BAEDN 202

FOUNDATION OF EDUCATION

BA (EDUCATION)
4TH SEMESTER

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FOUNDATION OF EDUCATION

BA

Fourth Semester

RAJIV GANDHI UNIVERSITY

Arunachal Pradesh, INDIA - 791 112

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About the University

Rajiv Gandhi University (formerly Arunachal University) is a premier institution for higher education in the state of Arunachal Pradesh and has completed twenty-five years of its existence. Late Smt. Indira Gandhi, the then Prime Minister of India, laid the foundation stone of the university on 4th February 1984 at Rono Hills, where the present campus is located.

Ever since its inception, the university has been trying to achieve excellence and fulfill the objectives as envisaged in the University Act. The university received academic recognition under Section 2(f) from the University Grants Commission on 28th March, 1985 and started functioning from 1st April, 1985. It got financial recognition under section 12-B of the UGC on 25th March, 1994. Since then Rajiv Gandhi University, (then Arunachal University) has carved a niche for itself in the educational scenario of the country following its selection as a University with potential for excellence by a high-level expert committee of the University Grants Commission from among universities in India.

The University was converted into a Central University with effect from 9th April, 2007 as per notification of the Ministry of Human Resource Development, Government of India.

The University is located atop Rono Hills on a picturesque tableland of 302 acres overlooking the river Dikrong. It is 6.5 km from the National Highway 52-A and 25 km from Itanagar, the State capital. The campus is linked with the National Highway by the Dikrong bridge.

The teaching and research programmes of the University are designed with a view to play a positive role in the socio-economic and cultural development of the State. The University offers Undergraduate, Post-graduate, M.Phil and Ph.D. programmes. The Department of Education also offers the B.Ed. programme.

There are fifteen colleges affiliated to the University. The University has been extending educational facilities to students from the neighbouring states, particularly Assam. The strength of students in different departments of the University and in affiliated colleges has been steadily increasing.

The faculty members have been actively engaged in research activities with financial support from UGC and other funding agencies. Since inception, a number of proposals on research projects have been sanctioned by various funding agencies to the University. Various departments have organized numerous seminars, workshops and conferences. Many faculty members have participated in national and international conferences and seminars held within the country and abroad. Eminent scholars and distinguished personalities have visited the University and delivered lectures on various disciplines.

The academic year 2000-2001 was a year of consolidation for the University. The switch over from the annual to the semester system took off smoothly and the performance of the students registered a marked improvement. Various syllabi designed by Boards of Post-graduate Studies (BPGS) have been implemented. VSAT facility installed by the ERNET India, New Delhi under the UGC-Infonet program, provides Internet access.

In spite of infrastructural constraints, the University has been maintaining its academic excellence. The University has strictly adhered to the academic calendar, conducted the examinations and declared the results on time. The students from the University have found placements not only in State and Central Government Services, but also in various institutions, industries and organizations. Many students have emerged successful in the National Eligibility Test (NET).

Since inception, the University has made significant progress in teaching, research, innovations in curriculum development and developing infrastructure.

SYLLABUS

Course Content:

Unit-I :   **Education and Social Change**
- Concept and Characteristic of Social Change
- Factors Influencing Social Change
- Role of Education as an Instrument of Social Change
- Salient Features of Tribal Culture in Arunachal Pradesh.

Unit-II: **Growth and Development**
- Concept of Growth and Development and their implications in Education
- Principles of Growth and Development
- Aspects of Development: Physical, Mental, Social and Emotional Development.

Unit-III: **Concept of Learning**
- Meaning and Laws of Learning
- Concept and Types of Transfer of Learning
- Concept of Motivation
- Role of Motivation in Learning.

Unit-IV: **Individual difference**
- Meaning, Types and Determinants of Individual Difference
- Concept and Types of Intelligences
- Meaning and Nature of Personality
- Concept and Process of Adjustment
- Educational Statistics: Graphical representation of data, Measures of Central Tendency and Variability, Correlation

CONTENTS

INTRODUCTION

Philosophy and education have been very important components to develop and enrich the personality of individuals and citizens of a country. The philosophical perspectives offer the foundation of education in terms of values, aims and objectives. Education as a subject should have a value-orientation for its impact on philosophy, society and other elements of education. The interface between these areas has made the interdisciplinary approach practicable today. The development in the field of education has been the result of various theories and perspectives from not only Western thinkers like Rousseau or Dewey but also has had significant contributions from the likes of Gandhi and Tagore.

According to the sociological perspective, education does not arise in response of the individual needs of the individual, but it arises out of the needs of the society of which the individual is a member of. The educational system of any society is related to its total social system. It is a sub-system performing certain functions for the on-going social system. The goals and needs of the total social system get reflected in the functions it lays down for educational system and the form in which it structures it to fulfill those functions.

But, no teacher can teach effectively without trying to understand the psychology of proper instruction. Each student has an individual set of characteristics that influence his ability to comprehend, register and process information. Also, the effectiveness of teaching is influenced by the assessment techniques and the school's overall environment, rules and attitude with regard to tests.

Thereby, the combination of the philosophical, sociological and psychological factors affects the way in which the foundation of education is laid.

The learning material in the book is presented in a structured format so that it is easy to grasp. Each unit begins with an outline of the Unit Objectives followed by Introduction to the topic of the unit. The detailed content is then presented in a simple language, interspersed with Check Your Progress questions to enable the student to test his understanding as and when he goes through each unit. Summary provided at the end of each unit helps in quick recollection. Questions and Exercises section is also provided for further practice.

UNIT 1 EDUCATION AND SOCIAL CHANGE

Structure

1.0 INTRODUCTION

'Society' can be said to be the sum total of people living in a community. Since, humans differ in their thoughts and ideas from one another, the society acts a composite whole representing the collective set of values held by that particular community. There are various different components of this society as a unit. Education is one of the most important element as it moulds and changes the way in which ideas, agendas, thoughts and discoveries are perceived. It affects the children of the society directly by taking up social issues and putting them under scrutiny as well as trying to come up with solutions to the pertaining problems. But the changes in the composite whole (society) too affects the way in which the education is imparted. This is why education in relation to the society must be studied.

In this unit, you will learn about the concept and characteristics of social change, factors influencing social change, role of education as an instrument of social change and the salient features of tribal culture in Arunachal Pradesh.

1.1 UNIT OBJECTIVES

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

- Explain the concept and characteristics of social change
- Describe the factors influencing social change

- Interpret the role of education as an instrument of social change

- Discuss the salient features of tribal culture in Arunachal Pradesh

1.2   CONCEPT AND CHARACTERISTICS OF SOCIAL CHANGE

Social changes are the changes that occur in various components of socialization for whatever reasons and circumstances. Social change is the most operative aspect of the society.

Definition of Social Change

Social change is a term used to describe variation in or modification of any aspects of social processes, social interactions or social organization, and are variations from accepted modes of life existing in a society from time to time. Society is dynamic, it grows and it grows through social change caused by various circumstances and reasons over a period of time. Social change is in fact, a variation in perception between generations separated by time and space. But, does it not make social change as good as cultural change? Are social changes and cultural changes not integrally related? In short could there be any social change without corresponding cultural change, and vice versa?

'Social change' indicates the changes that take place in human interactions or interrelationships. Society is regarded as a 'web of social relationships' and in that sense social change refers to change in the system of social relationships. It is the alteration or modification of the structure and function of any system. For example, change in interpersonal relationships, inter-caste and inter-community marriage, change in family type from joint-living to nuclear households, etc., can be called social change.

Different scholars have defined social change in different ways. A glance at some of them can make understanding clear. According to Morris Ginsberg, a British Sociologist, 'Social change is the change in social structure, i.e., the size of a society, the composition or balance of its parts or the type of its organization. The term social change must also include changes in attitudes or beliefs, in so far as they sustain institutions and change with them.' Here, he talks about two types of changes: changes in the structure of society and changes in the values system of society. However, these two types of changes should not be treated separately because a change in one brings on changes in the other, as a change in the attitude of people may bring about changes in the social structure and vice versa. Describing it as a part of 'cultural change', Kingsley Davis an American sociologist, says, 'Social change is meant only such alterations as occur in social organizations, i.e., the structure and function of society'. The renowned sociologist, Macionis defines social change as the 'transformation in the organization of society and in patterns of thought and behaviour over time'. So, it can be summarized from the above definitions that almost all the authors while defining social change, give emphasis on social relationships, social organizations, social patterns and values. Social change, therefore, is change in the societal system as a whole.

1.2.1 Nature of Social Change

Following the meaning and analysis of the concept, the features of social change can be discussed as given below:

1. **Social change is universal:** As discussed in the previous section, social change is inevitable. It is not only inevitable, it is also universal. It is found in every

society. From primitive society to the post-industrial one, change is found everywhere. No society or culture remains static forever. Human beings changed themselves from nomads, food gatherers to agriculturists and later modern, industrial beings.

2. **Social change is continuous:** Right from the time mother earth came into being to the present times, society/life has been in a continuously changing mode. No society or people can be stopped from the influences of change. It is a never-ending process.

3. **Social change may produce chain reactions:** Change in one aspect of a system may lead to changes of varying degrees in other aspects of that system. The change from hunting and food gathering to agriculture was a revolution in technology that led eventually to the development of civilization by making large and diversified societies possible. Similarly, the Protestant emphasis on Bible reading as a road to salvation led to a great rise in literacy. Further, introduction of the system of reservation for backward communities in government institutions and offices in India has brought changes in their socio-economic status, interpersonal relationships and also in the social and economic structure of the country. Similarly, improvement in literacy in the country leads to economic independence of women which in turn brings changes in the whole notion of family, marriage and husband-wife ties.

4. **Social change may be planned or unplanned:** Change may occur with or without proper planning. People, government or any other agent may initiate change through plans or programmes and may determine the degree and direction of change. The Government of India after independence devised several socio-economic developmental programmes to bring the country out of poverty and unemployment through the broader provision of Five Year Plans. The country has seen phenomenal improvement in literacy, health, infrastructure and industry, and considerably managed to overcome poverty, hunger and unemployment problems since independence. Apart from the planned social change, there can be changes which are unplanned and happen accidentally. Changes due to natural calamities like earthquakes, tsunamis and volcanic eruptions belong to this category.

5. **Social change is temporal and directional:** Change can be directional. It happens in a particular direction. In several instances, such direction is planned, predetermined and is fixed ideally. Such changes are called as progress. However, change in general may happen in any direction. Similarly, the rate or tempo of change varies from time to time and place to place. Some changes may take months and years while some may occur rapidly. Social change is temporal in the sense that it involves the factor of time. It denotes time sequence. It can be temporary or permanent. Time is an important component in the process of change.

6. **Social change is value-neutral:** The concept of social change is not value-laden or judgmental. It doesn't advocate any good or desirable and bad or undesirable turn of events. It is an objective term which is neither moral nor immoral. It is ethically neutral.

1.2.2 Forms of Social Change

There are different types of social change. The term 'social' is so vast in scope that different forms of change which carry several names of their own can actually be brought under the broader concept of social change. However, different types of change are discussed below for better understanding of the concept.

1. **Social change and cultural change:** Social and cultural changes are often regarded as the same and denote similar kind of change. However, there are differences between the two. 'Social' refers to the interactions and interrelationship between people.' 'Culture' on the other hand refers to the customs, beliefs, symbols, value systems and in general the set of rules that are created by people in society. It can be both material and non-material. Material culture consists of manufacturing objects and tools like automobiles, furniture, buildings, roads, bridges, books, mobiles, TV sets and anything of that sort which is tangible and is used by the people. Non-material culture includes belief systems, values, mores, norms, habits, language, etc. The concept of culture relates to the body of knowledge and techniques and values through which a society directs and expresses its life as an interacting entity (B.B Mohanty, Indian sociologist). So, the change in social relationships, human interactions, modifications in role expectations and role performance, etc. are regarded as social change, whereas changes in human artifacts, beliefs, values, body of knowledge, etc. are called cultural change.

   Culture changes through time and it spreads from place to place and group to group. In the span of time since the Second World War began, immense changes have taken place. Television, since the experimental stage before the war, has entered almost every living room in the world. From the first atomic reaction in the early decades of 20th century, we have progressed to space capsules and satellites and in a few short post-war years, plastics and synthetic fabrics, wash-and-wear clothes, stretch socks, automatic washers, dishwashers, clothes driers, food freezers and packaged mixes have changed the housewife's fate.

   It is important to mention here that sometimes changes that occur in a cultural system don't go smooth and face maladjustment with other parts of the system. Such a situation is termed as 'cultural lag'. Defining the concept, Ogburn, wrote, 'A cultural lag occurs when one of the two parts of culture which are correlated changes before or in greater degree than the other parts does, thereby causing less adjustment between the two parts than existed previously.'

   However, any cultural change has its impact on human relationships and, therefore, influences social changes too. The advent of mobile, telephone and internet has had far-reaching consequences on interpersonal relationships. Thus, cultural change positively affects social change and change in a society comes through both social and cultural changes.

   As Kingsley Davis stated, cultural change is broader than social change and social change is only a part of it. All social changes are cultural changes, but not vice-versa. Those cultural changes that affect social organizations and human interpersonal relations can be called as social changes.

2. **Social change and social progress:** Progress is a change in a desirable direction. It can also be referred to as change for the better. It involves value judgement because it implies betterment or improvement. Progress involves change that leads to certain well-defined goals. It is also a type of social change. However, there are differences between the two. Every change is not progress, but every progress can be called as a change. Moreover, change is a value-free concept, while progress always denotes change for the better. In that sense, progress is a value laden concept. It has been discussed before that change can be planned and unplanned. Nonetheless, progress is always planned and ideally fixed. Besides,

change is obvious and certain. Small or big, slow or fast, change takes place in every society, but progress is uncertain.

3. **Social change and social evolution:** The use of word evolution or 'social evolution' in sociology is borrowed from biology. Biology studies 'organic evolution' which denotes the evolution of all kinds of organisms. Social evolution, on the other hand, refers to the process of evolution of human society, human social relationships, societal values, norms and the way of life. It involves the idea that every society passes through different phases, from simple to complex. Sociologists and social anthropologists were impressed by the idea of organic evolution which could convincingly explain how one species evolves into another, and wanted to apply the same to the social world. Evolution means more than growth. Growth does connote a direction of change, but it is quantitative in character. Evolution involves something more intrinsic, a change not merely in size, but at least in structure also. Social evolution is also a type of social change. Both of them are natural and are inevitable facts of life. However, there are differences between the two. First, every change is not evolutionary in nature, whereas, evolution always implies change. Second, evolution, unlike change is a continuous process. Third, the cause of social change may be both internal and external, whereas evolution is mostly affected through the operation of internal factors. Fourth, social change can be planned or unplanned but evolution is an automatic process. Firth, social change is a value-neutral concept, whereas evolution is value-loaded. Sixth, there can be slow or fast social change, but evolution is always a slow process.

Any kind of change that we witness in the society can come under the broader definition of either social or cultural change. However, some specific variety of change can also be discussed here, although they come under the umbrella term of social or cultural change.

- **Demographic change:** Demography deals with the size, distribution, growth, etc., of population over a period of time. Demographic change is change in the patterns of fertility, mortality, age structure, migration, etc. High fertility or high mortality can have important implications in any society. The same can happen if the rates of such indicators are too slow. High fertility might lead to large-scale instances of poverty and unemployment, and might affect the developmental efforts of a state. Over-population also leads to greater use of natural resources and affects environmental sustainability. High birth and death rates bring about change in the attitude of people towards family and marriage. In India, demographic change in the form of high fertility led to the adoption of family planning programmes following which there was a decrease in the population growth rate. The small family norm has introduced change in the social relationships between husband and wife, parents and children, the status of women and so on.

- **Technological change:** The human civilization is moving from the most rudimentary technology of bow and arrow to the modern and highly sophisticated instruments of the present day. The invention of computers, internet, mobile phones, jet planes, atomic bomb and discoveries made by men like Vasco da Gama and Columbus have changed the socio-cultural space of the modern man dramatically. Ancient man walked on bare feet, then came the bullock cart which moved comparatively faster. Subsequent technological

innovations brought about bicycles, automobiles, jet planes and so on. These have helped the movement of people faster than ever before. These technological changes have enormous societal implications. The introduction of high-yield seeds in the form of Green Revolution in India that ensured massive increase in food grains like rice and wheat managed the hunger situation in the country quite well. Dramatizing the fact that technological change may lead to social change, sociologist William F. Ogburn once attributed the emancipation of women to the invention of the automobile self-starter, which enabled women to drive cars, freed them from their homes and permitted them to invade the world of business. The modern means of entertainment and communication like TV, radio, Internet, and cell phones have drastically changed the family life in India and substantially affected the role of women in society. Not only are they empowered and emancipated but also the husband-wife ties are now being seen as that of co-partners rather than that of superiors and inferiors. Although technological changes have not spread equally everywhere in the country, still phenomenal improvement in this respect cannot be ignored.

- **Economic change:** Economy plays a cardinal role in man's daily life. Noted sociologist and philosopher, Karl Marx pointed out the significance of economy as a factor in social change. He propounded that economy which constitutes the means of production like labour, instruments, and the relations of production is the infrastructure and all others like family, legal system, education, religion and polity are the superstructure. As he says, a conflict between the oppressor and the oppressed, haves and the have-nots brings change in the society and the society transforms to a new mode of production. In this manner, Marx says, society gets transformed from primitive communism to slavery, slavery to feudalism, from feudalism to capitalism and from capitalism, Marx predicted, socialism a classless society will emerge. In the Indian society, industrial economy brought enormous change in the lives of people. Not only did it change the occupation structure in the society but, also it affected inter-personal relationships. People from rural areas migrated to cities to work in factories. This drastically reduced the effect of caste/untouchability and also transformed joint families to nuclear households. India, once an agricultural economy, is now manufacturing industrial products to emerge a world leader in producing software, making it a service economy. The software giants like Infosys, Wipro and TCS are renowned the world over. So the economic change is one of the important forms of social change.

1.2.3 Factors and Conditions Influencing Social Change

Some factors that may affect the social structure of a setup are:

- Physical environment
- Scientific and technological advancement
- Inter-dynamics

According to Ogburn an American sociologist, social change first occurs in the material culture and then in the non-material culture. But these cultural changes do not take place one after the other, but it is a product of the inter-dynamics of the two. Social or cultural change occur because of the interaction of technological researches or scientific inventions and the ideals, values and aims of society. In other words, social change

occurs through the interaction of technological techniques and social values. Both the elements are essential. Any one of them without the other will not bring about any social change. As these factors namely technology, techniques and values play an essential role in any social change, it is necessary to understand the meaning and significance of these words. Technology is that branch of science which develops various techniques. Techniques are the means which fulfill various basic needs of human beings in a society. In the end values are those objectives, beliefs, thoughts and abstract concepts which make human life dynamic, successful and purposeful.

It may, therefore, be observed that neither technological advancements alone nor the values in themselves bring about any real social change In fact when technology changes, it effects change in values and when values change, they bring out the corresponding change in technology. In this way, technological advancements as well as values are both the essential basis of social change. Both are equally important and essential. Both actively interact and bring about social change.

Factors Resisting Social Change

The following factors resist social change:

- **Cultural inertia:** Cultural inertia refers to some blind beliefs, superstition customs, taboos, traditions, etc. which are passed down from generation to generation, and are considered sacred and inviolable.

- **Fear of the new:** People stick to traditional routine life for fear of the new elements that may turn harmful and injurious. Believing in the status quo, such people are content with the existing economic order.

- **Vested interests:** These interests suit a privileged section of the society who is powerful and influential to thwart any change.

- **Degree of isolation:** Some sections of the society remain isolated and insulated, with hardly any outside contacts with progressive groups, and deny themselves the benefits of social change.

1.2.4 Interrelationship between Change and Development

Development is a form of change. However, there are differences between the two. Change is a value-neutral concept while development, as discussed in the previous sections, is value-loaded one. Change is ethically neutral and suggests alterations or modifications in the structure and functioning of society over a period of time. Development, on the other hand, advocates change for good. It is a process of desired change. Although development leads to change, all forms of change don't indicate development. Those changes which are planned are termed as development. A change to be defined as development must occur continuously in a desired direction. These desired goals are set looking at the values, norms and needs of any society. Any change in the society must get absorbed in the system and must be felt by the people to make it more effective. Such change can then be regarded as development.

Advancement in education and modern means of transport and communication has resulted in high female literacy in the modern societies. This has led to women joining various jobs in both government and non-government establishments, changing the family relationship as a whole. Such a move leads to a situation like role conflict where the modern women are confused whether to perform the role of a traditional family woman, a mother, a daughter, a wife or to play the role of a teacher, an administrator or an engineer. Such a phenomenon is an example of social change. However, such

change can be regarded as development only when proper institutional arrangements and social adjustments are made so that the working women don't face the situation like role-conflict and manages both her roles well. Such institutional arrangements and social adjustments will then be called as development.

Development is a multi-faceted term and there are lots of confusions over its meaning and definition. Questions are often raised about how one should count the development parameters. How can a society be called developed and underdeveloped? What should be the basis? Education is the medium through which the members of society are socialized and the modern means of knowledge, skill and technique are imparted to them. Formal education and training expands opportunities for people and increase their capacities.

Availability of educated labour force in a country is a prerequisite for development, better governance system and healthy functioning of democracy. In India, to eradicate illiteracy, the successive governments have come out with policies like 'Sarva Shiksha Abhiyan' (SSA), 'Midday Meal Scheme', 'Mahila Samakhya Scheme', 'Teacher Education Scheme', etc. Following the National Literacy Mission (NLM), set up in 1988, the 'Total Literacy Campaign' was initiated to eliminate illiteracy. India's soaring literacy helped the country to become a knowledge economy. From a mere 12 per cent during independence, India's literacy has reached at 65 per cent (2001 census) now. This is a strong indicator of development.

Result of Social Change

The form of each aspect of social life is being continually transformed to the effect of the aforementioned factors which cause social change. New institutions and associations are being formed and destroyed in the social, economic, political, cultural, verily all spheres. The form of family, marriage, state, religion, civilization, culture educational system, economic structure and the social structure is always changing and being transformed. As a result, a change occurs in the life of an individual and his relations with others. To take an example, the result of social change can be well understood and realized by studying the history of the objectives, structures, forms, importance and functions of the family from the early past to the present day. Similarly, all the change and difference that is seen between the tribal society and present day society can be attributed to social change.

1.3 EDUCATION AS INSTRUMENT OF SOCIAL CHANGE

To make the society worth living, education and society should be closely associated with each other. They should depend on each other for their growth and development. If we neglect this contact, education would remain ineffective and artificial and cannot be used as an instrument of social progress. Education, therefore, is a society in miniature, where students and teachers function together by a code of conduct that directs their behaviour. Organizations of activities like prize distribution ceremonies, athletic events, education assemblies and clubs are integral part of the education culture. These are some important features of social life. To supervise the rights and duties of the members of education there are some authorities also. The relationships between the administrators and teachers, teachers and teachers, students and teachers, determine the efficiency of the education system. Thus education is a social organization.

Education may be called either a natural society or as an artificial society. Education becomes a natural society when there is no possibility of break of the conditions of life both inside the education and the society outside it. Nothing can be forced upon the children to learn. A nation's education, we might say, is an organ of its life, whose special function is to consolidate its spiritual strength, to maintain its historic continuity, to secure its past achievements, to guarantee its future. Thus education is an idealized epitome of society, which extends its boundaries to humanity at large.

The school, in order to function as a society in miniature should organize activities like morning assembly, ceremonies and functions like the prize giving ceremony, games and sports, debates and seminars to cultivate community feeling, teaching of subjects like history, music, art and literature should be recognized. Student's self-government should be organized to provide training for leadership and community living. Thus, we can relate education to life and society.

