rac and nationality. Many studies lead us to conclude that people belonging to different races and nationalities differ in respect of nature, physical and mental traits, interests, and personality, etc. It can be intelligence also.

10. **Personality differences.** Another type of individual difference is in respect of personality. Many classifications of personality differences are there. According to Hippocrates, people are of four types: (a) sanguine, (b) choleric, (c) melancholic, (d) phlegmatic.

According to Jung, people can be classified into three types: (a) Introverts, (b) Extroverts, (c) Ambiverts. Terman has classified people on the basis of intelligence into nine categories--from genius to dull.

11. **People differ in respect of their development.** It includes social development, and emotional development which includes emotional maturity, emotional stability, etc.

Causes of individual differences.

Causes of individual differences are only two and those are well known.

1. Heredity.
2. Environment.

These have been discussed in the previous chapter in detail.

The knowledge of individual differences can be made use of by a teacher in many ways.

1. **Individual differences and size of class.** People differ. It is thus ideal to limit the size of the class to twenty. More students means wider requirements and impossible teaching. This knowledge then tells us to limit the size of the class.

2. **Individual differences and expectations of teacher.** A teacher should always expect failures in the class because of individual differences amongst students. It is not always possible that people should run a race and always breast the tape at the same time. Teacher should not expect too much. He should not feel frustrated when some students fail.

3. **Formation of attitudes.** The knowledge of individual differences will help a teacher to form proper attitudes towards students. He should not have a negative attitude towards a weak student. His attitude should be that of sympathy.

4. **Modification of curriculum.** When we know that in a class there are all sorts of students, we should modify the curriculum accordingly.

5. Grouping can be done on the basis of different levels of intelligence and suitable curriculum can be framed.

6. Educational and vocational guidance should be provided.

For further detail, please read the below referred material.

George J. Mouly (1968)	Psychology for Effective Teaching 2nd ed., New York, Holt, Rinehart and Winston, Inc. pp. 274-296	4-4

4.4.4 Behaviouristic theories

The basic beliefs of such theorists are that behaviours are learnt in the same manner as any other kind of responses. The differentiation of social behaviours is learned according to the environmental circumstances that are present, and that these learnt characteristics can be observed in everyday living.

While studying the effects of social bnehaviour on the development of personality characteristics, psychologists have focused attention on two major areas such as the influence of the family and the influence of peers. General findings indicate that both sources are very important in disposing the person toward certain patterns of response. Furthermore, it seems that peer influences become relatively more and more important as a child grows older.

However, for further details, please read the below referred material.

Jerome Kagan (1971)	Personality Development, New York, Harcourt Brace Jovanovich, Inc. pp. 91-114	4-5

4.4.5 Humanistic theories of personality

Humanistic theories of personality put emphasis on studying the whole human being and helping humans try to achieve their fullest potential. Subjective experience is considered as important as objective reports, and the unusual or exceptional is studied as well as the general or usual.

In this regard **Carl Rogers** (1961, p. 72) developed a self theory, which stresses that the basis of personality is the human's wish to realize potentialities. Full realization would mean that individuals would be living in perfect accord with themselves and others. However, full realization of potentials is dependent upon the atmosphere in which one grows up. Rogers hopes this atmosphere would reflect an attitude of unconditional positive regard, where individuals are valued, respected and loved simply for what they are. Unfortunately, Rogers has found that most people seem to be raised in an atmosphere of conditional positive regard, where approval and respect are given for some parts of behaviour.

According to **Rogers** (1968, p. 266) "Personality maladjustment occurs when a difference develops between a person's self-image and the reality of a situation. When a person is unable to incorporate new experiences into his or her self-image, anxiety may result and lead to the development of defenses against seeing the truth of the situation".

Rogers hopes the person would have a more flexible self and be able to adjust to situations as they occur, thus avoiding personality maladjustment.

For further details, please read the below referred book.

Arno F. Witting and Gurneyt williams III (1984)	Psychology: An Introduction. New York, McGraw-Hill Book Company, pp. 443-444	4-6

4.5 STAGES OF PERSONALITY DEVELOPMENT

Personality consists of making adjustments to needs, frustrations and conflicts, which give rise to learning processes by which the individual acquires the characteristics of his personality.

The six most important stages where the individual has to learn a new mode of adjustment, do not form water-tight compartments but tend to merge in one another, the following evolving out of the preceding like the colours of a spectrum. There stages are:

1. Infancy, from birth to 5-6 years.
2. Childhood, from 5-6 to 12-13.
3. Adolescence, from 12-13 years to 18-19 years.
4. Maturity, from 18-19 years to 30 years.
5. Old age, from 50 years to 70 years.
6. Senility, from 70 years to death.

Moreover, personality development has very much link with the character of an individual. The character is merely a special aspect of a developed personality. Where personality is the expression of a man's inner life, character is the expression of what he does or believes. While considering personality, we take into consideration intelligence, character, temperament etc. Personality as Gordon states is a comprehensive term.

For further details about the stages of personality development, please read the below referred material.

Jerome Kagan (1971)	Personality Development. New York, Harcourt Brace Jovanovich, Inc. pp. 14-39	4-7

4.6. PERSONALITY AND CHILDREN ADJUSTMENT PROBLEMS

Great changes occur over a period of a few years, in personality, attitudes and social organization because of the new environment. Sociologists and anthropologists have found how culture is literally built into the organism. If you study urban culture, suburban and rural culture you will notice the differences even in the intervals between meals, feeding practices, time of weaning, type of toilet training and kinds of stimuli to which children react emotionally.

Psychologists also point out the importance of social factors in the home, the neighbourhood and the school in shaping our personality traits. Parents and home conditions shape the child in his early formative years. A happy and congenial home atmosphere, with healthy relations between the parents and the child is very important for a balanced, well adjusted personality to develop. On the other hand study on delinquents in England shows that broken homes produce unstable, delinquent, and badly adjusted personalities. What kind of school and teachers a child gets affects his emotional, social and intellectual growth to a great extent directly or indirectly. For example, pupils of Popular teachers cheated very little, while those of disliked teachers were apt to be crooked in their ways.

As stated earlier personality is the result of heredity and environment. Teachers should keep this constantly in mind while teaching, guiding, counselling or evaluating their pulips.

As far as the question of adjustment is concerned, it is defined as the process by which the individual seeks to maintain physiological and psychological equilibrium and propels himself toward self-enhancement. However, the question of adjustment revolves around such concepts as conflict, frustration and anxiety. If all conflicts were to be resolved automatically, the individual would have no adjustment problem, and, of course, no cause for learning. The fact that difficulties arise is the basis for both self-realization and self-destruction.

For further details, please read the below referred material.

Skinner Charles, E (1993)	Educational Psychology. New Delhi, Prentice-Hall of India Private Limited. pp. 101-127	4-8

4.7 THE ROLE OF TEACHER

The personality of the teacher is important outside as well as inside the class room. Teachers are continually in contact with their students. However, we are so concerned about the behaviour of the students that we often overlook the personality and behaviour requirements of the teacher. A teacher spends most of the school day in close association with his students and, as a result, his basic attitudes and actions, his tastes and mannerisms have great influence on them. The teacher creates the emotional climate in the classroom by just being friendly or unfriendly, tolerant or overcritical, generous or severe, calm or nervous. This directly affects the children themselves because children learn attitudes and behaviour by example. Emotional tensions, for instance, are contagious; a teacher who is fearful, tense and generally hostile can induce fear, worry and insecurity among those in his charge.

The learning situation is also affected by the personality and behaviour of the teacher, for the student's response to what is being taught is largely determined by his response to the teacher. This is important because one of the major objectives of education is to instil in students a love of learning. Specifically the teacher strives to interest his students in the subject he teaches. Effective or ineffective teachers with correspondingly good or poor personalities, often determine not only the response to their own courses but also the student's future attitude toward the entire subject. Various annoying behaviour patterns and habits of the teacher reduce his effectiveness in the development of the personality of his students and in teaching-learning.

For further details of the role of teacher, please read the below referred material.

Jerome Kagan (1971)	Personality Development, New York, Harcourt Brace Jovanovich, Inc. pp. 14-19	4-9

4.8 ACTIVITIES

1. Please discuss the concept of personality with any psychologist and prepare a report of your discussion.

2. Please prepare a chart of comparison of theories of personality.

3. Please write down any four problems of personality and children adjustment below.

_____

_____

_____

_____

4.9 EXERCISE

Hopefully, you have studied the unit, now please answer the following questions.

Q. 1 "Personality is the sum total of all the biological innate dispositions, impulses, tendencies, appetites and instincts of the individual and dispositions and tendencies acquired by experience". Discuss.

Q. 2 Explain the true meaning of personality.

Q. 3 State the significance of personality.

Q. 4 What is meant by personality? Discuss.

Q. 5 Explain personality by giving its various definitions and meanings.

Q. 6 Critically describe the various view-points on the nature and concept of personality.

Q. 7 Critically examine the theories of personality.

Q. 8 Discuss the stages of personality development.

Q. 9 Describe personality and children adjustment problems.

Q. 10 Write short notes on the following.

1. Psycho-dynamic theories.
2. Trait theories.
3. Individual differences.
4. Behaviouristic theories
5. Humanistic theories.

Q. 11 Critically examine the role of the teacher in personality development of a child.

Q. 12 Discuss the trait theory of personality and its implications in the measurement of personality.

Q. 13 When a child shows an unusual amount of hostility and aggressiveness in the playground, what possible causal factors occur to you? What remedies do these courses suggest in terms of possible learning teaching?

Q. 14 List the emotional attitudes that the average teacher may expect to have directed toward him as he meets a class for the first time. Which of these attitudes appear to be pseudo-adjustment of the learner's personalities? How can a teacher reach to these attitudes constructively and avoid being worried by them?

Q. 15 How does the teacher's own personality affect his way of dealing with the various attitudes of learners toward him? Explain.

4.10 BIBLIOGRAPHY

Cattel, Raymond, B(1950) — An introduction of Personality Study, London, Hutehinson's University.

Eysenck,J.J. (1953) — Uses and Abuses of Psychology, London, Penguin Books.

Freud, S (1993) — New Introduction Lectures in Psycho analysis, New York, Norton.

Freud, S. (1973) — 'Unconscious motivation in everyday life', In D.C. McClelland & R.C. Steel (eds), Human Motivation. A Book of Readings, New Jersy, General Learning Press.

George J. Mouly(1968) — Psychology for effective teaching, 2nd ed. New York, Holt, Rinehart and Winston, Inc.

Jerome Kagan (1971) — Personality Development, New York, Harcourt Brace Jovanovich, Inc.

Jung, C.G(1933) — Psychological Types, New York Harcourt.

Kundu, C. L. & Tuton, D. N. (1985) — Educational Psychology, 4th ed New Delhi , Sterling Publishers Private Limited.

Maddi, S.R. (1976) — Personality Theories: A Comparative Analysis. (3rd ed). Home wood III, Dorsey Press.

Rogers, C.R.(1961) — On becoming a Person. Boston, Haughton-Mifflin.

Rogers, C.R.(1968) — Interpersonal relationships: Year 2000, Journal of Applied Behavioural Science No.4, PP.265-280.

Shaffer, David, R(1988) — Social and Personality Development, 2nd ed. California, Brooks/Cola Publishing Co.

Skinner Charles, E(1993) — Educational Psychology, 4th ed New Delhi, Prentice-Hall of India Private Limited.

Unit No. 5

HUMAN NEEDS

BY

PROF. DR. MUHAMMAD RASHID

5.1 INTRODUCTION

Doubtless we cannot study the behaviour of living organisms without observing that they need things. It is their wants, lacks or needs which have to be investigated if the reasons for their behaviour are to be discovered. The things which they need vary greatly, not only from species to species, but also from individual to individual within the same species.

The needs of man, on the other hand, are even so much more numerous. There are certain vital needs. He needs to breathe oxygen, to eat food, to drink water, to eliminate wastes from his body, to maintain a relatively constant body. He may need to have more than anyone else. He may need to be loved by a particular person, or may need to be constantly praised.

There are various ways to classify needs. A simple but significant one is (1) Basic physiological or primary needs, and (2) Social and psychological needs, called secondary needs.

1. **Physiological needs:** Some of the physiological needs are food, water, sex, sleep, air to breathe and satisfactory temperature. These needs arise out of the basic physiology of life and are important to survival and preservation of the species.

2. **Secondary needs:** Secondary needs represent needs of the mind and spirit rather than of the physical body. They develop a variety of motives in each person. Many of these needs are developed as one matures. Examples are rivalry, self-esteem, sense of duty, self-assertion, giving, belonging and receiving affection. The secondary needs are the ones that complicate the motivational efforts of teachers.

Characteristics of secondary needs

1. They are strongly conditioned by experience.
2. They vary in type and intensity among people.
3. They change within an individual.
4. They work in groups rather than alone.
5. They are often hidden from conscious recognition.

6. They are nebulous feelings instead of tangible physical needs.

7. They influence behaviour. It is said, "We are logical only to the extent our feelings let us be."

Although human needs have been classified as primary and secondary, they are inseparable in a particular human being. The state of the physical body affects the mind, and the state of mind (both chemical and physical condition) affects the emotions and feelings. According to the renowned psychiatrist, Dr. William C. Menninger, "The psychiatrist believes that the mind and body are inseparable - the holistic concept. The former tendency to regard the mind and body as separate has been discarded. Now we study the physical, the chemical, the psychological, and the social factory of every individual who comes to us for help." However, needs indicate lack of something which is desired or useful.

The primary needs are sometimes referred to as biological needs because they have biological origins. The secondary needs are sometimes called social needs because they are the products of social life. Though this is a valid distinction among needs, we must not overlook the fact that social needs are also biological in the sense that they are needs of biological organisms and that biological needs are also social in that the expression of these needs is to a large extent, socially determined. All men need food, but the particular objects which will satisfy this need vary widely from one society or culture to another. Religious taboos and cultural prohibitions limit greatly the, number of objects which will satisfy an individuals need for food.

Effort has been made in this unit to highlight the concept of needs, their significance and types.

5.2 OBJECTIVES

After the unit, it is hoped that you will be able to:-

1. explain the concept of needs with special reference to the differences of interests and needs.

2. discuss the significance of needs.

3. specify the types of needs.

5.3 CONCEPT OF NEEDS

A need is a tension within an organism which tends to organize the field of the organism with respect to certain incentives or goals and to incite activity directed toward their attainment. For each need there are certain objects or activities – terminal situations – which, if they are obtained, satisfy the need, thus releasing the tension. It is for this reason that the fullest of meaning of any behaviour is described only when the final situation toward which it is leading is discovered.

However, there is difference between needs and interests. We will discuss both in order to make you understand the distinction. First of all, we will discuss the physiological needs or survival needs.

Physical needs or survival needs are responsible for the initiation of random muscular or glandular responses. They are commonly called physiological drives. Body needs such as clothes, shelter, water and food provide excellent illustrations of physiological needs. These needs are responsible for the survival of the organism and give direction to activity. Important physiological needs which when modified give proper directions to the activity of the organism may be called survival motives. Important survival motives are discussed below.

1. **Hunger.** Hunger initiates food-taking activity, and food-taking is essential to the maintenance of life. This motive remains powerful in determining behaviour through childhood and early adolescence. When social and personal motives begin to assume a position, they overshadow the importance of this move. However, the hunger motive continues to play its part in our daily lives even though we are frequently unaware of its existence. Some excellent experiments by Wada have provided considerable information covering the part played by the hunger need in producing activity in human subjects. Many of the most important investigations of the influence of this motive have been conducted with adult subjects. Experiments have shown that habit and social customs account for many or our preferences in the selection of food. These preferences sometimes force the child to eat certain foods which result in unpleasant emotional disturbance.

2. **Thirst.** This motive has much similarity with the hunger need. When supply of water in the body becomes low, the mucous membrane in the throat becomes dry. This dryness of the throat produces the conscious sensation of thirst and causes the animal to become active. Experiments have shown that water placed in the mouth, eliminates the sensation of thirst immediately while water placed in the stomach does not relieve the sense of thirst for several minutes.

3. **Sex.** Although sex is a fundamental need, unlike hunger and thirst its satisfaction is not as much essential to life. The fact has enabled society to surround this most powerful need with an elaborate system of conventions and taboos that restrict the scientific study of the stimuli which arouse the drive in human beings and the reactions produced by it. Fundamentally the sex need is the result of glandular functioning. The sex organs secrete not only the reproductive cells but also certain hormones which determine the secondary sexual characteristics of the individual and play a part in the general determination of the activities of the body. The sex need is like the hunger need in that it produces an increase in the general activity of the lower animals. The strength of the sex need of an individual will depend upon two factors - the level of activity of the glands themselves and the type of change that the individual feels.

4. **Sleep.** The need to sleep is the next dominant drive or need. With sleep are associated darkness, bed and other comforts.

Sleep is defined as passive state of body, and its controlling centre is located in the brain. Normally, we should have no difficulty in sleeping when tired after a day's work but disturbed sleep indicates something else. The cause should be looked into.

5.3.1 Educational implications

A teacher should understand that each of the above physiological needs have something to do with education. We shall sum up a few of these.

- **Hunger**
  1. Inculcate right food habits in children.
  2. Ensure mid-day meal in the school.
  3. See that when a child comes to school, he has eaten well at home. A hungry child will not learn.
  4. Educate to avoid wastage of food.

- **Thirst**
  a. Proper drinking water facilities in the school should be provided. A thirsty child cannot have thirst for knowledge.
  b. Soft drink will not quench thirst. It is water only which has to be provided.

- **Sex**

  i. Sublimate sex. Deflect sex. This can be done by introducing activities like socialization, parties, reading and writing poetry.

  ii. Give sex education.

  iii. Try to solve sexual problems by counselling.

5.3.2 Psycho-social motives or secondary needs

Another group of needs or motives is called psycho-social or sociogenic or secondary, as these are acquired in the course of development and in interaction with others.

According to William Thomas, there are four fundamental motives:

i) Desire for security.
ii) Desire for response.
iii) Desire for recognition.
iv) Desire for new experience.

One more classification is:

i) Self-assertion (prestige, recognition)
ii) Economic and social security.
iii) Physical well-being, self-preservation or physical security.
iv) Gregariousness (companionship).
v) Freedom and liberty.
vi) Need for variety.

A brief explanation follows:

(a) **Self-assertion:** This is also known as "Master-Motives". It exhibits itself in human beings in a desire to dominate people and objects. Self-assertion motive is also known as "want for personal worth and superiority". This self-assertion motive includes many things such as success, leadership, recognition, importance, self-respect, honour, a place under the sun, etc. In short, everyone wants attention to be paid to him or her. You cannot even ignore a child in a cradle. Even in a classless society every individual works better subject to being given due status and recognition. Recognition or self-assertion has much to do with emotional health and personality development. If and when self-assertion and the desire to be recognized are thwarted it

leads to aggressive action against the person or factors responsible for it. This aggressive action is expressed in the form of crying, screaming and often struggling. The result is that all your life through you struggle for recognition.

The educational significance of this motive is great. Teachers should provide praise liberally. Each child must be respected and every student must be given opportunity to display himself otherwise one is likely to imbibe feelings of inferiority. Let every child feel important. It will make him happy. Let all students achieve enough recognition. A child who asserts himself through aggression needs patient handling and sympathetic consideration.

(b) **Economic and social security.** The feeling of economic insecurity haunts individuals. Economic security ensures social security also. None wants to live in poverty and want. One has to have a job which can bring one enough income to purchase the necessities of life. Economically secure people raise a family, have friends and companions and find social acceptance.

In schools, thus, we are to emphasize the fact that good education can ensure economic security. Also, we must have an education system which has a vocational base and does not produce unemployed youth. We must ask the students to achieve merit. Merit means a job and that brings with it economic and social security. Right educational and vocational guidance should be given.

(c) **Physical well-being: self-preservation.** "Self-preservation is a first law of nature." The desire to protect ourself from danger is undoubtedly a strong and impelling motive. Self-preservation also means good health to live long. It also includes air breathing, food medical care, clothing, safety etc.

Educational implications are

i) Maintaining health service in the school and subjecting students to periodic medical check-up and follow-up. If there is no follow-up, then the medical check-up is not of much importance.

ii) The school be located at such a place that it ensures perfect health of students. The site be chosen carefully. Ensure that it is not damp, moist or surrounded by factories.

iii) Building should be well-ventilated and seating and lighting arrangements should be proper.

iv) Lectures on diet be arranged and parents to be educated in this direction. See that in winter, children adequately clothed.

(d) **Gregariousness (Companionship).** Gregariousness is the desire to be with one's own kind - animals live in herds, children prefer other children. The "consciousness of kind" is a well- observed phenomenon and is a strong social motive. This is also described as an 'instinct', although some people like to live alone and as such they give the lie to this fact that gregariousness is an instinct. The fact that we live in groups is because of our earliest teaching. Habits of group behaviour are built in early life. Further, group behaviour ensures safety.

Love is a popular form of gregariousness. Love has many shapes and hues. Its connection varies from age to age. It is between mother and son, boy and girl (romance as we call it) and so on. It is the basis for survival. If you do not give love to an infant, he may die.

Educational implications: Teach children the importance of give and take. Project method, group discussions, seminars and other co-curricular activities should be included in school programme.

(e) **Freedom and liberty.** This is perhaps the greatest need of intellectuals. Freedom and liberty are expressed in many aspects - freedom and liberty to create, to think, to write, to express, in self-government and in making decisions. Regimentation is hated. Man wants freedom for the progress of his spirit.

As a teacher, thus, you are to avoid being rigid in the classroom. Introduce a "thinker's period" in the school time-table.

(f) **Variety.** Variety is the spice of life. Man seeks change and wants to break monotony. You cannot eat the same food every day. You do not wear the same dress every day. Hence this need of having different things at different times. The need thus explains itself. Its educational significance is great. Give different ideas to children. Change your teaching strategy. This will keep children involved.

Now we will discuss interests.

James M. Sawhrey and Charles W. Telford (1960) define interest as "favourable attitude towards object." Interests, thus, are positive in nature. A high level of interest in a given area means a positive acceptance and, perhaps, an energetic attitude toward it. A low level of interest manifests a passive and listless attitude toward a given goal or object.

In simple terms, interest means "likes and dislikes" You like a thing, because you are interested in it and vice versa. What you do not like, you are just not interested in it. It is also said that interest is that affective tone of mind which prompts us to spontaneous activity. Interest is also defined as "felt value of an end." William McDougall says, "Interest is the latent attention."

Drever says, "Interest is disposition in its dynamic aspect." There are many shades in which the word interest can be used. For instance as object of interest, that is when I say, "I am interested in that painting," or as the nature of man's activity: "He is looking at it with interest," or as structure of a man's mind: "I am interested in novel reading."

Interest is positive in nature. It is important for educational activity.

Types of interests

These are of three types.

1. **Expressed interests.** Expressed interests are those which the individual talks about. As, "I am interested in fiction". It is direct revealing of one's interest.

2. **Manifest interest.** It is indirect revelation - by actions, including motions, gestures. There are other ways of manifesting it. A scientist is busy in an experiment. He forgets his meals. His interest stands revealed.

3. **Tested/inventories interest.** Formally measured with the help of a tool, it tells us about quality of interest.

Factors affecting interests

Various factors influencing interests are given below:

1. Age and sex.
2. Physical development.
3. Intelligence.
4. Learning as a factor in interests.

Other than the above factors, according to Encyclopedia of Educational Research by Harris, interests are influenced by the following factors:

(a) Socio-economic status of the family. Children coming from rich socio-economic background have different interests.

(b) Aptitudes. Aptitudes and development of interests are related.

(c) Personality pattern of the person. A timid introverted person has interests of its own type.

(d) Individual difference have a great role to play in the development of interests.

However, following are the types of interests.

1. **Interest in play.** Play tendencies, as discussed earlier, may be observed among children very early in life. Although there are important changes of play interests with age, there is no single age at which there is an abrupt change in the nature of this interest. Early studies by Lehman and Witty (1956) revealed that changes of play interests that characterize a given age appear to be gradual in nature.