5.3.1 Education and Social Change

Some of the ways in which education affects social change are listed below:

- Education helps perpetuate, stabilize, stabiles and consolidate some eternal values by means of its programmes and applications thus inculcating faith in social change.
- Education helps understand and accept the emerging social change smoothly and willingly.
- Education determines the desirability and efficacy of the social changes by continuous and critical evaluation.
- Education prepares ground for social change by generating public opinion.
- Education is a means of conserving and transmitting culture from generation to generation facilitating social changes at appropriate time.
- Education promotes unity and total integration which fosters social change at a mass scale.
- Education helps maintain human and social relation by keeping the structural equation and balance.
- Education spreads the message by word of mouth, print and electronic media.
- Education prepares enlightened public opinion by removing the resisting factors and obstacles to social change.
- Education increases depth and variety of knowledge to appreciate change.
- Education inculcates the spirit of reform and social welfare to conceptualize and promote change.

5.3.2 Social Factors Determining Educational Policy

Generally education leads to social change but at times social changes also determine the educational policy, theory and practice. This indicates the close and integral relationship between education and social change. Some of the instances wherein social change determines education are as under:

- **Educational changes because of social forces:** Social aspirations, social values and social dynamism are some of the social powers. When these forces change, change occurs in the educational process also.
- **Educational changes because of social needs:** Society has various needs which affect the process of education for the purpose of their own satisfaction. It

means that educational changes occur because of social needs and aspirations. Compulsory, free and universal education; diversification of secondary and higher education; adult education; agricultural, industrial, vocational, professional and scientific education are the various forms and varieties of education which have been brought about by the needs of modern Indian society.

- **Educational changes because of cultural changes:** Many changes in education occur because of cultural changes. It may be noted that first the material aspects of culture changes and then the non-material aspect of culture gradually changes. Thus, when cultural changes occur, changes also occur in education.

5.3.3 Role of Education in the Emerging Indian Society

In India, a state of social equilibrium existed for thousands of years before the English conquered the country. This equilibrium was the result of the scientific organization of education. The social feelings have influenced education and education has kept the aim of social progress always in view.

Observance of dharma was the aim of social life and education. Dharma according to the Indians is that which holds society together and it denotes justice, duty, right, moral obligations and several virtues. It stands for the individual's rights, duties and obligations towards oneself, one's kith and kin, towards the society at large. Thus observance of dharma aimed at physical well-being, emotional integration and refinement, intellectual stability and enlightenment, social and cultural coherence and harmony, and the true knowledge of dharma helped the people to be socialized. The social teachings of the great seers and sages of India united the country.

With the coming of British rule, the positive aspects of the country were altogether disregarded. To the people of India, such an educational system was bestowed, which had its roots in western social life. This obstructed the progress of socialization of the people through education.

With the dawn of independence, several attempts have been made to enhance the society with the help of education. Now the effect of sociology on Indian education is rapidly growing. Therefore, it is very necessary on the part of the people to be conversant with educational sociology. The study of educational sociology helps the students to understand the geographical unity, ethnic unity, fellowship of faiths, social institutions, and Indian culture based on the principles of socialization of the people. It helps the students of the emerging Indian society to know about the vast storehouse of sociological material that awaits careful study, analysis and orderly presentation. Beginning with the Vedic seers and sages, with Manu Varvaswata and Gautama Buddha, and ending with Rabindranath Tagore, Sri Aurobindo, Annie Besant, Bhagawan Das, Swami Dayanand Saraswati, Mahatma Gandhi and Vinohbha Bhave, India has given birth to seers, sages, saints, scientists, statesmen, social reformers and others, who preserved the Indian social tradition, while India's cultural and social life was shaken to its very foundation by the unsettling effects of contacts with other countries and by other agencies of social change. Our country's need today is to equip our students with the sociologist's concept of equality, secular attitude, broad–mindedness and cultural unity of the country.

5.3.4 Education as a Centre of Community Life

A group of people living together by common interests and purpose may be called a community. But in actual practice, we do not have such a community. Generally, people living together in a community have conflicting interests in their process of living. The

interests of the 'haves' have always dominated over the interests of the 'havenots'. In spite of these differences, there are certain grounds common among all the members and groups of any given community. These grounds are: beliefs, customs, traditions and attitudes because of these common interests, perhaps we call it a community. Even then different groups in a community may differ from each other on the basis of their basic interest. Therefore, it is very difficult on the part of education to look to the interests of several groups of a community equally. The group that becomes powerful influences the community as a whole and dominates over the policies and practices of the education system. In such a situation, it is very difficult to practice the principles like 'equality of educational opportunity.' During the British Raj, the people of India could not realize the importance of the education.

The various sections of the community dominated education to safeguard their own interests. But now the question arises as to how far the education enters the community. This is a crucial problem for anybody who deals with education. Our problem is to check the influence of different groups on education and use education as an instrument for general improvement of the community as a whole.

To achieve the above goal, it is essential that the work inside the education and the experience of the child in the society should be integrated, as a result of which education can become a social process and a dynamic part of the social life of the entire community. Such unification or integration between the two fields of education will be possible only when education can participate in the life of the community and take active part to solve the problems confronted by the community. When education understands the needs, interests and problems of the community as a whole, it can serve the community in the true sense of the term. In this respect, K.G. Saiyidain, former education secretary of India, opines, 'A 'people's' education must obviously be based on the 'people's' needs and problems. Its curriculum should be an epitome of their life. Its methods of work must approximate to theirs. It should reflect all that is significant and characteristic in the life of the community in its natural setting'.

Education is the only means to lead the individuals towards all-round development and progress. Therefore, each community maintains education in order to fulfill its economic, political, cultural and social needs and the education on the other hand maintain the community through its many different activities and diverse programmes.

Relation of education and community is a two-way traffic. The community conveys its problems to the education for solution and guidance and the searched out experimented knowledge is fed back to the community. The progress of the community depends upon the effective feedback process. A community cannot progress, if it does not get feedback from its education as guidance and required solutions. Thus, education and community depend upon each other for their progress. Education can solve the economic problems of the community.

Some are of the opinion that the education can meet the needs of the people, if it can orient the students to the existing industrial and agricultural conditions and prepare them for specific jobs. But some people criticize this opinion and argue that in a democratic country, it is not at all desirable to introduce early specialization. It may be introduced at an advanced stage of development. Regarding such vocational orientation in the education, some other experts advocate that introduction of socially useful productive work make learning more meaningful and effective. It helps the students realize the importance of dignity of labor and develops their personality. Thus, education can solve the economic problems of the community.

Education as a Solves of the Social and Cultural Problems of the Community

Education can solve the social and cultural problems confronted by the community in many different ways. For example, the social problems like untouchability, health and hygiene etc. should be discussed by the students, teachers and the members of the community and find out desirable solutions. Education may organize activities like literary classes, discussions, plays, Parent Teachers' Association, Adult Education Association etc. to solve the social and cultural problems of the community.

1.4   SALIENT FEATURES OF TRIBAL CULTURE IN ARUNACHAL PRADESH

The tribal cultures are the primitive societies which have not been affected by the modernisation. The social change in these societies is very different from the modern societies. This can be observed on account of the fact that in the urban modern societies, the modernisation seems to dominate and supersede the prevailing culture. In this section, we will try to understand the tribal culture of Arunachal Pradesh. For this, we will first look at the different tribes present in the state and then look at their pattern of settlement and their cultural divisions.

Arunachal Pradesh is the state full of dense forests, high mountain ridges and deep valleys with torrential rivers and streams separating the inhabitants from one another. Arunachal Pradesh is the home to 110 tribes and subtribes, and there are twenty-five major tribes recognized by the State. The tribes of Arunachal Pradesh are affiliated to the Tibeto-Burmese group of languages, and with regard to their racial affiliations, they have been described as Indo-Mongoloid, Proto-Mongoloid, Paleo-Mongoloid and so on.

Managing a Democratic Environment

The society is patriarchal and primogeniture and the fundamental laws of inheritance with variations are not uncommon. They follow endogamy and strictly observe the rule of clan exogamy. Polygamy is socially sanctioned and is practiced by most of them. The people are highly democratic, and each tribe has its own organised institutions that maintain law and order, decide disputes and take up all activities for the welfare of the tribes and the villages. The people of the tribe only select the members constituting these organisations.

Myths and Fictions

The tribal society is dominated by myths and fictions. These bear the stamp of tribal creativity and imaginations. In one of the stories, earth and sky are spoken of lovers. In Singpho story, God uses rainbow as the ladder to meet his wife on the moon. 'Wiyu' spirits who exercise great influence on human life dominates Adi stories. The stories of Monpas usually have moral.

Social Structure

The tribals of Arunachal Pradesh have highly ordered and organised system of functioning in their villages. All matters relating to the community as a whole are decided at the village level. The socio-administrative structure of the society, as evolved over a period of centuries, recognises democratic partition right down to the level of villages.

The traditional Village Panchayat of an Adi Village is locally, known as 'Kebang' which is judicio-administrative body, consisting of mature and influential elders. Kebang looks after the administration of justice in the society by setting all matters of dispute.

Similar such self-governing institution exists among other tribes too. They are variously called as "Jong" among the Sherdukpens, Mel among the Akas, Buliang among the Apaptanis and so on.

The Three Distinctive Cultural Groups

The entire population of the state can be divided into three cultural groups on the basis of their socio-politico-religious affinities. It has been found that the tribes of Arunachal are integrated into groups independant of each other, living their separate lives. The common denominators are that the pattern of lifestyle of each is the same and that they follow the same occupation; the societies are casteless; the societies are governed by chiefs and the adults were grouped according to their age for distinct social functions. The young are organised around dormitory institutions to follow the instructions of the older generation.

5.4.1 Tribes of Arunachal Pradesh at a Glance

Let us analyse the different tribes of Arunachal Pradesh.

1. **Mijis:** The Mijis of the West Kameng District called themselves Dammai (or Dhammai). According to their tradition, they were originally inhabitants of the plains and had connections with the Ahom kings of Assam. It is, however, not known to them at present as to how they came to settle in the Bichom Valley crossing the hills. The Miji country lies to the adjacent north of the Akas. The two tribes have a long tradition of close neighbourly relations. The Mijis have many traits in common with the Akas, and are known to intermarry with them.

2. **Galo:** In the post-independence records and writings, the Galos have been mentioned as the Gallongs and till the last decade of the 20th century, they were clubbed together with the Adis. Generally, they reside in the West Siang district.

3. **Ramos and Bokars:** From the legends available, it appears that the ancestors of the Ramos and the Bokars were brothers. The Ramos descended in a direct line from Dungram, the elder brother of Dumgumi, the ancestor of the Bokars. The ancestors of the Ramos left their original settlement, moved from place to place and finally came to Tadadege area and settled there. Their last migration from Tadadege to Rapum, which they still inhabit, took place long ago. The ancestors of the Bokars due to pressure of population started migrating and settled near about Tadadege, in a place which is at present known as Pui.

4. **Adis:** The Adis have two main divisions, (the Bogum and Bomis) and under each there are a number of sub-tribes. The Minyongs, Karkos, Shimongs, Bomdo, Janbos, Paggis, Pailibos, Bogum, Padams, Milangs and so on from one group; while the Gallong and seven other groups constitute another group of Adis. The Adis by nature are democratic and have organised village council called Kebang. Their traditional dance called Ponung is famous in the whole of Arunachal Pradesh. Dances are very popular among them. Adi villages are situated generally on the spurs of hills. Polyandry is unknown but polyandry is practised. Adi women are very good weavers and weave cloth with highly artistic designs.

5. **Apatanis:** The Apatanis are an enterprising and industrious tribal community and are unique in the whole of Arunachal Pradesh. They stand apart from other

communities in having a highly developed system of agriculture. The Apatanis have developed a community of their own in the small area of around 35 sq. kms., to which they are confined mainly to the Lower Subansiri district.

The Apatanis are settled agriculturists inhabiting the valley around Ziro-the headquarters of Lower Subansiri district. The older men-folk tie the hair in top-knots and tattoo the faces. Wearing of circular nose plugs and tattooing of faces is the most characteristic aspect of ornamentation of older Apatani women. However, new generation of Apatani men and women have stopped this practice of tying hair knot, nose plugs and face tattooing since early 1970s. The Apatanis are good cultivators and practice both wet and terrace cultivation. Paddy cum fish culture is very popular among them. Unlike other tribes of Arunachal their economy is stable.

6. **Buguns:** The Baguns – popularly known as Khowas earlier – are mainly scattered over Thrizino, Tenga Valley and Jamiri Circle and some villages in the Nafra Circle of West Kameng district. Like other tribes in the region, there have been various legends about their history and their movement in the region including elements like heaven and bamboo ladder. The Buguns or Khowas are gentle, hospitable and affectionate people. They are agriculturist and perform a number of rites and ceremonies for their welfare.

7. **Hrusso:** The Akas called themselves as Hrusso. There are two main divisions of the Akas, namely the Kustum (Hazarikhowa) and Kovatsun (Kapahchors). They have a patrilineal clan organization and particularly, clan's own villages. The term 'Aka' literally means painted. It is obviously an Assamese work that might have been originally applied to the tribal group, calling themselves Hrusso, because of their custom of smearing their faces with black resin. Their concentration in the West Kameng District is in the hilly area of Nafra-Buragaon Sub-division watered mainly by the Bichom (*Humschu*), Tengapani (*Hudju*) and Kheyang (*Khuwa*) rivers. The Kameng (Bhareli) river forms its eastern boundary. The legends seem to convey unambiguously the historical truth that the Akas were once settled in the plains of Assam and they migrated from there to the northern hills. There are also various stories of origin from Bayu and Natapura and Bhaluka.

The Hrusso or Akas have a custom of painting their face with black marks. They figured frequently in old historical records. Their popular belief is that they were related with the Ahom Kings. They are keen traders and trade mainly in cloth, blankets, swords etc. They have come to some extent under both Hindu and Buddhist influence.

8. **Khambas and Membas:** Khambas and Membas inhabiting northern part of West Siang are Buddhist by religion. Polyandry is prevalent among them. But it is more in vogue among the Membas. Agricultural activities are popular among them. Millet and Maize are their staple food. They grow cotton and barley also.

9. **Mishmis:** Mishmis form the bulk of the population of Lohit, Upper Dibang Valley and Lower Dibang Valley districts. There are also the Khamtis, the Singphos and a few Adi settlement. The Mishmis are divided into three main groups namely-Idus or Chulikatas, Digarus or Taroan and Mijus or Kaman. A section of the Idu Mishmi is also called Bebejia Mishmi. Their women are expert weavers and make excellent coats and blouses. Agriculture is the main occupation of the people. By nature, they are traders. Since very early days the Mishmis had relations with

the plains of Assam. The chief items of trade are deer–musk, wild medicinal plants, animal skins, Mishimi–tita, etc.

10. **Monpas:** The Monpas of the West Kameng and Tawang districts generally regard themselves as migrants from Tibet and Bhutan. The major sub-tribes of the Monpas are located at Tawang, Dirang and Kalaktang. The Mahayana form of Buddhism is the religion of the Monpas, and they are one of the two tribes of the state having a written script (Bhoti) of their own.

    The Monpas are simple, gentle and courteous people. They are friendly and possess a rich heritage of culture. They dress well in artistically designed clothes. Their communal life is rich and happy. They follow Buddhism and profess Mahayana Buddhism which centre around the Tawang Monastery. Each house has a small chapel attached to it.

11. **Nyishi:** The Nyishis also referred to as Nishi or Nishing or Bangnis or Daflas are the most populous tribe of Arunachal Pradesh and are the inhabitants of East Kameng, Papum Pare, Karum Kume, and Lower Subansiri districts. They occupy vast stretches of hills and forests extending from the eastern parts of the Kameng district to the territory of the Hill Miris in the Siang district. The Nyishis trace their descent from a mythical ancestor called Abo Teni (Abo Tani). While coming to these hills they brought with them animals like mithuns (bos frontalis) and pigs, and such articles of value as *majis* (Tibetan tongue less bells) and *talus* (metal plates) and beads. They wore their hair in a bun called *podum* and know even at this early stage weaving and agriculture.

    The Nyishis are the largest groups of people inhabiting the major part of Lower Subansiri district. Their menfolk wear their hair long and tie it in a knot just above the forehead. They wear cane bands around the waist. They believe that after death the spirit of a dead travels to the 'village of the ancestors'. The Sulungs or Puroik are considered to be one of the oldest of the tribes in the area. Their dress and costumes are simple, and the religion is a form of the primitive 'spirit culture'.

12. **Sherdukpens:** The Sherdukpens (Shertukpens) also regard themselves to be migrants from Tibet. However, the British writers have written them from Bhutan. Generally, they too are the followers of the Mahayana form of Buddhism. One important aspect of the Sherdukpens is that their entire society is divided into two classes, namely, the Thongs and the Chhaos. The Sherdukpens are mainly concentrated in a few villages of the West Kameng District, Bomdila. Rupa (formerly Roopai Goan), Shergaon and Jigaon are their important settlements.

    The Sherdukpens are a small tribe. They are good agriculturist but their main interest is trade. Their religion is an interesting blend of Mahayana Buddhism and tribal magico-religious beliefs.

13. **Tagins:** The Tagins are an important tribe of the Upper Subansiri district of Arunachal Pradesh. The identity of the Tagins fluctuated between the Nyishis and the Adis. It is believed that the ancestors of the Tagins came from Pui-Pudu believed to be located in Tibet. From there, they came to Pumte and then to Dibeh. Abotani was the first to come and died at Nide-Lankin. As per the oral tradition, Abo-Tani was the common ancestor of Nyishis, Adis, Apatanis, Hill Miris, Tagins and Mishings. Therefore, as per this version all the Tani groups of tribes must have migrated together to Nide-Lankin.

The Tagins are the main inhabitants of Upper Sunansiri district. Their main occupation is agriculture. Polygamy is customary among them. Their dress is very simple consisting of only one piece of cloth.

14. **Khamtis:** The Khamtis are believed to have migrated from the Shan states of Burma. They are the only tribe in Arunachal who have a script of their own. They are Buddhist (Hinayana cult) by religion, and bury the dead in a coffin. They include Khamyang tribe.

15. **Wanchos:** The Wanchos inhabit the western part of Tirap district, bordering Nagaland. They are a carefree, cheerful and hard-working people. Head hunting was one of the customary social activity. It was connected with many of the social activities of the tribe. Their society is divided into four classes – the Wanghams (chiefs), the Wangpana, the Wangaue and Wangaas. They have a strict sense of discipline and the law and order of the society is maintained by a village council. The entire tribe is divided into forty confederacies of villages. Tattooing is a social custom among them. They believe in the existence of two powerful deities, Rang and Baurang. The women are good weavers but the art is restricted to the members of the chief's families only. They are expert in wood carving also.

16. **Noctes:** The Noctes inhabit the central part of Tirap to the east of the Wanchos. They are organized under powerful chief–those of Namsang and Borduria. They profess Vaishnavism and are disciples of the Bareghar Satra of Nazira, Assam. Naga Narottam who was a close friend of Shri Ram Dev Ata, the founder-satradhikar of the Brehar satra, become his first disciple. Noctes are famous as salt producers which is their chief item of trade and barter. They are agriculturists. They also cultivate betel leaves on a commercial scale.

17. **Yobin:** The Yobin, also called Lisus, are a small group of people inhabiting the remote easternmost corner of the Tirap district. They are simple and gentle people having their own culture, religion, faith and beliefs and dialect.

18. **Simongs:** The Simongs seem to have migrated very late. From their original home somewhere on the other side of the great snow ranges of the Himalayas, they came down to the Nigong valley. They could not move further south beyond the present Simong village, as the Minyongs, the Padams and the Pangis were already in occupation of that area. Thus, in course of time, they had to turn back northwards as far as Jedo.

19. **Adi**: The Siang districts (East, West and Upper) are practically populated by the Adis. During the Ahom and colonial periods, the Adis were called Abors but this term has now been discarded. The word Adi comprises a large number of tribal groups, united by a language that in spite of dialectical variations, is fundamentally everywhere the same. Adis include the following communities: (i) Pallibo, Milang and Tagin of north-west Siang; (ii) Ashings, Minyongs and Shimongs of central Siang; (iii) Karbo and Bori of western and central Siang; (iv) Adi-Bori of central Siang; (v) Minyongs, Pasi and Pangi of eastern Siang; and (vi) the Padams of southern Siang. These communities are broadly divided into two sections. The Minyongs, Padams, Shimongs, Milangs, Pasis, Karkos, Ashings, Pangis, Tangams and Boris may be grouped into one section and the Ramos, Pallibos and the Bokars into the other section.

A study of the legends relating to their original home would suggest that the Adis came from the north across the Himalayan barrier. The real cause of their immigration cannot be ascertained at present.

20. **Membas and Khambas:** The two tribal groups, the Memba and the Khamba, are perhaps ethnically allied to the Monpas of the Tawang and West Kameng districts, and are similarly Buddhist by religion. They live along the northern borders of the Upper Siang district and have experienced a profound socio-cultural impact of Tibetan Buddhism on themselves. They are markedly different both ethnically and culturally from the Adis to their south. The Khambas are inhabitants of the Yang Sang Chu valley and are famous for their colourful dances. The Membas are found across Gelling where, as mentioned, the Dihang or the Siang river cuts across the Himalayan range and enters the frontier of our country. They too retain their dances. The Membas living in the Mechukha sub-division of East Siang district are believed to have entered in the valley from different parts of Tibet, Bhutan and Tawang. D.K. Dutta viewed that the Ramos, Membas and many other tribes of Tibet believed in animism. The Lamas of Tibet guided them to accept Buddhism.

21. **Mishings:** The Mishing, also known as Miri, live along the foothills of the East Siang district. The Mishing have close ethnic affinities with the Adis, and they usually practise settled cultivation in the level areas inhabited by them. In the past, like the Hill Miris, the Mishings mostly acted as go-betweens the Adis and the people of the plains of Assam.

22. **Mishmi**: Like the Adis of the Siang districts, 'Mishmi' is the name given to a cluster of small communities sharing a more or less common culture but having different dialects. The communities included in the Mishmi group are the Idu, Taraon and Kaman, also called Miju. The Taraons are also sometimes called Digarus and Idus as Chulikatas. These Mishmis are spread all over the Sino-Burma and Indo-Tibetan border area of the Lohit district and probably represent different waves of migrations from beyond the eastern borders of India. The term 'Mishmi' has originated from the plains people 'Akam' (Assam). The Akam (Assam) people were called *Misha-Meeshi*, later foreign explorers termed them *Misha-mee* and finally it settled to Mishmi. The first British explorer Lt. Burlton, in 1825, mentioned '*Misha-mah*'. And Rowlat in 1844 mentioned *Mishmee*. The Mishmi traders in olden days were known to the plains people for the wrong reason, as these hill tribesmen would often deviate from their words agreed upon in barter business. So, as an expression of anguish upon these hill tribes, the plains people often used the word '*Misha-Meeshi*', meaning liar. This abusive word might have finally settled down to Mishmi in due course of time.

23. **Khampti**: The Lohit district is the home of the Mishmis, the Khamptis and the Singphos. They are the followers of the Hinayana school of Buddhism and are one of the two tribes in the state who have a script of their own, originally derived from the Tai language.

24. **Singpho**: The Singphos migrated to Arunachal Pradesh from Upper Burma. The Burmese call them Kakhyens, and they are from a branch of Kachins of Upper Burma. Like the Khamptis, the Singphos are also the followers of Hinayana school of Buddhism, but side-by-side, the elements of primitive religion are also present. These two tribes had developed iron technology and settled agriculture.

They are agriculturists and expert blacksmiths. The ladies are good weavers too. They follow Buddhism but at the same time believe in a host of spirits.

25. **Tangsa:** The Tangsa occupy the eastern Himalayan hills. Their main concentration, north-east of the Nocte area is the Tirap and Namchik river basins, extending from the Patkai ranges in the south to the borders of Assam in the north. The word 'Tangsa' means hill people ('tang' for hill and 'sa' for people). The Tangsa story of migration eludes the fact that search of cultivable land and inter-tribal feuds impelled them to migrate from their abode across the Patkai and settle in the present place a few centuries ago. The memories of migrations lived for generations and they are still fresh in their minds. Their habit of dress such as wearing the lungi indicates a definite affinity with the Burmese.

26. **Lisu**: The Lisus have migrated into Arunachal Pradesh in very recent times. Their ways of living seem to have undergone a remarkable change during the decades following their migration. They are called 'Yowin' or 'Yobins' by the Burmese and the Singphos. Their religion is part animist and ancestor worship. The Lisus believing in traditional religion called themselves Maha-Lisus. However, the Lisus who were believed to have migrated from the Patkai Hills are generally Christians and are called Ha-Lisus.

27. **Nocte**: The Noctes inhabit the south-western and central parts of the Tirap district. The most important aspect of the Noctes was their production of salt from the salt wells. The availability of salt wells and the technology to produce salt provided the Noctes an upper hand in the social formation and this was one of the reasons for the struggle between the Nocte chiefs and the Ahom rulers. The latter always wanted to control the wells, since salt was in great demand in the neighbouring areas. The name 'Nocte' means village people (Noc – village, te – people). The Noctes trace their descent from a remote ancestor named Khunbao, the chief. Khunbao had two sons – Khunlung and Khunlai. They were succeeded by Tangthok and Tankam. The claim of the Nocte chiefs to royal descent is based on this genealogy. The Ahom chronicles bear evidence to the fact of Nocte settlements in the district of Tirap as early as the beginning of the 13th century. In the Ahom period and the early British period, the Noctes were referred to as various groups of people known as Bordourias, Paniduarias, Namsangias and Jaipurias, etc.

28. **Wancho:** The Wanchos live in the Longding area, in the south-western corners within the Tisa River in the east, Burma in the south, and east, Nagaland in the west and south and Assam in the north-west. They are spread over 36 villages, grouped into 11 confederacies called *Jan*. Previously, they were known to be fierce headhunters. The Wanchos, like many tribes of Arunachal Pradesh, have their own traditions about migration.

5.4.2 Pattern of Settlement

Geography has influenced the cultural development of the province to a great extent. The northern region had little contact with the lower region, particularly the valley of the Brahmaputra, and has been greatly influenced by the Indo-Tibetan culture. For many centuries, the Tibetan traders crossed the borders and traded in the region, many of them settled down in the valleys of the greater Himalayas. This accounts for the large Buddhist settlements in the Siang districts and the Buddhists impact is visible in the way of life in the higher regions. The southern belt of the foothills has had similar contact with the plains of Assam. The results are manifested in the religion, language, clothing, food

habits, and the mode of agriculture. But the middle zone has remained comparatively backward and both Tibetan and Assamese influences are visible in their ways of life. The tribes living in this region had very little contact with the outside world and even today they are living in extremely primitive conditions. As groups, even though partially, settled at a place to practice agriculture, a system of complex socio-economic relationships appeared which was remarkably different from those in primitive economies. In these agricultural settlements, food stockpiling played a decisive role. This role led to an increase in the density of the group whose base was not limited to the small family. This represents the permanent aggregation of a family as its base gets wider. Some members thus, though only partially, are able to work on things which are not directly linked with the search for food. This ensures a wider division of labour as the number of members in the functional group increases. These members apply techniques that make them share the burden of the 'specialist' in techniques whose economic utility is not immediately obvious. Obviously, this does not happen drastically and suddenly as the specialist was not freed abruptly.

Other factors also played an important role such as the change in the pattern of settlement and periods of food production. The new economic equations such as the invention centres upon methods of defense of the agrarian equipment (fortification and metallurgy), storage (basket weaving and storage pits), and the preparation of grain (grinding mills and pottery) determined the 'creative urge'.

Thus, this creates a network of needs and possibilities in the functional group that constitutes the village practicing agriculture and other techniques. This group is not limited to a single village but includes geographical areas that aggregate in size with the passage of time and lead to the interaction of a number of similar villages.

Antithetical to the primitive economy, this network of relationships is dynamic in nature. In this network, the volume of the resources has a direct impact on the increase in population. Technology thus evolves rapidly as the number of extra-alimentary relationships increases in relation to the number of human beings and the 'humanized' area. Thus, a direct relationship exists between the formation of a dwelling place in which the population survives the increase in the density of the population, new techniques, and the social configuration.

5.4.3 Three Cultural Groups in Arunachal Pradesh

Broadly the people may be divided into three cultural groups on the basis of their socio-religious affinities. The Monpas and Sherdukpens of Tawang and West Kameng districts follow the lamaistic tradition of Mahayana Buddhism. Noted for their religious fervour, the villages of these communities have richly decorated Buddhist temples, locally called 'Gompas'. Though largely agriculturists practising terrace cultivation, many of these people are also pastoral and breed herds of yak and mountain sheep.

Culturally similar to them are Membas and Khambas who live in the high mountains along the northern borders. Khamptis and Singphos inhabiting the eastern part of the State are Buddhists of Hinayana sect. They are said to have migrated from Thailand and Burma long ago and still using ancient scripts derived from their original homeland.

The second group of the people are Adis, Akas, Apatanis, Bangnis, Nishis, Mishmis, Mijis, Thongsas etc., who worship Sun and Moon God namely, Donyi-Polo and Abo-Tani, the original ancestors for most of these tribes. Their religious rituals, largely coincide with phases of agricultural cycles. They invoke nature deities and make animal sacrifices. They traditionally practice jhumming or shifting cultivation.

Adis and Apatanis extensively practice wet rice cultivation and have a considerable agricultural economy. Apatanis are also famous for their paddy-cum-pisciculture. They are specialised over centuries in harvesting two crops of fish along with each crop of the paddy.

The third group comprises Noctes and Wanchos, adjoining Nagaland in the Tirap District. They are known for their strictly structured village society in which hereditary village chief still plays a vital role. The Noctes also practice elementary form of Vaishnavism.

1.5 SUMMARY

- Social change is a term used to describe variation in or modification of any aspects of social processes, social interactions or social organization, and are variations from accepted modes of life existing in a society from time to time.

- The features of social change can be discussed as: social change is universal, it is continuous, it may produce chain reactions, may be planned or unplanned, is temporal and directional, and is value-neutral.

- There are various different types of social change: cultural change, social progress, social evolution, demographic changes, technological changes and economic changes.

- Some of the factors which affect the social structure of a setup are: physical environment, scientific and technological advancement and inter-dynamics.

- Factors resisting social change are: cultural inertia, fear of the new, vested interests and degree of isolation.

- While development is a form of change. The two concepts are not totally alike. While change is value-neutral, development is value-loaded. Although development leads to change, all forms of change don't indicate development.

- Education is the medium through which the members of society are socialized and the modern means of knowledge, skill and technique are imparted to them. Formal education and training expands opportunities for people and increase their capacities.

- Availability of educated labour force in a country is a prerequisite for development, better governance system and healthy functioning of democracy.

- To make the society worth living, education and society should be closely associated with each other. They should depend on each other for their growth and development. If we neglect this contact, education would remain ineffective and artificial and cannot be used as an instrument of social progress.

- Education may be called either a natural society or as an artificial society. Education becomes a natural society when there is no possibility of break of the conditions of life both inside the education and the society outside it.

- Educational change can be because of social forces, social needs or cultural changes.

- In India, a state of social equilibrium existed for thousands of years before the English conquered the country. This equilibrium was the result of the scientific organization of education. The social feelings have influenced education and education has kept the aim of social progress always in view.

- A group of people living together by common interests and purpose may be called a community. But in actual practice, we do not have such a community. Generally, people living together in a community have conflicting interests in their process of living. In spite of these differences, there are certain grounds common among all the members and groups of any given community. These grounds are: beliefs, customs, traditions and attitudes because of these common interests, perhaps we call it a community.

- Relation of education and community is a two-way traffic. The community conveys its problems to the education for solution and guidance and the searched out experimented knowledge is fed back to the community.

- Education can solve the social and cultural problems confronted by the community by many different ways. For example, the social problems like untouchability, health and hygiene etc. should be discussed by the students, teachers and the members of the community and find out desirable solutions. Education may organize activities like literary classes, discussions, plays, Parent Teachers' Association, Adult Education Association etc. to solve the social and cultural problems of the community.

- Arunachal Pradesh is the state full of dense forests, high mountain ridges and deep valleys with torrential rivers and streams separating the inhabitants from one another. Arunachal Pradesh is the home to 110 tribes and subtribes, and there are twenty-five major tribes recognized by the State. The tribes of Arunachal Pradesh are affiliated to the Tibeto-Burmese group of languages, and with regard to their racial affiliations, they have been described as Indo-Mongoloid, Proto-Mongoloid, Paleo-Mongoloid and so on.

- There are various tribes such as Mijis, Adis, Apatanis, Sherdukpens, Khampti, Wancho among others.

- Geography has influenced the cultural development of the province to a great extent. The northern region had little contact with the lower region, particularly the valley of the Brahmaputra, and has been greatly influenced by the Indo-Tibetan culture.

- The Monpas and Sherdukpens of Tawang and West Kameng districts follow the lamaistic tradition of Mahayana Buddhism. Noted for their religious fervour, the villages of these communities have richly decorated Buddhist temples, locally called 'Gompas'. Though largely agriculturists practising terrace cultivation, many of these people are also pastoral and breed herds of yak and mountain sheep.

- The second group of the people are Adis, Akas, Apatanis, Bangnis, Nishis, Mishmis, Mijis, Thongsas etc., who worship Sun and Moon God namely, Donyi-Polo and Abo-Tani, the original ancestors for most of these tribes. Their religious rituals, largely coincide with phases of agricultural cycles. They invoke nature deities and make animal sacrifices. They traditionally practice jhumming or shifting cultivation.

- The third group comprises Noctes and Wanchos, adjoining Nagaland in the Tirap District. They are known for their strictly structured village society in which hereditary village chief still plays a vital role. The Noctes also practice elementary form of Vaishnavism.

1.6 KEY TERMS

- **Social change:** It is a term used to describe the variation in or modification of any aspects of social processes, social interactions or social organization and are variations from accepted modes of life existing in a society from time to time.

- **Social evolution:** It refers to the process of evolution of human society, human social relationships, societal values, norms and the way of life.

- **Demographic change:** It is the change in the patterns of fertility, mortality, age structure, migration, etc.

1.7 ANSWERS TO 'CHECK YOUR PROGRESS'

1. The two essential basis of social change are technological advancements as well as values.

2. Changes due to natural calamities like earthquakes, tsunamis and volcanic eruptions fall in the category of social changes which are unplanned and which happen accidently.

3. Between social change and evolution, evolution is a value-loaded concept.

4. Availability of educated labour force in a country is a prerequisite for development, better governance system and healthy functioning of democracy.

5. Education becomes a natural society when there is no possibility of break of the conditions of life both inside the education and the society outside it.

6. Compulsory, free and universal education; diversification of secondary and higher education; adult education; agricultural, industrial, vocational, professional and scientific education are the various forms and varieties of education which have been brought about by the needs of modern Indian society.

7. Relation of education and community is a two-way traffic as the community conveys its problems to the education for solution and guidance and the searched out experimented knowledge is fed back to the community.

8. Monpas and Khamtis are the two tribes of Arunachal Pradesh who have a written script of their own.

9. Apatanis are famous for their paddy-cum-pisciculture.

10. 'Gompas' is the local name for the richly decorated temples of the Monpas and Sherdukpens of Tawang and West Kameng districts.

1.8 QUESTIONS AND EXCERCISES

Short-Answer Questions

1. Compare social change to evolution.
2. What are the factors which resist social change?
3. List the ways in which education affects social change.
4. What is the role of education in the emerging Indian society?
5. Who are the Mijis? Write a short note on there.

Long-Answer Questions

1. Describe the features of social change.
2. Explain the different forms of social change.
3. Discuss the factors which resist and influence social change.
4. Explain how education is the centre of the community life.
5. Discuss the tribal culture in the state of Arunachal Pradesh.
6. Write a short note on the Monpas, Sherdukpen and Akas.

1.9   FURTHER READING

Bose, M. L. 1997. *History of Arunachal Pradesh*. New Delhi: Concept Publishing.

Dave, R.H. 1976. *Foundations of Lifelong Education. UNESCO Institute of
Education.*

Veerman, Philip.E. 1992.*The Rights of the Child and the Changing Image of
Childhood.* Netherlands: Kluwer Academic Publishers.

UNIT 2 GROWTH AND DEVELOPMENT

Structure

2.0 INTRODUCTION

Human beings from birth till old age, undergo a sea of changes with respect to varied aspects. This transition from a baby to an adult and finally an old person is what is referred to as growth and development. Education is a factor which plays a very important role in shaping the mindset and intellect of the person ever since he/she is born into this world. But the changes through which every human goes through sometime complements and at other times stands at variance with the education that is imparted. These aspects are generally physical, mental, social and emotional in nature. And it is important to study the nature of the developmental process so as to device a curriculum which is appropriate for the student at different stages in his/her life.

In this unit, we will learn about the concept of growth and development and their implications in education, principles of growth and development and the aspects of development through different stages of development.

2.1 UNIT OBJECTIVES

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

- Discuss the concept of growth and development and their implications in education
- Explain the principles of growth and development
- Describe the aspects of development through different stages

2.2 CONCEPT OF GROWTH AND DEVELOPMENT AND THEIR IMPLICATIONS IN EDUCATION

Growth and development have been interchangeably used by most of the developmental psychologists because both the processes are interrelated and interdependent on each

other. It is difficult to differentiate the contribution of either of them in the development of the personality of an individual. However, some psychologists define growth as an indicative of increase in the bodily dimensions: height and weight, which are generally confined to quantitative changes. Arnold Gessell, an American child psychologist, wrote,

> '. . . Growth is a function of the organism rather than of the environment as such: The environment furnishes the foil and the milieu for the manifestations of development, but these manifestations come from inner compulsion and are primarily organized by inherent inner mechanics and by an intrinsic physiology of development. The very plasticity of growth requires that there be limiting and regulatory mechanisms. Growth is a process so intricate and so sensitive that there must be powerful stabilizing factors, intrinsic rather than extrinsic, which preserve the balance of the total pattern and direction of the growth trend. Maturation is, in a sense, a name for this regulatory mechanism.'

Development can be defined as the emerging and expanding of capacities of the individual to provide greater facility in functioning, such as development of motor ability from uncertain steps to proficiency in games. Development as a matter of fact is achieved through growth.

Development refers to interactions of a person and his/her environmental surroundings whose after-products alter existing response tendencies in such a way as to increase: their strength, the degree of differentiation, and the organization of personality.

Development refers to those effects upon the person's cognitive–emotional systems which strengthen or enlarge one or more of them, increase their number or interrelate them in some different way. In brief, development is confined to qualitative changes in the organism.

The process of development has been explained on the basis of different viewpoints. Some of them are as follows:

1. **Development as maturation:** According to the famous child psychologist, Arnold Gessell, the role of physical changes is important in development. The development from infancy to adolescence is governed by physical changes that are mapped out in the individual's genes. For instance, a growing nervous system changes systematically and automatically; and this results in predictable changes in bones and muscles. He used the word maturation to describe growth processes that are governed by such automatic and genetically determined signals. He believed that most major changes in the organism are based on maturation.

2. **Development as learning:** Baer has defined development as 'behaviour change which requires programming; and programming requires time, but not enough of it to call it age'. Here, programming refers to sequences of learning which may happen naturally or may be arranged in the life of an individual. Development, in this view, is a collection of learning experiences which the child acquires in the process of interaction with his environment.

3. **Development as synthesis:** Piaget says, 'For some psychologists development is reduced to a series of specific learned items and development is thus the sum . . . of this series of specific items . . . In reality, development is the essential process, and each element of learning occurs as a function of total development rather than being an element which explains development.'

According to Piaget, there are four basic elements in development: (i) Maturation; (ii) Experience; (iii) Social transmission (learning through language, schooling or training by parents); and (iv) Equilibration.

Distinction between growth, development and maturation

Growth refers to a process of becoming larger or longer or more numerous or more important, largely a physical change. Development, on the other hand, is a process in which something (mostly positive) transforms into a different stage or improves. Growth is taken to mean an increase in the size of an object or a living being. 'The lump as grown in size' is an example of its usage. Development is taken to mean an improvement in the level of functioning. 'He developed into a nice officer' is an example of its usage.

Development may mean a kind of improvement in the condition of health. 'He developed a better pulse rate now' is an example. Growth describes the process of growing. 'There was a rapid growth in the economy of the country' is an example. It indicates an increase in value. 'There was a growth in the number of hospitals in the city.' Growth can mean an increase in a crop or yield of some fruit for that matter. 'The farmer was amazed with the tremendous growth of grapes'. Development may mean a process of gradual transformation. You can use the word 'development' to suggest a process of developing.

Development is experiential change. It is orderly, adaptive and durable changes that occur throughout our life. Maturation, on the other hand, is naturally occurring change that is genetically controlled.

Some developmental changes are considered maturational, or indicators of physical maturity. Maturation is the progression of developmental changes toward the characteristics of adults. Physical maturation occurs from the time of conception, but some of the most commonly recognized indicators of maturation become apparent during adolescence. Changes in body shape, breast development in girls, pubic hair development in both genders, and development of facial hair in boys are visible indicators of maturation toward adult appearance of the body. The cessation of the growth of long bones, associated with the final attainment of adult stature is also a maturational event.

Although growth and maturation are certainly related, distinguishing between them is important because some physiological and hormonal processes affect growth and maturation differentially, as do some diseases. It is easy to observe that children of the same size can differ in maturational status and that fully mature individuals (adults) can be of different sizes.

Development leads to change

- Growth refers to quantitative changes—increase in size as well as structure.
- Development, by contrast, refers to qualitative changes. It is a progressive series of orderly, coherent changes. Progressive means that the changes are directional, which lead forward rather than backward.
- Goals of developmental changes: self-realization or achievement of genetic potential.

Types of changes in development:

- A human being is never static and is always undergoing changes.
- Changes are antagonistic: On one hand, there is positive growth, such as gaining maturity with experiences and on the other, there is atrophy and decay of the human body as it grows older.
- Changes are interrelated: Changes never occur in isolation. They are in the form of size, altered proportions, and disappearance of old and acquisition of new features.

Early development is critically important more than later development

- As per Freud, maladjustments lead to unfavorable child experiences. The more recent studies carried out on this aspect substantiate this theory.
- As per Erickson, babyhood is a time to 'build trust or distrust'—here, the individual learns to view the world as safe, reliable and nurturing or threatening and unpredictable.
- *Conditions affecting early childhood foundations:* Favourable interpersonal relations, emotional states, child-training methods, early role play, childhood family structure, and environmental stimulation.
- *Early foundations:* Early learning and experience play a big part and family should take part in the learning. Early foundations quickly develop into habitual patterns and will have a lifelong influence. Contrary to popular belief, children do not outgrow undesirable traits as grow older. Therefore, it is recommended to ensure that early learning is geared towards developing desired traits.

Maturation and learning both result in development

- Meaning of maturation: It is the unfolding of characteristics potentially present in the individual that come from the individual's genetic endowment.
- Phylogenetic functions: These are common to race
- Ontogenetic functions: These are common to individual
- Meaning of learning: Development that comes from exercise and effort.
- Importance of readiness to learn: Interest in learning and sustained interest will gradually lead to improvement.
- Effects of maturation and learning interrelationships: Variations in pattern of development, maturation sets limits to development, maturational limits are rarely reached, deprivation of learning opportunities limits development. Stimulation is essential for full development and effectiveness of learning depends on proper timing.

Nature *versus* Nurture

The nature *versus* nurture debate concerns the relative importance of an individual's innate qualities *versus* personal experiences in determining or causing individual differences in physical and behavioural traits. The view that humans acquire all or almost all their behavioural traits from 'nurture' is known as *tabula rasa* ('blank slate'). This question was once considered to be an appropriate division of developmental influences, but since both types of factors are known to play such interacting roles in development, many modern psychologists consider the question naive—representing an outdated state of knowledge.

In the social and political sciences, the nature *versus* nurture debate may be contrasted with the structure *versus* agency debate (i.e., socialization *versus* individual autonomy).

2.2.1 General Principles of Growth and Development

The following are the general principles of development:

1. **Development is a product of the interaction:** Development is a process resultant from a constant flux or interchange of energy within an organism and his environment. Hereditary forces inherent in the genetic constitution of the

individual and environmental forces influence the development of the organism. It is very difficult to distinguish the contribution either of the two forces. An individual is a by-product of its constant interaction with its environment.

2. **Development follows an orderly sequence:** Individuals differ in rate of growth and development. However, development follows an orderly sequence in all individuals and shows high degree of similarity in the order in which various developments appear. Psychologists have reported several directional trends in the development. Following are the main trends:

   (i) *Cephalo caudal:* Development starts from the head and proceeds towards the heel.

   (ii) *Proximodigital:* Development starts from the centre line of the body to the outer parts, more distant, from it.

   (iii) *Locomotion:* Locomotion develops in a sequence in all infants of different cultures of the world. The sequence is creeping, crawling and walking.

3. **Development is a continuous process:** Development begins from the time of conception in the womb of the mother and continues till maturity. But, it should be kept into consideration that it is not always smooth and gradual. There are spurts in physical growth and psychological functioning as increase in height and weight, sharp rise in vocabulary during pre-school years and sudden improvement in problem-solving abilities during adolescence.

4. **Bilateral to unilateral trend:** The newborn is essentially a symmetrical organism anatomically, physiologically and functionally. This functional symmetry is revealed in the early motor development. The infants up to the age of 2.5 years use both the hands with equal ease. The hand preference starts after the age of two-and-a-half years.

5. **Different aspects of development are interrelated:** Different aspects of development are interrelated and interdependent. A child's early social behaviour is interrelated with his/her physical development. If the child is physically handicapped, then his/her social behaviour will be retarded. The motor development of walking has a positive effect on the intellectual development of children. Thus, we see that different types of developments are interdependent and help each other.

6. **Development is an individualized process:** All individuals develop in their own way. Each child has his/her own rate of physical, mental, emotional and social development. If we observe six-year old children, we find great differences in their height, weight and social, emotional and learning readiness. Even at different ages, children have different rates of development. The rate of growth is very high in infancy and then it slows down and continues throughout one's life. Growth may occur by fits and starts, meaning thereby that the rate of growth changes at different stages of a child's development.

7. **Development is cumulative:** Development is a cumulative process. Certain changes impresses the observer with their dramatic suddenness, but actually these changes do not emerge all of a sudden. The child's first word, first step, etc., are the results of cumulative progress as the child has continuously been preparing for these functions. Each change is the culmination of his/her prior growth and experience.

8. **Development proceeds from the general to the specific:** In all types of developments, we find the principle of mass differentiation and integration. The

world at the time of birth is a big buzzing, blooming confusion for the child. Out of mass and undifferentiated behaviour emerges more differentiated, refined behaviour and goal-directed response. We can take any development and find that this principle applies. For example, language development of the child begins from the birth cry, as a mass response. Out of this mass response, differentiation starts and gradually the child acquires vocabulary of many words, and consequently the skill of communication develops.

9. **Rate of development differs in male and female children:** There is a difference in the growth rate of boys and girls. Girls mature earlier in comparison to boys. Girls are taller and heavier than boys during pre-adolescence, but by the end of adolescence boys surpass them.