2. **Reading interest.** This has been discussed earlier. The reading interests of kindergarten and elementary school children tend to follow a more or less definite pattern. These children like stories that are short and profusely illustrated; about animals, fairies and other children. There is, later on, a gradual change from fantasies to facts, although boys at all age levels show interest in fairy stories than girls. Adolescents like adventures, biographies, books related to sex, etc.

...terests in school-work. School work is interesting to a student when he sees how the subject matter, which he is expected to learn, relates to him as an individual; how it effects, how it serves his purpose, how it satisfies his needs. He is interested when he realizes that learning is a means to one of the goals and that the result of the learning experiences will make a difference to him personality. When he appreciates that, he has something at stake in the results.

In order to increase the interest of a child in a subject, a teacher must know something about the student and a great about the subject. He must understand the pupils wants, problems, tendencies, goals and interests at their current stage of development. He should share responsibility with them. Participation in a foot-ball game has a great interest in it than being a mere spectator.

One of the ways of arousing interest in classroom activities is to make students participants rather than spectators or members of an audience.

4. **Vocational interests.** Vocational interests have been found to be sufficiently developed so that reasonably reliable measures can be taken when the child is fifteen or sixteen (Strong, 1943).

5. **Conversation.** Conversation is yet another interest of children. It is difficult to keep their tongues tied. They are talking when not doing something. We must introduce word building games and debates in our schools.

6. **Radio and television.** Children are usually interested in the listening to the radio and watching T.V. It is leisure time activity. It has educational value also. You listen to songs, music, news, and informative talks. There is enough learning material there. Adolescents are specially interested in songs and plays.

7. **Movies.** Movies are a part of major interests of the child. Now with the availability of VCR - every home is a theater and all sorts of films can be seen. Let the children watch those movies which extol honesty, truth, bravery, and other noble qualities.

8. **Listening** is another interest of children. Elders talk. The youngster just stands by and listens.

For further details, please read the below referred book.

George J. Mouly (1968)	Psychology for Effective Teaching, 2nd ed., New York, Holt, Rinehart and Winston, pp. 60-65	5-1

5.4 SIGNIFICANCE OF NEEDS

Maslow suggested that all individuals have their sets of needs they seek to fulfil. They are arranged in a hierarchy, ranging from the physiological needs to the self-actualization need. All the basic needs are innate and, therefore, they can be affected by genetic variation. Although the needs are biological in origin, only behaviours that satisfy the biological needs such as eating, drinking, breathing and so on are unlearned.

Behaviours that satisfy other needs are learned. Eating satisfies hunger, but what satisfies a higher basic need such as the need for love? The answer is not absolute. It depends, of course, upon what one has learned as satisfying. The basic need concept is thus mid-way between the instinctual and environmental interpretation of motivated behaviour.

The physiological needs are the strongest of the basic needs and, therefore, the lowest on the hierarchy. Maslow believed that these needs were numerous and hence did not attempt to compile a comprehensive list. The classic examples are hunger, thirst, sex and breathing. Physiological needs are sources of motivation and bear a close resemblance to the instinct concept. They provoke specific desires aimed at satisfaction. Periodic failure to gratify physiological needs will prevent transition to the next stage of the hierarchy. Such failure would ultimately influence a person's attitudes towards future events and stifle the emergence of behaviours motivated by higher basic needs.

However, a need, a set and an attitude are psychologically the same thing. The terms are merely being used in different contexts. When a subject is given pairs of digits and told to write down their sums, he is put in the adding attitude and is operating under a set for addition. Actually it would be just as reasonable to say that he has temporarily acquired a need for sums, a need which is derived from his need to do what the experimenter asks him to do and to do it well. This in turn is a phase of his need for approbation, which, of course, belongs properly to all gregarious animals like man. Need, set, attitude - these are all dynamic psychological concepts which express the fact that the organism can be set to pursue a given end or purpose consistently and without being put off the main track by every casual stimulation that comes along.

Needs have a qualitative aspect which makes it possible for us to distinguish such primary needs as those for food, sex, thermal constancy and elimination, and such secondary needs as those for superiority, submission, affiliation, freedom and inviolacy. Such terms as these are, of course, generalizations from the specific situations in which the concrete activities of needs end. We do not have a general need to be superior, but rather a need to be superior in a particular way in a specific situation. For example, to win this race, to get the highest marks in this examination, to know more about a certain field of study than any other person. Yet it is often helpful in the study of certain problems of personality and in the comparison of individuals to conceptualize general needs of which any given behaviour or trait is but a specific and concrete expression.

For the above discussion, the significance of needs is very clear. However, in order to comprehend needs, please read the below mentioned book.

W. Porter Swift. (1969)	General Psychology, New York, McGraw-Hill Book Company, pp. 51-54	3

5.5 TYPES OF NEEDS

A healthy personality is able to find fascination and challenge in the beauties and problems which life poses and provides. His perception and energies are not bound to the problem of quieting pain, loneliness, boredom, or other subjective symptoms of basic need privation. These needs have been successfully coped with or, at the least, the healthy personality feels confident that whenever such basic needs arise, he will be competent to cope with them. Consequently, he can afford to forget himself and become involved in work, play, other persons' problems and perhaps the well-being of mankind as a whole. It is difficult to become concerned about the hunger or slavery of another person when one is in the midst of such privation oneself.

Let's come to the types of needs. These include:-

1. The first level of the hierarchy consists of physiological needs. If needs such as hunger or thirst are not adequately being met, the needs above them on the hierarchy are pushed into the background in terms of controlling behaviour. The individual is in an emergency situation and his or her whole being is dominated by the need. For example, someone in a state of semi-starvation will constantly think, dream, and talk about food.

2. Like the physiological needs, safety needs are primarily triggered in emergency situations. Higher needs become unimportant when one's life is endangered, and our behaviour reflects our attempts to remain secure. An example of this recently occurred when the remnants of a hurricane caused extensive flooding in neighbourhood. Some of neighbors sustained thousands of dollars of damage to their homes; yet at the time of the flood, their material loss was unimportant to them because escaping the flood was all that mattered.

Safety needs dominate our behaviour primarily in times of emergency. Maslow, however, felt that working of the safety needs can also be seen in people's preference for familiar surroundings, secure jobs, savings accounts, and insurance. Safety needs are most evident in young children, as shown when an infant cries if it is dropped suddenly, is startled by a loud sound, or a stranger enters the rooms.

Maslow believed that the safety needs of most adults in our society are adequately met. Their needs do not, therefore, normally dominate behaviour. Some types of neurosis, however, can be understood, according to Maslow, as the nonsatisfaction of these needs. In this nonsatisfied state one reacts as if one were continually in a threatening situation. Maslow proposed that obsessive-compulsive neuroses exemplify behaviour generated by nonsatisfaction of the safety needs.

3. When safety needs have been adequately met, they become unimportant in the direction of behaviour, and the love or belongingness needs emerge, these needs involve a hunger for affectionate relationships with others, a need to feel part of a group, or a feeling that one"belongs." The love needs are not equivalent to sexual needs (which are physiological), though sexual intimacy can serve to satisfy one's need to belong. The love needs require both the receiving and giving of love; love from another and someone to love.

One may gain a sense of belonging in a number of ways. Marriage, a job, or admission to a select group such as a fraternity, a club, or civic group can serve this need. According to Maslow, thwarting of the love needs leads to behavioural maladjustment and pathology and is the most common basis for behavioural problems in our society.

4. If the love needs have been adequately met, they too slip into the background in relation to guiding behaviour, and the esteem needs become dominant. These are needs for a positive, high evaluation of oneself. This evaluation can be broken down into two sub-categories - a need for self-esteem and a need for esteem from others.

The need for self-esteem motivates the individual to strive for achievement, strength, confidence, independence, and freedom. It seems to have at its core the desire to feel worthwhile, and appears highly similar to Rogers's concept of positive regard. The related need of esteem from others involves a desire for reputation, status, recognition, appreciation by others of one's abilities, and a feeling of importance.

When the needs of esteem are satisfied, one has feelings of self-confidence and self-worth and sees oneself as having a purpose in the world. When these needs are frustrated, maladjustment can occur, typified by feelings of inferiority, weakness, and helplessness. Lack of esteem leads the individual to feel inconsequential and to have little self-worth. One suspects that Maslow would regard depression as triggered by inadequate satisfaction of the esteem needs.

For further detail, please read the below referred book.

Kundu, C.L. and Tutoo, D.N. (1985)	Educational Psychology, 4th ed., New Delhi, Sterling Publishers Private Limited, pp. 140-151	5-3

5.6. ACTIVITIES

1. Please write down a brief definition of interests and Needs.
(Interests)_____
_____
(Needs)_____
_____

2. Please make a chart of types of needs.

3. Please write in two lines the significance of needs.
_____
_____
_____
_____

5.7 EXERCISE

Hopefully, you have read the unit, now please answer the following questions:

Q. 1 Discuss the concept of needs.

Q. 2 Describe in your own words, the significance of needs.

Q. 3 Discuss the impact of needs in the development of personality.

Q. 4 Distinguish between primary and secondary needs.

Q. 5 "When a person will not acknowledge his needs, these needs will give rise to unconscious motives." Discuss in relation to the significance of needs.

Q. 6 "Many interests and healthier personalities originate in the quest for gratification of basic needs." Discuss the statement.

Q. 7 Discuss the idea of Maslow.

Q. 8 Critically examine the types of needs.

Q. 9 What is meant by the need for economic security. Also discuss its importance in everyday life.

Q. 11 "Failure to gratify a basic need results in a directly related form of disfunction or disturbance, either physiological or psychological. Discuss the statement.

5.8 BIBLIOGRAPHY

Harris, Fred E.(1948) "Do children Think critically about classroom procedures"? Journal of Educational Psychology - 39 USA.

Kundu. CL & DN Tutoo (1985) Educational Psychology, 4th ed., New Delhi, Sterling Publishers Private Limited.

Maslow, A.H. (1962) "Some basic propositions of growth and self-achievement," In A.W. Combs (Chmn), Perceiving, Behaviouring, Becoming, Washington D.C. Association for Supervision and Curriculum Development.

McDougall, Willian(1960) "The effect of past experience on mental performance in the elderly" British Journal of Medical Psychology - 33.

Mouly, George J. (1968) Psychology for Effective Teaching, 2nd ed., New York, Holt, Rinehart and Winston.

Swift, W.Porter (1969) General Psychology, New York, McGraw-Hill Book Company.

Witty, Witty E. (1956) 'Comparative Psychology (behaviour)' Annual Review of Physiology, , 18.

Unit No. 6

LEARNING

BY

PROF. DR. MUHAMMAD RASHID

6.1 INTRODUCTION

The study of learning is considered most important in educational psychology. The main emphasis of both teacher and the pupil in the entire teaching-learning process is on learning. The central point of the whole education system is learning. The main aim of educational psychology is also to make learning effective and purposeful. In the present scientific age the concept of learning is being presented in a more scientific way. But it is essential to know what learning is before going through the details of the learning process.

The learning process is a continuous process. Being a comprehensive form it is not limited up the school boundaries. This process exists in every area of life. To clarify the meaning of learning, different experts have given various definitions which are as follows:

"Learning is modification of behaviour through experience" **Gates (1968, p. 41)**

"Learning involves the acquisition of habits, knowledge and attitudes" **Crow and crow (1956, p. 161)**

"Learning is any change in behaviour resulting from behaviour" **Guilford (1967, p. 131)**

"Learning includes both acquisition and retention" **Skinner (1969, p. 196)**

On the basis of the above definitions we can say that in learning;

- new experiences are acquired and old experiences are organized,
- new experiences are consolidated,
- learning changes behaviour,
- Learning is the verification of new process i.e. it is the construction of new experiences.

Both maturation and learning are inter-related. Both contribute to the development of the person. Before we discuss their relationship we may briefly state the meaning of maturation. Though maturation and learning are not separate or distinct causes of development, they are closely inter-related, the one aiding or retarding the other. Maturation, which depends upon hereditary endowment, provides the raw material for learning and determines the more general patterns and sequences of the individual's behaviour. But without practice development would not take place through maturation alone. It is wrong to presume that maturation is limited to pre-natal and learning to the post-natal periods of the individual's life.

There are certain phylogenetic functions which are common to the race, e.g., crawling, creeping, sitting, walking, etc. They are other genetic functions which are due to the individual only e.g. swimming, cycling etc. They are mostly due to learning and less due to maturation.

The following facts emerge from our present knowledge of the inter-relationship of maturation and learning:

1. Individual differences in attitudes, interests, ambitions and personality patterns are not due to maturation alone but due to maturation and learning. If development were the result of maturation alone, there would not have been individual personality.

2. Maturation sets limits beyond which development cannot progress even with the most favourable learning methods or the strongest motivation on the part of the learner (Gessell). The point has been stressed by Cattell and others when they said "All learning and adjustment in limited by inherent properties of the maturation."

3. Interrelationship between maturation and learning establishes a "time'table" for learning. The individual cannot learn until he is ready. Developmental readiness provides the "teachable moment" when the task should be learned. As Scott has pointed out, "Any attempt to teach a child or animal at too early a period of development may result in his learning bad habits or simply in his learning not to learn, either of which results may greatly handicap him in later life." Trying to teach a child to read, for example, before his spontaneous vocalizations have developed, will often dampen his interest in reading. Similarly, forced toilet training often results in enuresis. Many under achievers in schools and colleges are the products of forced learning on the part of very zealous parents.

Skills are efficient ways of doing things. Anything we do can be learnt either skillfully or ineptly. Generally skill can be developed and improved by guidance in new techniques. Interest and success are dependent on adequate skill for satisfactory accomplishment. Lack of skill means backwardness and reluctance to participate. In skill learning the end result is two fold:

1. Development of the skill.

2. Habit of using it in situations where it is appropriate.

Every skill involves content of some kind and a sequence of action. Some skills are largely a matter of muscle training, some depend upon perceptual and conceptual factors. Some skills such as skills in group participation are strong in emotional components, other, such as typing or shorthand, may be developed with little emotional involvement. We can develop skill in perceiving, forming concepts, remembering and solving problems.

The following points may prove more beneficial to the teacher in guiding his students towards the development of a skill in a special area:

1. **Readiness.** Unless and until one is ready for the acquisition of a certain skill one cannot be made to learn or acquire it. Therefore, the first step in guiding a learner towards the development of any skill is to make him ready to learn that skill. He must be given adequate incentive or sufficient motivation to start the learning of skill with great enthusiasm and effort.

2. **The knowledge of one's progress.** There must be a continuous appraisal of the skill learned so that the learner may be acquainted with the pitfalls in his learning. This can give him additional incentive to keep him on the track and help him to learn correct responses in place of incorrect ones.

3. **Utilization of the method of transfer of training.** Phenomenon of transfer of learning may help a lot in learning new skills. A person who has learnt a wide variety of skills is able to learn new skills with greater ease. Therefore, by securing the help of positive transfer, the teacher should guide the students to acquire new skills.

4. **Adequate guidance.** The students should be given adequate amount of guidance at the proper time in learning a skill. Too much help makes the students dependent and kills their originality and initiative, while denial of guidance discourages them in learning further. Therefore, an intermediate principle should be followed. They should be given help only when they think they need it. Otherwise self-reliance should be inculcated in learning.

5. **Maintaining a proper balance between speed and accuracy.** Speed as well as accuracy both are important for the proper learning of a skill. Which one of them should be given main importance is a difficult question to answer. In my opinion, both are equally important as they add to the proficiency and competency of a person in a specific area. Therefore, both should be given equal weightage in learning a skill.

6. **Learning methods.** The unit of practice as Boring, Langfield and Weld advocate, "must involve the entire sequence of a pattern which is essential for correct performance." Neither should the learner involve himself in peace-meal learning or concentrate on minute details, nor should he choose very large units for practising. In all situations he should try to keep a proper balance between the whole and part methods of learning. In place of continued or massed practice, the method of distributed practice should be adopted. It is better to practise a skill for 10 days by giving one hour than to devote 5 hours daily for two days.

7. **Adequate practice.** Learning of skills requires consistent practice. Therefore, sufficient opportunities and encouragement should be provided for practising the activities involved in performing a task skillfully. But it should also be seen that mere practice is not enough. Practice makes a man perfect only when practice is restricted to correct performance. Therefore, the correct responses should be practised by the students from the very beginning. Enough practice should be given to the students to acquire a skill to the level or extent over learning so that there may be a smooth flawless coordination of responses. Skills cannot be acquired by merely reading or learning techniques or ways of performing the tasks. They are better learnt by observing demonstration by or the actual performance of experienced and skilled persons. Therefore, attempts should be made to arrange demonstrations and exhibiting models for acquiring skills.

Apart from the above, there are other factors like suitability of the learning environment, the moods, temperament and other internal factors of the learner that should be kept in mind while guiding the students in learning a skill. Much depends upon the will and determination of the learner. If he wishes no power can check him in acquiring the desired proficiency in any skill.

Moreover, Bruner's model of concept learning, the Piaget model of concept learning and classical conditioning theory have been discussed in this unit.

Effort has been made to divide the sections into sub-sections to make the text more clear, meaningful and easy to understand.

6.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:-

1. discuss the nature of learning,

2. explain the important features of learning,

3. discuss the theories of learning such as:
   - trial and error theory of learning,
   - theory of behaviour,
   - insight theory of learning/Gestalt Field theory,

4. identify Bruner's model of concept learning,

5. explain the Piaget model of concept learning,

6. discuss operant conditioning of learning.

6.3 THE NATURE OF LEARNING

Learning is the central theme of educational psychology. It is the most pervasive phenomenon that goes in and out of school and the classroom. It can be defined as "change in behavioour brought about by activity, training or experience." it is not only the acquisition of knowledge through various means but much more.

Although learning means change in behaviour, but not all changes in behaviour are learning. Change or modification in behaviour also occurs through fatigue, drugs, illness, warm-up, and through maturation. Behaviour changes through the first four are transitory changes whereas learning involves relatively permanent changes. The maturational changes are the result of unfolding and ripening of inherited traits and are relatively independent of activity, practice or experience.

Unlike many animals at birth, the human infant has very few inborn patterns of behaviour or instinct upon which to rely for adjustment to its environment. It has, therefore, to be dependent on others, especially adults, in adjusting to demands of its environment. But as the child grows and develops, he constantly learns modes of adjustment to his environment. As a consequence of such learning, the human being becomes more and more independent and self-reliant.

Though the behavioural changes brought about by learning are more enduring, they are not "static" which once acquired do not change throughout life. They are being modified constantly and are only relatively stable.

Learning is often thought of as memorization, acquisition of knowledge, skills or habits and problem- solving. But these are only the learning activities that formally go

in the classroom. Learning includes much more than that. It includes changes in interests, attitudes, beliefs, values and goals.

For the purpose of research, etc., psychologists have distinguished several "kinds" of learning, such as verbal learning, perceptual learning, motor learning, problem solving, and emotional learning. But these distinctions, though useful for research are otherwise artificial. No one kind of learning takes place in isolation. A girl who learns shorthand does not learn a motor skill only. She also learns many arbitrary relationships between short visual symbols (verbal, motor and associative learning). At the same time she also learns some attitudes about shorthand, the commercial world, and herself (emotional learning). Learning is thus multiple. Such learnings are sometimes called "concomitant" or "incidental", but at times they may be central to the learner or not so incidental.

Learning is contingent upon experience i.e. any pupil's learning comes through what he himself experiences. Two pupils learning in the same stimulus situation, experience the situation differently, hence their responses and their learning vary.

A child's learning, in and out of school, is closely linked up with his goals, purposes and past satisfactions and dissatisfactions. It is these which determine what he sees in the learning situation and how he acts therein. The learner would learn from activity that would yield satisfactions he wants or would lead him to goals he aspires for. Thus learning is purposeful.

However, the best definition and explanation of what is learning has been given to us by **E. R. Hilgard (1974, p. 29)** in his world famous book "Theories of Learning."

According to him, let us take a situation, say, situation of cycling. There is a person called .X. There is a situation when X does not know cycling, and then there is another situation when the same X knows cycling.

The in-between process when the behaviour shifts from unlearnt to learnt is know as learning.

Learning is thus a process of acquisition-it is acquiring and not losing.

However, **Hilgard's** says that, "Learning is the process by which an activity originates or is changed through reacting to an encountered situation, provided that the

characteristics of the change in activity cannot be explained on the basis of native tendencies, maturation or temporary status of the organism"

A simple definition of learning will be "Any change in behaviour which is a result of experience and which causes people to face later situations differently may be called learning".

We can conclude the best definition of learning as, "Learning is more or less permanent change in behaviour as a result of reinforcement"

Remember, change in behaviour can take place as a result of drugs too. Say the doctor gives you an injection. A change in behaviour will take place, but this is not learning. In learning, voluntary participation is a must. It may so happen that when the effect of the drug wears off, you may revert to the earlier pattern of behaviour, whereas in the case of learning, the change in behaviour is more or less permanent.

It is the word "Reinforcement" that matters. Reinforcement is the same thing as reward. It increases the probability of repetition of desired response. Reinforcement is reward-say food, water, sexual contact. It can be non-material also like simple praise of the child.

The above discussion on definition reveals the following features/characteristics of learning:

1. Learning takes place during some activity in which the organism is involved. If you have to learn cooking, you have to do it yourself and not see someone else cook.

2. Learning is motivated, i.e. we learn when there is need to learn. The need may be individual and social.

3. Learning is a long and continuous process.

4. Learning takes place in both formal and informal situations.

5. Learning is purposeful. If it is not, would not be attempted.

6. Learning is multiple. There are various types of learning like verbal, skill, motor, conceptual, perceptual, associative, attitudinal, etc.

7. Learning is a conscious and deliberate process. You will not learn in a passive situation.

8. Learning may be right or wrong-desirable or not desirable.

9. Learning can be transferred. There is such a thing as transfer of training.

However, for more details, please read the below mentioned book.

Kundu, C. L. and Tutoo, D.N (1985)	*Educational Psychology*, 4th ed., New Delhi, Sterling Publishers Private Limited, pp. 211–213	6–1

6.4 THE THEORIES OF LEARNING

The following theories are discussed as:

1. Trial and error theory of learning.

2. Theory of behaviour.

3. Insight theory of learning.

6.4.1 Trial and error theory of learning

For nearly half a century, one learning theory dominated all others in the U.S.A. despite many attacks on it and the rise of its many rivals. It was the theory of E.L. Thorndike (1974). This theory was given by him in 1878 in his book 'Animal Intelligence'.

The basis of learning accepted by Thorndike in his earliest writings was association between sense impressions and impulses to action. Such an association comes to be know as 'bond' or a 'connection'. Because it is these bonds or connections which become strengthened or weakened in making and breaking of habits. Thorndike's system sometimes has been called a'bond' psychology or simply 'connectionism'. As such it is the original S-R Psychology of learning.

Thorndike's theory of learning is based on the following three elements.

- Stimulus element which involves an environment event.

- The response element which indicates a behavioural act.

- The formation of a connection or bond which implies that every stimulus is linked with some kind of response and thus makes for the building block or structure of behaviour. He further states that the formation of a bond (S-R bond) is the key expression in describing the learning theory of Thorndike. When an organism is said to have learned something, it is essentially the formation of a connection or bond between a stimulus and a response.

Connection has two phases. The first phases was before 1930. Second phase was after 1939 because Thorndike made important changes later on the basis of experiments. We shall examine this theory as follows:

There are four characteristic features of trial and error learning.

a. There is some sort of a motive that arouses or sustains the activity. This motive may appear in the form of need, a problem or a goal. Essentially the equilibrium of the organism is disturbed and this impels the organism to react to the situation in an effort that comes to terms with it.

b. Several different kinds of responses are made.

c. There is progressive elimination of superfluous unsuccessful or wrong form of activity.

d. Finally there is a progressive integration and establishment of the reaction by which the goal is achieved.