2.3 ASPECTS OF DEVELOPMENT THROUGH DIFFERENT STAGES

The following are the major stages of human development:
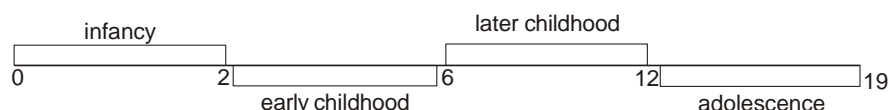
In this section, we will have a look at the physical, mental, social and emotional aspects of development at early childhood, later childhood and adolescence stage.

2.3.1 Dimensions of Development at Early Childhood Stage

At the early childhood stage, children witness different types of development.

- **Physical development:** Growth in physical dimension during the period of two to six years of age is not as accelerated as that experienced in infancy. The child begins to assume the body proportions of an adult. Growth of legs is rapid and the legs represent about half of one's total height. The head growth is slow and trunk growth is intermediate. Generally, the weight of a three-year-old male child is about thirty-three pounds and is thirty-eight inches tall. The girls are a bit lighter and shorter. By the age of five years, the average height for boys is forty-three inches and the average weight is forty-three pounds. The height and weight are affected by a number of variables, such as height of parents, nutrition, illness, etc.

  In addition to size and weight, the child undergoes other physical and physiological changes. The muscles develop at a very rapid speed. Larger muscles are far better developed than the smaller and finer ones. Physiological changes occur in respiration, heart rate slows down and blood pressure goes up steadily. Brain has developed 90 per cent of its adult weight. Nerve fibres in the brain areas come close to maturity level by the end of pre-school period.

- **Perceptual development:** The child in early childhood develops a variety of motor skills which are repeated. Self-feeding, self-dressing, bathing, brushing the hair, playing with toys, using pencils, jumping, hopping, etc., develop at the age of five to six years.

  The perceptual development begins from mass movements to differentiation and integration. Table 6.1 lists the norms for children from two years to three years of age.

Table 6.1 *Developmental Norms (Bulher, Gessell Terman)*

Motor	2 years	3 years	4 and 5 years
Development	Walks without help, jumps, runs.	Skips, hops	Free and active movement, responds to music.
Fine motor coordination	Copying.	Can match shapes, sees similarities and differences	Can name colours.
Perceptual	Identifies self, matches colours.	Can fit nets, boxes.	Matches shapes and colours, distinguishes names.
Vocalization	200 words, uses few words.	900 words, follows commands.	Can repeat 4 digits—2000 to 3000 words, can define familiar words.
Adaptive behaviour	Bowel control.	Builds blocks, can draw a man.	4 digits, draws body with details.

- **Language development:** The language development of the infant begins from birth cry. The ten-month-old child is able to use one word; but by the end of the first year, its vocabulary increases to three or four words. Good home environment and early childhood training helps in the development of vocabulary. It has been reported by several studies that there is a positive correlation between intelligence and language development.

- **Intellectual development:** The intellectual development of the child is accelerated after the age of two because now he/she begins to explore his/her social environment and acquires new experiences.

  The following are the major characteristics of intellectual development:

  o Child begins to form concepts of physical and social reality

  o By the age of six, the child develops perception of size, shape, colour, time and distance, etc.

  o Memory increases at a very rapid speed. The child can learn by rote memorization

  o Creativity develops in children and imagination begins to grow

  o Thinking and reasoning develops in relation to concrete material; Span of attention increases from 7–20 minutes and interest in exploring the environment increases

  o The child is now able to use symbols in language, draw symbolic play and engage in problem solving

  o The child asks questions about his/her environment.

- **Social development:** A child is born in a social environment where his/her personality development is shaped in accordance with the norm of the society:

  o Sense of trust and mistrust develops in children themselves and their environment

  o Feeling of autonomy develops in children. They begin to explore their environment independently

  o Social environment expands beyond home

  o Children of both sexes play together without any discrimination. They actively participate in group games in which physical energy is used such as hide and seek

o They learn to cooperate with others and make friends on shared interests and similar personality traits

o Children take interest in fairy tales and animal stories

o Negativity increases between the years three to six. It is a product of social situations. It is said that the more the child is frustrated by adult interference, the more negativistic his/her behaviour will be

o Girls are more dominating than boys in play situations

o The child seeks social approval of his/her action.

- **Emotional development:** Emotions play an important role in life and contribute in the personal and social adjustment of the individual provided they are directed into wholesome expression. Emotions have the following effects on the developing individual:

    o Emotions give us energy to face a particular situation in life

    o Emotions work as motivators of our behaviour

    o Emotions add pleasure to our everyday experiences in life

    o Emotions maintain our interest in work

    o Emotions influence our adjustment in the society

    o Highly emotional conditions disturb our mental equilibrium, reasoning and thinking

    o Emotions serve as a medium of communication between individuals and guide the individual to modify in order to conform to the social standard

    o Emotional deprivation leads to personality maladjustment.

2.3.2 Dimensions of Development at Later Childhood

Later, childhood is an important phase of life. Redl has characterized this period as the time 'when nicest children often begin to behave in the most awful way'. The parents and teachers are annoyed with children and vice versa. It is a period which requires proper guidance and counselling by parents and teachers for the adequate adjustment of children in the society.

Different types of development during later childhood are discussed as follows:

Physical development

There is slow increase in the weight and height during late childhood. Girls are ahead of boys by two years. Changes are shown in all general proportions of the body. Children are free from diseases at this age. Physiologically, the girls at the age of eleven are a full year ahead of the boys. Shedding of milk teeth and growth of permanent teeth changes the appearance of mouth; flattening of forehead, sharpening of the nose, broadening of the chest, and motor skills develop through play.

The following are the marked physical changes during the later childhood stage.

- Increased manual dexterity

- Increased strength

- Increased resistance to fatigue

- Increased accuracy and endurance in relation to games

Intellectual development

The following changes in the intellectual development occur during the period—six to twelve years of age.

- The child begins to make clear distinction between himself/herself and the outer world. He/She seeks reality in his/her environment.

- The concept of natural laws becomes almost fully developed by twelve years of age.

- It is the time for eager absorption of information and ready accumulation of ideas. Learning and memory become more efficient because the child enters formal schooling.

- Capacity for logical thinking increases. The child becomes increasingly efficient in selecting, developing and applying cognitive operations in relation to concrete objects.

- Interest in science stories and mechanical operations reaches its height at this age.

- Courage and loyalty increase. Children show courage in doing things.

- Imaginative plays are given perference to.

- Use of reading of factual material, scientific and mathematical information, and fiction, with a realistic theme increases.

- Use of causal relationship in thinking about physical, mechanical, and natural phenomena in the environment increases.

- Early imaginative fears disappear by the age of twelve.

- High ability to generalize is shown by children of ten to twelve years of age. Children are more concerned with immediate cause-and-effect relationship and current happenings.

- Flavell (1977) has suggested that the mind of the child during this period has a better general understanding of problems. The child has a much better sense of what a conceptual problem is. He/She can rationally analyse a problem. He/She is able to deal with the environment in a flexible, efficient and symbolic manner. The child has at his/her disposal a set of operations or rules that are logical although concrete.

Emotional development

Emotions are very important for life. Without emotions, life becomes monotonous and dull. They change with the age of the child.

The following are the characteristics of emotional changes during this period:

- Early pattern of emotional expression changes. By the end of late childhood, the child learns to control his/her emotional expression in social situations.

- The emotional responses of the child become less diffuse, random and undifferentiated.

- Emotions are expressed even in the absence of concrete objects.

- Emotions are most contagious during childhood, because children are highly suggestible and dependable on others.

- Early childhood fears of animals, high places and noise disappear and fear of supernatural, imaginary creatures, fear of failing, being ridiculed and being different appear.
- Anger is caused by thwarting, teasing, making unfavourable comparisons with other children, interruption of activities in progress, ridicule by peers or elders, and negligence, etc.
- Parental favouritism causes jealousy in childhood.
- Joy, pleasure, love, curiosity, grief and affection appear in childhood.

Social development

The process of socialization confines to home and neighbourhood environment in the early childhood, but as the child enters school his/her social circle widens.

The following are the major changes:

- It is the period when children form peer group of their own sex and remain outside the home. Peer group becomes an important agent of socialization.
- It is the period of peak unruliness in school and home.
- Complaints of disobedience are highest in percentage during this period.
- Children reject adult standards and circle of friends widens.
- Delinquency begins more during this period than adolescence.
- Sex differentiation becomes sharp. Girls play with girls and boys play with boys. There is sex difference in play activities. Girls are more antagonistic towards boys.
- Boys are more rebellious than girls and their groups are more organized than the groups of girls.
- Children take interest in group games. Boys and girls form their own groups. Group consciousness develops and the child becomes less selfish, self-centred and aggressive but more cooperative and outgoing.
- Social consciousness develops very rapidly. It is called 'gang age' period when the child associates himself/herself with the peer group of the same age who feel and act together. The child shows great loyalty to his/her gang. He/She conforms to the stand of his/her gang.

2.3.3 Dimensions of Adolescent Development

Adolescence is the most important period of human life. Poets have described it as the spring of life of human beings and an important era in the total lifespan. The word 'adolescence' comes from a Greek word '*adolescere*', which means 'to grow to maturity'. A number of definitions have been given by psychologists from time to time. Some psychologists define it as the transitional period of life. The child experiences a number of changes in this transitional period. The period runs between childhood and adulthood, and is sometimes called the 'period of teenage'.

According to A.T. Jersild, 'adolescence is that span of years during which boys and girls move from childhood to adulthood, mentally, emotionally, socially and physically'.

Some psychologists believe that it is the period when an individual is capable of begetting offspring. It means that when the power of reproducing its own kind is attained by the individual, we can say that he/she has become an adolescent.

Dorthy Rogers defines adolescence as, 'a process rather than a period, a process of achieving the attitudes and beliefs needed for effective participation in the society'.

Adolescence starts with puberty. Usually, puberty starts between ages 10–13 in girls and 12–15 in boys. During puberty, your body will grow faster than at any other time in your life, except when you were a baby. A boy or a girl at birth and before puberty can be distinguished from the sex organs. Sex organs are necessary for reproduction, therefore, they are called the primary sexual characteristics.

At the onset of puberty, physical changes and development that are not directly part of the reproductive system, but distinguish the male from the female are called 'secondary sexual characteristics'. The changes at puberty can be studied under three headings: (1) development of secondary sexual characteristics, (2) development of sex organs, and (3) intellectual, emotional and psychological development.

Significance of the study of adolescence

Adolescence is the most important period of human life. A major part of a country's population ranges between the ages thirteen to twenty-one years. The country's success in various fields of life depends on the proper guidance of adolescents. The significance of the study of this period may be discussed under the following heads:

- **Better understanding of developmental characteristics and problems:** Every teacher and parent must know about the nature and changes emerging in the transition period from childhood to adulthood. It is also necessary for them to be familiar with causal factors of the problems of adolescents so that proper individual, educational and vocational guidance may be provided for adequate adjustment in the society.

- **Maintenance of mental health:** The progress of a country depends on the maximum exploitation of its human resources. Sound mental health is one of the first requisite conditions of development. Adolescence is marked with a number of problems which affect the mental health.

- **Adjustment to responsibilities:** The study is significant to provide the knowledge of needs and developmental tasks for adolescents. Parents and teachers can help adolescents to adjust to their responsibilities. By understanding the needs of adolescents, the teacher and administrator can frame appropriate curriculum, school policies and methodology of teaching them.

- **Rise in curiosity:** To study the psychology of adolescent may be a desire to know something about oneself. Such a desire is quite justifiable and understandable, if the student is in the adolescence period. But it is also a sound motive for an older person. The older person who studies adolescence has within himself/herself a potential source of insight into the issues facing the person who is in the adolescence period—issues that once he/she had to face. It may also be due to the scholarly interest of the individual.

- **Better planning curriculum and education:** The needs, interests, aptitudes and changes occurring during adolescence are very important and useful for teachers, principals and guidance workers for planning education, curricular and co-curricular activities, and for developing proper instructional material.

Fallacies about adolescence

A systematic study of adolescence started with the classic work of G. Stanley Hall in the beginning of the 20th century. Prior to the study of Hall, some misconceptions regarding adolescence prevailed in society; some of them still exist even after scientific contradiction and disapproval. These misconceptions are listed below:

- The *first* fallacious view is that adolescents are awkward in physical appearance
- The *second* misconception is that adolescents are rebellious
- The *third* misconception is that adolescents grow rapidly
- The *fourth* fallacious view is that adolescents are bothered by sex maturation and its problems.

Theories of Adolescence

Important theories of adolescence are discussed as follows:

1. **Comenius and Rousseau's Views:** Comenius was the first philosopher who recommended that schooling should be divided into four-to-six yearly periods. The periods proposed by him are as follows:

   - The *first* period of schooling should provide training of different senses;
   - The *second* period of schooling should provide education for memory;
   - The *third* period of schooling should encourage understanding and judgment ability in children; and
   - The *fourth* period of schooling should concentrate on harmonizing the 'will'.

   The theory has been elaborated in great detail by Rousseau in his book *Emile*. The theory of Rousseau exercised a great influence upon educational thinking and practices in several countries for centuries. The theory still has impact on stages of childhood and education.

   Psychologists criticize his/her theory on the basis that it was purely philosophic in nature. It was not based on observation and experiments. He/She was neither a successful teacher nor a devoted parent. However, he/she succeeded in drawing the attention of educationists to the need for basing education in accordance with the nature of child.

2. **Hall's Theory:** The first psychologist who devoted much of his time in collecting data on adolescence was G. Stanley Hall. He stands half way between the philosophic fiction of the past centuries and the controlled observation and experimental approach of the present time. He analysed the self-expression of children and adolescents through essays and directed interviews.

   He wrote two volumes in 1904 on psychology of adolescence. He wrote:
   'The years from 8 to 12 constitute the unique period of human life. Height and weight are at their full—health is at its best. Activity is greater than even before. The child develops his own circle out of home—he develops peculiar endurance and resistance to fatigue. There is greater immunity to exposure, danger and accident. The development is saltatory. It is a period of storm and stress. Important functions previously non-existent arise—every step of the upward way is strewn with wreckage of body, mind and morals. Sex asserts its mastery in field after field and works its havoc in the form of secret vices. The social instincts undergo sudden unfoldment and the new life of love awakens. Everything is plastic.

Character and personality take form. Self-feeling and ambitions are increased. It is all marvellous new birth.'

The findings of G. Stanley Hall had a great influence on the educational literature of the US.

3. **Hollingworth's Theory:** Hollingworth who conducted surveys on the developmental characteristics of children holds a different view than that of Hall's view. She holds the view that growth is a continuous process. Changes in adolescence do not occur all of a sudden but in a gradual way.

4. **Theory of Sigmund Freud:** Freud was a prolific writer on human behaviour and its problems. He developed a new concept of unconscious motivation which revolutionized the theory and practice of psychology. His main emphasis was on sex. Freud developed distinct stages of psycho-sexual development of human personality. He shared Hall's attachment to past theories in his assumption of complete discrepancy in the characteristics of man and woman. Freud's whole interpretation of human nature was based upon the consequences which followed from an explanation of social functioning in terms of the rivalry of brothers for overthrowing of the father in his possession of the mother. He did not agree with G. Stanley Hall's concept that sexual instinct had its birth at puberty. Freud held that sex is present in the life of the child from his birth. He developed the theory of psycho-sexual development.

Physical Development

The most important single feature of adolescent development consists of the changes that take place in the young person's body. In adolescence, marked physical changes take place which have significant behavioural implications.

Physical features in adolescence may be discussed under the following heads:

- **Change in height:** Almost all boys and girls show a spurt in growth during adolescence which is preceded and followed by years of comparatively little increase. There is a sudden shoot-up in growth in height.

  During adolescence, the height increases by 15–20 per cent. The height depends on the genes that you have inherited from parents. Right kind of diet, exercise and general health during these years also contribute to height.

- **Changes in bodily proportion:** There is a general change in the proportions of various bodily parts. The different parts of the body grow at different rates and attain their maximum development at different times. The pelvis bone of girls broadens and their wrist becomes circular. The arms and legs grow in length and become finer. Boys develop round shoulders.

- **Voice:** Both girls and boys are affected by voice changes during their adolescence. In girls, the change in their voice is hardly noticeable because it becomes only slightly deeper. As compared to boys they have a high-pitched voice. In boys, changes that occur in the larynx cause their voices to deepen. The vocal cords of the larynx grow thicker and longer and when they vibrate the voices sound lower and deep. The larynx sticks out as a prominent Adam's apple in males.

- **Secondary sex characteristics:** The secondary sex characteristics develop during adolescence. Genital organs in boys grow in size. Testes usually grow earlier. In girls, sex organs acquire maturity. The growth of breasts and the widening of the pelvis in girls are among the physical developments that have significant influence on the adolescent girls' conception of her physical self.

- **Hair growth:** Both, boys and girls, have a body hair in the armpits (under the arms), in the pubic area (region above the thighs) and on the arms and legs. Boys also begin to grow facial hair, in the form of moustache and beard and hair on chest.

- **Physiological changes:** All internal systems such as respiratory, circulatory, digestive, blood pressure, heart and pulse-rate acquire their full growth. Brain is fully developed by the age of eighteen.

- **Age of menstruation:** The data on menarche has been collected in all parts of the world. It is generally believed that girls in tropical and sub-tropical countries mature earlier than cold countries. The average age of menstruation varies from thirteen to sixteen years.

- **Relationship between physical and mental growth:** It has been shown that the interests and behaviour patterns of children are closely allied with their pattern of physical and physiological development. Physical development has a psychological effect on his/her attitude regarding himself/herself, and on the attitudes of others towards him/her. The physical development is an important factor in the social development and approval. If the girl is ugly and under-developed, she tries to avoid social situations. If the boy is physically handicapped or has some minor physical defects, then definitely his/her intellectual and social developments are affected.

- **Increase in weight:** During adolescence, the weight of a teenager almost doubles as the amount of muscles, fat and bones in their bodies change.

- **Development of muscles:** During puberty, the muscles of the body increase in mass and strength, in both, boys and girls.

- **Distribution of fat tissue:** The distribution of fat in the body changes during adolescence. Boys add more fat to their trunks than to their limbs, whereas in adolescent girls there is an increased distribution of fat in both. Among the limbs, there is more fat added to their legs than to their arms as a result their waist becomes thin and the hips become more rounded. Adequate physical exercise should, therefore, be a part of daily life of an adolescent.

- **Increased activity of sweat and sebaceous glands:** During puberty, the sweat glands of both boys and girls become more active especially those present in the armpits and groin and on the palms of the hands and soles of the feet. When the sweat comes in contact with bacteria on the skin, it can produce body odour.

- **Acne:** Acne is a common problem among adolescents. It appears in boys and girls around the beginning of puberty. The hormonal changes that are happening inside your body cause the sebaceous (oil) glands to become more active. When the oil glands get infected with bacteria, an outbreak of acne takes place. Most teenagers get acne on the face, neck, upper back, upper chest, shoulders and back.

- **Breast development:** The beginning of breast development is one of the earliest signs of puberty in girls. Breast is made up of fatty tissue and milk glands with ducts. The milk glands produce milk for the newborn child. Some adolescent boys also have breast development which is temporary. The swelling usually goes down within a year or so. In overweight boys, fat may also give the breasts an enlarged appearance.

- **Physical activity and ability:** The capacity to perform physical activities increases rapidly in adolescence.

- **Changes in strength speed:** There is a great increase in muscular strength in adolescence. The adolescents become more active in their work. Girls seem to mature earlier than boys in physical activity.

- **Growth trend in motor performance:** Espenschade conducted a study on boys and girls for a number of years on running, throwing a ball and jumping. There was great difference in the performance of boys and girls. Boys are better. The boys are superior, particularly in activities which involve speed and muscular strength. Boys continue their interest in physical activities, while there is a sharp decrease in the interest of girls. There is a sharp increase in jumping and throwing events from thirteen to sixteen years. Many of the sex differences in motor and mechanical activities are not due so much to a genuine sex difference as to a difference in the amount of interest, experience and practice.

There is a close relationship between motor performance and other traits. Popularity in adolescence is closely related to physical strength, and skill in athletic activities than to intelligence and school achievement. The cluster of physical traits as physical skills, bravery and strength show a high relationship in social situation and heterosexual relations.

These findings emphasize the importance of physical education and recreational activities for adolescents. The boys who have poor athletic abilities have poor social adjustment. They develop tension and conflict arising from inferiority.

Mental Cognitive Development

Another area of physical development is in the brain, especially the frontal lobe, which is the area for impulse control, judgment, and the ability to plan. The frontal lobe develops during the teens and early 20s. An undeveloped frontal lobe helps explain impulsiveness, risky behaviours, and moodiness among adolescents. In mid to late adolescence, young people often feel the need to establish their sexual identity by becoming comfortable with their body and sexual feelings. Through romantic friendships, dating, and experimenting, adolescents learn to express and receive intimate or sexual advances.

As an adolescent boy/girl grows, he/she develops problem-solving skills and could be a part of decision-making in school or at home. He/She would be able to analyse information and experiences by critical thinking and handle a new situation through creative thinking. The adolescent boy/girl would indulge in planning and goal setting for long-term and short-term tasks. Yet, the same hormones that cause changes in the appearance and intellect can also affect his/her emotions. One may feel awkward and self-conscious at times, confused and insecure at other times. All these are normal feelings and the adolescent boy/girl gradually gets used to such emotions and gets over them.

All studies on the mental growth have reported that mental abilities increase with age. Mental development during adolescence accelerates on many intellectual fronts. The following are the characteristics of mental development in adolescence:

- **Increased ability to generalize the facts:** Children usually generalize in relation to concrete objects. The intellectual development in childhood operates on a perceptual level but in adolescence the ability to generalize on conceptual level develops. The adolescent can generalize in an abstract way.

- **Increased ability to understand:** There is an increase in the ability to see relationship and to solve problems of increasing complexity and difficulty. The adolescent's depth of understanding develops.

- **Increased ability to deal with abstraction:** The adolescents can think not only in general terms, but also in abstract terms to a greater degree than children. They can think in terms of symbols rather than concrete things. Ability to carry on abstract thinking is not something that suddenly develops in adolescence. It is relative. This ability to comprehend and to communicate meanings in abstract qualitative concepts is an important aspect of intellectual maturity in adolescents.

- **Development of memory and imagination:** The memory in adolescence develops tremendously with the growth in vocabulary. The adolescents can imagine about a situation which is not physically present before them. Their long-term memory increases. They can retain facts for a longer period. They can anticipate future needs and can plan for it.

- **Growth away from trial and error method:** Trial and error is the primitive method to solve problems. During adolescence, an individual develops the capacity to cope with the situations through manipulation of pertinent factors. Teachers should encourage adolescents to develop the habit of substituting thought for trial and error method of solving problems.

- **Ability of problem solving:** The ability to solve problems increases in adolescence. Adolescents can solve problems with the help of symbols. They can deal with ideas that do not represent something in which a person is directly involved. They are able mentally to deal with events in a world that extends far beyond their own immediate sphere of activity.

- **Increased ability to communicate with other persons:** The adolescents on roads, in coffee houses, and tea stalls can be seen arguing for hours on topics of their interest.

- **Identification with conditions and characters in the larger world:** Another important change in the intellectual orientation that takes place near the beginning of adolescence appears in the child's ability to identify with the circumstances and people outside his/her own immediate environment.

- **Ability to make decisions:** The individual has to make many decisions in his daily life. Decision-making ability is necessary for successful adjustment in life. During adolescence, we expect the growing child to gain increasing confidence in his/her own opinion. There is a certain amount of independence in thinking, a certain freedom in exploring and in weighing alternatives that is involved in the kind of maturity that enables one to make decisions on his/her own.