The essential point in trial and error is the second point-the process by which the correct response is identified through trying various responses until a solution which permits the attainment of goal is achieved.

Thorndike studies the character or trial and error learning in a number of experiments on cats. A favourite device was his puzzle box used years ago by him for his studies of animal learning.

Thorndike believes that all learning takes place through the following three major laws.

(A) **The law of readiness.** This law is indicative of the learner's state of willingness participate in the learning process.

According to Thorndike 1963, P.422), readiness is preparation for action. It is not readiness which comes naturally with maturation. It is a law of preparatory adjustment, not a law about growth. Thorndike termed the neuro and the synapse involved in establishment of a specific bond or connection, a "conduction unit". According to this law, for a conduction unit ready to conduct, to do, is satisfying, and for it not to do so is annoying.

(B) **The law of effect.** The law of effect states the pleasure-pain principle. A response is strengthened if it is followed by pleasure and weakened if followed by displeasure.

(C) **The law of exercise or repetition.** According to this law the more times a stimulus-induced response is repeated, the longer it will be retained. The law states that, other thing being equal, exercise strengthens the bond between situation and response. Conversely a bond is weakened through failure to exercise it. Thus the law has two sub-parts: (i) law of use: and (ii) law of disuse.

1. **Multiple response.** Confronted with a new situation the organism responds in a variety of ways before arriving at the correct response.

2. **Attitude.** The learner performs the task well if he has his attitude set on the task.

3. **Prepotency of elements.** The learner reacts to the learning situation in a selective manner. He uses his insight, selects the prepotent elements in a situation and bases his response upon those elements.

4. **Analogy.** The organism responds to a new situation on the basis of the responses made by him in similar situation in the past. He makes responses by comparison or analogy.

5. **Associative shifting.** According to it we can get any response from the learner of which he is capable, associated with any situation to which he is sensitive.

6. **Principle of polarity.** It states that connections act more easily in the direction in which they were first formed than in opposite direction.

A serious limitation of this theory is its lack of understanding. Thorndike did not consider understanding important. He merely assumed that it would follow as a natural result of well-organized learning. He believed that insightful learning, though it did occur, was infrequent.

There are some educational implications of the trial and error theory.

1. **Effect of motivation.** It is the most important factor in all learning. Motivate the child.

2. **Exercise Patience.** Learning by trial and error theory is always gradual. The teacher must exercise with the child if the child does not show any progress immediately in any learning situation.

3. **Place of exercise.** Exercise has its own place in education and learning. Repeat, give a sufficient drill in some tests.

4. This theory has drawn our attention to the principle of learning by doing. You will learn only when you do a thing.

5. Make learning meaningful. Effect of belonging to a thing should be exploited.

6. We must learn basic things, need for it in any learning.

However, the main concern of the teacher is to identify the bonds he wants to form or break in the students. The next stage is to ensure satisfying conditions for the bond formation, and annoying conditions, if he does not want the existing bonds to continue. For performance, the teacher will encourage repetition, drills, etc, so that the connections are strengthened. The teacher must motivate the students to the learning situation. Thorndike (1990, P.233) has given five aids to improve learning. They are.

1. Interest in the work.

2. Interest in improvement.

3. Significance.

4. Problem-attitude.

5. Attentiveness.

Further to Thorndike (1990, pp. 301-303):

i) Learning capacity depends upon the number of bonds and their availability. The differences between bright and dull are quantitative and not qualitative.

ii) Mere repetition is of no use. Repetition becomes useful when the response is rewarded. In that case, repetition strengthens the connections.

iii) Role of understanding is minimized because understanding grows out of previous habits. The best way to get understanding is to develop a body of connections appropriate to that understanding.

iv) Transfer in learning takes place because of identical elements in the two situations. The transfer effect can also be attributed to the principle of analogy described as assimilation.

v) Rewards have more strengthening effect than the corresponding weakening effect of punishment. Rewards have spread also and so they strengthen the neighbouring connection as well, in addition to the strengthening of the rewarded connections. Punishment may work indirectly, i.e. it may make the learner do something else which may bring him reward.

vi) Forgetting takes place because of the law of disuse, in accordance with the empirical studies of Ebbinghans.

6.4.2 Theory of behaviour

B.F.Skinner (1958, p. 98) formulated his theory of behaviour based on conditioning in 1930. His theory came to be known as Operant Conditioning. Skinner developed his theory on the lines of Thorndike's learning by selecting and connecting under the law of effect.

Operant conditioning is the learning process whereby a response is made more probable or more frequent by re-inforcement. An operant is a set of acts which constitutes an organism's doing something. In the process of operant conditioning, operant responses are modified or changed by re-inforcement. Re-inforcement is a special kind or aspect of conditioning within which the tendency for a stimulus to evoke a response on subsequent occasions is increased by reduction of a need.

Most S-R theorists have assumed the existence of a stimulus as a pre-requisite for evoking a response. In the absence of any external stimulus they have assumed some internal stimuli for evoking the response. Skinner was against this "No stimulus-no response" theory and believed that most of the responses could not be attributed to the known stimuli. He defined two kinds of responses-the one elicited by known stimuli, which he called as respondent or reflexive behaviour and the other emitted by the unknown stimuli, which he called as operant behaviour.

Respondent behaviour is learnt according to Pavlovian model of conditioning. Since it is concerned with the stimuli, it is known as S-type conditioning. Skinner attaches greater importance to operant behaviour which is primarily concerned with response rather than stimuli. It is known as R-type conditioning. Out of many responses which an organism is capable of giving, the problem with the experimenter is to evoke only the appropriate responses and fix them properly. Thus Skinner changed the usual S-R formula into R-S formula.

According to the R-S formula, when a desired response is emitted, a reinforcing stimulus is presented. Thus a response is conditioned by constantly reinforcing it. The reinforcement must come after the response has been made and not before it. If the response is not reinforced, it results in the extinction of the response (operant).

A reinforcer is the stimulus whose presentation or removal increases the probability of a response. Skinner (1958) thinks of two kinds of reinforcers-positive and negative. A positive reinforcer is any stimulus the presentation of which strengthens the probability of a response. A negative reinforcer is any stimulus the withdrawal of which weakens the probability of responses. Electric shock, a loud voice, etc, are negative reinforcers, while food, water, sexual contact, etc, are positive reinforcers.

Skinner (1958) does not attribute motivation to internal processes with the organism. He takes for granted the reinforcement of conditions in a commonsense way for motivation. Food is reinforcing to a rat or a pigeon. Knowledge of correctness is reinforcing to a learning in the school. Reward strengthens the behaviour which preceded it but punishment does not permanently reduce a tendency to respond. Extinction, i.e. permitting a behaviour to die out by not reinforcing it and not punishment is the appropriate process for breaking habits. This is known as external approach to motivation.

As a result of this external approach Skinner (1958) has worked out the following effective schedules of reinforcement.

1. **Fixed internal reinforcement.** When reinforcement is given after a fixed interval of time, it is called fixed interval reinforcement.

2. **Fixed ratio reinforcement.** When reinforcement is given after a varying number of responses, it is called fixed ratio reinforcement.

3. **Variable** or interval-and-ratio reinforcement. When reinforcement is given at varying number of responses, it is called variable reinforcement.

Learning of a response takes place quickly if every correct response is reinforced but it is forgotten easily when the reinforcement is stopped. If reinforcement is given after varying number of correct responses or at varying intervals of time, the response is remarkably resistant to extinction.

There are two types of operant reinforcement-stimulus discrimination and response differentiation. Stimulus discrimination occurs when a given response is made to a member of a pair of stimuli and not to the other member of the pair. Differentiation of a response occurs when the response form is altered or adjusted appropriately to the situation.

Skinner's theory of operant conditioning has been applied to learning by developing teaching machines and programmed learning. In programmed learning an information to be learnt is broken into small sequential units or "frames". To each of these the learner make a response. If the material is properly organized he will make the correct response and will be immediately informed of its correctness. There is, therefore, immediate positive reinforcement which fixes the response and permits movement to the next frame. This way the student can move at his own pace without waiting for other members of the class. This way Skinner has revolutionized the whole teaching-learning process, and mechanical learning is replacing the teacher.

Typical problems involved in learning as explained by Skinner's theory are as under:-

1. **Capacity.** Differences in capacity have been attributed to the empirical constants which are formed in Skinner's laws, because the value of these constants varies from species to species.

2. **Practice.** Skinner accepts something like a law of exercise for "Type-S" conditioning, and for "Type-R" conditioning he favours repeated reinforcement. He emphasizes intermittent reinforcement as protection against extinction.

3. **Motivation.** Reward increases the operant strength, while punishment has no corresponding weakening influence. Drive level also affects the role of responding.

4. **Understanding.** Rapid learning, which has been identified with "insight" by Keller and Schoenfield, depends upon (1) similarity of the problem to one solved earlier, and (2) the simplicity of the problem. Problem solving is the process of manipulating variables to correct response. It does not involve originality.

5. **Transfer.** Generalization which Skinner calls induction, is the basis of transfer.

6. **Forgetting.** There is no special theory proposed by Skinner for forgetting. Extinction of a response may take place due to non-reinforcement or interference by incompatible responses. But there can be spontaneous recovery of the response also, which means that extinction is not forgetting. True forgetting is a slow process of decay with time.

6.4.3 Gestalt field theory of learning

Gestalt psychology is a revolt against the S-R approach to learning. It pointed out two weakness in the theory of conditioning.

1. Conditioning reduces complex human behaviour to an accumulation of simple conditioned responses.

2. S-R theorists attribute learning to reduction of basic organic drives.

The Gestalt School made a strong attack on Thorndike's theory of trial and error and asserted that learning was not stamping-in of correct responses through trials and errors. The behaviouristic approach to learning was also not acceptable to Gestaltists as they wanted to study behaviour as a whole and learning in its totality.

Gestalt psychology is primarily concerned with the nature of perception. According to it an individual perceives wholes and not parts. Learning is viewed as a purposive, exploratory, imaginative and creative enterprise, in which the total situation is taken into account by the learner. Kohler and Koffka conducted many experiments on chimpanzees and brought out a book "Mentality of Apes" in 1925 (which is the result of these experiments conducted during 1913-17). These experiments show that learning was not the result of trial and error but of insight and the ability to see relationships between various factors involved in a situation.

The fullest and most systematic treatment of learning from the Gestalt view-point is found in Koffka's "Principles of Gestalt Psychology" (1935). He suggested that the laws of perception were equally applicable to learning. A learning situation is a problem situation and the learner has to see the problem as a whole and find its solution by insight. The law of organization of perception as applicable to learning is the law of Pragnaz and four laws of organisation subordinate to it-the laws of similarity, proximity, closure and good continuation.

The Gestalt theory has a number of problems of learning. These include:-

1. **Capacity.** Learning depends upon natural capacity of the learner.

2. **Practice.** Repetitions bring to light new relationships and consolidate trace systems.

3. **Motivation.** Law of effect is recognized in motivation.

4. **Understanding.** The relationships between parts and wholes and means and ends are emphasized.

5. **Transfer.** Generalized principles, common patterns or relationships are transferred.

6. **Forgetting.** Forgetting takes place because of changes in the traces. Traces may completely disappear or they may not be available at a particular time.

6.4.4 Lewin's field theory of learning

According to Lewin's field theory (1962), learning is a relativistic process by which a learner develops new insights or changes old ones. Learning is not a mechanistic atomistic process of connecting stimuli and responses within a biological organism. Insight, concisely defined, is a basic sense of feeling for relationship. Field psychology explains development of insight as change in cognitive structure of a life space.

The main concepts used in Lewin's field theory are as follows:

(a) **Topology.** *It* is also called topological. Two basic concepts which topological space denotes are : (i) connectedness, and (ii) part-whole relationships. Topological concepts are used to represent the structure of life space in such a way as to define the range of possible perceptions and actions. This is accomplished by showing the arrangements of the functional parts of life space. The parts are shown as various regions and their boundaries. When an individual structures his life space, he divides it into regions.

(b) **Vector.** The term vector represents a force which is influencing movement towards a goal or away from it. If there is only one vector (force), there is movement in the direction of the vector. However, if there are two or more vectors acting simultaneously in different directions, the movement is in the direction of the resultant force.

(c) **Life space.** It is also called the psychological field. The psychological field is the space in which the person moves psychologically. It contains the whole of one's psychological reality-one's self and what thinks of or what one gains from one's physical and social environment.

(d) **The person in life space.** The person is often represented as a point moving about in his life space, affected by pulls and pushes upon him, circumventing barriers in his locomotion in his own life space.

(e) **Valence.** When a person is attracted by an object that object is said to have a positive valence. When a person is repelled by an object that is said to have a negative valence. The person tends to move towards a region in life space that has positive valence and he tends to move away from a region in life space that has negative valence. Because life space

may contain regions with several valences active at once, these give rise to conflict, especially when the opposing forces are approximately in balance. Lewin specifies three chief kinds of conflict.

i) **Two positive valences.** Such as when a child has to choose between going to picnic and playing with his friends.

ii) **A simultaneous positive and negative valence.** Such as when a child is offered for a reward for the school task he does not wish to perform.

iii) **Two negative valence.** Such as when a child is threatened with punishment if he does not do a task which he does not wish to perform.

(f) **Distance and direction.** When there is a close correspondence between life space and physical space, physical distances and directions may be used for experimental purposes as approximations of distances and directions in life space.

(g) **Behaviour.** Lewin regards behaviour as a function of present life space i.e. he insists that behaviour depends upon the present and not upon the past or future.

(h) **Barrier.** It is a dynamic part of an environment which resists motion through it. It stands in the way of a person's reaching his goal.

(i) **Goal.** Goal is a region of valence-region of life space to which a person is psychologically attracted.

(j) **Tension.** It is very closely related to, and is descriptive of psychological needs. Release of tension may be achieved either through reaching a goal or through reconstruction of a life-space.

(k) **Cognitive structure.** It is an environment including a person as known by the person. it is synonymous with insight or understanding.

Learning according to field theory, is to make life space highly differentiated. Differentiated life means the formations of structured region in the life-space. Initially, the life-space of a child is less differentiated but as he grows up and learns more, his life space becomes more and more differentiated. A

problematic situation represents an unstructured region of life-space. We do not know how to reach the goal (solution). We do not feel insured till the region becomes structured. When it becomes structured so that we can solve the problem, we have learnt.

A change in the structure of knowledge may occur with repetition. The situation may require repeated exposures before the structure gets changed. However, with better arrangement of the problems, it is possible to change the structure with fewer repetitions. Therefore, learning depends upon insight. Too much of repetition does not aid learning. On the contrary excessive repetition may lead to psychological satiation with accompanying disorganization and de-differentiation of the cognitive structure.

Reward and punishment according to Lewin (1962). The learner because of attraction to rewards may resort to shortest methods. For example, to get distinction in the examination (reward) the student may like to cheat (short-cut method). It is, therefore, necessary to put some barriers over the reward situation, to avoid access to such tendency to leave the field because of the unpleasantness of the tasks, unless some strong barriers are there to keep him in the field. Reward activities often become interesting and are liked so that motivation is no longer extrinsic, while the activities controlled by the threat of punishment tend to become extremely hated.

Success and failure psychological analysis from the point of view of learner shows the following possibilities:

(1) To reach a goal constitutes success.

(2) To get within the region of the goal may be a success experience.

(3) To make some progress in the direction of the goal also constitutes a success experience.

(4) To select a socially approved goal is also a success experience.

Psychological success or failure depends upon ego involvement and the level of aspiration. Success in a easy task is not a success experience, since it does not involve the ego of the person. Similarly failure in a very difficult task is no failure experience.

Motivation and the repetition of an activity brings changes both in the cognitive structure in the need-tension systems. As a result of this goal attractiveness changes. Lewin (1962) calls goal attractiveness, valence and valences change. The valence may change in any of the following ways:

i) Attractive goals may lose attraction if the activity related to them is repeated to the point of satiation.

ii) Goals originally unattractive may become acceptable through a change in the meaning of the goal related activity.

iii) Choice of goal is influenced by previous experience of success and failure.

Regarding memory the field theory says:

a) Tasks which have no sense of competition are not remembered.

b) Unfinished tasks are remembered better than finished tasks because of psychological tension.

c) Tasks which lead to the satisfaction of many needs are remembered better than the tasks which lead to the satisfaction of one need.

Following are the typical problems in learning.

Capacity. Capacity is regarded as the differentiation in life-space of a man.

Practice. Learning may take place with repetition because the change in cognitive structure may require repetition.

Motivation. It depends upon ego-involvement and the level of aspirations. Cognitive structure is both activated by and changed by aroused needs or tensions. Motivation is, therefore, of central importance within the theory.

Understanding. Knowledge and understanding lie at the heart of learning.

Transfer. Lewin accepts the Gestalt theory of transposition.

Forgetting. Lewin accepts something like repression in the forgetting of too difficult tasks.

6.4.5 Tolman's theory of learning

Tolman's (1959) theory of learning is known by several names such as "sign significance theory", "expectancy theory", "purposive behaviourism" or simply "sign theory". The main features of this theory are as follows:

1. It accepts behaviourism as basis. Main characteristics of behaviour are:
   a) Behaviour that is goal directed, i.e. it is purposive.
   b) Behaviour is goal makes use of environmental factors as means for getting at the goal.
   c) Behaviour consists of the formation of cognitive maps.
   d) The organism has a selective preference for the "principle of least effort", for arriving at the goal.
   e) Molar behaviour is docile.

2) According to Tolman, behaviour depends upon:

   (a) the need system, (b) the belief value matrix, and (c) the behaviour space.

3) This theory takes into consideration that learning is based upon some signs or clues leading to the goal. The organism learns not the movement patterns, but the sign-significate relations.

6.4.6 Tolman's laws of learning

i) Learning of an organism depends upon its capacity to learn (capacity law).

ii) Learning depends upon the nature of the material to be learnt.

iii) Learning depends upon the manner of presentation of learning material.

6.5 BRUNER'S MODEL OF CONCEPT LEARNING

The meaning of a concept may be referred to a class or category all the members of which share a particular combination of critical properties not shared by another class.

6.5.1 Conceptual learning and rote learning

A learner who has fully grasped a concept can give meaning to relevant kinds of responses. He can generalize to instances and discriminate non-instances. In rote-learning this is not possible. In rote-learning students merely know facts of subject-matter and do not really understand the principles of the subjects studied.

Skinner, Charles, E. (1993)	Educational Psychology, 4th ed., New Delhi, Prentice Hall of India Private Limited pp. 389-415	6-2

Following are the typical learning problems.

Capacity. The learning of a task depends upon the capacity of the learner.

Practice. Tolman believes that practice on exercise cannot help a learner in the initial selection of a right response. Mere frequency without 'belongingness' does not establish a connection.

Motivation. According to Tolman, motivation does not help in learning something new. It simply encourages the performance as such.

Understanding. Transfer believes in learning by creative inference, incentive ideation and so on. Insightful learning is emphasized.

Transfer. Transfer of training depends upon applicability of the essential relationships perceived by the learner in one situation to some other situation.

Forgetting. Repression and ratio-active inhibition cause forgetting. Tolman attributes forgetting to the resistance of cathexes (relationship between a drive and object) also.

For further details, please read the below referred material.

6.5.2 Essential elements of conceptual learning

No concept can be taught by one example. Any typical teaching instance of a concept must include those properties which are critical to its class membership by definition, but it will also include many propositions which are irrelevant. What is crtical and what is relevant may be quite apparent to the student.

The programmer must specify the degree to which students must master any concept in his teaching. "Far-out" examples must be discarded.

Adequate analysis is the best cure. Some psychologists have put it as, "When the relationship between teaching and concept analysis is made explicit, the teaching sequence can be evaluated more precisely. We know that the programme must teach...If the programmer does not account for all facts of the concept structure we do not have to run empirical tests to say that the programme is inadequate."

Inadequate instructional designs can level students with over-generalized concepts. Overgeneralization is evidenced when a learner treats a non-instance of a class in a way appropriate to an instance of the class-for example, calling a shovel a spade.

Generalization or categorizing is a basic phenomenon in learning. The tendency to generalize on the basis of half-learnt concepts may result in a leap so brilliant that a teacher might call it insightful.

Logical solution is better training in discriminating easily confusable non-instances from true instances of the concept. Skinner observed, "If thinking can be analysed and taught separately, the already taught can be transmitted with maximal efficiency."

Concept analysis is a systematic procedure applying technique for analysis of academic content which are similar in intent to those employed by task analysis in designing training sequences for a job.

6.5.3 Bruner's model of concept learning

J.S. Bruner (1960) has suggested a model on concept, attainment and structure in teaching. He proposes that economy in thinking and responding

requires that we categorise phenomena according to their common attributes. An attribute is a property or characteristic of an object which differentiates it from others. Colour, texture, form, size, number of parts, position and sound are examples of attributes. We categorise objects having common characteristics into one group. For example, we categorise certain animals having four legs, a tail and a barking voice as dogs. Similarly we can also categorise more abstract concepts such as enemy or friend, artisan or professional, etc. For teaching about a concept the teacher must identify such attributes of that concept which differentiate it from others. For example, dog and cat have four legs and a tail, but cat has a different voice than the dog.

Bruner (1960) studied the strategies people use in acquiring concepts. For this he used a set of cards, some cards having borders, others without. All the cards have centre figures varying in shape (square, circle or cross), in colour (red, green or black) and in number (single, double, or triple.) Each card thus combines four attributes; figure shape, figure number, figure colour and presence or absence of borders. Each attribute has three values (variations) as listed above. The subject is told that the experimenter has a concept in mind, say red circles, and the subject was to identify that concept. The subject is asked to select a card and is then told by the experimenter whether or not the card was an instance of the concept. With these data in mind, the subject would select another card to determine further the attributes of the concepts and would continue doing so till he finds the answer i.e. the card with red circles.

Bruner (1960) identified four strategies in concept attainment: (1) Simultaneous scanning strategy, (2) successive-scanning strategy, (3) conservative-focussing strategy, and (4) focus-gambling strategy.

1. **Simultaneous scanning.** In this type of strategy, the subject uses each positive instance (each correctly identified card), to deduce which combinations of attribute values are no longer valid. The subject must keep in mind simultaneously all the rejected combinations in order to narrow down the range of subsequent alternatives. This technique is not very efficient since it places a great deal of strain on the subject's memory.

2. **Successive scanning.** In this technique the subject makes an overall estimate of each correct characteristic of the concept and test, each one

by one. This is called successive scanning since the subject tests individual hypothesis about the correct characteristic one at a time in succession. This technique too is inefficient as the subject may choose redundant cards which give no new information.

3. **Conservative focussing.** In this technique, each attribute is tested by selecting a card that is different from a focus card in only one attribute. If the new card is still a positive instance, then the subject knows that the varied attribute is not part of the concept. If, however, the changed attribute yields a negative instance, then the attribute is a part of the concept. For example, the concept to be attained is "red circles". Assume that the subject encounters a positive card with three red circles and two borders. This card becomes the focus card and each variable is examined by selecting. This technique is more efficient since the subject uses a correct instance as a point of reference and selects additional cards to test each attribute value individually.

4. **Focus gambling.** In this strategy the subject focusses on a correct card, but varies more than one attribute at a time. This technique can give early result if cards chosen yield a positive instance. If, however, the subject encounters a negative instance, he cannot tell which attribute was essential. In that case he has to revert to simultaneous-scanning technique to test hypotheses. This strategy is called gambling since the subject takes a chance varying two attributes at a time.

Bruner's strategies of concepts learning can be applied in science teaching. The use of discovery and enquiry techniques in teaching science provides the pupils with experiences quite similar to the card tasks used by Bruner. For example, if we want the pupils to invent their own system of classification of plants and animals, they can do it by identifying the attribute and putting the plants or animals with common attributes in one group.

More details of Bruner's model of concept learning are given in the below referred material. Please read.

Gerda Siann and Denis C. E. Ugwuegbu. (1985)	*Educational Psychology in Changing World,* 2nd ed., London, English Language Book Society, pp. 48-61.	6-3

6.6 PIAGET MODEL OF CONCEPT OF LEARNING

Jean Piaget (1964) stressed the following aim of education:

(1) The principal goal of education is to create men who are capable of doing new things, not simply repeating what other generations have done. Education should create men who are creators, inventors and discoverers.

(2) The second aim of education is to form minds which can be critical, can verify and do not accept everything they are offered.

6.6.1 Piaget's views about learning

He revolutionized thinking and understanding about the intellectual growth of young children. According to his theory a child goes through a series of developmental stages which are as under:-

(a) Sensimotor (birth to two years).

(b) Preconceptual (two to four years).

(c) Initiative (four to seven years).

(d) Concrete operations (seven to eleven years).

(e) Formal operations (eleven years and onwards).

6.6.2 Piaget's views on various aspects of learning

(1) **Meaning of learning.** Learning includes a wide range of activities. Rigid distinctions like classroom for instruction, laboratory for practicals, recess for amusement, mathematics for developing computational ability, athletics for strengthening the body muscles, etc. are unnecessary. Piaget's approach helps to tie together what have been treated as separate subjects.

(2) **Role of learner's actions.** Action stresses the role of active exploration. A child is active when he stares at objects. A child is active when he stares at an organism. A child is active when he studies his body parts. A child is active when he lifts something. A child is active when he carries things. A child is active when he arranges things. Children are usually active for most of their time. There is no doubt that some of

these activities may be rather aimless or unnecessary. However, most of these activities are purposeful.

(3) **Role of practice.** An important part of Piagetian model is repetition of an act of a child. The role of practice varies with the development. Concepts are the products of a long history of action. A child may take three or more days to complete a puzzle. Each day he appears to go through the same sequence. The child's actions upon the environment are repeated again and again with slight modifications each time. Piaget depicts the child as somewhat slower and methodical and systematic in acquisition of new ideas.

(4) **Motivation.** According to Piaget, a learner desires to reduce his internal conflicts by keeping his thought harmonious and in equilibrium. It is only through playing, imitation, exploring and questioning that a child gradually comes to distinguish the achievable from the non-achievable, and logical from the illogical. To Piaget, the progress towards this end is an inherent property of cognitive style, as are eating, drinking and breathing in the physiological field.

(5) **Memory.** Memory is a symbolic representation of how the child has schematised what he says. Experiments conducted by Piaget reveal that after six months, 61 per cent of the children from 4-8 years of age regressed in their memory ability if tested by recall or evocation.

A reconstruction test involving the child with some material showed regression in 4-5 years old but 48 percent progression among 6-7 years old. Piaget holds that recognition is perceptual and reconstruction is internalized imitation. Each experiment reveals that the pattern of accuracy, improvement and regression (gradual loss of memory) is determined by initial conceptual understanding and is altered by new understandings.

(6) **Interest.** According to Piaget, the interest of the child at any given movement depends upon the system of ideas he has acquired plus his affective inclination. A child tends to fulfil his interests in the direction of greater equilibrium. Equilibrium according to Piaget is development and the ability to think in a logical and national manner.

6.6.3 Implications of Piaget's views

(a) A child's development is retarded if he is not allowed a fairly wide sensory and motor experience in his early years.

(b) Real events and concrete objects play an important role in learning.

(c) In science and mathematics, learning from physical environment is more important than what is learnt from people, books or television.

(d) A teacher should arouse curiosity of the child through planned activities.

(e) Children should be made active.

(f) Children should be treated as children.

(g) Children like to find out by themselves by their own spontaneous activity.

(h) Children learn speedily if we provide concrete material to them.

6.6.4 Piaget's theory of cognitive development (intellectual development)

Piaget asserts that learning is a function of development. For Piaget cognitive development, intellectual development and development of intelligence are more or less synonymous.

Intelligence is regarded as a way of behaving. Behaving is reflected in an individual's 'adaptation' to the environment. Adaptation takes place through the interaction of 'assimilation and 'accommodation'. An intelligent behaviour requires a balance between assimilation and accommodation. This balance is called 'equilibrium'.

'Assimilation' implies incorporation of something from the environment. New ideas, concepts and stimuli are taken in and incorporated into one's existing set of schemes. A scheme is the organized pattern of behaviour which the child develops when he is engaged in any activity. For example when a child is engaged in sucking, there is a certain pattern of movements of the cheeks, lips and hands. When a child is confronted with a new object, he will try to understand the new object by applying his old scheme to it. He grasps it. He

adapts himself to a new object by assimilating it. His old scheme does not change in the process.

'Accommodation' involves modification or change in some elements of an old scheme or learning a new scheme which is more appropriate for the new object. A baby who has already got a scheme of sucking mother's breast accommodates to the object placed in the mouth-finger, nipple, pencil, a toy-depending on its shape, form and the size. The baby develops a new scheme or a modified scheme. This is called 'accommodation'.

Thus a baby assimilates when he understands and preceives the new in the light of his old perceptions. A baby forms a new scheme when he modifies or changes his old perception to suit the new. This implies adjusting or accommodating. In this way a baby forms new structures or new schemes and consequently develops cognivity. A reference has already been made to the four periods of cognitive development.

6.6.5 Educational implications of Piaget's cognitive theory of development.

1. It provides a broad developmental perspective to the educator for building a curriculum for pre-school children.

2. The description of developmental stages and qualitative aspects of intellectual growth is very useful in providing suitable educational practices.

3. The cognitive theory states that the child is to be actively involved in the teaching-learning process for his intellectual growth.

4. The Piaget-based curriculum requires that children should not skip any stage.

5. The pre-school child is at the pre-operational level. The educational programme at this stage should provide concrete operations.

6. A pre-school programme should enable the child to integrate the information.

7. A child should be helped to develop internal consistency of the system.

8. Most of the activities of the Piaget type require simple equipment and material.

9. Drilling in skills is to be avoided.

10. Teaching-learning situation should be geared to a point where the child is neither too familiar nor too unfamiliar with the objects and ideas.

11. A variety of cognitive activities like story- telling, rhymes, singing etc, are included in the programme in a systematic manner. There is a deliberate attention to developing cognitive growth.

However, for further details, please read the below referred material.

Gerda Siann and Denis C. E. Ugwuegbu. (1985)	*Educational Psychology in Changing World,* 2nd ed., London, English Language Book Society, pp. 41-47.	6-4

6.7 THE CONDITIONS OF LEARNING

Instruction, for Gagne (1975) is a matter of a teacher making sure that each student has the prerequisites for the learning task before him, stimulating the use of the capabilities that the learner already has at his disposal. It arranges the proper conditions of learning that are external to the learner. It is an admitted fact that *in any learning situation the appropriate learning hierarchy, consisting of pertinent prerequisite intellectual skills, involves application of the conditions of learning as follows:*

1. Signal learning.
2. Stimulus response learning.
3. Chairing.
4. Verbal association.
5. Discrimination learning.
6. Concept learning.
7. Rule learning.
8. Problem solving.

The phases of an act of learning are the typical series or chain of external and internal events that constitute a single learning act. They are mentioned below in order of their occurrence:-

1. Motivation.
2. Apprehending.
3. Acquisition.
4. Retention.
5. Recall.
6. Generalization.
7. Performance.
8. Feedback.

For details of conditions and processes of learning, please read the below mentioned book.

Skinner, Charles, E. (1993)	Educational Psychology, 4th ed., New Delhi, Prentice-Hall of India Private Limited, pp. 429-447	6-5

6.8 ACTIVITIES

1. Write down in your own words a definition of learning which you think more apropriate in the situation of Pakistan.

_____
_____
_____
_____

2. Please prepare chart of comparison between Bruner's Model and Piaget Model of concept learning.

3. Please write below the important conditions of learning.

_____
_____
_____
_____

6.9 EXERCISE

Q. 1 What do you understand by the term psychology of learning? Explain.

Q. 2 Describe the nature of learning process in human beings.

Q. 3 Discuss the theories of learning bringing out their educational implications.

Q. 4 Discuss the broad principles of learning.

Q. 5 Explain the principles involved in the learning skills.

Q. 6 Distinguish between learning and maturation. Give examples in support of your answer.

Q. 7 Discuss in detail Thorndike's trial and error theory of learning or the connectionist viewpoint in learning. Also discuss its educational implications.

Q. 8 Explain Skinner's theory of operant conditioning. What are its applications in learning? How are some typical porblems in learning explained by it?

Q. 9 Describe Thorndike's S-R bond theory of learning and various laws of learning derived from it. What is position of typical problems in learning?

Q. 10 Describe the main concepts used in Lewin's field theory of learning. What are its applications to learning and how are typical problems in learning solved by it?

Q. 11 Explain Gestalt field theory of learning. What are the various laws derived from it and how are typical problems in learning solved by it?

Q. 12 What is conceptual learning? How is it different from rote learning? Discuss Bruner's Model of concept learning.

Q. 13 Explain Jean Piaget's views on concept formation.

Q. 14 Discuss the views of Brunner about concept learning.

Q. 15 Describe the conditions of learning as discussed by Skinner. E (1993)

6.10 BIBLIOGRAPHY

Bruner, Jerome S(1960) — The Process of Education, Cambridge Mass, Harvard University Press.

Crow L. D., & Alice Crow (1956) — Human Development and Learning, New York, American Book Company.

Gates, Arthar et. al, (1968) — Educational Psychology, 3rd ed., New York, Crowell Colier and Macmillan, Inc.

Gerda Siann and Denis, C.E. Ugwuegbu (1985) — Educational Psychology in a Changing World, 2nd ed., London, English Language Book Society.

Gruilford, J.P (1968) — The Nature of Human Intelligence, New York, Mcgraw-Hill, Inc.

Hilgard, Ernest, R. (1974) — Introduction to educational Psychology, 2nd ed., New York, Harcourt, Brace and World, Inc.

Kundu, C.L.& Tutoo, D.N (1985) — Educational Psychology, 4th ed., New Delhi, Sterling Publishers Private Limited.

Lewin, Kurt (1962) — A Dynamic Theory of Personality, revised ed., Newe York, McGraw-Hill, Inc.

Skinner. B.F. (1958) — "Reinforcement today" Amer. Psychology, 13.

Skinner, B.F. (1969) — "Are theories of learning necessary", In Psychology Review, No.59.

Skinner, Charles, E. (1993) — Educational Psychology, 4th ed. New Dehli, Prentice-Hall of India Private Limited.

Thorndike, Robert, L. (1963) — "The measurement of creativity", Teach. Coll. Rec. 64

Thorndike, Edward. L. — Human Learning, 3rd ed., New Delhi, (1990) Sterling Publishers Private Limited.

Tolman, Edward C. (1959) — Purposive Behaviour in Animals and men, New York, Appleton-Century-Crofts.

Unit No. 7

MOTIVATION

BY

PROF. DR. MUHAMMAD RASHID

7.1 INTRODUCTION

We know that learning is a change in behaviour brought about by activity. But "Why do we behave at all", "Why do we behave the way we are behaving?" are the questions which have been drawing the attention of psychologists, almost from the beginning. To these questions of "why" of behaviour, psychologists have given many answers.

Probably the oldest answer is that given by psychologists like William James. (1990, p. 127) and Cyril Burt (1958, p. 211), who said that springs of human behaviour lay in "instincts". Instincts were defined as complex inherited tendencies, common to all members of a species, compelling each individual (i) to perceive and pay attention to certain objects and situations, (ii) to experience positive or negative emotional excitement on perceiving them, and (iii) thereupon to act in a way which is likely in the long run to preserve the individual. According to Gray (1967, p. 113) "the human mind has certain innate or inherited tendencies which are the essential springs or motive powers of all thought and action". He lists the main instincts as parental, escape, pugnacity, repulsion, gregariousness, self-assertion, submission, mating, acquisitiveness and a number of minor instincts. He further says that under the working of intelligence and learning experiences, the emotional dispositions attached to each specific instinct (such as anger with pugnacity, or fear with escape, etc) get organized around objects, persons or principles. These organizations are called sentiments of which the chief and supermost is the self-regarding sentiment. According to Gray (1967, p. 149) these sentiments determine a great deal of behaviour and make it relatively consistent and predictable. Sigmund Freud proposed two fundamental instincts, the sex instinct and the self-preservative instinct. Later on he combined these two into one "life instinct" and proposed an additional "death instinct".

Instincts as explanation of the 'why' of human behaviour were soon questioned by psychologists like Burnard, Dunlop, Watson and Woodworth, They pointed out that most human behaviour, especially adult behaviour is greatly influenced by learning and is therefore not innate. A number of experiments were conducted to show that even animal behaviour dependend to some extent on learning or external conditions.

Social anthropologists like Linton, Mead and Bendict also asserted that human behaviour, far from being influenced by the innate universal instincts, was shaped and determined by cultural patterns like child-rearing practices and social roles. The behaviour and personality varied widely from group to group depending upon the customs in each culture.

After the rise and decline of the instinct doctrine, a new type of explanatory construct became prominent. This was the drive. All organisms have physiological

needs.....need for food, water, elimination, etc. When such needs are not readily satisfied, the organism is driven to activity. On this basis we speak of physiological drives, such as hunger. The strength of a drive may be known from the speed of running toward an incentive (food, etc.), or away from an aversion stimulus (shock), the rate of pressing a level that brings the incentive, or how much shock the organism will take in order to reach a satisfying stimulus or incentive.

There are different conceptions of how drives activate the organism. One conception looks upon drives as source of energy- as energizers of behaviour, in the sense that drive states are accompanied by the release of hormones and neural mechanisms. Another concept looks upon the physiologically driven organism as in a state of physiological disequilibrium and the final act, such as getting food or water, thought of as compensatory-as restoring equilibrium or homeostasis. But this concept of drive does not hold good in the case of human beings. A well-fed person may still have a drive to eat a different variety of food. Similarly, sexual activity in the case of human beings cannot be considered as an example of homeostatic response.

The concept of drive might explain behaviour among animals like rats, monkeys, etc., but it appears inadequate to describe and explain all of human behaviour. Human beings are far more complex and show much greater elasticity of behaviour than animals. They have physiological drives, but they have other strong urges too which seem to be acquired and learned in a social environment e.g. the desire to acquire and hold property and other possessions.

To include these social strivings as well as the physiological drives found in human beings, the psychologists now use the term motives. The term motive not only includes influences of learning in explaining the source of human behaviour but also indicates the direction of an activity toward a goal. Consequently a motive is said to be that which arouses, sustains, and directs activity.

Motives are classified into three types:

i) Physiological motives.
ii) Social motives.
iii) Personal motive.

Physiological motives.

These include hunger, thirst, sex, sleep, elimination of body wastes, maintenance of constant body temperature, sensory stimulation etc. Emotions too are comparable with physiological motives. The physiological correlates of emotions energize behaviour in the sense that physiological drives energize it. Like physiological motives they impell us to

activity. They also engender goal-oriented activities, like the lover's affectionate behaviour toward the loved lone, and the angry man's aggression toward the object of his anger. Some activate the escape motive. Fear and annoyance exemplify this fact. Sometimes, emotions move us to tears or to performance of helpful and benevolent acts.

Social motives

The social motives are learned and developed differently in different cultural settings. In the daily life of an adult, behaviour released by learned motive is much more in evidence than that which could merely satisfy physiological needs. Social motives are sometimes called secondary or derived in the sense that they have their origin in the gratification of primary physiological motives in infancy and childhood. For example, an individual learns to desire social approval because the experience of approval from parents and other persons has been earlier associated with the satisfaction of primary needs. The desire for approval is, therefore, said to be a derived and learned motive.

Social motives are the motives that seem to be the reasons for behaviour one sees daily among people, whose physiological needs are more than satisfied. The social motives include need for social approval, for affection, for a respectable place in our group, for possessing money, gold, degrees and other status symbols. These are the motives which provide occasion for our action.

Personal motives

Many motives are much more personal than those mentioned earlier. They are sort of variations on the universal or cultural theme and are learned through one's unique life experiences. Individual's interests, attitudes, self-concept and life-goals are the examples of personal motives. Since interests show an individual's feeling or like or dislike for a situation, and one attitude shows disposition to act positively or negatively in regard to something, they both function as motivators. Without an interest one may not like to act in a situation. But active interest functions as a strong motive. Similarly a person's attitudes will attract him toward certain situations and repel him from others.

One's self-concept too can act as a powerful motive. Self-concept includes the cultural picture of what one is, as a teacher, as a student, as a person with particular background and level of aspiration. A person's self-image determines not only the kinds of goals he sees as suitable for him to strive for, but also his level of aspiration. One's life goals too function like strong motives.

But not all motives of personal type are manifest or known to the individual. Quite many of them may be conscious and influence him strongly but he seldom knows them. Many strong dislikes, prejudices and other symptoms of maladjustment are due to unconscious motives.

In the present scientific age, the importance of motivation has increased much more in every field. No field is left untouched from the effects of motivation. These days the problem of motivation has emerged as a major problem in every field. Due to lack of motivation, every field has a strong feeling of dissatisfaction. Motivation exists in every human activity. Most of the human mental activities occur due to motivation. Therefore, excessive motivation causes proper learning. For this reason motivation is known as the 'Heart of Learning'. In psychology, motivation is frequently mentioned. In the field of education also motivation is being considered important. Hence, it is important to clarify the meaning of motivation before going through its various aspects.

On the basis of various studies, it has been decided that for learning, the individual should be motivated essentially. Greenberg (1983, p. 219) has considered motivation as a precondition for learning. As such in all types of learning, the existence of motivation is very essential. Therefore, the main problem of educational psychology is that of motivation. In fact, motivation is the inner state of the individual. This inner state of the individual brings dynamism in the individual. This inner state of dynamism takes the individual to his goals. The process of this dynamism of reaching the goals goes on continually.

The bird continues building its nest. It is just possible that the straws collected by the bird may be disintegrated. The bird repeats the performance again and again. The student reads till midnight and even after that when the examination draws near on, so that he may attain the desired result in the examination. Motivation for these activities builds a psychological foundation.

Interest is the central element of learning and motivation is intimately related to interest. The meaning and definition of motivation, its significance, theories and techniques have been discussed in this unit.

7.2 OBJECTIVES

After studying the unit, it is hoped that the student will be able to:

1. discuss the nature and significance of motivation.

2. explain various theories of motivation.

3. describe the role of motivation in the teaching- learning process.

4. discuss various techniques of motivation.

7.3 THE SIGNIFICANCE OF MOTIVATION

Before discussing the significance of motivation, it seems necessary to highlight the concept of motivation. However, motivation is an energy within a person, which directs him to attend to his work sincerely. Various definitions of motivation are given below.

"Anything that initiates activity, whether internal or external, is motivation"
Hakanson, J. E (1989, p. 203)

The English word **'motivation'** originated from 'movere' which means to move. In the field of education, the word 'motivation' is interpreted in the form of interest of the pupils for learning and encouragement.

"Motivation is the influence of general pattern of activities indicating and directing the behaviour of the organism" **Johnson (1972, p. 84)**

"A motive is a state of the individual which disposes him towards certain behaviour and for seeking certain goals" **Woodworth (1968, p. 114)**

"Motivation is an energy change within the person characterized by effective arousal and anticipatory goal relations" Korman, A. K.

"A motive is any particular internal factor or condition that tends to initiate and to sustain activity" **Young, P. T (1981, p. 84)**

In the nature of motivation, needs are considered to be important. Many psychologists have considered the need as a source of motivation.

The study of above definitions suggests that the process of motivation encourages the learning process and this process is very intense. Learning process cannot be made impressive without motivation. Hence, for a teacher it is essential to motivate the students for class-room activities with the help of various techniques. In short, through motivation, we can have glimpses of an individual's behaviour and activity, etc. Therefore, the knowledge of various techniques of motivation is very essential for a teacher to motivate the students in the class-room.

Motivation is the state of mind, which emerges within a person and directs him towards the goal or the achievement of the desired result. All these initial basic behaviours are motives. Generally motives can be classified into the following two categories:

1. **Primary motives.**

These are also known as initial motives and some regard them as natural motives because these are concerned with the individual and his community. These motives are hunger, thirst, relief from pain, sleep, comfort, sexual desire, etc. These motives are found in every person. These are born instructs and satisfy the basic needs of the body. These motives satisfy physiological and biological needs such as:

- Hunger, thirst
- Resting after being tired.
- Engaging in work after rest
- Need for sleeping after remaining sleepless for many hours.
- Releasing unnecessary wastes from the body just as stool urine and sweat.
- Satisfying sexual desire
- Need for protection from storm, rain, cold, heat, fire and danger from wild beasts.

2. **Secondary motives.**

These motives are not inborn. While satisfying his physiological needs, man derives these motives also: need for love and belongingness, need for protection, status and acceptance. Energy motives and achievement motives are its examples. These motives are responsible for needs and human behaviour and lead it towards definite goals. Thus these motives give birth to social and psychological needs, such as:

- Need for being independent and self-dependent.
- Need for protection-related needs.
- Achievement-related needs
- Affection-related needs
- Respect and social acceptance-related needs
- Need for befriending or leading
- Need for power and looking socialy powerful.
- Need for self-expression and exposition.

Thus man has certain physiological, social and psychological needs which can be called as motives. Motivation is the heart of learning in the learning process. Such a view is true in present situations. Whatever be the field of life, motivation is essential. The teacher tries to create situations for motivation. The arousal of motivation becomes doubtful if a teacher does not create proper conditions. Therefore, the study of the role of motivation in the process of learning is also very important. It is described as under:-

1. **Maturation:** If the tasks or activities being taught to the students are more difficult than the maturation level of the students, the learning process in the school will definitely be affected. Therefore, maturation of students should be kept in mind which would result in more motivation. There should be coordination between maturation and motivation. Formal learning will occur only if the students are physically, mentally, emotionally and culturally matured. For example, very small kids get satisfied when their immediate needs are fulfilled and they do not motivate from external incentives. The span of attention is also very short in case of small children.

2. **Respect for personality:** Children (and elders too) possess self-respect. It can be disastrous if disrespect is shown to the children or they are discouraged in the class. Shyness, discouragement are not considered good emotions; they disorganize the personality of the persons. These emotions create uncertainty, hesitation, frustration and reduce self-respect and self-confidence in the children. Sometimes these emotions isolate the children from school activities and develop mental attitudes in the children against learning these activities. The child refuses cooperation. He gets agitated frequently in the school. Such an aggression also develops for society. These situations render him delinquent. So it is not wise to show disrespect to a child's personality. Psychologically the feeling of frustration is the most dangerous situation in school learning.

3. **Securing attention, creating interest and enthusiasm:** In the learning process, motivation produces attention, interest and enthusiasm. In the absence of attention, the child does not listen to anybody. Hence to intensify the learning process, motivation is essential as a basic requirement. For concentrated 'attention', interest and enthusiasm are essential. To some extent, interests are inborn and to some extent, the teacher has to create the interests. In this way, the arousal of motivation through inborn interests and interests produced by the teacher are symptoms of a good educational programme. Inborn interests must be achieved. An intelligent teacher takes advantage of a few interests. The interpretation of the contents is maximum when the student, involves himself in maximum questioning. The teacher's own interests are also important and their effects on the students remain for a longer time.

4. **Significance of attitudes:** The attitudes in the background of the motivation are also much important. Attitudes show the way to the motives. These are not only the preparation for new experiences, but also determine the new limits for acquiring new experiences. Hence, the attitudes of the students are much important in arousing motivation during learning.

5. **Praise and reproof:** A series of studies have revealed very clearly that praise and reproof are very important for learning in school. Age, sex etc. are to be considered for praise and reproof, because excessive reproof has resulted controversially. Even many times over-appreciation also could not supply the expected results of motivation. Therefore, the teacher should make use of praise and reproof very cleverly.

6. **Definite goals:** It has been proved many times by experiments that the effect of clear objectives and knowledge is maximum. If a student comes to know that he is progressing well in his tasks, the knowledge of this will act for him as inspiration. Therefore, the teacher should make clear all the objectives before the students. Only then the learning process will become effective.