- **Understanding of moral concepts:** The child, without questioning the validity of moral training, obeys the moral code framed by parents, but as he enters adolescence he critically examines the moral code and asks a number of questions.

- **Self-criticism and evaluation:** Adolescents begin to evaluate their performance objectively, but majority of adolescents do not achieve the mental maturity to do so. They either overestimate or under evaluate their performance.

- **Increased rational self-control:** Adolescents show more intellectual maturity to do a thing. They achieve rational self-control which is promoted by good mastery of developmental tasks which develops the sense of achievement and duty in them.

Emotional Development

C.T. Morgan emphasizing the importance of emotions in life writes that emotions are basic, primeval forces of great power and influence designed by nature to enable the organism to cope with circumstances which demand the utmost effort for survival or success or to add colour and spice to our living.

If there had been no emotion in life of the organism, life would have been without any aspiration. In absence of emotions, social and family life would have ceased and progress would have been checked. The word emotion has been derived from the Latin word 'emovere' which means 'to move out'. Emotion may be defined as the stirred up condition of the organism involving internal and external changes in the body. It is expressed in love, fear, anger, laughter and tears, etc. It involves feelings of jubilation or depression and impulse to action and awareness of perception.

Basically, human beings are creatures of feelings or emotions. Our emotions control our behaviour. Emotion in the organism is a dynamic internal adjustment, which operates for the satisfaction and welfare of the individual. Adolescence is marked by heightened emotionality.

Causes of heightened emotionality

The following factors are responsible for increase in emotionality:

- Change of roles in home, school and society
- Unfavourable relations in home
- Social expectations
- Difficulty in adjustment to the member of opposite sex
- Religious conflicts
- School failures
- Conflicts with friends and family members
- Vocational problems.

Characteristics of emotions in adolescence

The characteristics of emotions in adolescence are as follows:

- **Complexity:** By the time a child steps into adolescence, he/she experiences a number of emotional upheavals and storms. His/Her emotional development becomes complex by his/her experiences with his/her environment. The adolescent learns to conceal his/her true emotional experience.

- **Development of abstract emotion:** Generally, children show emotional expression in relation to concrete objects but adolescents can express their emotional feelings in relation to objects which are abstract or which are not present in concrete form.

- **Widening of emotional feelings:** As the child grows, he/she starts taking account of the past and imagines the future; and thus we can expect him/her to become

more patient and able to tolerate delay. The child gets pleasures from what he/she expects in future. The sphere of his/her social relation increases. The child starts appreciating elder and younger people.

- **Bearing of tensions:** Adolescents develop competencies to bear the tensions in different social situations. The emphasis is on self-control. They feel a kind of inner freedom—freedom to feel and experience in an intimate personal way.

- **Capacity of sharing emotions:** In childhood, children are not able to control their emotions. Sharing of emotional experiences reaches its fullest development when an adolescent is able to relate himself/herself to another person in such a way that the satisfaction of the person is just as important as his/her own. It means he/she begins to love his/her neighbours as much as himself/herself.

- **Expansion of loyalties:** Emotional development begins from the home environment of the infant, and during adolescence, it is expanded beyond home and neighbourhood. These loyalties are identified with peers and leaders of various fields.

- **Realism in emotional experiences:** Now the child enters the period of reality. An adolescent can perceive and appreciate people around him. He recognizes the weakness and strength of one's character.

- **Reviewing of hopes and aspirations:** Adolescence is the period of life when one has high hopes and aspirations for his/her future life. Some adolescents work realistically to achieve their expectations and others do little to realize their hopes; they remain in illusion, and in the world of day-dreams and flights of fancy which make them unrealistic.

- **Toleration of aloneness:** The adolescents develop a feeling of loneliness. Sometimes, they like to be alone in their home.

- **Externalization of feelings:** The adolescent learns to externalize his/her feelings in the various situations of external environment he/she moves in. He/She can project his/her feelings on others.

- **Increased compassion:** Compassion means fellowship of feeling. It denotes an ability to enter into kinship with the feelings and impulses involved in any sort of emotional experience, whether it be joy or sorrow. To be compassionate, a person needs to be able to enter his/her own feelings and appreciate the emotional feelings of others.

Effects of Emotions

Emotions have a profound effect on the life of an individual. They can make or mar one's life. There are two types of effects of emotions which are described as follow:

1. Good effects of emotions

- Source of motivation
- Source of enjoyment
- Source of strength and endurance to body
- Media of communication

2. Bad effects of emotions

Emotions also have damaging effects on the behaviour of an individual. The most damaging effect of emotions is on the physique of the individual. Constant emotional tension may cause lack of sleep, restlessness, headache, chronic fatigue, insomnia and lack of appetite.

Social Development

During adolescence, the following changes in the social behaviour occur:

- The most marked change in adolescence is the place of the adolescent in family. In India, a special ceremony is held to celebrate the entry of child into a new social role. Parents' attitude changes and now they assign him/her social responsibilities. He/She is taken into confidence on important matters of the family.

- The circle of adolescent narrows down to a small group. His/Her interests become specialized.

- Adolescents start identifying himself/herself with adults and tries to do roles of the adult.

- In childhood, boys play with boys and girls with girls; while in adolescence, there is heterosexual trend in companionship. The adolescent boys and girls form their groups based on their common interests and goals. The social groups of boys are larger than girls because boys in our society have more freedom than girls. But very recently in big cities, a new trend toward giving more freedom to girls is emerging as a new social pattern among adolescent girls. The adolescent boys and girls have a variety of grouping such as chums, clique.

- Adolescents make friendship with those who conform to their standard and possess the personality traits they like. The number of friends decrease, but the affiliation becomes more permanent. There is interest to make friendship with the members of the opposite sex. The adolescent does not tolerate the interference of parents and other members in selecting friends. Sometimes because of his/her immature decision, the adolescent is bluffed in selection of friends. The friendship of this period tends to be permanent.

- The teacher should make an appraisal of student's social interests, social acceptance in classroom, socio-economic conditions, and organize activities to foster socialization.

Moral Development

The term *moral* is derived from the Latin word *mores* meaning manners, customs and folk ways. Morality is indissolubly linked with the social system. The child has to learn what is *good* and what is *bad,* what is *right* and what is *wrong.* He/She has also to learn his/her *duty.* All these terms imply clearly that morality has reference to social relationship and social process. Morality has two dimensions which are closely interlinked—(i) the rules of morality operate in the social context, and (ii) it is used to mean the pursuit of good life i.e., personal moral code.

Dimensions of moral development

Baqer Mehdi and B.P. Gupta in an NCERT publication entitled, *Psychology of the Child and Curriculum* (1983) observe, 'moral development of the child implies inculcation in the child a number of qualities for which curriculum provides ample opportunities'. According to them, following are some of the important moral qualities which need to be attended to in schools:

- Honesty in words and deeds
- Truthfulness
- Self-respect and a desire to respect others
- Righteousness

- Self control
- Duty consciousness
- Compassion

Jean Piaget (1932) used the interview method to find out the various stages of moral development of the child. According to him, there are four stages: (*i*) Anomy the first five years (*ii*) Heteronomy - Authority (5–8, years) (*ii*) Heteronomy - Reciprocity (9–13 years) and (*iv*) Autonomy - Adolescence (13–18 years).

Education of Adolescents

Adolescence is a period of transition from childhood which implies many developmental changes. S.R. Laycock has grouped the problems of adolescents under the following major tasks:

- Adjustment at home, school, society, and with opposite sex;
- Freedom from home;
- Adjustment in suitable vocation; and
- Development of a sound philosophy of life

Charlotte Pope made an extensive study of the problems of adolescent boys and girls, and reported the following areas of problems:

- **Teaching–Learning relationship in school:** Most of the adolescents face a great problem in adjustment with teachers. Teachers are rigid, conservative and do not change their attitude. Some adolescents reported the problem of favouritism by teachers to some students. Students also resent the amount of homework given to them.

  It is unfortunate that the curriculum in India is purely theoretical, and there is hardly any active participation on the part of the students. Sitting passive in the class creates annoyance in adolescent boys and girls.

- **Occupational adjustments:** The greatest single problem which bothers the mind of adolescent boys in India is uncertainty for future vocation. The problem of 'what-to-do-after-study' haunts the minds of unemployed adolescents. There is another black side of the picture, when an adolescent sees thousands of unemployed adolescents. The mind of the adolescent agitates against the social order, and he/she becomes rebellious. It is further unfortunate that most of the adolescents study without future planning. When they finish their study, the adolescents find themselves incapable of taking any independent means of livelihood.

- **Financial problem:** The problems of adolescents have multiplied with the socio-economic development of the country. The problem of money is a big issue. There are many activities of adolescents which involve money. The adolescent needs money. He feels ashamed of begging money from parents. Parents are conservative in providing money, for extra activities, to their sons and daughters.

- **Home life relationship and social adjustment:** Adolescents want more freedom to attend social functions, but parents do not permit them to move outside the home. This is particularly more so in the case of girls from rural areas.

The second important problem happens to be parents' high aspirations regarding the achievement of their sons and daughters, and when they do not come up to their aspirations, there is constant quarrelling among parents and adolescents.

There is a lack of understanding between parents and adolescents, regarding freedom and money. The parents treat the adolescent like a child. They never discuss the problems freely with them.

- **Health adjustment:** Both boys and girls are very particular regarding their physical appearance. Those adolescents who are either underdeveloped or overdeveloped have great problem in adjustment. The important problems of this area are weak eyes, poor teeth, too short or too tall height, poor complexion, headaches and frequent colds.

Sex education and adolescents

Social environment has many occasions when adolescents come to know about sex and its problems. The child comes to know about sex from the early age of six. Surveys made by Ramsey and Hamilton prove that children cannot be kept ignorant of sex knowledge.

The important sources which provide sex knowledge to children include: friends, literature, old people, movies, drawings, reproduction in animal life, and physiological development.

These sources and a number of others are responsible for providing knowledge of sex. The knowledge which is received from these sources is injurious to mental and physical health of adolescents. Many boys and girls suffer from worries and venereal diseases because of their wrong information about sex and lack of proper guidance. All teachers, social workers and psychologists agree that sex education should be provided to children.

The provision of sex education should be made from the early life of the child. It is the responsibility of parents to inculcate good habits in their children and develop positive attitudes toward sex problems. Our social values are quite different from the Western countries where adolescents discuss sex problems with their parents.

Vocational interests

The child up to twelve years of age does not bother much about his/her future career but as he/she reaches sixteen years of age, he/she starts thinking about his/her future career. The choice of future career by an adolescent significantly affects his/her future social relationship in the society and indirect progress of the country.

Several factors affect the choice of future career in adolescents. The most important factors are as follows:

- **Urban-rural factor:** Adolescents who come from rural areas generally aspire for low paid and lower prestige jobs than adolescents from urban areas.

  An interesting study was conducted by Sewell and Ovenstein in 1965 to study the relationship between socio-economic status and community size. They have reported in their study that adolescents coming from lower socio-economic conditions are exposed to poor stimulation in the sense that they have contact with people of low status who do not provide good models for inspiring adolescents for higher vocations. They are exposed to less number of vocations.

- **Sex differences:** Sex differences make great differences in the choice of vocation. Earlier women were thought to be fit for limited vocations; but in recent times, women have entered almost all professions with success. But in India, parents generally do not permit their daughters to opt for certain professions such as the military.

- **Father's occupation:** Generally, adolescent boys identify themselves with the career of their fathers. Werts, 1968, who studied fathers' occupation and career choice of 76,000 boys found that the sons of physical scientists, social scientists; and medical men tended to choose the careers of their fathers.

- **Occupational attractiveness:** Adolescents are led to make their vocational choice by the prestige, income, and social recognition to the profession by the society. Socio-economic class and intellectual level and availability of vocation are important factors which affect the choice of career in adolescents.

2.4 SUMMARY

- Growth and development have been interchangeably used by most of the developmental psychologists because both the processes are interrelated and interdependent on each other. It is difficult to differentiate the contribution of either of them in the development of the personality of an individual.

- Development can be defined as the emerging and expanding of capacities of the individual to provide greater facility in functioning, such as development of motor ability from uncertain steps to proficiency in games.

- The process of development can be explained through different viewpoints: development as maturation, development as learning and development as synthesis.

- Growth refers to a process of becoming larger or longer or more numerous or more important, largely a physical change. Development, on the other hand, is a process in which something (mostly positive) transforms into a different stage or improves.

- Development is experiential change. It is orderly, adaptive and durable changes that occur throughout our life. Maturation, on the other hand, is naturally occurring change that is genetically controlled.

- There are different types of developmental change: antagonistic or interrelated.

- Maturation is the unfolding of characteristics potentially present in the individual that come from the individual's genetic endowment.

- The nature versus nurture debate concerns the relative importance of an individual's innate qualities versus personal experiences in determining or causing individual differences in physical and behavioural traits.

- The general principles of growth and development are that it is a product of interaction, follows an orderly sequence, is a continuous process, is cumulative, proceeds from general to specific etc.

- There are different stages of development: infancy, early childhood, later childhood, and adolescence.

- There are different visible aspects of development at different stages. These include physical, mental, social and emotional development.

Check Your Progress

5. What are the motor skills which develop at the age of five to six?

6. Which stage of development is a period which requires proper guidance and counselling by parents and teachers for the adequate adjustment of children in the society?

7. What is a 'gang age'?

8. Mention the main headings under which the changes at puberty can be studied.

9. In what ways can emotions have an effect on the physique of the individual?

10. Enlist the factors which affect the choice of future career in adolescents.

2.5   KEY TERMS

- **Growth:** It refers to the process of becoming larger or longer or more numerous or more important, largely a physical change.

- **Development:** It is the emerging and expanding of capacities of the individual to provide greater facility in functioning such as development of motor ability from uncertain steps to proficiency in games.

- **Maturation:** It is the unfolding of characteristics potentially present in the individual that come from the individual's genetic endowment.

- **Adolescence:** It comes from a Greek word 'adolescere' which means 'to grow to maturity'. It is the period which runs between childhood and adulthood.

2.6   ANSWERS TO 'CHECK YOUR PROGRESS'

1. According to Piaget, there are four basic elements in development: (i) maturation; (ii) experience; (iii) social transmission (learning through language, schooling or training by parents); and (iv) equilibration.

2. Development is called an experiential change because it is orderly, adaptive and durable change that occurs throughout our life.

3. Tabula rasa is the theory which refers to the view that humans acquire all or almost all their behavioral traits from 'nurture'.

4. Cephalo caudal, proximodigital and locomotion are the main directional trends in the development.

5. Self-feeding, self-dressing, bathing, brushing the hair, playing with toys, using pencils, jumping, hopping etc. are the motor skills that develop at the age of five to six.

6. Later childhood is the stage of development which requires proper guidance and counselling by parents and teachers for the adequate adjustment of children in the society.

7. Gang age is the period when the child associates himself/herself with the peer group of the same age who feel and act together.

8. The main headings under which the changes at puberty can be studied are (1) development of secondary sexual characteristics, (2) development of sex organs, and (3) intellectual, emotional and psychological development.

9. Constant emotional tension may cause lack of sleep, restlessness, headache, chronic fatigue, insomnia and lack of appetite.

10. Urban-rural factor, sexual differences, father's occupation, and occupational attractiveness are the factors which affect the choice of future career in adolescents.

2.7   QUESTIONS AND EXERCISES

Short-Answer Questions

1. Compare and contrast growth and development.

2. What is the significance of the study of adolescence?

3. Write a short note on the mental cognitive development during adolescence.

4. Discuss briefly the theories of adolescence.

Long-Answer Questions

1. Explain the general principles of growth and development.

2. Discuss the dimensions of development at early childhood stage.

3. Describe the dimensions of development at later childhood stage.

4. Explain the problem areas of the education of adolescence.

2.8 FURTHER READING

Thorndike, R.L. 1970. *Measurement and Evaluation in Psychology and Education*. New Delhi: Wiley Eastern Limited.

Anastasi, A., Urbina, S. 1997. *Psychological Testing*. New Delhi: Prentice Hall of Private Limited.

Gelder, M., R. Mayou, P. Cowen. 2004. *Shorter Oxford Textbook of Psychiatry*. Oxford: Oxford University Press.

Sadock, B.J, V.A. Sadock. 2004. *Concise Textbook of Clinical Psychiatry*. Philadelphia: Lippincot Williams Wilkins.

UNIT 3 CONCEPT OF LEARNING

Structure

3.0 INTRODUCTION

Learning is a very important element in our lives. Learning is so pervasive, that it finds different ways and forms to reflect at different stages and in different situations. Learning to different age groups mean varied things. It affects the behaviour and the response of the humans involved. Since, learning is such a dynamic phenomenon, there have been a lot of theorizing in this field. Numerous philosophers have come up with different approach to how learning functions and should operate. Learning also depends on a lot of factors which affect the knowledge or skill that is being learnt.

In this unit, you will learn about the concept of learning, its types and characteristics along with the concept and types of transfer of learning and the theory of motivation.

3.1 UNIT OBJECTIVES

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

- Discuss the meaning and laws of learning
- Describe the concept and types of transfer of learning
- Explain the concept of motivation in learning

3.2 MEANING AND LAWS OF LEARNING

Learning is the most common activity each one of us is involved in. At every point of time in our life, we are learning something. An individual starts learning from the very first day of his life that is just after he is born. A small child cries when he is hungry, and he is given food, next time he associates being hungry with crying and he learns that whenever he will cry, he will be given food. Similarly, a man touches a naked electric wire, he gets an electric shock, only then he immediately withdraws. The next time

when he sees the naked electric wire, the man immediately withdraws from there. That means learning has taken place that electricity can be harmful under certain circumstances.

From these examples, it is clear that there is a change in behaviour because of learning. Learning is certainly a universal experience. Kids learn to talk, to dress and to feed themselves. Adults must learn how to perform their jobs and how to meet the responsibilities of family life. Thus, learning means to discover or invent and to become efficient. Thus, learning is the change in behaviour because of experience. Learning can be defined as 'the relatively permanent change in behaviour brought about as a result of experience or practice'. John B. Watson (1878–1958) was the first psychologist to study the process of learning, and he formed the school of thought known as behaviourism. Behaviourists identify learning as an internal event. However, it cannot be termed that learning is presented by an overt behaviour.

There are three components of behaviour: (i) conative, (ii) cognitive and (iii) affective. The conative aspect refers to act or doing part. Learning related to this part of behaviour means acquiring skills to perform tasks like cooking, playing, dancing, knitting, jumping, crawling, talking, walking, singing, etc. The cognitive domain means the meaningful aspect of behaviour. The activities which require mental thinking like reasoning, analysing, interpreting, concluding, illustrating are included in this dimension of learning. The affective domain is related to emotional or feeling part of the behaviour. Changes that are brought about by performing activities related to emotions and feelings like happiness, sadness and anger are included in this domain.

Why is learning important?

There can also be changes in behaviour because of maturation, but there is a slight difference between maturation and learning. In case of human learning, they are closely related. In case of animals, the birds start to fly because of maturation.

If the change in behaviour is due to development through different stages, then the change in behaviour is because of maturation and not learning. If the change in behaviour does not improve with training or practice, then the change is because of maturation. For example, the child cannot speak until he attains a certain age (because of maturation), but the child cannot speak fluently if he does not learn to speak the language; this proves that maturity and learning are closely related.

Learning involves new ways of doing things. It operates in the individual's attempts to overcome obstacles or to adjust to new situations. It represents a progressive change in behaviour as the individual reacts to a situation in an effort to adapt his behaviour effectively to the demands made upon him. It enables him to satisfy certain interests or to attain certain goals.

Learning is vertical when precision in performance is increased or when information is added to what has been already learned and it is horizontal when what is learned is integrated and organized as a part of a functional unit of expanding experience.

As an individual goes about his daily activities, he unconsciously acquires many changed modes of thought and behaviour that grow out of his experiences. These may exercise a powerful influence upon his conduct and his relations with people around him.

Learning, therefore, means change in the response or behaviour including emotional behaviour; it means the acquisition of knowledge or motor skills.

There are various types of abstract learning. These include memorizing learning material with little or no understanding of its meaning (formulae or equations, for example),

learning simple concepts like addition or subtraction, discovering and understanding the relationships involving responses that are logical and psychologically sound.

Definitions of Learning

Woodworth (1945): 'Any activity can be called learning so far as it develops the individual (in any respect, good or bad) and makes him alter behaviour and experiences different from what that would otherwise have been.'

Hilgard (1958): '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 response, tendencies, maturation, or temporary states of the organism (e.g., fatigue of drugs etc.).'

Gardner Murphy (1968): 'The term learning covers every modification in behaviour to meet environment requirements.'

Henry P. Smith (1962): 'Learning is the acquisition of new behaviour or the strengthening or weakening of old behaviour as the result of experience.'

Garrrett: 'Learning is that activity by virtue of which we organize our response with new habits.'

Kingsley and Garry: Learning process of learning

Learning is a process and it is not the product by itself. Learning starts with a need or drive. Unless there is a need, the individual is not motivated to act.

When the needs of an individual are strong, he is compelled to act to satisfy those needs. So the process of learning starts with a need and then there is a drive to strive for its satisfaction.

The next step is the formation of the aim or goal because the goal motivates to learn. Then there are obstacles in achieving the goal. These hindrances can be removed by acquiring the right skills.

The internal attributes of the learner affect the learning process. The environment and learning situation also influence learning. If there are favourable learning conditions; the learning is highly effective, in the sense that it is retained for a longer period of time.

Thus, learning is a continuous ongoing process which changes the behaviour of a learner.

3.2.1 Characteristics of Learning

The change in the behaviour of the individual is more or less a permanent change. These changes because of training or practice can be observed and therefore, the process of learning has special characteristics which are as follows:

- **Learning is a change in behaviour:** It is believed that because of learning, that there is a change in behaviour. The changes in behaviour should help the learner to develop because learning is always directed to achieve some aim.
- **Learning is the process involving stimulus and response:** The process of learning starts when the individual responds to the stimuli present in the environment. If the individual does not respond actively to the stimulus, learning will not take place.

- **Change in behaviour is a relatively permanent change:** The change in behaviour because of learning should neither be too permanent (e.g., because of maturation) nor too temporary (e.g., because of illness or fatigue).

- **Learning is an ongoing process:** Learning is an activity which starts from birth and continues till a man dies. Sometimes, it is believed that learning starts much early when the child is in the womb of the mother; such instances are referred to in Hindu Mythology when Abhimanyu learned the art of *chakravyueh* when he was in the womb of his mother.

- **Learning is a goal directed activity:** All learning takes place because of a goal or aim. Because of the aim, the individual starts learning to perform certain tasks. If there is no purpose or aim, the learning will be difficult.

- **Learning helps in the development and growth:** Learning helps an individual to achieve his full potential by learning the skills. The individual can learn physical, moral and social skills.

- **Learning helps in adjustment:** Learning helps an individual to adjust to his environment and self also.

- **Learning can be transferred from one situation to another:** The important characteristic of learning is that it can be transferred from one situation to another. This can have positive as well as negative effects. The learning in one situation can help in learning in another situation, but sometimes learning in one situation may cause obstacles in learning in other situation.

- **Learning is universal:** Every organism has the ability to learn irrespective of caste, colour, region, religion, culture and country. Thus, learning is a universal process, the organisms learn according to their needs.

- **Learning is not always positive:** Learning leads to development, but it is a fact that learning can be both in a positive direction and in a negative direction. According to Woodworth, as a result of learning, the pattern of development is free to move in either direction positive or negative. A small child may learn to cheat, disrespect elders, which is all negative learning.