7. **Self motivation:** Knowledge of results, high expectations and clear objectives act as inspiration for self-motivation in students. These provide internal motivation. There cannot be a better method of developing character and ideal citizenship than that of self-motivation. The teachers can guide the students, so that they may determine their objectives. Teachers only convey the possible method to the students. But their ultimate selection is left with the students. Hence, in learning, self-motivation also contributes significantly.

8. **Will to Learn:** Self-motivation induces the will to learn. The will of the student is essential for effective learning. In fact, speed and efficiency in learning are directly related to the will of learning. Hence, in learning a will to learn is essential for motivation of the students. Without this will, no student can be motivated for learning.

9. **Need for motivation in learning:** The fulfillment of needs for motivation in learning is essential. To retain the will to learn, the needs of the unconscious mind of the students should be aroused. According to **Gray (1971, P.81)** many of one's activities are direct due to unconsciousness. Therefore, the teacher can develop the motivation for learning by keeping in mind the needs of the students in the classroom and by fulfilling those needs. The fulfillment of needs reduces the tension in the minds of the students. With reduction in tension, the students would be more motivated in the learning process.

10. **Competitions for motivations during learning:** The use of competitions for learning are effective for motivation. As a result of these competitions, the students learn to cooperate. These competitions also meet basic needs. Competitions and cooperation also motivate for the development of democratic

tendencies which are essential for motivation. In some situations, there are possibilities of mutual jealousy or displeasure due to these competitions.

In view of the above, the importance of motivation in the process of learning becomes clear. Therefore, motivation is essential to make learning effectively.

For further details, please read the below referred material.

Kundu, C. L. and Tutoo, D.N (1985)	*Educational Psychology*, 4th ed., New Delhi, Sterling Publishers Private Limited, pp. 127–120	7-1

7.4 VARIOUS THEORIES OF MOTIVATION

Following theories of motivation explain motivation with all its distinct varieties. We may find that these theories supplement one another and point towards the same truth.

1. Pawn Theory.
2. Energy Theory
3. Instinct Theory
4. Need Theory.
5. Stimulation Theory
6. Behaviour or Learning Theory
7. Social Theory
8. Depth Theory
9. Physiological Theory.

1. **Pawn Theory:** This is based on the transcendental approach to the problems of life. According to this theory, we are a 'pawn', a puppet, an instrument in the hands of God. Both classical and Freudian psychologists and behavioristic theories of learning derive their strength from this. The pawn theory passes on the responsibility to some "mysterious power" which is something intangible.

2. **Energy Theory:** "No energy no motivation." According to Freud the source of physical energy is Eros and according to **Jung (1937),** it is Libido. As a matter of fact this theory offers no explanation.

3. **Instinct Theory: William James (1990, p. 139)** is said to be the originator of this theory. According to him, "The human mind has certain innate or inherited tendencies which are the essential springs or motive powers of all thought and

action, whether individual or collective and are the bases from which the character and will of individuals and of nations are gradually developed under the guidance of the intellectual faculties." McDougall put forward a list of 41 instincts and attached 14 emotions with them. This theory was very popular in Britain with Nunn, Burt and Ross. However, the American psychologists do not find any weight in this theory.

4. **Need Theory:** There are two sets of needs: (i) primary or biological, and (ii) secondary or psychological. The more intense the need, the more the motivation.

5. **Stimulation Theory:** All inner and outer stimuli that bear upon a person at one time constitute his psychological field and determine his behaviour jointly through interaction.

6. **Behaviour or Learning Theory:** This is more elaborate than the need theory. **Hull (1975, p. 897)** and his associates are the supporters of this theory. The theory has three main tenets:

   (a) All motivated behaviour is based on needs and desires;

   (b) All learning involves reward in the sense that only those responses that reduce need or drive are stamped in; and

   (c) Needs may be biological or psychological, primary or secondary.

   Maslow (1973, p. 19), Tolman (1981, p. 69), Hebb (1966, p. 133) do not share this view. They argue that all learning is not like that. Learning can be 'cognitive type' also. It is only the 'need reduction' but also 'avoidance of pain' that goods one to learn.

7. **Social Theory:** According to this theory, causes of social behaviour are to be found in the social environment. There are two streams of this theory.

   (i) **Cultural Pattern.** According to this view, an individual is cast in the mould of the culture to which he belongs. Different cultures would, therefore, produce different types of personalities.

   (ii) **The Field Theory.** According to this theory, behaviour is caused by the interaction between a person and his environment.

8. **Depth Theory: Freud** is the main protagonist of this theory. The spring of action is unconscious which is dark, ruthless, very powerful and illogical. Special

exploratory techniques are needed to dig out the unconscious. Unconscious motives influence our conscious thought and conduct.

9. **Physiological Theory:** This theory holds that the secrets of the mind are locked within the cells of the nervous system.

"Hierarchy of Motives" Achievement Motivation and its Use for Class-room Motivation.

Abraham Maslow (1962, p. 310) has developed the theory of human motivation that integrates most of the basic motives which psychologists had discussed for a long time. Maslow's theory of motivation is based on the view that the person has an inner nature that is constantly growing and unfolding. According to Maslow this growing and unfolding has to occur in a certain sequence so that we may achieve the end result called self-actualization. Maslow has suggested the following six levels or hierarchy of needs.

1. Basic physiological and issue needs.
2. Stimulation needs (sex, activity, exploration, etc)
3. Safety needs(protection from injury, security)
4. Love and belonging needs
5. Self-esteem needs(adequacy, feeling of competence)
6. Self-actualization(fulfillment of potentialities).

Maslow calls them hierarchy or levels of needs, because he believes that the needs in one lower group must be minimally satisfied before those in the next higher group. Thus people who remain more or less starved will usually be more concerned with food than about love and status and even will jeopardies their safety in order to get food. They will have no time to think of self-actualization.

Similarly, those who have enough means to satisfy physiological needs but feel socially unacceptable, will give less time to strive for love and belonging needs. But they too may feel less motivated to actualize themselves or realize their potentialities.

But when both physiological needs the needs and for love, belongingness and acceptance are satisfied, a person feels an impetus for further development, to become what one is capable of becoming.

For further details, please read the below referred material.

Kundu, C. L. and Tutoo, D. N (1985)	*Educational Psychology*, 4th ed., New Delhi, Sterling Publishers Private Limited. pp. 129-135	7-2

7.5 MOTIVATION AND ACHIEVEMENT

Achievement motivation is the desire to do better, to achieve unique accomplishment, to compete with a standard of excellence, and to involve oneself with long term achievement goals. The theory of achievement motivation has been developed by **Hokanson, J. E (1989, p. 173)** at the Harvard University, and **John W. Atkinson** at the University of Michigan.

Some psychologists look on all human behaviour as the organism's attempt to reduce tensions and reach a state of equilibrium. But others believe that non-organic or psychogenic motives, such as the drive of status or esteem, can also move the individual to activity. **Hokanson (1989)** also concluded that rather than being essentially tension states, which an individual tends to eliminate, motives are also drives toward action based upon expectation. He also concluded that psychogenic motives are learned by association with primary needs gratification. For example, an infant reacts to the comforts associated with the feeding process as well as to the food itself.

Development of achievement motivation is fostered by parents who set high standards and expectations, who stress independent training at an early age and who reward the child when he masters something. Compared with parents of boys with low achievement motivation, fathers and mothers of achievement motivated children show more warmth, give less directions and state higher expectation regarding the boys' performance. Mothers and fathers have different influences. Studies reveal that an achievement oriented mother dominates the home.

The common measure employed to assess achievement motivation is T.A.T. type pictures showing achievement related cues. **Hokanson, J. E (1989, p. 221)** has developed an elaborate scoring system for this.

The individual with high achievement scores exhibits a tendency to achieve success on a particular task whereas those with low achievement scores show a tendency to avoid failure. The tendency to achieve success is greater among the former when the strength of expectancy or probability of success, and the incentive value of success at a particular task, is high enough.

Men who are strong in achievement motivation have been found to be more upwardly mobile in society than man who are weak in achievement motivation.

However, for further details, please read the following book as indicated below.

Kundu, C. L. and Tutoo, D.N (1985)	*Educational Psychology*, 4th ed., New Delhi, Sterling Publishers Private Limited, pp. 135–138	7-3

7.6 TECHNIQUES OF MOTIVATION

Motivation is of two types-external and internal. Both these types of motivation are essential for the students in the classroom. External motivation is concerned with the external environment while internal motivation is related to the interests, aptitudes, growth etc, of the students. External motivation is also known as artificial motivation and internal motivation is also known as natural motivation. Motivation is very essential whether it is external or internal. For this purpose, the selection of various techniques is essential, the description of which is as follows:

1. **Reward and punishment:** The use of reward and punishment has much importance to motivate the students in the class. Both reward and punishment mobilize energy in the students. This energy is motivation. These rewards can be in the form of objects or in the form of words. The reward given in the form of words can be appreciation. This technique is very useful for small children. In the home assignments, small children feel happy with rewards as 'good', and 'very good'. They complete their home assignments with double excitement in future.

   But sometimes the excessive use of motivation proves harmful inspite of the fact that it produces motivation.

   The students become opponent-type. Sometimes punishment goes to the wrong student at in appropriate time and the teacher has to face man-handling problems. Hence more the use of punishment is restricted the better results. The use of reward should also be made intelligently. Sometimes, the use of this technique of reward also develops jealousy among students. The students who fail to get rewards develop ill-feelings for the teacher concerned. Therefore, this method should be used very carefully.

2. **Fixation of goals:** The fixation of goals also provides motivation to the students. Unless and until there is clarity of goals before the students, they will not be motivated to learn anything. There will be neither external nor internal motivation in them. Similarly, if the teachers are also not clear about their teaching goals, they will also not get motivation for their teaching tasks. Hence, for teaching and learning, the objectives should be clear and pre-determined. Pre-determined objectives provide direction to the students to do something.

3. **Teaching methods:** The teacher should pay attention towards his teaching methods in order to motivate his students in the class. He can select his teaching methods keeping in view the individual differences between students. The selection of teaching methods can produce or develop motivation of students or may contribute the maximum motivation. In the light of new concepts of teaching, only the modern teaching methods can produce motivation.

4. **Praise and reproof:** A word of praise and reproof uttered by the teacher in the classroom has a deep effect on the minds of the students. Praise and reproof are a form of reward and punishment. Like reward and punishment, the use of praise and reproof should also be made very carefully. Like rewards, the students are always anxious to win the praise of the teacher. Sometimes the students get motivated to learn something as a result of the reproof of the teacher. Praise and reproof are very advantageous for both talented and backward children.

5. **Novelty:** Novelty and change are also cause of motivation. In the classroom, the exhibition of novelty by the teacher is sufficient to motivate the students, especially in the lower classes. The teachers can motivate the students by introducing novelty in their teaching methods. The students are always interested in novelty. Hence, it also acts as a technique for motivation.

6. **Success and failure:** To motivate the students in the classroom, success and failure also play a prominent role. The students want to go on doing that very task in which they get success. Sometimes failure also mobilizes energy in the students and the unsuccessful students work very hard to achieve success. Hence, success and failure too are used as an important technique of motivation in the classroom.

7. **Competition:** Competition is also a healthy technique of motivation. A teacher can use this technique very conveniently in the classroom. A feeling of competition produces motivation and under the influence of this motivation, the students are able to face more and more difficult competitions. In the class, the students are busy in their trials to secure more scores from each other. Hence the teacher should organize such competitions which can motivate the students to work. In fact, these competitions also lead to the achievement of the objectives. But sometimes, this technique is used in an improper way. The students want to reach their objectives by using unfair-means. Hence this method should be used very carefully. These competitions may also develop feelings of jealousy among one another.

8. **Interests:** In order to motivate the behaviour of the students, existence of their interests is essential. In the absence of interests, the motivation of the students is not possible. The task in which a student shows more interest, he would have more motivation in that task, and in which the students are motivated, their interests will develop in that task. Therefore, the teacher should recognize the interests of the students and according to these interests they should determine their teaching tasks.

With the use of the above techniques a teacher can produce maximum motivation in the classroom. But the use of these techniques should be made very carefully, otherwise they may cause possible harm. A teacher can select these techniques keeping in view the age-level and individual differences.

7.6.1 Psychological self-psycho analytical motivation

Jung (1933) is a famous Western psychoanalyst who transcends both Freud and Adler and goes deep into the human psyche revealing some of its mysteries. He seems to be more of a philosopher and less of a psychologist. Starting as one of Freud's associates he started differing with him and by 1912 he developed serious ideological and personal differences and founded his own school named Analytical Psychology.

Jung considers life itself as an 'ever living fire' and self-realization as the aim of life, which is far beyond satisfaction of sex and seeking of an easy-chair high prestigious job. There are, of course, persons who are mad after these two things, but this does not minimize the importance of 'self-realization'. So we may brush aside such differences as individual differences.

Jung does not question the importance of sex and status but he goes beyond these. He often appears to attack the Freudian Concept of Sexuality. He stresses certain clear-cut aims of life before the individual. He states, "I have observed that a directed life is in general better, richer and healthier than an aimless one, and that it is better to go forward with the stream of life than backward against it."

We are living in an age of anxiety and tension and lawlessness in the outer world. Western man expects that psychology should be able to assist him in understanding the incomprehensible factors of life.**Jung** thinks that there cannot be law and order in this outer world so long as man does not feel at home in the inner world, in his own soul.**Jung** is very near the living of the soul. He wants to lead people to responsible attitude towards life and a responsible way of living, suited to the peculiarities of each man. **Jung (1933)** is optimistic about human nature.

The structure of self.

Jung (1933) does not deny the outer world but he gives more importance to the inner world and the deep-seated unconscious. He gives a complete picture of the "Self" with its various aspects in the outer as well as the inner world. **Jung** thinks that the term 'self' stands for the integration of the various aspects of personality, conscious and unconscious. Development of personality takes place when an individual chooses his way and separates himself from the crowd. His concepts about the different aspects of the self are woven into one integrated whole.

He accepts the conscious as well as the unconscious. But his concept of the unconscious is entirely different from that of Freud.

He thinks that the unconscious is the matrix out of which the conscious has been evolved. Unconscious is not evolved out of the conscious but the reverse. Consciousness is the product of growth, whereas unconsciousness even existed before the intellectual self began to function. Our consciousness arises from unknown depths. **Jung's** concept of the unconscious is that of something vaster and more comprehensive. According to **Jung** unconscious was just not the dumping ground of the repressed desires from the conscious (as Freud thought).

Jung (1933) admitted Freud's explanation of the unconscious but felt that it was only a part of the vaster unconsciousness, which is shared by an individual with all other people in all places and at all times.

Jung has classified the unconscious in two types:

1. Primary or racial unconsciousness

2. Personal unconsciousness.

Racial unconsciousness consists of primitive beliefs and modes of response handed down over centuries. We call these ancient ways of thinking as 'archetypes'.

The unconscious of an individual is opposite to his conscious mind and is complementary to it. The unconscious tries to correct and moderate the conscious.

We can compare the picture of the mind given by **Jung** with compensatory aspect of a photograph of a range of mountains mirrored in a lake below. Just as each mountain has its equal and opposite reflection, in the same way each mental attitude has its equal and opposite complement. To **Jung (1933),** therefore, a man is both better and worse than he knows. The coward is a brave man and the brave is a coward in his unconscious; the romantic is a realist and vice versa. Different layers of unconscious according to **Jung** are as follows:

a) Animal life;
b) Primitive ancestors;
c) Ethnological groups(races);
d) Nations;
e) Clans; and
f) Family.

He further observes that the conscious mind permits itself to be trained like a parrot, but the unconscious does not. Our unconscious contains the experience of the whole race. **Jung** states, "Body is a sort of museum of its phylogenetic history, so is the mind".

According to **Jung (1933)** the unconscious is more than just containing personal memories. The collective unconsciousness represents a sort of social memory. He also points out that certain identical customs are found in widely scattered parts of the earth. It has also been noted that siblings' dreams are very similar even though they may be hundreds of miles apart in different milieus.

There is only racial unconsciousness at birth. It has got three things at that time:

i) Individual instinctive reactions;
ii) Ancestral behaviour; and
iii) Ancestral interpretations, i.e. belief in ghosts, fairies etc. The unconscious forgets nothing. It is mnemic in nature.

Jung uses archetypes, symbols, libido, shadow, Persona and the soul images while explaining the concept of unconsciousness. These concepts are explained here:

Archetypes. Ancient ways of thinking and symbols or figures which explain life are called archetypes. Symbols are generally based upon experience of the individual but the experience of the individual is the experience of the human race, the collective unconsciousness. The collective unconsciousness is the "all controlling deposit of ancestral experience from untold millions of years" to which is added by each century small amount of variation and differentiation. These experiences are archetypes. Their sources are to be found in profound religious thought, in enduring literature and art which draw their universal inspiration from the depths of the human psyche.

The archetypes are eternally inherited identical forms and ideas. The archetypes may appear as persons. they may appear as demons or as fabulous animals or natural forces or objects or geometrical forms and numbers, etc. **Jung** says, "Archetypes resemble the beds of rivers. An archetype is something like an old water-course along which the water of life flowed for a time, digging a deep channel for itself. The longer it flowed the deeper the channel, and the more likely it is that sooner or later the water will return."

Archetypes were and still are psychic forces which must be taken seriously. The archetype is a psychic organ present in all of us. They are complexes of experience that come upon us fatefully. They affect our personal life. We can never legitimately ignore our archetypal foundations.

Symbols. They are of greater psychological value as they are necessary openings to understand 'human experience.' They serve to reveal the depths of the soul. They are created by the deep unconscious and are found all over the world. They appear in dreams, art productions, visions and fantasies. These symbols lead to the expression of archetypal thinking.

Libido. Jung while retaining the Freudian term 'libido' gives it a different meaning. He means by the term a life energy underlying all natural phenomena, including the human psyche. He believes that sexuality is one manifestation of libido but not all. Libido is essentially creative and it takes many forms. For Jung libido is life itself. It may follow different channels, with the individual gaining maturity. Sexual is perhaps the most important among these but not the only one. He took it as the life urge. Jung suggest three stages of development (I) Pre-sexual, upto three, four years the infant has epoch of sucking nutrition only, i.e. mouth zone. (2) Sharp changes take place when the child leaves the mouth zone and the individual develops and learns to turn from parents to the real world around him. (3) Libido gets direction to two ways-introversion and extroversion.

Shadow. Shadow represents the unconscious and is closely related to us as the dark reflection of our conscious efforts. It may become monstrous and may actually overwhelm the ego-conscious. In one sense the shadow is a highly personal creation. In another sense it reflects the universals of human experience and is 'personal' only in a very limited manner.

Jung's concept of the ego-conscious is similar to that of Freud's.

Persona. Persona is adaptively organized image of the self which all of us form in the course of living. It is formed consciously as we develop our goals and ideals. Extroverts can change the persona as they change dress. It may differ at different times, places and persons. Identification with persona is full of changes, it represents the face we show to the world. It is a necessity for social living.

The Soul Images. The soul image (anima-animus) lies deeper in racial unconscious. Every woman has her animus, the male component. The anima includes archetypal images of woman, the eternal mother, the virgin, the harlot, the witch, the temptress, the spiritual guide like Dante's Bedrock.

Psychological Types. Jung believes that libido takes two directions-extroversion and introversion. Both are necessary for complete living. Freud's stress on sexual relations is extroversive and Adler's insistence on status seeking is introversive. Jung

considers both these right but he goes beyond them and states that these attitudes complement each other. Even within himself the individual has the counterpart. The extrovert wants to adjust himself to the reality of his environment; the introvert on the other hand seeks to adjust himself to the world which lies within himself. He thinks that the contents of the unconscious possess a greater reality than the things of the outer world.

Each type performs four functions-sensation, intuition, feeling and thinking. All the four are essential for ideal living, and should work in harmony. Sensation concerns the present. Intuition with the potential-what the living will be or has been. Feeling gives us a sense of values, and thinking tells us what things are in an abstract manner.

Thinking coupled with intuition may take us away from reality and, coupled with sensation, it may bring us down to reality.

With each of these functions the same organ may have one dominant general attitude in the conscious region of the mind and the other in the unconscious. According to these functions, total personality types fall in eight categories. All persons may be ranged in a continuously graded series ranging from extreme introversion to extreme extroversion.

Jung (1933) believes there are eight categories of personality according to the functions mentioned above:

1. Thinking
2. Empirical thinking
3. Sensation (Empirical)
4. Empirical feeling
5. Feeling
6. Intuitive feeling
7. Intuition
8. Intuitive thinking.

Educational implications for Jung's Theory.

1. **Creation of proper environment.** Jung thinks that teachers and parents should make efforts to create proper environment for the child so that he is helped to find out his own and thus motivates to contribute his best for his development. Extreme domination hinders development and vice versa.

2. **Special Assistance to the extrovert and the introvert.** The teacher needs to help both types of children in proper expression. Special help should be given to the introverted young children lest they should fall into dangers. They should be

...aged to enter into living contracts with other persons and to have their interests widened. In the same way the extrovert is to be helped to lead a more balanced life.

3. **Full expression.** The child should get opportunities for expression. Due freedom should be given to the child. No rigid discipline is to be imposed.

4. **Healthy pictures.** Healthy pictures of different objects should be put before the child, and negative pictures with many conflicts should not be painted before the mind of the child. The teacher as well as the parents should be mentally healthy and should not be torn between conflicts themselves.

5. **Creativity.** Jung gives importance to creativity. Appropriate opportunities for creative expression should be provided in the school so that the child may express the message of unconscious through creative work which may help him in attaining integration of personality.

6. **Due recognition to the child.** Due recognition should be given to the child and he be treated as an individual and not considered as a 'cog in a machine'.

7. **Death as the other phase of life, Jung (1933, p. 131)** states that if the first half of life is spent in learning to live, the second half should be spent in learning to accept old age gracefully and in preparation for death. He thinks that for this too proper education is required.

8. **Self-Realization as the aim of life.** Self-realization is the aim which the individuals should be taught to have in the life before them.

9. **Home to provide a pleasant environment.** Home should be a pleasant one for proper emotional training to the child. Children do not get proper direction in restless homes. Lack of proper freedom or license in the home, both are injurious for the development of the child's personality, as the child does not get proper opportunity for communication with his unconscious.

10. A sense of security. The school should also have the responsibility of assisting the child to have a sense of security and protection.

11. **Importance of religion.** Jung believes that religion is so important in the life of man that it cannot be left out of any scheme of education for the young. The child should be taught to realize the peace and calmness that comes through religion.

12. **Appropriate education at every stage.** Junge observes "To remain child too long is childish, it is just as childish as to move away and then assume that childhood no longer exists because we do not see it." So appropriate education at every step of life is very necessary.

13. **Importance of individual difference.** Jung considers individual differences as very important. This necessitates the provision for diversified courses.

Jung's views on introversion and extroversion, religion, creative living, neurosis and dreams are discussed below.

Introversion and extroversion: Jung classified the whole humanity in two categories, the psychological types of extroverts and introverts. According to him, an extrovert's interests are directed outward, he has facility of expression, is chiefly objective, is more confident about himself, is self-seeking in the sense that he likes other people to think and act as he does. He is essentially a pragmatist; works best when observed. He is essentially gregarious. On the other hand, an introvert's interests are directed inward. He lacks the facility of self expression. He is chiefly subjective. He lacks self-confidence. He is detached and remains content to go his way and let others go theirs. He is essentially an idealist. He likes to work in seclusion, is fundamentally solitary, and is finally cautious in accepting any responsibility.

Role of religion: Jung believes that religion is a human need. And though morality is determined by one's given religion helps to fority it and teachers children to differentiate between good and evil. Morality is deep-seated in the racial unconscious and the human psyche has influenced by religious feelings and ideas from time immemorial. Religion has a healing effect, gives faith and meaning to life and enables one to face death bravely.

Creative Living: Jung believes that creative work grows out of unconscious depths. The artist is the mouth-piece of the secrets of the psyche of his time. Every creative man is born with a divine spark, and genius forces its way through all odds.

Neurosis: Jung has totally different views about neurosis. He considers it a positive factor in life. According to him neurosis results from the conflict between instinctive wishes and conscious opposition to their expression. It serves as a cry for assistance, sent from a higher inner authority in order to draw our attention to the fact that we are urgently in need of broadening our personality and we can achieve this by confronting neurosis.

According to **Jung (1933, p. 183)** neurosis is an attempt on the part of the neurotic to life himself. A man in neurosis gets into the habit of communicating with his inner self as he gets a direct encounter with the unconscious to re-enliven the archetypes within him.

Dreams are given importance by Jung. They are a natural product of the whole psyche. They come from the unconscious. There is similarity in the dreams of father and son since both come from the same heritage and their racial unconscious is of the same nature. Dreams supply that which is lacking and thereby improve the attitude. They give a true picture of the subjective state while the conscious mind denies that this state exists. They do not have any moralizing intention. They have a compensatory nature.

According to Jung 'parallel' dreams are rare. Their meaning coincides with the conscious attitude. They have got meaningful contents. Dreams can be anticipatory or prophetic. Such dreams provider clear information about the analytical situation. Through dreams our unconscious gives solution to our problems. There are many instances when great men got clues to their problems in dreams. For example, Elias Hoe learnt in his dream to make hole in the front part of the needle of his sewing machine. Unconscious only supplants the conscious. Dreams perform two functions:

1. **The prospective function.** This is an anticipation of future conscious achievements arising in the unconscious.

2. **The compensatory function.** This implies that the unconscious adds to the situation that had remained below the threshold of consciousness on the previous day. This compensation in the sense of the self-guidance of the psyche of the organism, should be regarded as meaningful.

On the other hand, Jung seems to be more of a mystic than a realist. Some critics think that his concepts of the 'self' and mind cannot be proved scientifically. But we should not apply scientific approach of dissection and analysis to the realm of mind as mind is only a matter of the understanding, insight and experience.

It is argued that his interpretation of dreams and dream symbols is more subject to the whims and fancies of the interpreter which is not the case with the Freudian school.

Jung unfolds new realms of 'unfathomable' collective unconscious. After giving due allowance to certain mystic elements, Jung's theory of Analytical Psychology is of immense philosophical value.

Finally for more details, please read the below referred material.

Skinner, Charles E. (1993)	Educational Psychology: 4th ed., New Delhi, Prentice-Hall of India Private Limited, pp. 452-469	7-4

7.7. ACTIVITIES

1. Prepare a comparison chart of various theories of motivation.

2. Give in two lines a brief about the significance of motivation.

3. Write down the important points of motivational techniques in the space given below.

   _____
   _____
   _____
   _____

4. Write a summary of psycho-analytical classroom motivation.

5. Make a list of primary (natural) needs and wants that are more or less universal for human beings. Arrange the list in order of importance to education.

6. Study ten advertisements in a popular nwspapers/magazine and note the nature of the appeals. Which do you consider most effective?

7. Give a definition of motivation.

   _____
   _____
   _____
   _____

7.8 EXERCISE

Hopefully you have studied the unit, now please answer the following questions.

Q. 1 What is the meaning of motive? Discuss some motives which impel a human being to activity.

Q. 2 All human actions have certain motives behind them. What are these motives? Discuss in detail.

Q. 3 What do you understand by psychology of motivation? How will you achieve motivation in classroom situation?

Q. 4 Discuss motivation. Through which devices a teacher can motivate his students to learn in the classroom situation.

Q. 5 Define motivation. Explain various devices for motivating the learner.

Q. 6 "Motivation is an energy change within the person characterised by effective arousal and anticipatory goal relations." Discuss.

Q. 7 Explain motivation and its various theories. Give classroom implications of motivation.

Q. 8 Who founded the school of 'Analytical Psychology'? What is the structure of "Self" according to this school? How has the unconscious been explained by Jung? What are the educational implications of Jung's theory?

Q. 9 Explain the views of Jung on introversion and extroversion, religion, creative living, neurosis and dreams.

Q. 10 How will you motivate students in the class?

Q. 11 How do you compare Adler with Freud and Jung? What are the educational implications of Adlerian Psychology?

Q. 12 Why is the science or theory of motivation relatively simple and the art or practical application most difficult? Explain.

Q. 13 Distinguish between primary and secondary motives.

Q. 14 Discuss the merits and demerits of rewards and punishments in motivation of school learning. Which is more effective and why? What limitations or precautions would you suggest in the use of rewards and punishments in the classroom?

7.9 BIBLIOGRAPHY

Burt, Cycril (1958) "The Inheritance of Mental Ability." In. American Psychology,-13.

Gray, J.A.(1967) The Psychology of Fear and Stress. New York, McGraw-Hill.

Greenberg, J.(1983) Motivation: The Force Behind Behaviour. In R.A. Baron (ed) Behaviour in organizations. Newton, Mass: Allyn & Bacon.

Hebb, D.O.(1966) A Textbook for Psychology, 2nd ed., Philadelphia: Saunders.

Hokanson,J.E.(1989) The Psychological Bases of Motivation. New York, Wiley.

Hull, C.L.(1975) Essentials of Behaviour New Haven Conn. Yale University Press.

Johnson, R.N.(1972) Aggression in Man and Animals, Philadelphia, Saunders.

Jung, C.G.(1933) Psychological Types, New York, Harcourt.

Korman, A.R.(1974) The Psychology of Motivation, Engle-wood Cliffs, N.J. Prentice-Hall.

Kundu, C. L. & Tutoo, D. N (1985) Educational Psychology: 4th ed., New Delhi, Sterling Publishers Private Limited.

Maslow Abraham H., (1962) "Some basic propositions of growth and self-achievements". In A.W.Combs (Chmn) Perceiving, Behaviouring, Becoming, Washington, D.C., Association, Supervision and Curriculum Development.

Maslow, A.H.(1973) "Theory of Human Motivation." In R.J. Lowry (ed Dominance, Self-Esteem, Self-Actualization, Germinal Papers of A.H.Maslow, Monterey, Calif, Brooks/Cole.

Skinner, Charles E., (1993) Educational Psychology" 4th ed., New Delhi, Sterling Publishers Private Limited.

Tolman, E.C.(1981) Purposive Behaviour of Fear in Animals and Men. 3rd ed., New York Appleton - Century - Crofts.

Young, P.T.(1981) Motivation and Mmotion, 3rd ed., New York, Wiley.

Woodworth, R.S. (1968) Dynamics of Behaviour, New York, Halt.

Unit No. 8

INTELLIGENCE

BY

PROF. DR. MUHAMMAD RASHID

8.1 INTRODUCTION

Not all psychologists are agreed upon the theory of intelligence and it's meaning. For a layman, an intelligent person is that who is capable of facing various life situations.

But certain students learn rapidly and some other students are slow in learning. There are certain students who start using equipment even after seeing them only once. There are others who cannot make proper use of tools even after using them many times and receiving instruction personally. What are the causes which enable a person to produce effective responses in specific situations? Interest, drives, motivation, achievements and success have an important place in learning. Still there is definitely something else which makes one student superior and more responsive than his mates In psychology, it is called talent. Different scholars have tried to make the nature of intelligence clear by defining it differently. Some main definitions are given below.

> "Intelligence means intellect put to use. It is the use of intellectual abilities for handling a situation or accomplishing any task". --Woodworth (1938).

> "It is the capacity of flexible adjustment". —Thorndike. R. (1963. p. 14)

> "Intelligence is the ability to adjust oneself to a new situation." — Rogers. C. R. (1961. p. 8)

> "Intelligence is the ability to make profitable use of past experience." --Thorndike

> **Terman, F.L. (1972, p. 23)** has called intelligence as an "abstract thinking." Furthermore he adds. "Intelligence is a capacity to think well. to judge well. and to be self-critical."

All the above definitions show two defects i.e. they seem to be incomplete and concentrate on one element only instead of all the aspects of the personality. If these definitions are analyzed, intelligence can be divided into three categories i.e. intelligence in the form of ability to learn, intelligence as abstract thinking, and intelligence in the form of adjustment.

To make the nature of intelligence clear, it is necessary to know that intelligence is neither a skill nor a memory or talent. Even knowledge cannot be called intelligence. Intelligence is abstract, mechanical and social.

> **Wechsler (1985, p. 136)** has included the following abilities in intelligence.
>
> i) the ability to act purposefully
>
> ii) the ability to think rationally

iii) to deal effectively with the environment. Hence, intelligence is the collective ability of these elements.

Various theories have been presented to make clear the nature of intelligence. These include:-

1. **Monarchic theory:** It is also called unitary theory. It was indoctrinated by **Johnson, W.** (1946, p. 11) and Stern and according to them, intelligence consists of only one factor: It is the ability to solve all types of problems. According to this theory, a man with intelligence can utilize it in any field of activity to eliminate the problems of life and he can achieve success in them. But this theory is not acceptable to all. According to it, if a man is intelligent in one activity, he should also be intelligent in other activities. Hence, if a student is intelligent in science, he should also be intelligent in history, which is not true in practice.

2. **Group Factor or Oligarchic Theory:** The name of **Thurston** (1968, p. 112) is very prominent among the advocates of this theory. It also known as the sampling theory of intelligence. According to this theory, intellectual abilities are related to some groups which do have a mutual relationship. The abilities related to a single group are closely related with each other. According to this theory, if a child is intelligent in one group, then it is possible that he may not be intelligent in other groups. For example, if a child is intelligent in the group of science, then there is a possibility that he may not be intelligent in the arts group. He can be intelligent in the other subjects of the group; e.g. if he is intelligent in physics he can be intelligent in chemistry or mathematics too.

3. **Multi-Factor of Anarchic Theory:** The advocate of this theory was **Thorndike** (1963, p. 171). According to him, intelligence is a group of many elements. There is no particular relationship among these elements. It is difficult to predict the ability of the child in other fields on the basis of his ability in one field only. For example, if a child about his intelligent in literature, then it is difficult to predict his intelligence in about mathematics or other subjects.

4. **Spearman's two Factor Theory or Electric Theory:** This theory was presented by **Spearman (1968, p. 23).** According to him, intelligence consists of two factors--one is 'G' factor and the other is 'S' factor. 'G' factor means general ability and it exists in every individual. Factor 'G' participates in all the intellectual activities. But factor 'S' does not participate in all the intellectual activities. In all persons, there are different 'S' factors for different tasks. For some tasks 'G' factor is required more and in some tasks. 'S' factor is more

required. In this way, according to this theory, there is a sort of general intelligence which exists in all individuals. For example, for mathematics 'G' factors and for music 'S' factors are needed more. The advocates of this theory plead that persons having 'G' factors in excess are more successful in life.

5. **Theory of Primary Mental Abilities:** According to this theory intelligence consists of nine primary mental abilities. These abilities are--number ability, inductive reasoning ability, deductive reasoning ability, word fluency ability, perceptual ability, spatial ability, memory ability, verbal ability and problem solving ability.

On the basis of the above theories we can assess the nature of intelligence, but due to lack of a definite theory, definite nature of intelligence has not been possible to determine as yet.

Effort has been made in this unit to highlight the intelligence and environmental factor, intelligence and aptitude tests and the limitations of intelligence tests.

8.2 OBJECTIVES

After reading the unit, it is hoped that you will be able to:-

1. discuss the concept of intelligence,
2. explain intelligence and environmental factors,
3. identify the theories of intelligence,
4. state the significance of intelligence and aptitude tests,
5. specify the limitations of intelligence tests.

8.3 THE CONCEPT OF INTELLIGENCE

Psychologists have not yet been able to arrive at one common definition of intelligence. A variety of definitions have been suggested by them which can be classified into at least four distinct groups.

One group of definition places emphasis on the adjustment and adaption of the individual to his environment or to its limited aspects. This says that intelligence is general mental adaptability to new problems and to new situations of life.

The second group of definitions stresses the ability to learn. The more intelligent a person, the more readily and extensively he is able to learn and enlarge his field of activity and experience.

The third group of definitions maintains that intelligence is the ability to carry on abstract thinking. This implies the effective use of ideas and efficiency in dealing with symbols, specially numerical and verbal symbols.

The fourth category refers to the operational definition given by **Vernon** (1975. p. 7)

These categories of definitions are not and perhaps cannot be mutually exclusive. They intersect and overlap at many points. The definition of intelligence given by **Wechsler** (1975, p. 7) seems to contain all these views in it. It states, "Intelligence is the aggregate or the global capacity of the individual to act purposefully, to think rationally and to deal effectively with the environment."

According to British psychologists intelligence involves:

a) Ability to see relevant relationships between objects or ideas, and

b) Ability to apply these relationships to novel situations.

Some psychologists, particularly Thorndike, believe that the various kinds of intelligence should be distinguished from each other. Accordingly, intelligence is divided into three kinds:

a) Social intelligence or the ability to deal with persons.

b) Concrete or mechanical intelligence, or the ability to deal with things, tools and instruments.

c) Abstract intelligence, or the ability to deal with symbols, specially verbal and mathematical symbols.

Out of these three kinds, abstract intelligence has received the greatest attention and is most pronounced in several current tests of intelligence.

Following is a comparative study of four categories of intelligence ability to adjust.

1. **Burt, C (1968, p. 13)** says that:-

It is the power of readjustment to relatively novel methods by organizing new psycho-physical coordination.

2. **Allport, G. (1961, p. 113)** stated that
It is the ability to adjust oneself successfully to a relatively new situation.

3. **Adler, A. (1971, p. 87)** points that:-
It is the flexibility of the mind to meet new situations.

4. **Adler, A. (1971, p. 85)** also says:-
It is an inherited capacity of the individual which is manifested through his ability to adjust and reconstruct the factors of his environment in accordance with the most fundamental needs of himself and his group.

5. **Johnson, W. (1946, p. 96)** says that:-
It stands for an ability to solve the general run of human problems to adjust to new situations.

6. **Gates et al (1972, p. 14)** of the view:-
It is the capacity to learn and to adjust to relatively new and changing conditions.

7. **Allport, G. (1961, p. 113)** points out that:-
It is the capacity to improve upon native tendency in the light of past experience.

8. **Wechster (1985, p. 87) G.D. Stoddard, G. W. Allport**
There views are discussed separately.

Ability to Learn

i) **Vernon, P. E. (1951, p. 41).** It is the ability to learn.

ii) **Brown, R. C. (1965, p. 186).** It is the general mental adaptability to new problems and conditions of life.

iii) **Spearman (1968, p. 21).** Intelligence may be thought of in terms of two abilitie i.e 'G' or general and 'S' specific.

iv) **Thurston, L. L. (1968, p. 127).** He suggested seven primary mental abilities.

Ability to Do Abstract Reasoning

i) **Terman, E. L. (1972, p. 15).** An individual is intelligent in proportion as he is able to carry on abstract thinking.

ii) **Thorndike (1963, p. 9).** We may define intelligence in general as the power of good responses from the point of view of truth or fact.

iii) **Gates and Others (1972, p. 47).** It is a composite organization of abilities to learn, to grasp broad and subtle facts, especially abstract facts, with alertness and

accuracy, to exercise mental control and to display flexibility and sagacity in seeking the solution of problems.

Operational Definitions

i) **Vernon, P. E. (1975, p. 11).** Intelligence is what intelligence tests measure.

ii) We can measure electricity without being able to define its precise nature. But we can put electricity to use and measure it. So we can use and measure intelligence.

An Evaluation of Definitions

A perusal of these definition suggests that it would be very difficult to separate all these definitions into clearcut categories. These categories of definitions are not mutually exclusive. A definition of intelligence as the capacity to behave appropriately and effectively in new situations and a definition that intelligence is the ability to learn are in fact two aspects of the same process. Similarly, the ability to carry on abstract thinking contributes to a person's ability to adjust or adapt to changing or new situations.

The following definition given by **Burt, C. (1986, p. 29)** seems to be very comprehensive and it clarifies many of the confusing issues on the nature of intelligence.

According to **Burt C. (1968, p. 101)** "Intelligence is the ability to undertake activities that are characterized by:

1. difficulty,
2. complexity,
3. abstractness,
4. economy,
5. adaptiveness to a goal,
6. social value,
7. the emergence of originals, and
8. to maintain such activities under conditions that demand a concentration of energy, and a resistance to emotional forces."

It may be said that intelligence is an ability to "see the right thing at the right moment in the right way." It is a general capacity to understand and meet the situations that life may present, successfully. To quote Principal R.R. Kumira; "Call it practical wisdom; call it common sense; call it genius; it is just the same in different names and grades."

Intelligence cannot be increased or decreased. The amount of intelligence that a person possesses is inherited and fixed. The amount though fixed does not reveal itself

at the start of life. With the growth of the child, the amount inherited by the child also grows. The general belief is that the growth of intelligence stops and it reaches its limit at the age of sixteen or seventeen. It is true that a man of forty knows more than when he was a boy of sixteen. But this does not mean that the amount of intelligence possessed by him has increased. This may be due to his experience. As regards his intelligence, his position remains the same.

The growth of intelligence of certain children may be checked due to certain unfavourable circumstances and when these are removed, intelligence begins to grow and functions normally.

An intelligent person has the ability to adjust himself to changing circumstances with ease, efficiency, and speed. He has the capacity to assimilate ideas very quickly and clearly. He can cope with new situations successfully. All the inventions of the world can be attributed to persons of intelligence.

The unintelligent or the dullard fail to think of new situations. They are always guided by others. They lack originality.

For further details, please read the below referred material.

George J. Mouly (1968)	Psychology for Effective Teaching, 2nd ed., New York, Holt Rinehart and Windston Inc. pp. 241-244	8-1

8.4 INTELLIGENCE AND ENVIRONMENTAL FACTORS

It is certainly justifiable to assume that love, affection and concern, generously but judiciously bestowed on growing children have very desirable effect upon a wholesome nature. A poor environment retards development.

Distribution of Intelligence. A majority of school children, say about 60%, are found in the I.Q. interval 90--110, and are referred to as 'Normal' or 'Average'.

Intelligence and Sex Differences. Generally speaking, research studies show that the average scores of the sexes are strikingly similar.

For further details please read the below referred material.

Jerome Kagan and Ernest Havemann (1972)	Psychology: An introduction, 2nd ed., New York, Harcourt Brace Jovanovich. Inc. pp. 478-482	8-2

8.5 INTELLIGENCE AND HEREDITY

Every racial and cultural group contains some gifted children. Franz Bolas states, "if we were to select the most intelligent, imaginative, energetic and emotionally stable third of mankind, all races would be represented."

Three Areas of Intelligent Behaviour

Thurston has suggested that we recognize at least three broad areas of intelligent behaviour:

1. **Abstract Intelligence.** He defined this as the "ability to understand and manage ideas and symbols, such as words, numbers, chemical or physical formulas, legal decisions, scientific principles and the like." In the case of students this is very close to what is called scholastic aptitude.

   Usually scholars, executives in business and Government, and scientists possess high abstract intelligence.

2. **Mechanical Intelligence.** This includes, "The ability to clean, to understand and manage things and mechanisms, such as a knife, a gun, a moving machine, an automobile, a boat, a lathe___". Mechanics, building experts, carpenters, and plumbers possess high mechanical intelligence. High social intelligence is found in politicians, sales people and leaders in society.

3. **Social Intelligence.** This is the ability of mature men and women, boys and girls to act wisely in human relations.

   A successful civil engineer presumably possesses high abstract as well as high mechanical intelligence: the successful criminal lawyer, abstract as well as social intelligence, the machinery salesman, mechanical and social intelligence. Of course, no generalization can be made.

However, please read the following material for further comprehending the concept of intelligence in heredity.

McMahon, Frank B. and Judith. W. McMahon (1982)	*Psychology: The Hybrid Science*. 4th ed., Illinois. The Dorsey Press. pp. 500--504	8-3

8.6 THEORIES OF INTELLIGENCE

On the one extreme there are the followers of the Monarchic Theory who believe that intelligence consists of one single factor or all-round mental alertness. On the other

extreme are the followers of the Anarchic theory, founded by Thorndike, who believe that intelligence comprises a multitude of several separate factors or elements. All other theories lie in between these two extremes.

Spearman's Two-Factor Theory. In 1904, Spearman produced strong evidence based on his own researches that there was one fundamental ability underlying all cognitive functions. According to him every task involving intellectual activity depended upon a general ability or "G" factor and a separate ability or "S" factor. This view is popularly known as the two-factor theory of intelligence i.e. "G" factor and "S" factor. The "G" factor represents native intelligence. Thus when we respond to any situation or perform an intellectual task, our general mental ability or "G" factor is responsible for part of our reactions, while our specific ability or "S" factor in that particular task is responsible for the rest. There is a large number of specific abilities, such as, ability to draw inferences, ability to complete sentences, ability to continue series of numbers, the ability to code messages, etc.

Group Factor Theory. L.L. Thurston propounded the Group Factor Theory of intelligence. According to him intellectual activity is neither an expression of numerous highly specific factors as claimed by Thorndike, nor the expression primarily of a general factor which prevails in all mental tasks, as Spearman believed. Instead, as revealed by factor analysis, certain mental operations have in common a primary factor which gives them psychological and functional unity and which distinctly separates them from other mental operations. These mental operations are said to constitute a group A. Similarly another group of mental operations have their own unifying primary factor and may be said to constitute a group B. And so on. Thus there are a number of groups of mental abilities, each of which has its own primary factor.

Thurston proposed the following seven factors and called them primary mental abilities.

1. Verbal Comprehension (V)
2. Word Fluency (W)
3. Number or Numerical Ability (N)
4. Space (S)
5. Perceptual Speed (P)
6. General Reasoning (R)
7. Associative Memory (M)

Later Thurston himself found that these primary mental abilities are not completely independent and they are significantly correlated. He ultimately concluded that in addition to primary mental abilities there was a second order G or general factor.

The theories of intelligence have important implications for teachers. How a teacher looks upon his student's performance in various activities of the school, depends upon the theory he believes in. For example if he believes in uni-factor (or one factor) theory, he is likely to label his student as entirely dull or as entirely gifted or average. But if he believes in special mental abilities, he is likely to have a differential estimate of his students' abilities in different areas of school activities.

The theory of intelligence that a psychologist believes in, decides the type of intelligence test he will like to construct and use.

For further details of the theories of intelligence, please read the below referred material.

Kundu, C.L. and Tutoo, D.N. (1985)	Educational Psychology, 4th ed., New Delhi, Sterling Publishers Private Limited, pp. 294-319	8-4

8.7 INTELLIGENCE AND APTITUDE TESTS

Degree of intelligence in its pure form cannot be measured except in so far as intelligence is expressed in behaviour. The ideal procedure to measure the degree or extent of an individual's mental abilities is to observe his behaviour and see what success he achieves in his many and varied activities. Since this is a long and cumbersome process, psychologists have devised various types of intelligence tests or tests of mental abilities.

1. Binet Test.

The father of intelligence testing is Alfred Binet, a Frenchman. Binet disagreed with some of his contemporaries who tried to measure general intelligence by testing reaction time, rote memory, sensory activity, or muscular movements. According to him, intelligence can be estimated only by test of higher faculties like reasoning, comprehension, judgement, adaptability, persistence, and self-criticism. Binet worked on these lines and in collaboration with Theophile Simon, published the first intelligence test in 1905. This test had thirty items arranged in order of increasing difficulty.

Binet tried out these items on children, and in 1908, brought out a revised scale which divided the test items into age groups from 3 to 11 years. At some age levels, only 3 questions were asked, at others 5 or 6. With this scale Binet introduced the concept of mental age. Mental age means that if given child's score on a test is equal to the average score of children of 9 years of age, then

his mental age will be nine in spite of the fact that his chronological age is eight.

In 1911, shortly before his death, Binet published a second revision of his scale. It omitted some old items and introduced some new ones. He also brought the scale upto adult level. In this revision, he included 5 tests for each age except the 4-year level.