Characteristics of animal learning are as follows:

- **Animals learn by doing and not by reasoning:** Human beings learn by observation. Animals learn by doing.

- **New attachments and linking a particular stimulus with definite response:** The animals learn by experience and they avoid the responses that led to negative results and link a particular stimulus with a definite response so that it leads to positive results.

- **Animal learning is characterized by trial and error learning:** Thorndike was of the view that learning occurred through trial and error.

Thorndike's Trial and Error Learning

In trial and error learning, the subject is strongly motivated to achieve the aim. The solution to reach the aim is not very clear. The animal made many responses, many of them wrong or ineffective, and eventually learned to repeat those that got desirable results, so that the process is learnt and the goal is achieved. Some examples of trial and error learning are the maze learning experiment and the puzzle box experiment.

In the maze learning experiment, a hungry rat is placed in an enclosure from which it can reach the food kept on the maze by taking a complicated path. The rat takes all possible paths by entering into blind alleys and finally by a lot of effort it reaches the food, Thus, it is clear that rat learns the fixed path by observation and paying attention, by eliminating the unsuccessful responses and learning by repeating the successful ones.

Puzzle box experiment

In this experiment, a hungry cat is placed in a cage with a fish outside. The cat tries to reach the food by pushing the mouth behind the bars but fails to reach the food. There state only one exit from the box: the cat could open the latch by manipulating it. There were a lot of random movements made by the cat. By making one of the movements, the cat could manipulate the latch and was able to find the way out to food. In reaching to the solution the cat made errors. In due course of time, the cat started opening the door without making any errors. This type of learning was named by Thorndike as trial and error learning.

3.2.2 Types of Learning

Learning has been classified in a number of ways in various categories. It is very difficult to dichotomize learning into clearcut categories because one category overlaps the other. Important categories are as follows:

- **Deliberate or conscious learning:** This is the process by which behaviour is organized or changed through practice or training. For example, learning of a skill or subject. This is of two types:
  - (a) *Primary learning:* This includes learning of facts, principles and theories, etc., which are the main cores of lessons.
  - (b) *Associated learning:* This consists of the facts and other objective materials that are learned because they are related to the primary learning and are logically brought into the lesson.

- **Unconscious or concomitant learning:** This includes learning of likes and dislikes, attitudes, etc. It is equally important as conscious learning.
  - **(i) Development learning:** According to the type of development, learning is classified as: (i) academic learning, (ii) emotional learning, (iii) intellectual learning, (iv) moral learning, (v) motor learning, (vi) sensory learning, and (vii) social learning.

- **General learning:** It includes knowledge learning, skills learning and attitude formation, etc.

- **Hierarchical learning:** R.M. Gagne (1970) has classified learning into eight categories: (i) signal learning, (ii) S–R learning, (iii) chain learning, (iv) verbal associate learning, (v) discrimination, (vi) learning of concepts, (vii) learning of principles, and (viii) problem-solving.

- **Signal learning:** It is usually termed as classical conditioning, which was developed by a Russian physiologist Pavlov. In classical conditioning, unconditioned stimulus (food) and conditioned stimulus (sound of the bell) are paired together and presented to a dog a number of times with the result that when conditioned stimulus CS (Sound of the bell) is presented alone, it elicits saliva from the mouth of the dog. This modification of behaviour which causes salivation to the sound of the bell, is called conditioning.

- **Operant conditioning:** Thorndike initiated the study of operant or instrumental conditioning with the puzzle box experiments on cats. B.F. Skinner conducted a series of experiments on animals and prepared ground for the use of the principles in human learning.

- **Chain learning:** Chain learning consists of motor and verbal chaining. Verbal chaining is a matter of connecting together in a sequence two or more previously learned stimulus responses (S's – R's). The first member or element of the sequence seems firmly tied with the second. Examples are boy and girl, daddy and mummy, horse and buggy, etc. Motor chaining may be illustrated with the following stimulus response connections in the process of unlocking a door:
    - o Key in hand
    - o Facing the lock
    - o Checking the side of the key to be inserted
    - o Inserting the key into the lock until the stop of the lock is reached
    - o Pushing the door to open it.

It must be remembered that for establishing a chain, the individual must be capable of performing the individual links.

- **Verbal associate learning:** The simplest type of verbal associate learning is explained as: 'A child is shown an object, say a doll. The next time he sees this particular object, he will be able to say that it is a doll.' Two chains are involved here.
    - (a) Observing response S–R connection that connects, the appearance of the object and distinguishes it from other objects.
    - (b) S–R connection that stimulates the child himself to say 'doll'.

- **Discrimination:** When the behaviour shows a specificity of response to one given stimulus to the exclusion of others, we may say that discrimination has taken place. From the very beginning, an infant learns to discriminate between a feeding bottle and a simple bottle, between walking and talking, etc. Gradually, the child learns to discriminate more objects and ideas.

- **Concept learning:** In concept learning, we deal with classes of objects as the stimuli. We form concepts by finding properties which a class of objects share in common. Thereafter, we learn generalizations within classes and gradually learn discrimination between classes. First, we learn about a dog, then various classes of dogs and then cats, etc.

- **Learning of principles:** Learning of principles depends on learning of concept formation and other forms of learning. Principles denote regular relationship among two or more concepts.

- **Problem-solving:** Problem-solving comes at the higher stage in the hierarchy of learning process. In fact, all the earlier steps lead to problem-solving.

3.2.3 Principles of Learning

Koffka 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 Pragnanz and four laws of organization subordinate to it—the laws of similarity, proximity, closure and good continuation.

- **The Law of Pragnanz:** The German word '*Pragnanz*' means 'compact but significant'. The law suggests the direction of events. Psychological organization tends to move in one general direction, always towards the state of Pragnanz, towards good gestalt. A good gestalt has the properties as regularity, simplicity, stability, etc.

  So, this law speaks of the movement of our psychological organization towards the direction of stability i.e., we accept only those experiences which do not disturb our psychological organization (equilibrium). How good the Pragnanz is, is examined by the following subordinate laws.

- **The Law of Similarity:** This law says that 'other things being equal, the stimuli that are more similar to one another will have greater tendency to be grouped'. Thus, learning similar things is easier than learning dissimilar things.

- **The Law of Proximity:** According to this law, 'perceptual groups are favoured according to the nearness of the parts'. This means that we perceive all closely situated or located things as groups.

- **The Law of Closure:** This law states that 'closed areas are more stable than unclosed ones and therefore more readily form figures in perception'. It is similar to the Thorndike's law of effect. Unless the work is finished, the individual does not feel satisfied. He is under tension which is over only when the work is completed.

- **The Law of Good Continuation:** This law states that 'organization in perception which appears to go in a particular direction appears to be going infinitely in the same direction'. So there is a tendency of factors to give direction, movement and continuation to perceptual organization. Koffka believes in the trace theory of memory. The function of learning is to strengthen those traces and create new ones. The essential features of the trace theory are as follows:

    (i) Trace is the result of past experience so that it represents past in the present.
    (ii) The present process can select, reactivate or communicate with the trace.
    (iii) There is a resulting new process of recall or recognition.

Factors upon which insight depends

Insight involves the following:

1. The learner perceives the situation as a whole.

2. The learner tries to understand the relationships between various factors involved in a situation.

3. As a result of the understanding of the relationship, the learner is helped in the sudden grasping of the solution of the problem.

On the whole, insight depends upon the following factors:

(i) *Experience*—Past experiences assist in the insight of the problems.

(ii) *Intelligence*—Basic intelligence of the learner is an important factor in insight learning.

(iii) *Learning Situation*—A common observation insight occurs when there is ample scope for observation in a learning situation.

(iv) *Initial Efforts*—Initial efforts in the form of trial and error open the way of insight learning.

(v) *Reception and Generalization*—Learning gained in one situation helps the learner to react insightfully in other identical situations.

The distinctive criteria for insightful solutions are given by Yerks (1927) as:

(a) Survey of the problem followed by critical solutions.

(b) Repetition of the solution after a single critical solution.

According to Werthenier, insight can be developed by productive thinking. Productive thinking helps in the systematic solution of the problem in line with the true structure of the situation.

3.2.4 Theories of Learning

Theories of learning attempt to explain the mechanism of behaviour involved in the learning process. Experts have formulated different theories of learning with the result that it is not possible to give a theory which satisfies all interested persons. Before taking up theories of learning, we may consider the meaning of a theory. The most acceptable definition of a theory is that of Melvin H. Marx (1970). A theory is 'a provisional explanatory proposition or set of propositions, concerning some natural phenomena and consisting of symbolic representation of: (1) the observed relationships among independent and dependent variables, (2) the mechanisms or structures presumed to underlie such relationships, or (3) inferred relationships and underlying mechanisms intended to account for observed data in the absence of any direct empirical manifestation of the relationships".

A theory provides detailed systematized information of an area of knowledge. It serves as guidelines to conduct further research in the area. The theory produces new facts or supplements the previous facts. It gives an organized explanation about a phenomenon. It provides practical wisdom. The theory provides effective guidelines.

Important characteristics of a theory are: (a) Testability of its principles (b) Predictability of the outcomes of the actions (c) Comprehensiveness, (d) Brevity, and (e) Simplicity.

A learning theory is supposed to find answers of the following:
1. Role of drill and practice in learning.
2. Utility of rewards and punishments or other incentives/motives in learning.
3. Place of insight and understanding in the process of learning.
4. Role of transfer of learning in various situations.
5. Limits of learning with regard to the capacity of an individual in various aspects—i.e., individual differences of age, intelligence and sex etc.

Learning theories may broadly be divided into two categories as noted below:

I. Stimulus Response (S–R) Theories

A. S–R Theories without Reinforcement
(i) Pavlov's Classical Conditioning Theory of Learning
(ii) Watson's Learning Theory
(iii) Guthrie's Learning Theory

B. S–R Theories with Reinforcement
(i) E.L. Thorndike's Theory
(ii) Hull's Theory
(iii) Skinner's Theory

II. Cognitive Field Theories

    (i) Gestalt Theory of Learning or Kohler's Insight Theory of Learning

    (ii) Lewin's Field Theory of Learning

    (iii) Tolman's Sign Theory of Learning

We will discuss some of the important theories in this section.

Kurt Lewin's Field Theory

Kurt Lewin (1890–1947), unlike Pavlov, Skinner and Gestltian psychologists, conducted experiments on the study of behaviour of children. He utilized an elaborate experimental set-up with a view to control the child's total environment during the course of the investigation for getting detailed information. Lewin emphasized the study of behaviour as a function of the total physical and social situation. Lewin holds that psychological laws need not be formulated soley on the basis of statistical averages. Rather, the individual case is equally important. Even if all general psychological laws were known, we would still need to understand the specific individual and 'total situation' in which he exists before we could make any prediction about his behaviour. Thus, Lewin favours an *idiographic* psychology in which the focus is on the *individual,* as opposed to *nomothetic* psychology, where the emphasis is on *Statistical average.* Lewin describes his viewpoint in the following formula:

$B = f(PE)$

B represents behaviour

f is a function

P is the person

E is the total environmental situation

Lewin explains the individual behaviour on the basis of life-space. An individual's life-space depends on his psychological force. It includes the person, his drives, tensions, thoughts and his environment, which consists of perceived objects and events. Lewin represents his theory through a diagram in which an individual is in the centre. He moves through his life-space which consists of the totality of facts that determine his behaviour at a given time.

A life-space contains the individual himself, the goals he is seeking (positive valence) or avoiding (negative valence), the barriers that restrict the individual's movements and the path he must follow to reach his goal. Desire creates tensions in the individual and tensions come to a balancing state and the person acts. After the goal has been achieved, the organism (individual) returns to a state of repose until a new desire activates him.

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

Lewin's theory is called field theory as to a psychologist *field* means the total psychological world in which a person lives at a certain time. It includes matters and events of past, present and future, concrete and abstract, actual and imaginary—all interpreted as simultaneous aspects of a situation. Lewin states that each person exists within a field of forces. The field of forces to which the individual is responding or reacting is called his *life-space.*

Lewin's theory regards learning as a relativistic process by which a learner develops new insight or changes old ones. According to the theory, learning is not a mechanistic process of connecting stimuli and responses within a biological organism. Field psychology explains development of insight as a change in cognitive structure of life-space.

Lewin's theory may be explained as under: Suppose a person P is moving towards a goal of getting social recognition. But to achieve the goal, he has to apologize. Now asking for apology is the barrier coming in his way. The barrier may be physical or psychological forces preventing him from reaching the goal. These forces organize themselves into a pattern which determines his future behaviour.

Lewin has classified learning into the following categories:

(i) Learning is a change in cognitive structure.

(ii) Learning is a change in motivation, i.e. in valences and values.

(iii) Learning is acquisition of skills.

(iv) Learning is a change in group belonging.

Learning of all types involves change in perception.

Changes in cognitive structure are caused by the forces in the psychological field—needs, aspirations and valences. Lewin thinks that the level of aspiration depends upon the potentialities of an individual and on the influences of the group to which he belongs. Too higher or too lower aspiration discourages learning.

Lewin's system leans heavily on concepts derived from *topology,* a branch of higher mathematics that deals with transformation in space, from *vector analysis,* or the mathematics of directed lines and from the sciences of chemistry and physics concepts as valence, equilibrium and field force. Lewin's most important publication is *Principles of Topological Psychology* (1936).

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

1. **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.

2. **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.

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

4. **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.

5. **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 a time, these give rise to conflict, especially when the opposing forces are approximately in balance. Lewin specifies three chief kinds of conflict:

   (i) *Two Positive Valence:* 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.

6. **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.

7. **Behaviour:** Lewin regards behaviour as a function of present life-space. He insists that behaviour depends upon the present and not upon the past or future.

8. **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.

9. **Goal:** Goal is a region of valence-region of life-space to which a person is psychologically attracted.

10. **Tension:** It is very closely to and is descriptive of psychological needs. Release of tension may be achieved either through reaching a goal or through reconstructing a life-space.

11. **Cognitive Structure:** It is an environ mean including a person as known by the person. It is synonymous with insight or understanding.

Classroom implications of field theory

Taking into consideration, the field theory as a whole, the classroom teaching–learning implications include the significance of seeing the total situation at the beginning of the lesson or an activity. The teacher should preview the activities involved and the problem to be encountered. Moreover, from the point of view of a field theorist, the teacher should keep in mind that the student, the teacher himself, other teachers, the school arid the peer group—are all parts of the total situation.

The need for seeing the whole and details of the situation is very necessary. The teacher must assist the students to perceive the goal and the barrier. The goal must be presented in an easier and simplified way. Sometimes, partial insight of a situation may provide partial relief from tension.

Following are the major educational implications of this theory:

1. **Reward and Punishment:** According to Lewin, the learner because of attraction to rewards may resort to shortest methods. For example, to get distinction in the examination (record) 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 short methods. In the case of punishment, however, there is a tendency to leave the field because of the unpleasantness of the task unless some

strong barriers are there to keep one in the field. Reward activities often become interesting and are liked so that motivation is no longer extrinsic, while the activities controlled by the threat of punishment tend to become extremely hated.

2. **Success and Failure:** Psychological analysis of success from the point of view of the learner shows the following possibilities to:

   - Reach a goal constitutes success,
   - Get within the region of the goal may be a successful experience,
   - Make some progress in the direction of the goal also constitutes as a successful experience, and
   - Select a socially approved goal is also a successful experience.

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

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

   (1) Attractive goals may lose attention, if the activity related to them is repeated to the points of satiation.

   (2) Choice of goals is influenced by previous experiences of success and failure.

   The field theory states the following regarding memory:

   (1) Tasks which have no sense in completion are not remembered.

   (2) Unfinished tasks are remembered better than finished tasks because of the psychological tension.

   (3) Tasks which lead to the satisfaction of man's needs are remembered better than tasks which lead to the satisfaction of one need.

Tolman's Sign Theory

Edward C Tolman (1886–1959), like behaviourists rejected the idea of introspection as a method of studying human behaviour. On the contrary, he believed in the objective method of collecting data. He remarked that we do not only respond to the stimulus but we act on beliefs, and express attitudes. Behaviour can be modified by experience and training.

Tolman's theory combines the advantages of stimulus–response theories and cognitive field theories.

Tolman published his major work entitled *Purposive Behaviour in Animals and Men* (1932), and recorded the results of his experiments. He revised his theory in 1949, According to the findings of these experiments, the learner does not reach the goal in a fixed sequence of movements but changes his behaviour according to the variation in conditions.

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

1. It accepts behaviourism as basis. Main characteristics of behaviour are as follows:
   (a) Behaviour is goal-directed i.e., it is purposive.
   (b) Behaviour 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, the behaviour depends upon:
   (a) The need system
   (b) The belief value matrix
   (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-significative relations.

Educational Implications of Tolman's Sign Theory

Some of the typical learning problems are as follows:

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

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

- *Motivation*: Motivation does not help in learning something new; it simply encourages the performance as such.

- *Understanding*: Tolman believes in learning by creative inference, inventive ideation, and so on. Insightful learning is emphasized.

- *Transfer*: Transfer of training depends upon the applicability of the essential relationship 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 cathexis (relationship between a drive and object) also.

Laws of learning

Tolman stated the following laws of learning:

1. **Law of Capacity:** This relates to the traits, characteristics and aptitudes of the learner which determine the type of tasks and situations which can be mastered successfully.

2. **Law of Stimulus:** It deals with the conditions inherent in the material itself such as belongingness of its parts and how successfully it leads to an insightful solution.

3. **Law of Manner:** It is concerned with the manner of presentation of material such as frequency of presentation, distribution of practice and use of rewards.

Bruner's Concept Attainment Theory

J.S. Bruner has suggested a model on concept attainment and structure in teaching. He proposed that economy in thinking and responding requires that we categorize phenomena according to their common attributes. An attribute is a property or characteristic of an object which differentiates it from the other. Colour, texture, form, size, number of parts, position and sound are examples of attributes. We categorize objects having common characteristics into one group. For example, we categorize certain animals having four legs, a tail and a barking voice as dogs. Similarly, we can also categorize 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's voice is different from a dog's voice.

Bruner 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: (i) figure shape, (ii) figure number, (iii) figure colour and (iv) 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 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 identified four strategies in concept attainment:

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 over-all 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. The technique is also inefficient as the subject may choose redundant cards which give no new information.

3. **Conservative focusing:** 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 additional cards. The selection sequence is given as follows.

A plus sign in the parentheses means the card is a positive instance of the concept, a minus sign in parantheses that the card is a negative instance.

Four cards: 3 red circles, 2 borders (+) 2 red circles, 2 border + first decision, eliminate 'three figures' as a relevant variable.

3 green circles, 2 borders (–) second decision: retain red as relevant attribute value.

3 red crosses, 2 borders (–) third decision: retain circle as relevant attribute value.

3 red circles, 1 border (+) fourth decision: eliminate "two borders" as relevant attribute value.

Conclusion: The concept is 'red circle'.

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 focuses 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.

Attributes/Characteristics of Concepts

1. **Difference in learnability:** Some concepts are easily learned than others by children who even have similar cultural experiences and language.

2. **Usability:** In our daily life, we use some concepts more frequently than others.

3. **Validity:** Concepts in physical sciences are well defined than concepts in social sciences.

4. **Power:** There are some fundamental concepts in various disciplines which are necessary to learn in the beginning to understand other concepts. Thus, the attribute of power of a concept implies the extent which to a particular concept is essential to the attainment of other concepts.

5. **Types of concepts:** Concepts are of numerous kinds. Relational concepts are smaller or bigger, shorter or taller, etc. Abstract concepts are such as gentleness, honesty, kindness and love, etc.

6. **Instances of perceptibilty:** A plant has many instances which can be sensed, as a plant can be seen and smelled whereas eternity has no perceptible instance. Certain concepts may have imaginary rather than actual instances.

Principles of Concept Formation

H.J. Klausmeicr and Richard E. Ripple in their book. *Learning and Abilities* (1971), describe the following principles of concept formation:

1. Principle of likeness and differences among things
2. Principle of cognizance of attributes
3. Principle of correct terminology
4. Principle of proper sequence of instances
5. Principle of analysis of concepts
6. Principle of generalization of concepts
7. Principle of self discovery of concepts
8. Principle of use of concepts
9. Principle of independent evaluation

Essential Elements of Concept Learning

Concepts should be explained through as many examples as possible. Concepts should be taught through the process of connecting subject-matter; process of abstraction comes at a later stage. An analysis of a concept reduces its complexity. Positive examples are more useful. Repetition is very important at various stages.

Simple Activities Related to Concept Formation

Concept	Activity/Experience
1. Formation of number concept	1. Number rhymes
	2. Number games
	3. Number puzzles
2. Formation of time concept	1. Time perception cards
	2. Improvised clock.
3. Formation of colour concept	1. Rhymes and songs
	2. Dramatization
	3. Experiences with objects, cards and clothes.
4. Formation of concept of temperature	1. Activities with an improvised thermometer
	2. Simple experiments.
5. Formation of concept of physical environment	1. Sand and water play
	2. Simple experiments with air/ water, etc.
6. Formation of concept of social environment	Celebration of festivals.

Learning of Correct Concepts

From the very beginning, our efforts should be to teach concepts appropriately. It should be kept in view that faulty teaching leads to the formation of faulty concepts. Verbal explanation must be supplemented by teaching aids. In verbal talks, sufficient number of examples should be given.

There are several ways to teach concepts as follows:

- **Direct method:** One of the best ways of helping children acquire the concept of an object is to let them have direct experience. For example, if they have to learn about flowers let them see different kinds of flowers.

- **Teaching aids:** Direct experiences are not always possible. It may not be feasible to bring the lion into the classroom. Nor it is always possible to take the children to a zoo. There are several objects which are not found in children's environment. Teaching aids are helpful in teaching such concepts. Through teaching aids, like pictures and models, children can be given an idea of these objects.

- **Association:** New concepts are easily understood if they are associated with the old ones. Children should be provided with numerous instances of the concept and helped to verbalize the concept in the form of definition.

- **Self discovery:** Children should be encouraged to differentiate old concepts and new concepts and to form their own concepts.

Hull's Reinforcement Theory

Clark L. Hull (1884–1952), professor of psychology at Yale University, related learning to the needs of the organism. His theory holds that the association between S–R is not enough for learning. According to his views, some kind of reward or other reinforcement was necessary to establish the stimulus as signal. Hull emphasized the importance of the satisfaction of the needs of the children. These needs could be reduced or satisfied through some reinforcement. Hull's theory, therefore, is known as *need reduction* or reinforcement theory of learning. Needs create behaviour and the particular behaviour that reduces need is learnt by the organism.

Men and animals are always confronted with such situations in which there is need: (i) to reinforce S–R bonds which have already been formed, (ii) to form entirely new S–R bonds. A conditioned response occurs when a child feels a need. For instance, when he is hungry or thirsty, there is response and the need or drive is minimized or satisfied. In a simple way, it can be stated in these words: 'Whenever a response (R) follows quickly upon a stimulus (S), and this conjunction of S and R is closely associated in time with the diminution of a need, there will be increased tendency of that S–R to recur on later occasions.'

Hull conducted experiments to frame his theory of learning. In a puzzle box, he placed a rat in one apartment. In the box, there was another apartment which was divided by a wall. The way to the department was through a hole at the top of the dividing wall. An electric current was switched on in the compartment where there was the rat. The current was also directed into the dividing wall. To the stimulus of the electric current, the rat responded in a number of ways. It started cutting bars of the box and began to jump in a haphazard manner. In the end, it jumped into the other apartment through the hole. This was repeated till the rat learnt to jump immediately to the other apartment through the hole.

This showed that learning took place on account of the law of effect.