2. Binet-Simon Scales.

The first serious revision of Binet-Simon Scales was prepared by Terman at Stanford University and was published in 1916. This revision introduced a great many alternatives and new additions. The entire scale was re-standardized on an American Sample of about 1000 children and 400 adults. For the first time the term I.Q. or "Intelligence Quotient" was introduced. I.Q. has been defined as the ratio of mental age to chronological age. To avoid fraction, it is multiplied by 100. Thus:

$$\text{I.Q} = \frac{\text{Mental Age}}{\text{Chronological Age}} \times 100$$

$$\text{or simply I.Q} = \frac{\text{M.A.}}{\text{C.A.}} \times 100$$

This test aroused deep interest in intelligence testing and in 1955 Wechsler brought out a similar test called Wechsler Adult Intelligence Test (WAIS). He also brought out Wechsler Intelligence Scale of Children (WISC). His scales have two parts--a verbal scale and a performance scale. WAIS has six sub-tests with a verbal scale and five subtests making the performance scale. They are as follows.

Verbal Scales.

1. Information.
2. Comprehension.
3. Arithmetic.
4. Similarities.
5. Digit span.
6. Vocabulary.

Performance Scale.

1. Digit symbol.
2. Picture completion.
3. Block design.
4. Picture arrangement.
5. Object assembly.

Stanford-Binet as well as the Wechsler Scale are individual tests, i.e. they can be administered to only one person at a time. Thus they are time consuming.

The large scale recruitment problem in U.S.A. during First World War necessitated the production of group tests of intelligence. The immediate result was the publication of Army Alpha, a verbal test and Army Beta, a non-verbal Test. Thereafter many more group-tests were developed. Some examples are Davish-Eells Test, Raven's Progressive Matrices, the Kuhlmann Finch Test, the Oist Self-Administering Test of Mental Ability, Army General Classification Test, etc. In Pakistan also a number of Tests have been developed such as I.S.S.B. etc.

Group tests have the advantage of saving time, ease of administration, and objectivity of scoring. But group tests cannot be given to younger children below the age of 9 or 10. Moreover, the examiner cannot detect and rectify the influence of ill-health, mood, poor social background or practice and coaching. In an individual test these things can be taken care of to some extent.

Performance tests are useful for those who are handicapped in language ability, for foreigners, for illiterates, for retarded children, for culturally deprived or socially disadvantaged and for young children. But the performance tests may not be able to predict scholastic success as well as do the verbal tests, because school work itself is predominantly verbal. Moreover, performance tests are unwieldy, difficult to transport and very costly. Their reliability is also difficult to evaluate.

Among the group tests there are two types, (i) Verbal and (ii), Non-verbal.

Verbal tests are those which require the use of language to answer the test items.

Non-verbal tests do not require the use of language to respond to the item.

3. **Measuring Special Abilities.**

The I.Q. obtained as a result of performance on an intelligence test indicates general status only. It does not point to the size of strength or weakness in each of the particular mental abilities that are being measured. For example, two students showing an I.Q. of 120 on a particular test may have different positions on different sub-tests; one may do very well on arithmetic and poorly on vocabulary, while the other may do very well on vocabulary and poorly on mathematics. Yet both score the same total.

4. **Primary Mental Abilities Test (PMA Test)**

To correct this sort of error we need tests which indicate differential success of a subject on various mental abilities. The tests of primary mental abilities prepared by Thurston meet this need. The PMA test for ages 11 to 17 is based on the group factor theory of mental ability which postulates that intelligence is made up of certain distinct and more or less independent mental functions which Thurston calls the "primary mental abilities. The primary abilities as measured by this test are:

1. Number facility.
2. Verbal comprehension.
3. Spatial perception.
4. Word fluency.
5. Reasoning.
6. Rote memory.

5. **Differential Aptitude Test Battery (DATB)**

Another test to measure the special abilities is Differential Aptitude Test Battery (DAT). This comprises eight tests:

1. Verbal reasoning.
2. Numerical ability.
3. Abstract reasoning.
4. Space relations.
5. Mechanical reasoning.
6. Clerical speed and accuracy.
7. Language usage: spelling.
8. Language usage: grammer, punctuation and word usage.

6. **General Aptitude Test Battery (GATB)**

Another test of the differential aptitude type is the General Aptitude Test Battery (GATB), developed by the United States Employment Service. It consists of 15 tests which cover 9 factors, such as intelligence, verbal aptitude, numerical aptitude, spatial aptitude, form perception, clerical perception, motor-coordination, finger dexterity and manual dexterity.

These sophisticated test batteries mentioned above give a much more clear picture of what special abilities a person has than the general intelligence tests.

However, for further details, please read the below referred material.

Davitz, Joel, R. and Samuel Ball (1970)	*Psychology of the Educational Process*, New York, McGraw-Hill Book Company, pp. 519–561	8-5

8.8 INTELLIGENCE TESTS AND IMPLICATIONS FOR TEACHERS

It has been amply proved by the psychologists that all persons do not have the same amount of intelligence and all cannot work with the same speed and efficiency. The assumption that, given the same opportunities all men will be equally successful, is based upon faulty foundations. The intelligence tests are of great use in schools. To be a successful teacher, one must know one's pupils thoroughly and one must possess an instrument with which one can measure their intelligence and one must know the proper use of that instrument. The work of a teacher is the work of handling young growing minds and he must, therefore, know as much as possible of these minds. Binet's Rod of Mental Measurement is an instrument for the teacher to find out the exact calibre of the minds of his pupils. Intelligence tests help to discover whether a child is backward or dull or intelligent. It is not possible to gauge the intelligence of children without the use of mental tests. Their intelligence cannot be estimated from the marks obtained by them in their school subjects. A child of 12 years and another of 14 years may be put on the same level if they obtain the same number of marks. But this is a defective method. Obviously, the child of 12 years is more intelligent than the child of 14 years in this illustration. Similarly, a child may be more industrious but comparatively dull and may score more marks than another child, who may in fact be more intelligent but less industrious. There are important spheres in which intelligence test can be employed for the purpose of:

(a) Selection of pupils for admission to various courses of study.
(b) Classification of pupils.
(c) Prediction of scholastic success.
(d) Detection of superior and inferior intelligence among pupils.
(e) Selection of suitable occupations.
(f) Awarding scholarships.
(g) Judging of teacher's work.
(h) Selection of students into educational institutions.
(i) Discovery of unusual cases.
(j) Prediction of success in college.
(k) Diagnosis of backwardness.

Though intelligence is defined in many different ways, the intelligence tests are based mainly on definitions in terms of ability to succeed scholastically.

1. **Selection of courses.** Different subjects require different degrees of intelligence. Some call for a higher order of intelligence and others for a low order.

2. **Classification of pupils.** Intelligence tests help us to make a sifting at the time of first admission to school at the age of five or six. The fit should be allowed to form a class and the unfit be segregated.

   Secondary education is the next stage where another check can be provided. Those who are unfit to take up secondary education should be discouraged.

   This is even more true at the university stage. A proper sifting and a proper control are very important at this stage also.

3. **Detection of superior and inferior intelligence.** There are different grades of intelligence among the fit and the unfit. Some pupils have a very superior intelligence than others. They move at different rates. All these cannot be given instruction together. Many methods have been suggested to give instruction to the superior and the gifted. Some favour complete regregation of the gifted and the superior, while others suggest that they should be taught along with the average, and an enriched course of study should be prescribed for them. To quote **Adler, A.** (1971, p. 97), "If on the other hand 'gems of purest ray serene'. Are allowed to be in unfathomable caves, the blame of this criminal neglect lies at the door of the parents and teachers who are making the future generation. They should pick and choose the vanguard and the rear-guard of the nation. Tarring all with the same brush is not only a psychological absurdity but a political blunder."

4. **Determination of the optimum level of work.** What is the primary aim of education? The primary aim of education is to help each student to make the best possible use of all his capacities. The intelligence tests help to measure the student's capacity to succeed in his school work and enable teachers to make an estimate of the mental level at which the student can be expected to work most efficiently in academic subjects. I.Q. is a rough index of the learning capacity of the various members of the class. With the aid of this method the teacher finds it easy to adjust his methods to meet the needs of the individual.

5. **Selection of suitable occupations.** Burt draws up the following provisional scheme for occupational classification according to the degree of intelligence they

require.

(a) Higher professional and administrative work. (I.Q. 150)--lawyer, physician, architect, teacher (university and secondary).

(b) Lower professional, technical and executive work. (I.Q. 130 to 150).

(c) Clerical and highly skilled work. (I.O.115 to 150) Shorthand typist, bank clerk, salesman, electrician, nurse.

(d) Skilled work (I.Q. 100 to 115)--Tailor, dressmaker, carpenter, cashier, printer.

(e) Semi-skilled repetition work. (I.Q.85 to 100) barber, welder, miner, painter, baker.

(f) Unskilled repetition work. (I.Q.70 to 85) manual labour, packer.

(g) Casual labour.(I.Q. 50 to 70)--simplest routine work.

(h) Institutional (under 50)--unemployable.

6. **Award of scholarships.** Various public scholarships are awarded on the basis of the results secured through intelligence tests. The Government of Pakistan selects some students for the award of scholarships for studying in public schools on the basis of intelligence and achievement tests.

7. **Assessment of teacher's work.** When the achievement of the pupils in a subject does not correspond to the scores of intelligence tests, it gives indication to the fact that the subject has not been properly taught by the teacher and properly understood by the student.

8. **Selection of students to a school.** In good schools there is always rush for admission. All the applicants, though eligible, cannot be admitted. It then becomes necessary to adopt some additional method of selection. Intelligence tests help to meet this difficulty. By administering these tests, authorities pick out the innately brighter boys.

9. **The discovery of unusual cases.** The lack of intelligence may be the main cause of abnormal behaviour. Intelligence tests help to find out cases of abnormal behaviour.

10. **Intelligence and success in college.** Gates and others think that an I.Q. of at least 120 is needed to do acceptable college work in a first class college with an average expenditure of time and energy.

11. **Help in diagnosis of backwardness.** Ordinary scholastic examinations fail to discover 'educable abilities'. The failure of a child in an examination is no indication that he lacks intelligence. This failure may be due to defective methods of teaching or it may b due to some temperamental on physical obstacles which might have stood in the way of the child. There may not be any fault with the intelligence of the child, only it has not been allowed to work itself out.

12. **Evaluation of methods and material of instruction.** Intelligence tests are helpful in evaluating the results of the experiments conducted by a school in the relative importance of the different methods of instruction i.e. achievement obtained with different text-books or with a certain text-book as contrasted with extensive reading material not confined to any one book.

However, for further details, please read the below referred book.

Kundu, C. L. and Tutoo, D. N. (1985)	Educational Psychology, 4th ed., New Delhi, Sterling Publishers Private Limited, pp. 333-3	8–6

8.9 LIMITATIONS OF INTELLIGENCE TESTS

It would be a great mistake to think that these tests are all-in-all-in measuring the various aspects of the personality of the individual. Intelligence is not the only factor which determines the equipment of a man for the journey of life.

The first limitation of such tests is that they seek to measure intelligence which in itself is not a clear conception to psychologists and about which they differ among themselves.

Secondly, intelligence is not the only factor which plays a significant role in the success or failure of a man in a particular vocation. Intelligence tests fail to measure the depth, strength and qualities of a man pertaining to his emotional stability. They also fail to measure his ethical, social and aesthetic qualities which play a significant part in the life of an individual.

Thirdly, intelligence tests fail to take into account environmental factors and educational factors many a time, and thus give misleading results. These tests may

include material with which children of certain socio-economic groups have had more experience than those of other groups.

Precautions to be taken

While interpreting test results, the teacher, should take certain precautions, namely:

1. The general intelligence test, especially the group test, measures ability to work with abstract ideas and their relationships. This is just one type of ability. Thus a child who scores low on this test can do well or very well on other practical activities. Children with low intelligence should, therefore, be encouraged to develop and strengthen their special practical skills.

2. Verbal group test of intelligence is sufficiently dependent upon reading. So a low test score should be interpreted very carefully for a poor reader. Such a child should be tested on an individual test as well as on a non-verbal test.

3. Intelligence test results for socially disadvantaged children should be interpreted with caution.

4. The test interpreter should always keep in mind the standard error of measurement and give due allowance for it.

5. Intelligence tests leave untouched many important aspects such as interests, attitudes and motives, etc.

Please read the below referred material for further comprehending the concept of limitations of intelligence tests.

McMahon and Judith W. McMahon (1982)	*Psychology: The Hybrid Science*. 4th ed., Illinois, The Dorsey Press. pp. 499-500	8-7

8.10 ACTIVITIES

1. Prepare a chart for comparison of intelligence and environment.

2. Discuss the theories of intelligence with any psychologist and prepare a report of your discussion.

3. Write below four important types of intelligence tests with one line definition of each type.

_____

_____

_____

_____

4. Write down the important limitations of intelligence test in the space given below.

_____

_____

_____

_____

8.11 EXERCISE

Hopefully, you have studied the unit, now please answer the following questions.

Q. 1 Discuss the nature and signifiance of intelligence.

Q. 2 Write a note on Spearman's two factor theory of intelligence.

Q. 3 Write a note on Thurstons Group Factor Theory of intelligence.

Q. 4 How is intelligence measured ? Describe various types of intelligence tests. What are the implications of intelligence tests for classroom teachers and counsellors.

Q. 5 What is intelligence? Describe its various theories and give salient features.

Q. 6 How can intelligence be measured? Discuss some of the good intelligence tests.

Q. 7 Critically excamine the uses and application of intelligence tests.

Q. 8 Discuss the theory of Intelligence which you consider more appropriate. Give arguments in support of your answer.

Q. 9 what do you understand by Intelligence Quotient? How is I.Q. determined?

Q. 10 "A good psychological test is essentially a purposeful standardized tool of observing the sample of individual behaviour, objectively and comprehensively". Discuss.

Q. 11 Discuss the limitations of intelligence tests.

Q. 12 What cares should be taken while developing an intelligence test? Explain.

Q. 13 What are some of the educational and sociological implications of the recent views on the role of environment influences on the development of the intellect? Discuss.

Q. 14 What evidence do we have of the effectiveness of the various programmes designed to promote intelligence and academic adequacy among the culturally disadvantaged? On what premise do they base their general approach.

8.12 BIBLIOGRAPHY

Adler, A (1971) — Understanding Human Nature, 2nd New York, Greeburg Publishing, Inc.

Allport, G. (1961) — Pattern and Growth in Personality, New York, Holt.

Brown, R (1965) — Social Psychology, New York, Free Press.

Burt, C. (1968) — The Backward Child, 2nd ed., London, University of London Press, P.133.

Davitz, Joel, R. & (1970) — Psychology of the Educational Samuel Ball Process, New York, McGraw-Hill Book Co.

Gates, et al (1972) — Educational Psychology, 2nd ed., New York, The Macmillan Company.

Johnson, W. (1946) — People Quandaries: The Semantics of Personal Adjustment, New York, Harper.

Kagan Jerome & Ernest Haremann (1972) — Psychology: an Introduction, 2nd ed., New York, Harcourt Brace Jovanovich. Inc.

Kundu, C. L. & D. N. Tutoo (1985) — Educational Psychology, 4th ed., New Delhi, Sterling Publishers Private Limited.

McMahon, Frank B. & Judith, W. McMahon (1982) — Psychology: The Hybrid Science, 4th ed., Illinois, The Dorsey Press.

McMahon & Judith W. Mcmahon (1982) — Psychology: The Hybrid Science, 4th ed., Illinois, The Dorsey Press.

Mouly, George J (1968) — Psychology for Effective Teaching, 2nd ed, New York, Holt, Rinehart and Winston Inc.

Rogers, C.R. (1961) — On Becoming a Person, Boston, Hughton Mifflin.

Spearman, C. (1968) — The Abilities of Man, 3rd. ed., New York, Macmillan

[illegible] — The Gifted Child Grows Up, 4th ed., Stanford, Stanford University Press.

Thorndike, Robert L. (1963) — The Measurement of Creativity, Teachers College Record, 64.

Thurstone, L.L.(1968) — "Primary mental abilities", in Psychometric Monograph, No.1, Chicago, University of Chicago Press.

Vernon, P.E. (1961) — The Measurement of Abilities, London, London University Press.

Vernon, P.E. (1975) — The Structure of Human Ability, 3rd ed., London, Methuen.

Wechsler, D. (1985) — The Measurement of Adult Intelligence, 3rd ed., Baltimore: The Williams & Wilkins Company.

Woodworth, R.S. (1978) — Experimental Psychology, 5th ed., New York, Henry Holt and Company.

Unit No. 9

PSYCHOLOGICAL TESTING

BY

PROF. DR. MUHAMMAD RASHID

9.1 INTRODUCTION

Process of measurement is called testing. Psychology tests are administered to measure the mental ability of a person. Normally, in the early age, many schools give their pupils some kind of intelligence test to predict how well they are likely to perform in their classes.

The tests serve as a clue to whether they are under-achievers, who are not living up to their true capacities, or over-achievers who are working exceptionally hard and doing better than might be expected. In the later grades pupils take achievement tests which measure their progress at their particular school. The student who seeks vocational guidance is often asked to take tests for special aptitudes, such as mechanics and art, and tests that measure his interests and preferences. If a student goes into the army, he undergoes a number of aptitude tests designed to measure special abilities for work in radio, electronics, mechanical repair, and other fields. When he seeks a job, his employer may test his intelligence, his specific abilities, and sometimes his personality characteristics also.

Testing is an important branch of psychology in which many investigators have been hard at work for many years. It is the source of much of the data analysed with the statistical tools. It has been especially useful in the study of human intelligence and has put considerable light on the nature of intelligence and the relationship between intelligence and success in school or career.

Tests are of many kinds. They include group tests and individual tests. Group test is administered to many people at once whereas individual test is given to one person at a time by a trained examiner. In this case, the test items can call for a verbal answer or for the subject to perform some kind of task. Group tests have made possible the measurement of hundreds of student each year. A low score on the group tasks may be caused by factors like temporary ill health, poor vision, or lack of motivation from the examiner.

Effort has been made in this unit to highlight the and various types of psychological testing in vogue ane their respective importance. The uses, characteristics and limitations of tests have also been discussed.

9.2 OBJECTIVES

After reading the unit, it is hoped that you will be able to:

i. discuss the concept of psychological testing;

2. explain the uses of psychological testing;

3. distinguish between different types of psychological tests, such as intelligence tests, personality tests, projective tests, and group tests;

4. specify the main characteristics of psychological tests;

5. identify the limitations of psychological tests.

9.3 CONCEPT OF TESTING

There is no doubt that tests are important tools which serve a variety of purposes. Tests are a major way of measuring people's behaviour and abilities. Their results can help people to make informed decisions in a broad spectrum of situations and can also extend our basic knowledge about behaviour.

If used inappropriately, the results can be harmful. Most of the problems with tests arise through misunderstanding, especially when users expect the tests to accomplish more than they can. Hence, these tests are tools for psychological assessment. They range from open ended situations which use a standard set of stimuli (such as a set of pictures) to bring out highly individualistic responses, to very structured situations in which individual responses are much more restricted and are clearly right or wrong.

According to Margan K. R. (1984, p. 478) "Psychological tests are no more or less than samples of real behaviour which, because they are standard and repeatable, provide shortcuts to understanding individual differences." It is important to emphasise that tests are samples, or cross sections of behaviour.

Gerda Siann & Denis, C.E.U. (1985, p. 223) describe the increasing popularity of intelligence testing in the first half of this century to:

(a) a scientific interest in the testing and measurement of human abilities;

(b) a practical desire to be able to diagnose those children who required special remedcal education;

(c) a politically motivated desire to be able to identify mental defectives and than control their behaviour; and

(d) a socially motivated desire to be able to identify gifted children and provide them with a more academic type of education than to those who were identified as less able.

However, from their above quotation of such influences on intelligence testing, it seems clear that perhaps more than any other area in psychology, perspectives on intelligence must be related to the social, political and cultural environment.

Moreover, testing is done in order to sample behaviour for a specific purpose. Usually one of three different purposes is considered before a test is used: diagnosis, the sampling of performance, or the monitoring of progress. The first very common purpose of testing is diagnosis; the second common purpose is to sample final performance, and the third and comparatively new purpose of testing is the monitoring of progress.

Finally, according to Cronbach (1984, p. 224) attribute which is responsible for recognisable measures among children and adults in their learning, reasoning and other cognitive capacities essentially stable and does not change throughout an individual's life time. Intelligence tests are adequate measures of this attribute.

For further details, please read the below referred material.

Anne Anastasi (1982)	Psychological Testing, 5th ed., New York, Macmillan Publishing Co; Inc. pp. 22-27	9-1

9.4 USE OF TESTS

There is much importance of intelligence tests in schools. The objet of these tests is to classify the students. The classification is done on the basis of intelligence. Classes of students with higher intelligence can be arranged separately and those of lower intelligence separately. These tests are needed for educational and vocational guidance to the students. On the basis of these tests, it is possible to make education effective and provide proper guidance.

The tests are used for selection for various courses: subjects, scholarships or co-curricular activities. The children are selected on the basis of their I.Q. These tests are also used to understand individuals and their potentialities of the individuals. Similarly, on the basis of results of intelligence tests, the aspiration levels of individuals can be established. The establishment of higher aspirations for persons with lower intelligence would be an injustice to those with higher intelligence. In the same way lower aspiration on the part of persons with higher intelligence would be improper.

The tests are also used to promote students to next classes. Especially in the vocational fields the use of these tests is always advantageous to promote the persons on the basis of their abilities. The tests are also used for important research studies.

The importance of intelligence tests is increasing day by day in the education system. One cannot avoid the use of these tests. For further details, please read the

below referred material.

Anne Anastasi (1982)	Psychological Testing, 5th ed, New York, Macmillon Publishing Co; Inc. pp. 27-44	9-2

9.5 TYPES OF PSYCHOLOGICAL TESTS

In theory, any test of a behaviour characteristic could be called a psychological test. Several of the most important types of psychological tests will be discussed here.

9.5.1 Achievement and aptitude tests:

Achievement tests are designed to measure what a person has accomplished upto to a given point in time. Aptitude tests are designed to predict what a person may accomplish in the future if given appropriate training. Both of these types of testing are based on the concept of ability, which is a person's potential for acquiring a skill. (Achievement tests show how well a person has acquired skills up to now, while aptitude tests indicate how well a person might acquire skills in the future)

In a sense, all ability tests are achievement tests, showing only how well the person does on a given test at a particular time. However, the purposes of achievement and aptitude tests differ, and psychologists try to design aptitude tests that measure basic skills and do not require any specific knowledge

There are two major types of aptitude tests: scholastic aptitude tests (which are used to predict future successes in academic pursuits) and vocational aptitude tests (which are based to estimate future successes in employment situations).

9.5.2 Personality tests:

The term 'personality' is such that the word 'measurement does not look appropriate in its context. Because development cannot be measured, it can not be evaluated or appraised. Hence, only evaluation is possible in case of personality. There is no unit of its measurement, the physical aspect of the development of personality i.e. height, weight etc. can be measured, but the complete personality cannot be measured. Subjective and objective methods are used for the evaluation of personality. The description of these methods is given below:

(A) Subjective methods:

1. **Autobiography:** This is a subjective method. In an autobiography a person himself writes his own life story while other people evaluate his

personality by going through it. In autobiography the writer describes about his past as well as his experiences, interests, desires and aims.

Limitations: This method has the following limitations:

(a) A person does not alwys write the whole truth about himself.

(b) He exaggerates his merits.

(c) Sometimes details are not complete.

Due to these limitations, this method is not a 'complete method.'

2. **Interview method:** A face-to-face conversation between two persons is called an interview. It is also included in subjective methods. In this method, an individual asks questions from the other individual. On the basis of responses to those questions, the personality of the individual is analyzed. In this face to face conversation once can know the interests, needs and expectations of the person.