In the next experiment, two seconds before the electric current was switched on, a bell was rung. The rat quickly learned to jump on hearing the bell. It started jumping even earlier than the switching of the electric current, only on hearing the bell. This type of learning occurs due to conditioning. It, therefore, follows that in Hull's theory, law of effect and law of conditioning are combined.

Electric Shock

S1

S2 —————————————— | Jumping
         Wall   R —————————— Diminution of Need

                            |

S3

Sound of Bell
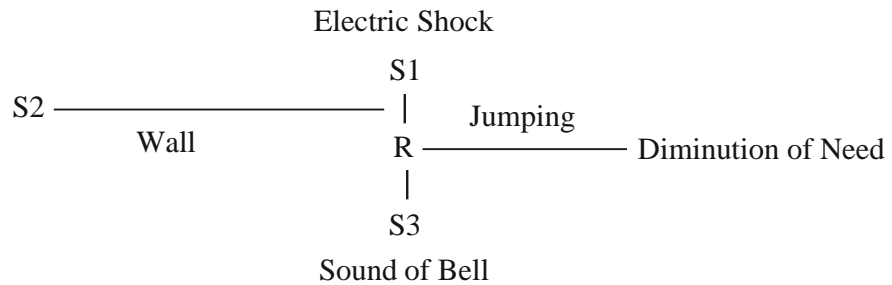
Lines denote formation of new bonds or the reinforcement of old ones.

Important Definitions Related to Hull's Theory

Important definitions related to Hull's Theory are as follows:

- **Need:** Need implies a state of the organism in which a deviation of the organism which is necessary for survival from the optimum of biological conditions, takes place. When a need arises, the organism acts with a view to reduce the need. Hence, sometimes Hull's theory of learning is called need reduction theory.

- **Drive:** Drive is a general condition or a common denominator for all primary motivation whether on account of food, water, sex or any other reason. It is a state of tension resulting from needs.

- **Reinforcement:** According to Hull, reinforcement is as 'whenever a reaction (R) takes place in temporal contiguity with an afferent receptor impulse (S) resulting from the impact upon, a receptor or stimulus (S) and this conjunction is followed closely by the diminution in a need, in the tendency of that stimulus on subsequent occasion to evoke that reaction'.

- **Postulates:** Hull stated his theory in the form of sixteen postulates or general rules. Some of the postulates are given here:
    1. *Postulate of hereditary responses*: Hereditary matters in learning. These are unlearned stimulus responses.
    2. Postulate of primary and secondary enforcement.
    3. Postulate of habit formation.
    4. *Postulate of reaction potential*: It is the strength of the tendency to respond.
    5. *Postulate of stimulus intensity*: The greater the intensity of the stimulus, the greater the reaction potential for a level of habit strength.
    6. *Postulate of intensive motivation:* The greater the magnitude of the incentive used in reinforcement, the greater the reaction potential.
    7. *Postulate of stimulus generalization:* This postulate means that there are two or more alike stimuli, they can evoke exactly the same response from the organism as was evoked by the original stimulus.

Educational Implications of Hull's Theory of Learning

Curriculum should be student-need-based. Individual differences of students should be taken care of. A reasonable anxiety should be created in the students. Students with mild anxiety are easier to teach. Drive in them creates restlessness and in order to release tension a series of actions would be needed. Too much or too little of anxiety is very harmful to learning.

In the course of action, the students encounter several stimuli. They make a continuous series of responses. When these stimuli occur with a response, there is a chance for an association and the association takes place only if it is followed by reward or punishment. Rewards and punishment both reduce tension of the students.

The basic educational implications of Hull's Theory of Learning are as follows:

- Hull's theory makes drive a major factor in learning. Therefore, all learning should be as stimulating as possible. Students must be motivated as much as possible.
- Hull's theory points out the importance of adequate drill and practice in learning.
- Hull's theory emphasizes the gradual development of 'artificial incentives'. In all learning situations, especially in the case of younger children, artificial incentives work wonders.

Gagne's Hierarchy of Learning

Gagne, in his theoretical framework, accounts for many factors of learning. However, he mainly focuses on intellectual skills. Many scholars have found his theory of prescriptive nature.

Gagne makes a distinction between the types of conditions. He saw states as the internal conditions, which included attention, motivation and recall. On the other hand, the external conditions were the factors surrounding one's behaviour, which included the arrangement and timing of stimulus events. Hence, he identified the following phases of learning:

- Phase I: Receiving the stimulus situation
- Phase II: Stage of acquisition
- Phase III: Storage
- Phase IV: Retrieval

Gagne identified the following five major types of learning levels in his theory:

1. Verbal information
2. Intellectual skills
3. Cognitive strategies
4. Motor skills
5. Attitudes

The aforementioned classification is necessary because each learning level requires different internal and external conditions. In other words, each learning level requires different types of instruction. For example, in order to learn cognitive strategies, there must be a chance to practice developing new solutions to problems. In order to learn attitudes, the learner must be exposed to a credible role model or persuasive arguments.

Gagne further argues that learning tasks for intellectual skills can be organized in a hierarchy according to the increasing level of complexity: stimulus recognition; response generation; procedure following; use of terminology; discriminations; concept formation; rule application; and problem solving.

This hierarchy fundamentally provides direction for instructors so that they can identify prerequisites that should be completed to facilitate learning at each level. This learning hierarchy offers a basis for forming the sequence of instruction. Gagne laid down the following nine instructional events and corresponding cognitive processes:

1. Gaining attention (reception)
2. Informing learners of the objective (expectancy)
3. Stimulating recall of prior learning (retrieval)
4. Presenting the stimulus (selective perception)
5. Providing learning guidance (semantic encoding)
6. Eliciting performance (responding)
7. Providing feedback (reinforcement)
8. Assessing performance (retrieval)
9. Enhancing retention and transfer (generalization)

3.3 CONCEPT AND TYPES OF TRANSFER OF LEARNING

The idea of transfer is basic to education. Education is considered to be a preparation for life. Whatever students learn in educational institutions, i*s* useful only when they can apply the same in the everyday life. This application or *carry over* learning from one act of learning to another is called 'transfer of learning'. The transfer of learning implies the application of knowledge in various subjects and fields. Whatever is taught in the schools, it is assumed that children will use that knowledge, skills, attitudes and information to solve problems of life after completing their formal educa-tion. Arithmetic is taught on the assumption that it will be used in day-to-day life to handle the problems involving the use of arithmetic. Civics is taught on the assumption that its knowledge would be helpful to face social problems successfully.

Children are required to do addition and subtraction of fractions in algebra. The teacher points out to them that the principle is the same as that of addition and subtraction of fractions in arithmetic. This implies that transfer of learning arithmetic takes place in the learning of algebra.

There are many educators who believe that subjects like mathematics, English language and science, etc., are superior to other subjects like economics, history, arts, crafts and home science as they are more helpful in sharpening the intellect of the students. The intellect so sharpened, they think, can be profitably employed in the performance of any other activity which may or may not be directly related to the subjects studied.

Traditionally children had been given long poems to memorize, long mathematical tables to learn by rote and a huge store of material to be committed to memory. It was believed that such learning was meant for disciplining the mind.

Definition of Transfer of Learning

For having an adequate understanding of the term transfer of learning, we may consider the following definitions:

1. M.J. Peterson (195) — 'Transfer is generalization, for it is the extension of idea to a new field.'

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

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

4. H.C. Ellis (1965) — 'Transfer of learning means that experience or performance on one task influences performance on some subsequent task.'

5. K. Lovell (1970) — 'Transfer of learning is the effect which some particular course of training has on learning or execution of a second performance. Such an effect may be of a helpful nature or it may hinder.'

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

A comprehensive definition of transfer of learning would mean the application or carry-over of knowledge, skills, attitudes, habits, values or other responses from the situation in which they were initially acquired to some other situation for which they were not specifically learned.

There is no doubt that almost all educational and training programmes are built upon the premise that the learners have the ability to transfer what they have learnt in one situation to another. This relationship has a great significance for any educational practice as it lends importance and faith to the usefulness of formal education. Learning becomes functional only when it enables the students feel confident that they would use their experiences and skills obtained in the school in their day-to-day life.

The very existence of our educational institutions is based on the assumption that the knowledge, skills and attitudes developed by them in the students will be transferred to life situations. The following issues arise in connection with the study of transfer of learning:

1. What are the areas in which transfer of training takes place?

2. What is the degree of transfer of training from one area to another?

3. How best transfer of learning can take place?

4. Is transfer of training possible in reasoning?

Areas of Transfer of Learning

The scope of transfer of learning is very wide. Some of the important areas of transfer of learning are as under:

1. Transfer from knowledge to knowledge

2. Transfer from knowledge to skill

3. Transfer from knowledge to behaviour

4. Transfer from attitude to attitude

5. Transfer from attitude to behaviour

Types of Transfer of Learning

Important types of transfer of learning are as follows:

- **Lateral transfer:** It is the most common form of transfer to occur. Suppose a child has been taught the addition and subtraction and he understands that $15 - 8 = 7$ in the context of beads or blocks or other subjects used in the classroom by the teacher, it is hoped this understanding would transfer to other situations. For example, the child at home removes eight apples from a basket containing fifteen apples and understands that there would be seven left. This is an example of lateral transfer. In this case, the child has made use of the understanding and skill learnt in the school in learning situations outside the school.

- **Sequential transfer:** The contents of the subjects of school curriculum are divided into sequent units. One idea leads to another and both ideas have some relationship to the third idea to be taught.

- **Horizontal transfer:** Lateral and sequential transfers are called horizontal for the learner, and is within the same behavioural category in making the transfer.

- **Vertical transfer:** Vertical transfer of learning implies facilitating the higher behavioural level in vertical manner by the lower level of learning.

- **Bilateral transfer:** This type of transfer takes place when training imparted to one lateral automatically transfers to another. Training in the use of pen by the right hand transfers training to the left.

Positive, Negative and Zero Transfer

A positive transfer takes place when the learning of a particular task facilitates the subsequent-learning of another task. But on the other hand, if learning a particular task interferes with the learning of a subsequent task, it is called a negative transfer. If, however, learning of a particular task makes no difference whatsoever to the learning of a subsequent task it is said to be zero transfer or no transfer of learning from one task to the subsequent task.

Once a child has learnt to misspell a word, it is difficult to correct it, especially if the child has been writing it for a long time. Similarly, if a child has developed faulty handwriting, it is more difficult to remedy it than to teach him to write well from the beginning. These are the examples of negative transfer.

Theories of Transfer of Learning

Important theories of transfer of learning are discussed below.

1. Theory of Mental Discipline.
2. Theory of Identical Elements or Components.
3. Theory of Generalization of Experience.
4. Theory of Ideals.
5. Gestalt or Relationship Theory.

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

on function automatically in all situations and areas in which they are involved. It was thought that the rigorous study of Geometry can train the faculty of reasoning and it is so trained in a person that he can reason well in the realms of mathematics, social studies, philosophy and business. This theory was first challenged by William James. Experiments by James and Sleight show that one can hardly improve memory for all situations in which it is called for by rigorously exercising it in any one specific situation.

Thorndike did a lot of research work on this problem and came to the following conclusion: 'The notions of mental machinery which being improved for one sort of data held the improvement equally for all sorts, of magic powers which, being trained by exercise of one sort to a high efficiency, held that efficiency whatever they might be exercised upon, and of the mind as a reservoir for potential energy which could be fired by any one activity and drawn on for any other—have now disappeared from expert writing on psychology.' This sets limits of formal discipline.

A.G. Wesman (1945) concluded on the basis of his studies that there is no clear-cut superiority of any subject as regards the amount of transfer.

2. **Theory of Identical Elements or Components:** Thorndike and Woodworth were the main founders of this theory. On the basis of their experiments, carried out in 1901, Thorndike and Woodworth concluded that the transfer of learning occurs from one situation to another on account of the presence of identical twins. The theory implies that learning is facilitated in the new situation to the extent that identical elements which occurred in an earlier situation are present in the new situation. The similarity of elements can be either in the subject-matter or in procedure or in attitudes.

Peter Sandiford (1941) stated: 'This theory of identical elements is a perfectly reasonable one. Out of the millions of specific reactions, each with its specific connection in the nervous system, some of them are bound to be common to several situations. The greater the number of these common elements, the greater will be the transfer effect.'

According to this theory, addition is supposed to improve multiplication on account of lots of additive processes required in multiplication tables. Learning of one language helps the learning of the other as the methods of learning used in two languages have the common elements of vocabulary. In a simple way, it may be stated that the transfer of learning is in terms of 'identity of content, identity of procedure and identity of ideals.

3. **Theory of Generalization of Experience:** C.H. Judd (1908) came to the conclusion, on the basis of his experiments conducted on transfer of learning, that transfer takes place to the extent to which a learner is able to generalize his experiences. Judd lays emphasis on the intelligence of the learner which enables him to understand and apply the knowledge of principles or generalizations from one situation to another.

The theory states: 'The development of special skills, the mastery of specific facts, the achieving of particular habits or attitudes in one situation have little transfer unless the skills, facts, habits are systematized and related to other situations in which they can be utilized.' If we are trying to build good habits of study and work, it should be done in such a way that these are applicable in all subjects and not merely to one subject.

4. **Theory of Ideals:** W.C. Bagley, who gave an explanation of transfer in terms of ideals asserted that generalizations are more likely to transfer, if they are regarded as of some value as desirable. According to him, generalization is not the whole story, but it must be given an emotional sanction or be elevated to a plane of an ideal worth living for. Thus, the teacher should consciously seek maximum transfer values by emphasizing the ideals of neatness, of love, of learning, tolerance for difference of opinion, and so on.

5. **Gestalt or Relationship Theory:** According to Gestalt psychologists, transfer of learning means that generalizations, concepts or insights which are developed in one learning situation are employed as a whole in other situations in which they are applicable. However, the transfer of generalizations or insights does not occur automatically. For transfer to occur, the pupil must perceive the relationships between the two situations, must understand that the generalizations gained through past experience are appropriate to the new situations and must have the desire to use the generalizations and to benefit by the perceived commonality.

Educational Implications of Transfer of Learning

In the curriculum, the utility aspect should be kept in view. In selecting and planning the curriculum, the selection and arrangement of material in subjects should be such as they are closely associated with the day-to-day needs of the learners. This implies that spellings of those words should be taught first which are used in every-day life of the learners. Similarly, the kinds of readings they will use in their life should be given priority. Curriculum content should be related directly to the vocational interests and ways of life. Mathematical symbols and formulas should be expressed in familiar terms to the students.

Superiority of one subject over the other in terms of transfer has little relevance. The degree of transfer depends upon the applicability of the outcomes of learning. As Thorndike pointed out: 'The differences are so small and the unreliabilities are relatively so large, that the influence of the subject studied seems unimportant. Indeed one subject was about as good as another.'

Conditions that facilitate the transfer of learning are as follows:

1. Transfer of learning takes place when there is some similarity between two tasks.

2. It is not enough that there should be a similarity between two tasks but the learner must realize that similarity.

3. Transfer of learning is more likely to occur if the learner is keen to use his old learning in the new situation.

4. Transfer of learning depends on the ability of the learner. The more intelligent a learner is, the more likely it is that transfer will take place. The impact of transfer of learning on the part of the learner also depends on the intelligence of the teacher.

5. The better the first task has been learnt the more likely it is that the learning will be transferred to the new situation

6. Understanding of the underlying principles, i.e., arriving at generalizations, adds transfer of learning.

7. When children discover principles for themselves, there is greater possibility of transfer than when they are told the principles.

8. The more experience children have, of applying a principle in different situations, the easier it will be for them to apply it in a new situation.

Role of the teacher in transfer of learning are as follows:

1. Subject-matter of all subjects should be taught and learnt in close contact with its applications.

2. Adequate experiences and practice should be provided with the original task for its transfer to other situations in learning.

3. Important features of a task should be identified so that differences and similarities with other tasks should be comprehended and proper relationships established.

4. Implications of concepts and rules in actual life should be thoroughly discussed to make its applications practicable.

5. Students should be guided to discover common essential features and relationships of situations which appear to be different superficially.

6. Students should be encouraged to develop proper generalizations.

7. Students may be motivated to see the significance of identical elements and components of ideas, skills, attitudes and objects.

8. Emphasis should be on the development of desirable flexible behaviour and not merely to apply it mechanically

9. While teaching abstract concepts, a number of illustrations and practical examples of applications should be given.

10. Relationships should be emphasized and the learners guided to perceive them within a subject, between the subjects and to out-of-school life project method is very useful in cutting across several subjects.

11. Discussions and debates should be arranged to develop the students' power of understanding relationships.

12. Field trips to important places of commercial, educational, economic, historical, cultural and scientific etc., help in developing proper understanding of life situations in the context of curriculum content.

13. Logical thinking should be kept in constant focus. Students may constantly be asked the *why* and *how* of generalizations.

14. Goals, outputs and objects of a particular activity should be made very clear to the students.

3.4 CONCEPT OF MOTIVATION

Motivation is the very heart of the learning process. Adequate motivation not only sets in motion the activity which results in learning, but also sustains and directs it. It has been stated, 'Motivation arouses interest. Interest is the mother of attention and attention is the mother of learning. Thus to secure learning you must first catch the mother, grandmother and great grand-mother.' Motivation is an indispensable technique for learning. It energizes and accelerates the behaviour of learner. Desirable changes in a learner's behaviour are only possible when a learner is properly motivated. No learning is possible without motivation.

The word motivation has been derived from the Latin word *movers* which means to move. Motivation is an internal force which accelerates a response or behaviour. Some learners learn the same subject-matter or task more efficiently than others, some find it more rewarding and interesting than others; and some enjoy it more than others. At any given time, learners vary in the extent to which they are willing to direct their energies to the attainment of goals, due to difference in motivation.

Tremendous research has been conducted on motivation in the last five decades and a number of definitions and theories have been given to explain motivation. K B Madson (1975) in his book, *Theory of Motivation* has given twenty-four definitions and theories of motivations which provide different explanations of learning and human behaviour. Some of the important definitions are given here for having an adequate understanding of the term motivation.

1. *C F Skinner* (1947)— 'Motivation in school learning involves arousing, persisting, sustaining and directing desirable behaviour.'

2. *G M Blair and Others* (1947)— 'Motivation is a process in which the learner's internal energies or needs are directed towards various goal objects in his environment.'

3. *J P Guilford* (1950)— 'A motive is any particular internal factor of condition that tends to initiate and sustain activity.'

4. *A H Maslow (1954)*— 'The self-actualization tendency is growth motivation. Self-actualization is the development of personality which frees the person from the deficiency problems of growth. Motivation is constant, never ending, fluctuating and complex and that it is an almost universal characteristic of particularly every organismic state of affairs.'

5. *W A Kelly (1955)*— 'Motivation is the central factor in the effective management of the process of learning. Some type of motivation must be present in all learning.'

6. *L D Crow and A Crow (1962)*— 'Motivation is considered with the arousal of the interest in learning and to that extent is basic to learning.'

7. *K Lovell (1964)*— 'Motivation in school learning involves arousing, persisting, sustaining and directing desirable behaviour.'

8. *H W Bernard (1965)*— 'Motivation is the stimulation of actions towards a particular objective where previously there was little or no attraction to that goal.'

9. *T W Atkinson (1966)*— 'The term motivation refers to the arousal of tendency to act to produce one or more effects.'

10. *F G McDonald (1972)*— 'Motivation is an energy change within the person characterized by affective arousal and anticipatory goal relations.'

11. *C W Good (1973)*— 'Motivation is the process of arousing, sustaining and regulating activity.'

12. *D O Hebb (1975)*— 'The term motivation refers (i) to existence of an organized phase sequence (ii) to its direction and content (iii) to its persistence in given direction or stability of content.'

13. *Bernard (1980)*— 'Motivation is the stimulation of actions towards a particular objective where previously there was little or no attraction to that goal.'

14. *Arun Monappa and Mirza S Saiyadain (1985)*— 'Motivation is propensity or the level of desire of an individual to behave in a certain manner at a certain time and in a certain situation.'

Characteristics and Functions of Motivation

1. Motivation arouses interest in learning.
2. Motivation sustains interest in learning
3. Motivation directs behaviour.
4. Motivation initiates and energises activity in learning.
5. Motivation leads to self-actualization in learning.
6. Motivation is the arousal of tendency to act and produce result.
7. Motivation is directed to a selective goal.
8. Motivation provides the energy and accelerates the behaviour of the learner.
9. Motivation releases the tension and helps in satisfying the needs of the learner.
10. Motivation is the internal condition or factor of learning.

Terminology of Motivation

Following terms are usually used:

1. *Motive*—According to McDougall, 'Motives are conditions—psychological and physiological within the organism that dispose it to act in certain ways.'
2. *Drive*—According to Boring, 'A drive is an intra-organic activity which initiates for specific activity and behaviour.'
3. *Incentive*—Incentive is an object or external condition perceived as capable of satisfying an aroused motive that tends to elicit action to attain that object of condition.
4. *Interest*—According to Bingham, 'An interest is tendency to become absorbed in an experience and to continue it.'
5. *Curiosity*—Curiosity implies the tendency to investigate and seek to learn more about new objects with which there was no previous experience.
6. *Goal*—It is the end result immediate or remote which the individual seeks.
7. *Arouser*—According to Donald Hebb, 'Arousal is an energizer of an organism.'
8. *Expectancy*—It is a momentary belief that a particular outcome will follow a particular act.

Motivation, Hierarchical Needs and Educational Implications

A Maslov (1954) suggested a hierarchical set of five basic needs which must be satisfied to reach the highest level of motivation. These needs are:

(i) Physiological, (*ii*) Safety, (*iii*) Love and Belongingness,

(*iv*) Self-esteem, (*v*) Self-actualization.

Higher needs can be satisfied only after the lower needs are satisfied.

(i) *Physiological Needs:* These needs are like hunger, thirst, etc., and serve the function of the maintenance of the organism. A severe deprivation of food, for example, can deprive the child of various opportunities of his intellectual and other developments.

(ii) Safety Needs: Children want to have a safe environment. If the safety needs are not satisfied, the child feels a sense of insecurity and develops mistrust.

(iii) Love and Belonging Needs: When the child has his sense of security and trust, he develops affectionate relationships with other people (parents, peers and teachers, etc.) and has the desire to belong to a wider group. Children need affection from all quarters.

(iv) Self-esteem: The child at this level is able to function well in interpersonal situations. He develops the desire for achievement and competence, for independence and freedom, for reputation and prestige.

(v) Self-actualization: This is the highest level of motivational goals. It refers to a child's desire for self-fullfilment, to realize his potentialities. This has a special significance at the adolescence stage.

Characteristics of Self-actualizers (Persons Who Achieve Self-actualization)

1. They demonstrate an efficient perception of reality and acceptance.
2. They accept themselves and others.
3. They show a high degree of spontaneity and simplicity.
4. They possess problem-centred orientation.
5. They believe in privacy.
6. They are somewhat detached.
7. They appreciate goodness.
8. They tend to be autonomous and independent of their environment.
9. They show mysticism at times.
10. They identify themselves with mankind
11. They develop deep interpersonal relations with others.
12. They are democratic in outlook.
13. They distinguish means and ends.
14. They have a sense of humour.
15. They are creative.
16. They are adaptable.

3.4.1 Role of Motivation in Learning

Gourevitch and Feffer (1962) identified four stages in the development of motivation; each stage characterized by its own type of reinforcement. In the first stage, reinforcement is concrete and bodily. It is direct satisfaction of a physiological need. In the second stage, reinforcement is concrete but external involving tangible rewards such as prizes or intangible rewards like affection or belongingness to a group. The third level involves abstract but external reinforcement like esteem of others, being well-thought by others, etc. The final level involves active concern for self-actualization, reinforced by abstract and internal reinforces, such as self-respect.