Limitations: The main defect of this method is that it is time consuming. Sometimes one is unable to respond properly or he suppresses many things in his mind.

3. **Questionnaire method:** In this method a list of questions is prepared. This list is distributed among different persons and their answers are sought. Then these answers are analysed from which the personality of those persons is evaluated. These questions are related to those aspects of the personality which are to be evaluated. The list of questions can be given to a single person or a group of persons at a time.

Limitations: The main defect of this method is that the persons hesitate to give responses with clarity and honesty. This is also a subjective method.

4. **Case history method:** This method too is subjective. By this method we record one's past facts. After collecting all the facts about a person, these are analyzed. This is a sort of complete history of one's personality. With this method, most of the adjustability capacities can be studied.

Limitations: The main defects of this method are the collection of relevant material and preparation of its record. A special type of training is required for this task. For a case history, to collect and record the relevant information regarding the person, and the use of clarity and history is very essential.

(B) Objective methods:

These methods are based on the external behaviour of the individual. They can be said to be more scientific and more reliable. The objective methods are of the following types.

1. **Observation method:** Through observation one's personality can be evaluated. But it is a continuous process. A short observation cannot reveal the personality. This observation is of two types (a) controlled and (b) uncontrolled. In the controlled observation, one's personality is observed under controlled conditions. The person under observation himself knows that he is being studied. The main defect of this method is that the person starts behaving artificially when he knows that he is being observed. A correct evaluation of personality is not possible in this manner. Under un- controlled observation a person is observed silently and he knows nothing about the observation. With this method the true nature of one's personality exposes itself.

2. **Sociometric:** The social aspect of one's personality is evaluated with this method i.e. the social habits of the individual. Children are asked about their choices. A sociogram is drawn on the basis of the facts. After analysing the sociogram the personality of the individual is studied.

3. **Rating method:** To evaluate one's personality, the opinions of various persons are collected in this method. The persons,who contribute their opinions, belong to the surroundings of the person about whom the information is being collected. In this rating-scale method, the statements and answers to questions are divided into five or seven categories. The category labelled 'maximum' depicts the existence of maximum quantity of that characteristic.

   The main defect of this method is that a person can be subjectively biased while responding to questions. The personal influences also become hurdles in responding correctly. To remove these defects the responses regarding these difficulties, should be sought and analyzed. Only then can a useful any result be derived.

4. **Situational tests:** In these tests, the persons are put in some situation and then their characteristics are evaluated. Real situational tests can also be prepared. For example, if the honesty of a child is to evaluated, he can be put in a situation where his honesty is really put to test.

5. **Personality inventory:** This method resembles the questionnaire method. The questions are related to the specific person only. Whereas in the questionnaire method, information other than that of the person is also gathered, in personality inventory the questions are all written in the first person, e.g. "I like excursions."

With this method the responses of all the questions cannot be had. Sometimes correct responses are not made. Individuals hide their demerits and weaknesses. Hence, this method too cannot be called a complete method.

6. **Projective technique:** The behaviour of the unconscious mind is studied with this method, while other methods are concerned with the study of conscious behaviour. By this method the behaviour of a person is evaluated by exploring his suppressed desires, behaviours, interests, etc.

For further details, please read the below mentioned material.

Anne Anastasi (1982)	Psychological Testing, 5th ed, New York, Macmillon Publishing Co; Inc. pp. 10-21	9-3

9.5.2.2 Projective tests:

Projective tests are techniques in which the subject is put in an unstructured situation and is allowed the free use of his imagination in making out a structure. For example, making a story, interpreting ink-blots, free-association with words, constructing some object out of paper or plastic material, drawing a picture etc. Here the assumption is that while doing so, the person unconsciously projects his own ideas--emotions and complexes in giving the structure to an unstructured or partially structured situation.

The projective tests have the following common characteristics:

i) The stimulus material is ambiguous and weakly structured and the subject is expected to supply meaning, significance, organisation or in some other way leave the impression of his personality upon the underdefined stimulus or situation.

ii) An attempt is made to explore the psychological reality or the underlying basic personality factors of the individual which consists of his hopes, aspirations, needs, motives, moods, attitudes, conflicts, complexes, fears, etc.

iii) Projective tests tap the implicit or unconscious aspects of the personality.

iv) Projective tests require sophistication in administration and interpretation.

Some of the projective tests are standardized and are widely used. They include Rorschach's Ink Blot Test, Thematic Apperception Test and various other picture tests like Children's Apperception Test etc.

1. The Rorschach's Ink Blot Test:

This test was constructed in 1921 by Herman Rorschach a Swiss psychologist. This test is considered the most successful.

i) **Material of the test:** There are ten cards in this test. These cards bear unstructured figures like ink blots. Out of these ten cards, five cards bear black figures two cards bear red and black figures and the rest of the cards bear figures of mixed colours. The figures on these ten cards bear no specific meaning.

ii) **Administration of the test:** These ten cards are given one by one to the individual whose personality is to be evaluated. The reactions regarding the printed figures are noted. The individual is asked what they see in the figures. The time which an individual wants to look at each card is given to the individual. The individual can look at them from any angle. There is no restriction in that respect. The reactions of the individual on looking at the figures, his style of holding the cards and face readings of the individual are recorded.

iii) **Analysis of responses:** After the test is over, the responses received from the individual are analyzed. For this analysis, the responses are scored

iv) **Validity and reliability:** Its validity has been calculated ranging from 67 to 97 and its reliability is 49.

v) **Utility:** The utility of Rorschach's test is as below:

(a) This test proved useful to [illegible] complicated unsocial act...

(b) It reveals the intelligence of the tested person.

(c) It familiarizes us with the emotional, mental and social aspects of the individual.

Criticism: This method is not useful for small children. It needs more time and finance. To conduct this test, efficient and trained persons are needed. Everyone cannot conduct this test. Its fault is that it lacks objectivity.

2. **Thematic Apperception Test:**

This test was constructed by Morgan and Murrary in 1925.

i) **Material of the test:** This test consists of 30 pictures. In these, 10 pictures are of males, ten of females and rest 10 are for both. Every person is shown 20 pictures. These cards are shown in two turns.

ii) **Administration of the test:** In this test, the pictures are presented one by one. These pictures are vague. There is no correct or incorrect response in this test. Only the original imagination is looked at. The individual is given a definite time. He is to write a story after looking at that picture on the card in that time. The story regarding a picture is to be written on the following aspects:

(a) What is going on in the picture?
(b) What can causes of it be?
(c) What is the result?

An individual can express his feelings, expectations etc. through these stories. Thus persons who are unable to express themselves in the presence of others are able to do so in writing.

iii) **Analysis and interpretation:** The stories are analyzed on the basic of the following facts:

(a) How the personality of the hero of the story has been portrayed.
(b) Theme of the story.
(c) Style and language of the story.
(d) Contents of the story.
(e) Behaviour of the individual while writing the story.
(f) End of the story.

iv) **Criticism:** In this method, some untrained testers may interpret incorrectly the stories written after looking at the pictures. This may affect the complete interpretation of the individual's

personality. Secondly, to conduct this test, well trained person are needed. This test is not fit for children.

3. **Children apperception test:**

This test is proper for small children. It was constructed by Leopold Bellack from children of 3 to 10 years of age.

i) **Test material:** This test has only ten cards. The cards bear animal pictures. The animals are shown in different situations. A story is to be written after looking at these pictures. In the story the children express their feelings, desire, interests and other characteristics of their personality.

ii) **Administration of the test:** The cards are presented one by one to the children. They are asked to write stories after looking at them. Children do this with great interest.

iii) **Analysis and interpretation:** The following points are to be kept in mind for analysis and interpretation of these stories.

- Personality of the hero of the story.
- Theme of the story.
- End of the story.
- Attitude towards parents.
- Affectionate relations with any member of the family.
- Mention of any external object in the story other than the picture.
- The references left out of story after looking at the picture.
- The anxiety of the children and their problems.
- The self-confidence of the characters of the story.
- The language of the story and organization of the contents.

For this test too, experienced persons are needed otherwise the results may be incorrect.

4. **Sentence completion test:**

In this test, sentences are left incomplete which a person has to complete rapidly. To complete these incomplete tests, an individual uses maximum contents.

5. **Word Association test:**
In this test, there are some selected words. These words are mixed with other words. The concerned man is asked to speak the work which comes to his mind after listening to these words. This tells us about the facial expressions of the person, his maladjustment, mental tension, etc.

6. **Free association technique:**
In this method one is asked to speak out frankly whatever he has in his mind. This frank expression presents his personality.

7. **Play technique:**
Play reveals the different aspects of behaviour of children. During play, children exhibit unconsciously the various aspects of their behaviour. In these plays the emotions of children, leadership qualities, social qualities etc. are properly expressed.

8. **Features of hand writing:**
These days, personality is also evaluated by looking at one's handwriting. Information about various aspects of the personality is given by the size of words inclination of words, placing of words, differences between two words, the emphasis on various types of words, etc. Sometimes, the structure of the words reveals whether the writer is a female or a male, an adult or a child or an old man.

9. **Drawing. painting and sculpture:**
Drawing painting and sculpture also reveal many aspects of the personality. For example, the colours used in drawing and painting reveal the emotional development of an individual. Drawing reveals one's tensions. During modelling the children exhibit their personality in an adequate manner.

Merits of projective methods:

1. The projective methods have a wide field. With these methods, various aspects of one's personality can be evaluated.

2. With this methods, both conscious and unconscious behaviours can be studied.

3. In these tests, an individual performs an activity which is unstructured.

4. The nature of these methods is quite secret. One cannot know which aspect of personality is being looked into.

Demerits of projective techniques:

1. The methods and the material used in these are quite costly.

2. They take much time in scoring.

3. These tests lack objectivity.

4. For the administration of these tests trained persons are needed, and such persons are often scarce.

For further details, please read the below mentioned material.

Anne Anastasi (1982)	Psychological Testing, 5th ed, New York, Macmillon Publishing Co; Inc. pp. 564-591	9-4

9.5.3 Intelligence tests:

The basic concepts involved in the testing of intelligence are:-

1. Chronological age (C.A.)

2. Mental age (M.A.)

3. Basal age.

4. Intelligence Quotient and its constancy.

5. Distribution of intelligence.

1. **Chronological age:** This refers to the age in years, months, hours. This is counted from the time and date of the birth of an individual. It is symbolically expressed as C.A.

2. **Mental age:** It was in the year 1908 that Binet introduced the term 'Mental Age' to give a better footing to the intelligence test results. This ordinarily, refers to mental maturity of a person corresponding to his level of performance in an intelligence test, irrespective of his C.A. If a person of C.A. 6 years is able to score satisfactorily on a test meant for a child of C.A. 9, then his mental age (henceforth referred as M.A.) is 9. Mental age can also be defined as "an expression of the extent of development achieved by the individual, stated in terms of the performance that can be expected at any given age." This, then, means that a child who is said to have a mental age of six years as a result of the performance in the test, has a C.A. of six years is normal.

   And when the scores of a given intelligence tests are put into M.A. scores - we have with us what is known as Age Scale. Maximum mental age is 19 or 20. In our average case, mental age corresponds to chronological age of the individual.

3. **Basal:** Basal age is that age of the child with reference to his chronological age where he can solve all questions in a given test. Mental age cannot be calculated directly. It is basal age which helps in the calculation of mental age.

Types of intelligence tests:

Intelligence tests are of three types i.e. (a) verbal, (b) non-verbal, (c) performance.

a. **Verbal Test:** A verbal test of intelligence is not to be confused with oral test. A verbal test is that test where reading and writing are involved.

Contents of verbal test: A verbal test of intelligence consists of various types of questions (items) such as commonsense questions, analogies, arithmetical reasoning, etc. It has about 75 to 100 questions and these have to be answered in 20-25 minutes. Intelligence would be measured in terms of the score obtained by the individual in the test.

A popular verbal test is a test of general mental ability.

b. **Non-verbal test:** In the non-verbal test of intelligence, paper and pencil are required but no reading and writing is to be done. These are also known as culture free tests or paper pencil tests. An example of non-verbal test of intelligence will be drawing a pattern without lifting the

pencil and without going over the same point twice.

This has got to be done in the shortest possible time. Another non-verbal test is "Draw a man test". Scoring is done in terms of how many important parts of man such as eyes, nose, mouth, etc, are included in the drawing and how they are shown in relation to another. This test is for children between 3 to 13 years.

c. **Programme test:** In the performance test, one has to perform some kind of motor activity. No reading and writing are involved. The motor activities increase in complexity by every step.

Performance test are different from non-verbal tests in the sense that, in the lather writing is involved and there is very little motor activity.

Boring, Edwin Garrigues, Herbert Sidney Langfeld and Harry Porter Weld ed. (1948)	Foundations of Psychology: New York, John Wiley and Sons, Inc. pp. 394-396	9-6

One of the earliest performance test is the Form-Board Test developed by Seguin for use with the feeble-minded. Another test is Portes Maze Test, where the subjects, ranging from 3 years to adults, trace with a pencil the shortest path from the entrance to exit of the maze without even raising the pencil from the paper. A battery of performance tests of intelligence produced by C.M. Bhatia is widely used in Pakistan in age group 1-6. There are five tests in this battery - Koh's Block Designs, Alexander's Pass Along Test, Pattern Drawing Test, Immediate Memory Test for Digits and Picture Construction Test.

For further details, please read the below referred material.

Arno F. Witting and Gurney williams III (1984)	Psychology: An Introduction, New York, McGraw-Hill Book Company, pp. 256-267	9-5

9.6 CHARACTERISTICS OF A GOOD PSYCHOLOGICAL TEST

A good psychological test is essentially a purposeful standardized tool for observing samples of individual behaviour, objectively and comprehensively.

We have to use many criteria to know about a test. If any test proves appropriate against that criteria, that test definitely will be considered good test. Similar criteria area are also fixed in the context of intelligence tests. Therefore, we should study these criteria in the form of characteristics of intelligence tests. The description of good intelligence tests or criteria is given below:

1. **Reliability:**

   Reliability refers to the consistency with which a result will be obtained when either identical or supposedly equivalent forms of a test are used. In testing, perfect consistency cannot be expected, but a higher degree of reliability is essential. It would be impossible to make accurate or meaningful predictions from the results of an unreliable test.

2. **Validity:**

   Validity means that a test measures what it claims to measure; that is, a valid test

what it intends to predict. A test may have several validities. For example, a high validity for the prediction of scholastic success in literature courses but a much lower validity for predicting success in mathematics courses.

It is very important to identify just what a test does measure. Improper use of tests may lead to inaccurate predictions and, therefore, faulty counseling or guidance.

3. **Comparison of Reliability and Validity:**
It is necessary to note that a test may be highly reliable, but invalid. This can occur when a test measures something consistently, but does not measure what it claims to measure. However, a test that is valid will also be reliable. If the test measures what it intends to measure, then it will have to do this with fairly high consistency; otherwise the test would not predict accurately.

4. **Standardization:**
Standardization refers to how the testing is carried out. All aspects of the testing procedure, including the administration of the test and the scoring and evaluation of the results, should follow the same pattern each time the test is given. If the testing procedure is not standardized, differences among the test performances of the subjects may be the result of variations in test procedures, and not an accurate indicator of differences among the subjects.

Norms. One way to standardize test results is to establish norms, which are scores obtained from groups of people who have taken the test. Once norms have been determined, performances by others taking the same test (in the same manner) can be compared to the norms.

Norms versus criterion orientation. Norms are frequently helpful in interpreting the results of psychological tests, but on occasion they may be misleading. In such cases, it may be better to use a criterion, or an absolute standard, to evaluate a subject's performance.

Norms and stereotypes. Because norms are established on the basis of test results and are often reported as statistics, they sometimes take on the ring of truth for the naive reader. They can, however, be misinterpreted. For example,

a person may look at a norm and follow this train of reasoning: "(1) If this is average or typical score of a group of people and (2) one person is a member of that group, then (3) this score must be typical of that person." The test results may be typical of that person, but the norm does not provide any assurance that it is so.

5. Objectivity:

Objectivity means that an observer's or measurer's biases or prejudices play no role in observation or measurement. (All measurement are made in a neutral or dispassionate fashion.) Observers who allow bias to influence their judgement or measurement are described as subjective rather than objective.

Several variables must be taken into account when using psychological tests. Some of the most important are discussed in this section.

1. Individual versus group tests:

One concern is whether each individual needs to be tested separately or not. Sometimes data can be collected from a number of people simultaneously. Individual tests have the advantage of giving the psychologist a chance to closely observe the subject taking the test, and they are sometimes more sensitive than group tests as a means of evaluating special characteristics. On the other hand, individual tests are generally more expensive than group tests, and they often require a more highly trained administrator.

Group tests have the advantage of allowing large amounts of data to be collected quickly. They are also relatively inexpensive and usually do not require skilled administration. As a means of surveying a number of individuals quickly, they work fairly well, although it is difficult to keep accurate track of each subject's effort or motivation.

2. Speed versus power tests:

Speed tests are those which have a time limit as a significant variable.(Subjects are expected to do the best they can within a limited amount of time.) For all practical purposes, power tests have no time limits. Subjects are asked to give their best possible performances and not to worry about the time involved.

3. **Cross-sectional versus longitudinal investigations:**
Psychologists often need to compare the performances of subjects in various age groups. There are basically two ways of making such comparisons. Cross-sectional investigations are tests of different individuals in each of the age groups being studied. Data collection can take place fairly quickly, but matching samples from one age group to another may be difficult or impossible. Longitudinal investigations test the same subjects throughout the study, and thus matched samples are unnecessary. However, longitudinal studies take a much longer period of time to complete and tend to have a higher probability of subject loss because of the waiting periods between one testing session and the next.

4. **Culture-free and culture-fair tests:**
It has long been known that an individual's cultural background can affect his or her performance on some cognitive ability and personality tests. Attempts have been made to create psychological tests that do not contain biases against or in favour of certain cultures or subcultures. Culture-free tests attempt to eliminate such biases totally. For example, withperformance tests free of any cultural background influence. Culture-fair tests try to choose items that should be equally well-known by all cultural groups to be investigated. (Note: Most attempts at creating such tests have proved relatively unsuccessful).

Psychological tests are used for many different purposes. It must be remembered, however, that test results should be considered as advisory only and that any other information available should be used in making either predictions or decisions. Several typical uses of tests are discussed here.

1. **Selection:**
Probably the most common use for psychological test result is in the selection of individuals for academic or vocational positions. If there is more than one qualified applicant for a position, the person doing the hiring may administer tests to help in the selection process.

2. **Counselling and therapy:**
Ability tests and personality tests may be used by the psychologist who is attempting to aid an individual with guidance or therapy. The results obtained may help the psychologist formulate a plan for treatment of the

individual or advise an individual about his or her abilities.

3. **Legal Proceedings:**
Results from psychological tests are sometimes used in courts of law and other legal proceedings. For example, a court may have to make judgements about the sanity of a defendant in a criminal case.

4. **Statistical versus intuitive judgment:**
A psychologist may make predictions or decisions based soley on some norm or criterion and the results of a test. In such a case, the psychologist has made what is called a statistical judgment based on the test. In other situations, the psychologist may use the test results and other pieces of information, including feelings or intuitions about the subject. In such a case, the psychologist has made what is called an intuitive judgment based on the total information.

Some more facts about psychological tests are given below:-

1. The correlation of psychological test scores with school marks is substantial (0.5 to 0.6 is average).

2. Previous school achievement gives correlation with later school achievement to be equal or higher than the correlation between intelligence and later school achievement.

3. Intelligence test and achievement combined in a battery give still better prediction about future achievement.

4. Intelligence tests correlate higher standardized measures of achievement than with school marks.

5. The degree to which intelligence tests are related to academic success depends upon the subject matter.

For further details, please read the below referred material.

9.7 LIMITATIONS OF PSYCHOLOGICAL TESTS

Psychological testing has been questioned for a number of reasons, including the extent to which the tests can actually predict, the fairness of tests for all groups, the possibility that psychological tests invade a person's privacy, and the ways in which the results of tests are publicized or revealed.

1. **Limited prediction:** Many of the predictions and decisions mentioned can be based on, or are aided by, the results of psychological tests. However, psychologists and others with access to test results must realize the limitations of such scores and not attempt to rely upon them exclusively.

2. **Test Fairness:** As previously mentioned, attempts have been made to try to develop culture-free or culture-fair tests, but success has been limited. Thus, psychological tests may be misused if they are administered to a sub-cultural group for which they are inappropriate.

3. **Privacy:** Privacy is invaded if the results of an individual's test are revealed without that person's knowledge or consent. (Merely administering a psychological test is not necessarily an invasion of privacy, and frequently serves the beneficial purpose of assisting an individual in making behavioural choice.

4. **Revealing results:** Anyone with access to the results of psychological tests should respect the privacy of the individuals who were tested, and should consider carefully the consequences of revealing test results. Government regulations that attempt to preserve and limit access to test results have been enacted.

9.7.1 Cautions while using an intelligence test:

1. The teacher must recognize that I.Q. (especially from verbal tests) is not a complete measure of a person's worth. It is an indication of only one limited type of ability. A person may have a good level of ability in many other non-verbal aspects of living i.e., mechanical, social, artistic and musical. A child whose score on scholastic aptitude test is low should in no way be rejected.

2. Verbal group tests of intelligence must be supplemented by other types of intelligence tests.

3. Results of intelligence tests should not be declared to the students in a way as to label a particular student once for all with a particular I.Q.

4. In case it is suspected that the child was emotionally disturbed at the time of testing, results should be considered as tentative.

5. An I.Q. of 70 should be interpreted as an I.Q. somewhere between 60 and 80.

For further details please read the below referred material.

Judith Worell and Stilwell William, E (1981)	Psychology for Teachers and Students, New York, McGraw-Hill Book Company, pp. 522-525	9-7

9.8 ACTIVITIES

1. Write down one line definitions of
   Reliability_____
   Validity_____
   Objectivity_____

2. Prepare a chart indicating different types of psychological testing.

3. Write below one line definition of personality tests.
   Projective test_____
   Subjective test_____
   Objective test_____

9.9 EXERCISE

Hopefully, you have read the unit, now please answer the following questions.

Q. 1 Describe the nature of psychological testing.

Q. 2 Discuss the uses of psychological tests and their impact on education and training.

Q. 3 Critically examine the types of psychological testing. Give examples to elaborate your answer.

Q. 4 Explain various characteristics of a good test. Also give examples in support of your answer.

Q. 5 What is the difference between individual tests vs group tests? Give examples in support of your answer.

Q. 6 "Projective method is the most reliable and valid method for personality evaluation". Discuss the statement.

Q. 7 Describe various characteristics of psychological tests.

Q. 8 Critically examine the significance of psychological testing in the teaching-learning process.

Q. 9 Explain various uses of tests in teaching-learning process.

Q. 10 Write short notes on the following:

(a) Children Apperception Test.

(b) The Rorschach's Ink Blot Test.

(c) Merits of Projective Methods.

(d) Intelligence Tests.

Q. 11 Discuss various characteristics of good psychological tests.

Q. 12 Describe the limitations of psychological testing.

9.10 BIBLIOGRAPHY

Anne Anastasi (1982) — Psychological Testing, 5th ed., New York, Macmillan Publishing Co. Inc.

Boring, Garrigues Edwin, et al., (1962) — Foundations of Psychology, 9th ed., New York, John Wiley and Sons, Inc.

Morgan, Clifford, T. et al (1984) — Introduction to Psychology, 6th ed., Auckland, McGraw-Hill International Book Company.

Murray, H.A. et al., (1939) — Explorations in Personality, New York, Harper and Bros.

Siann, Gerda & Denis (1985) — Educational Psychology in a Ceugwuegvu Changing World., London, English Language Book Society.

Witting, Arno F. & William III (1984) — Psychology: and Introduction. New Gurney York, McGraw-Hill Book Company.

Worell, Judith & Stilwell William, E. — Psychyology for Teachers and Students, New York, McGraw-Hill (1981)Book Company.

[ ]