Teachers are expected to keep in mind all these stages of development of motivation while dealing with children.

Classroom Motivation: Different Techniques

Students, in the classroom learning, need constant motivation from the teachers so that optimum use of their talents may be made for their development. The needs are the basis of motivation. Therefore, the techniques that the teachers employ to arouse and maintain motivation will be successful only insofar as they make them perceive that progress is being made towards need-satisfaction. Since individual children differ in regard to their specific needs according to their personality patterns and socio-economic background, the teachers will have to vary their motivational techniques and employ them judiciously. In other words, every individual pupil should be led towards goal that he is aware of and will want to attain. Secondly, goals should be within each pupil's reach, and should seem attainable to him. Thirdly, he should be able to judge whether or not he is attaining his goals and how he is falling short. Fourthly, a teacher should not rigidly and strictly adhere to one technique of motivation but he should make use of all techniques judiciously and scientifically.

NOTES

(1) *Attractive Physical and Environmental Conditions:* First of all the teacher should attend to the physical conditions of the classroom. There should be no distracting factors in and around the classroom. Noise, strong light and some undesirable scenes often distract the attention and do away with the interest. Abnormal temperature is also a disturbing element. Monotony creates boredom.

The rooms should be ventilated and tastefully decorated. There must be flowery plants in the school compound. Cleanliness should be stressed adequately.

(2) *Sublimation of Innate Impulses:* Most of the behaviour of small children is directed by their innate impulses. Curiosity, construction, self-assertion, submission, pugnacity and hoarding are some of their most powerful drives which form the basis of all kinds of their activities. Small children are very curious by nature. They like to do many things. Every new and strange things attract them. An efficient teacher will stimulate the impulse of curiosity. He will always start the lesson by exhibiting some very new and strange aspect of the same. Similarly, children like to construct things. The teacher should encourage the children to learn by constructing and creating things.

(3) *Stimulus Variation and the Teacher:* It has been generally observed that children are not able to attend to one thing for a very long period. The effectiveness of the teaching–learning process in such a situation depends to a great extent on the stimulus variations used by the teacher behaviour. Some of the common teacher behaviours in the classroom which fall under variation are:

   (i) Teacher movement

  (ii) Teacher gestures

 (iii) Changes in speech pattern

 (iv) Changes in sensory focus

  (v) Changes in posture.

(4) *Reinforcement (Praise and Blame):* 'Praise, like gold and diamonds, owes its value to scarcity', writes Robinson Johnson. It implies that this technique should be employed with great care. These may be classified as:

  (i) *Positive verbal reinforcement:* Following a pupil's answer, the teacher verbally indicates pleasure at the pupil's response by the use of words like 'Good', 'Fair', 'Excellent', 'Correct', etc.

(ii) *Positive non-verbal reinforcement:* This includes

    (a) Teacher's nods and smiles.

    (b) Teacher's friendly movements towards pupils.

    (c) Teacher's friendly look.

    (d) Teacher writing student's response on the blackboard.

(iii) *Negative non-verbal:* This comprises gestures and facial expressions, such as those depicting impatience, annoyance, contempt, pity, sometimes by sneering, frowning, etc.

(iv) *Negative verbal:* This includes comments like 'No', 'Wrong', 'No good', 'Poor', 'Of course not', etc.

(5) *Extrinsic Learning Rewards and Punishment:* These are also termed as reinforces, and the process of giving rewards and punishment is known as reinforcement. Rewards, whether material or symbolic and psychological, enhance and satisfy child's safety, belonging and esteem needs, and as such are capable of acting as incentives. Material rewards seem to work better for poor children and symbolic rewards seem to work better for children from rich homes. Thus a reward in order to act as an incentive must be perceived by the child as of some value. As extrinsic motivator, rewards may, however, become an end in themselves, and the child may not develop any intrinsic impulsion to identify himself with the learning activity. Therefore, the students should be helped to perceive that successful performance is more important than any extrinsic incentive like prizes, marks and certificates. Intrinsic learning takes place when the individual is motivated without rewards, etc.

(6) *Pleasure and Pain:* According to the oldest theory of behaviour, pleasant experiences which give satisfaction are sought after and painful experiences are avoided by an individual. This theory has direct implication in classroom teaching-learning. The teacher must provide pleasant and satisfying experiences to the students so that they are motivated for further learning.

(7) *Attainable Goal:* There should be a goal to be reached in every lesson. Only then the students can endeavour to continue their efforts in a particular direction. The goal must be made clear to the students.

(8) *Experience of Success:* Experience of success motivates a child to continue an activity. The teacher should, therefore, make school work, both curricular and co-curricular, sufficiently varied so that each pupil has a chance to experience success at his own level. He must ensure frequent and regular experience of success or reinforcement throughout all the phases of learning, but particularly during the earlier and more difficult phases.

(9) *Competition and Co-operation:* Competition is a spur to activity. But competition on an individual basis is likely to be unequal and therefore threatening to some students. Competition between groups makes it possible to spread the share of success or failure.

Co-operation too provides motivation since it provides social situation to learners when they find satisfaction of their acceptance and belonging needs.

(10) *Knowledge of Progress:* Pupil's knowledge of their progress, of how well they are moving towards their goal is a very effective form of motivation. It also helps them put greater efforts. Individual progress charts not only inform a child as to

how he is doing but also keeps the child involved in the learning activity. Children are said to learn better through programmed learning because they get immediate information of success or failure.

(11) *Novelty:* The striving toward self-actualization makes pupils search for the new and the different. Field trips, excursions, dramatics, sports, literary activities, etc., satisfy the pupil's needs for self-actualization by providing them opportunities. But their safety needs require that they should know beforehand when and how the new experiences will be provided.

(12) *Individual Differences of the Children:* Children have different interests and capabilities. All the children cannot be motivated alike for all the lessons at all times. It is the duty of the teacher to discover individual interests and capabilities of the children in his charge to motivate them accordingly.

(13) *Teaching Skills.* Teaching skills of the teacher greatly influence motivation. It is not easy to give an exact number of teaching skills involved in motivating students in the class. Commonly identified skills in the teaching-learning process may be listed as under:

   (i) Skill in introducing the topic.

  (ii) Skill in putting questions.

 (iii) Skill in dealing with pupil's answers.

 (iv) Skill in stimulus variations.

  (v) Skill in the use of blackboard or the chalkboard.

 (vi) Skill in handling teaching aids and other equipments.

 (vii) Skill in non-verbal cues.

(viii) Skill in reinforcement.

 (ix) Skill in the use of illustrations and examples.

  (x) Skill in the exposition of sub-matter.

 (xi) Skill in explanation.

 (xii) Skill in encouraging group discussion.

(xiii) Skill in planned repetition.

(xiv) Skill in drawing out conclusions from students.

 (xv) Skill in teacher liveliness.

(xvi) Skill in the closure of the lesson.

(xvii) Skill in using appropriate methods of teaching.

(14) *Teacher's Own Motivation and Interest in Teaching.* The teacher must be interested in what he is teaching and in the children whom he is teaching. If he is not interested in the work himself, he can never motivate the class. It may be said that a teacher who has been teaching the same subjects to the same classes for years tends to lose interest. But this is not the fact. The subject matter may be the same but the children are not the same. Even the subject matter is changing and developing. Moreover, with experience the teacher will discover new approaches and methods of teaching even the same subject matter.

Theories of Motivation

As already mentioned, twenty-four theories of motivation have been propounded by experts. These theories provide divergent explanations of motivation. It is neither feasible nor desirable in the limited scope of this book to provide a detailed treatment. Only an

overview of some of the popular theories is given here. It is also observed that these theories supplement each other and point towards the same truth.

1. Pawn Theory.
2. Instinct Theory.
3. Need Theory.
4. Stimulation Theory.
5. Behaviour (or Learning) Theory.
6. Social Theory.
7. Depth Theory.
8. Physiological Theory.
9. Theory of Achievement Motivation.

1. Pawn Theory of Motivation

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. This theory passes on the responsibility to some *mysterious power,* which is something intangible and which motivates human beings to action.

2. Instinct Theory of Motivation

McDougall is 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 fourteen instincts and attached fourteen emotions with them. This theory became very popular in Britain. Nunn, Burt, Ross, Hughes and Valentine, etc., accepted this theory. However, American psychologists did not find any weight in it.

3. Need Theory

A. Maslow (1908–1970) was the main advocate of this theory. We have already discussed hierarchy of needs as stated by him. There are two sets of needs: (*i*) Primary or biological, and (*ii*) Secondary or psychological. The more intense the need, the more is the motivation.

4. Stimulation Theory

According to this 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.

5. Behaviour or Learning Theory

This is more elaborate than the need theory. Hull and his associates are the suppoters of this theory. The theory has three main tenets:

(i) All motivated behaviour is based on needs and desires;

(ii) All learning involves reward in the sense that only those responses that reduce need or drive are stamped in; and

(iii) Needs may be biological or psychological, primary or secondary.

Tolman, Hebb and Mowrer do not share this view. They argue that all learning is not like that. Learning can be 'cognitive type' also. It is not only the 'need reduction' but also 'avoidance of plain' that goads one to learn.

6. Social Theory

According to this theory, causes of the 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. The 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.

7. 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.

8. Physiological Theory

This theory holds that the secrets of mind are locked within the cells of the nervous system.

9. Theory of Achievement Motivation

C McClelland David (1953) and Atkinson W John (1958) came to the conclusion that in every individual there is a need for achievement. A person who has a high need for achievement considers problems and obstacles as challenges to be met. According to this theory, human beings differ from one another in the strength of achievement motive. It is this difference in the strength of motivation to achieve that is important in understanding the development. The need for achievement develops in early childhood. It depends upon the discipline of the home. Parents' expectation and guidance to the child develops a need for high achievement in life.

The teacher can play an important role in the development of motivation by taking the following steps:

STEP 1. The teacher should emphasize the importance of achievement motive in life by the means of narrating the exploits of great personalities and their achievements. Students may be motivated to follow the footsteps of great persons.

STEP 2. The teacher's encouraging and friendly attitude and his enthusiasm in work will to create the necessary environment for the achievement motive in children.

STEP 3. The teacher will guide the students in developing realistic achievement motives.

STEP 4. Attempts should be made to convince the students that new motives will improve their self-image and is an improvement upon the prevailing ones.

STEP 5. The teacher should develop habits of self-study among students.

STEP 6. The teacher should encourage the students to evaluate their own achievement from time to time.

STEP 7. The teacher should develop conducive social environment in the class so that even, student should think that he is wanted and has a role to play.

Rewards and Punishments in Motivating Children

No Misfit Children—Punishment by Natural Consequences: 'There are misfit schools, misfit tests and studies, misfit dogmas and traditions of pedants and pedantry. There are misfit homes, misfit occupations and diversions. In fact, there are all kinds and conditions of misfit clothing for children, but in the nature of things, there can be no misfit children,' writes Frederick Burk. Educationists representing such a school of thought protest against all sorts of well-established systems of rewards and punishments. Their watchword is 'Freedom to the child,' because they think that by nature, a child is innocent and noble and adult restrictions and discipline simply spoil the intellect of the child and stand in the way of his progress and happiness.

Bertrand Russell remarks, 'The man whose tongue is constricted by laws or taboos against free speech, whose pen is constricted by the censorship, whose laws are constricted by an ethic which considers jealousy a better thing than by affection, whose childhood has been imprisoned in a code of manners, and whose youth has been drilled in cruel orthodoxy, will feel against the world that hampers him with the same rage that is felt by the infant whose arms and legs are held motionless. In this rage he will turn to destruction becoming a revolutionary militarist, or a prosecuting moralist according to temperament and opportunity.'

Similarly, the votaries of 'Free discipline,' would dub all rewards as bribery.

They believe in the discipline of natural consequences and are convinced that natural punishments are the best and leave no room for punishments in the life of the school. Rousseau says, 'Children should never receive punishment as such—it should always come as the natural consequence of their fault.' Sir T Percy Nunn writes, 'The conviction that punishment and the fear of punishment are the natural foundation of school government, is gradually being recognized as merely a barbarous superstition.' A S Neill, in his book, *'The Free Child'* writes, 'My contention is that unfree education ignores almost entirely the emotions of life, and because these emotions are dynamic, their lack of opportunity for expression must and does result in cheapness, ugliness and hatefulness. Only the head is educated, but if the emotions are free, intellect will look after itself.'

Herbert Spencer would like the child to suffer the unavoidable consequences of his conduct.

Punishments are Indispensable: Bagley puts it, 'The child is immature and helpless and he must not be given a long rope with which he may hang himself.'

Bray justifies punishments with these words, 'Punishment is the lesser evil applied to avoid the greater one that lives in the future.' It is always seen that evil if not checked in time brings havoc ultimately. 'Nip the evil in the bud' is an old saying.

P C Wren, though admits that punishment is an evil thing to be avoided, yet says that it is a necessary evil like the surgeon's knife.

According to H Thring, school punishment is not vengeance. Its object is training, first of all the training to the wrong-doer; next the training to other boys by his example. Both he and others are to be deterred from committing the offence again.

The naturalists dub all rewards as bribery. They think these rewards have a demoralizing effect on the child because they tempt the child to work not for duty's sake but for the sake of prize.

Rewards sometimes lead to unhealthy jealousies among students. Moreover, they affect only a few students and leave the group on the whole untouched. They encourage unnecessary competition and affect emotional development adversely.

The protagonists of the system of rewards, on the other hand, argue that the rewards provide incentive to the students to work hard. They contend that society as a whole is governed by a system of rewards and punishments.

Psychologically also the system of rewards and punishments can be justified if we take into account the Law of Effect as enunciated by Thorndike.

Rewards provide incentive for healthy emulation among individuals and group of individuals.

When the work of the students is given appreciation in the presence of others, they feel encouraged and reinforcement is provided. This helps in infusing great confidence in them.

It gives happiness to the parents when their children get prizes. They encourage their children to put in all the more labour.

Rewards may be given for:

(a) Regular and punctual attendance.

(b) Good conduct.

(c) Progress in studies.

(d) Proficiency in games, etc.

(e) Service rendered for a noble cause.

3.5 SUMMARY

- Learning is the most common activity each one of us is involved in. At every point of time in our life, we are learning something. An individual starts learning from the very first day of his life that is just after he is born.

- Learning can be defined as 'the relatively permanent change in behaviour brought about as a result of experience or practice'.

- There are three components of behaviour: (i) conative, (ii) cognitive and (iii) affective.

- There are various types of abstract learning. These include memorizing learning material with little or no understanding of its meaning (formulae or equations, for example), learning simple concepts like addition or subtraction, discovering and understanding relationships involving responses that are logical and psychologically sound.

- There are various characteristics of learning. It is a process of change in behaviour, involves stimulus and response, is a relatively permanent change, is an ongoing process, is universal, not always positive, is goal directed activity etc.

- There are different types of learning including deliberate learning, unconscious learning, signal learning, operant conditioning, chain learning, concept learning, problem-solving etc.

- The principles of learning are the law of pragnanz, law of similarity, law of proximity, law of closure, and law of good continuation.

- There are numerous theories of learning but they are generally categorized as stimulus response theories and cognitive field theories.

- The transfer of learning is the application or carry-over of knowledge, skills, attitudes, habits, values or other responses from the situation in which they were initially acquired to some other situation for which they were not specifically learned.

- There are different types of transfer of learning: lateral transfer, sequential transfer, horizontal transfer, vertical transfer and bilateral transfer.

- Important theories of transfer of learning are the theory of mental discipline, theory of identical elements, theory of generalization of experience, theory of ideals and gestalt or relationship theory.

- The word motivation has been derived from the Latin word *movers* which means to move. Motivation is an internal force which accelerates a response or behaviour. Some learners learn the same subject-matter or task more efficiently than others, some find it more rewarding and interesting than others; and some enjoy it more than others.

- There are different classroom motivation techniques: attractive physical and environmental conditions, sublimation of innate impulses, stimulus variation and the teacher, reinforcement, competition and cooperation among others.

- There are several theories of motivation: pawn theory, instinct theory, need theory, social theory, psychological theory etc.

3.6 KEY TERMS

- **Learning:** It is the relatively permanent change in behaviour brought about as a result of experience and practice.

- **Life-space:** It refers to the field of forces to which the individual is responding or reacting.

- **Motivation:** It is an internal force which accelerates a response or behaviour.

- **Transfer of leaning:** It is the application or carry-over of knowledge, skills, attitudes, habits, values or other responses from the situation in which they were initially acquired to some other situation for which they were not specifically learned.

3.7 ANSWERS TO 'CHECK YOUR PROGRESS'

1. The three components of behaviour are conative, cognitive and affective.

2. According to the type of development, learning is classified as: academic learning, (ii) emotional learning, (iii) intellectual learning, (iv) moral learning, (v) motor learning, (vi) sensory learning, and (vii) social learning.

3. According to the law of proximity, perceptual groups are favoured according to the nearness of the parts'. This means that we perceive all closely situated or located things as groups.

4. Bruner identified four strategies in concept attainment: (1) simultaneous scanning strategy, (2) successive scanning strategy, (3) conservative focusing strategy, and (4) focus gambling strategy.

5. Storage is the phase III of Gagne's hierarchy of learning.

6. The transfer of learning implies the application of knowledge in various subjects and fields. Whatever is taught in the schools, it is assumed that children will use that knowledge, skills, attitudes and information to solve problems of life after completing their formal education.

7. In sequential transfer, the contents of the subjects of school curriculum are divided into sequent units. One idea leads to another and both ideas have some relationship to the third idea to be taught.

8. As per the theory of identical elements or components, learning is facilitated in the new situation to the extent that identical elements which occurred in an earlier situation are present in the new situation.

9. Motivation is an indispensable technique for learning because the desirable changes in learner's behaviour are only possible when a learner is properly motivated.

10. Incentive is an object or external condition perceived as capable of satisfying an aroused motive that tends to elicit action to attain that object of condition.

11. According to the stimulation theory, all inner and outer stimuli that bear upon a person at one time constitute his psychological fields and determine his behaviour jointly through interaction.

12. The naturalists dub all rewards as bribery as they think these rewards have a demoralizing effect on the child because they tempt the child to work not for duty;s sake but fir the sake of prize.

3.8 QUESTIONS AND EXERCISES

Short-Answer Questions

1. Write a short note on Gagne's hierarchy of learning.

2. What are the characteristics and functions of motivation?

3. Enlist the role of the teacher in the transfer of learning.

4. What are the conditions that facilitate the transfer of learning?

5. Briefly explain the different types of learning

Long-Answer Questions

1. Discuss the classroom implications of field theory.

2. Explain Hull's reinforcement theory.

3. Describe the different techniques of classroom motivation.

4. Assess the theory of achievement motivation.

5. Describe the special characteristics of learning.

6. Write an essay on the concept of punishments being indispensable.

3.9 FURTHER READING

Thorndike, R.L. 1970. *Measurement and Evaluation in Psychology and Education*. New Delhi: Wiley Eastern Limited.

Schunk, D.H., J.L, Meece, P.R. Pintrich. 2013. *Motivation in Education: Theory, Research, and Applications.* New Jersey: Pearson.

Elsworth, D.H. 2009. *Motivation in Education.* New York: Nova Science Publishers.

UNIT 4 INDIVIDUAL DIFFERENCE

Structure

4.0 INTRODUCTION

In a classroom environment, it is very crucial for the teacher to have a good understanding of the general psyche of the students, so that they can work upon and adjust their teaching methods to enhance the performance of the students in a particular class. No individual is alike, they differ from each other in various ways and due to multiple reasons. Their differences are rooted not just in their biological traits but also gets reflected through mental capabilities like the level of intelligence, personality and their learning ability. Since the field of psychology is so complex, various psychoanalyst have come up with different theories to not only define but categorize various individual differences.

In this unit, you will learn about the meaning, types and determinants of individual difference; the concept and types of intelligences; the meaning and nature of personality and the concept and process of adjustment.

4.1 UNIT OBJECTIVES

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

- Discuss the meaning, types and determinants of individual difference
- Describe the concept and types of intelligences
- Explain the meaning and nature of personality
- Recall the concept and process of adjustment

4.2 MEANING, TYPES AND DETERMINANTS OF INDIVIDUAL DIFFERENCE

In this section, we will discuss the meaning, types and determinants of individual difference with examples.

4.2.1 Meaning of Individual Difference

Scottist psychologist, Drever James has given the following definition of individual difference:

'Variations or deviations from the average of the group, with respect to the mental or physical characters, occurring in the individual member of the group are individual differences.'

This is to say any characteristic or number of characteristics which make one individual distinct from another can be termed as individual difference.

4.2.2 Types of Individual Differences

Let us analyse the different types of individual differences.

1. Differences in physical features

Individual differences with regards to physical characteristics are reflected in the height or the level of shortness or tallness of stature, the shade or the colour of the complexion i.e the darkness or fairness, and other features like the thickness, thinness or the weakness of body parts.

2. Differences in intellectual capabilities

Not all individuals are the same. The intelligence level varies from person to person. Generally, the individuals based on their intellect can be categorized as super-normal (above 120 I.Q.) or idiots (from 0 to 50 I.Q.), by measuring them through an IQ test.

3. Differences in attitudes

Individuals have varied outlooks. They differ from each other on opinions related to numerous subjects like people, objects, institutions and authority.

4. Differences in achievement

It cannot be possible for all people to achieve the same things in life. These are evident in the disparities with regards to the capabilities in general to difficult activities like reading, writing and learning mathematics.

These variances can be seen more clearly when we observe children who fall into the similar stage of intelligence. The differences are a result of distinct determinants like life experiences, educational history, and interests of the individual which affects the level of achievement attained.

5. Differences in motor ability

Even in the category of motor ability, there can be seen different level of motor skills which change according to the different age. For example, for some people it is easier to

complete mechanical tasks much effortlessly compared to others who struggle to complete the same task.

6. Differences on the basis of sex

American psychologists like Quinn McNemar and Lewis Terman observed some differences between the female and the male sex on the basis of certain studies:

   (i) It was observed that while women have much better memory building skill, men are good at motor skills.

  (ii) When comparing handwriting women are much better, while men ace in the category of logic and mathematics.

 (iii) Women are mastery in cases of sensory distinctions with regards to taste, touch and smells etc. On the other hand, men are more competent in displaying greater reaction and perceiving the illusion of size-weight.

 (iv) Women fair better than men in languages, while men come out ahead in the field of physics and chemistry.

  (v) When talking about mirror drawing, women trump men. In the case of faults of speech too, men were recorded to have thrice as many faults as women.

 (vi) Women are far more impressionable when it comes to suggestions and the cases of colour-blindness in men is close to three times higher in men than in women.

 (vii) They observed that themes of love, home, school, fairytales and day dreaming attracted young girls and was reflected in varying degrees during their play time. Boys, in contrast, were more interested in tales of courage, science, war, sports or occupational skills.

7. Differences as a part of a race

Individuals as humans differ from each other on the basis of the race they belong too. An element which is responsible for this is the environment which varies in different regions. Karl Brigham is credited with coming up with a list which showcases these differences in people in terms of level of intelligence, taking the immigrants to US as his subject of study. He concluded that it is not possible to measure the level of intelligence of an individual because the environment is dominating factor in their mental growth.

8. Differences as a result of nationality

Difference among individuals also arise due to the fact the people belong to or reside in different nations. This distinctness can be observed in the physical and mental faculties, their general personalities and attitudes and their hobbies or interests. There are some general differences or notions which are widely perpetuated like Russians are tall and stout in stature; Germans have a very poor sense of humour; Yellow races are known to be cruel and revengeful; American's in their attitude are frank and hearty and Indians are generally timid and peace-loving people.

9. Differences arising due to economic status

The financial situation of an individual plays a huge role in the nature of hobbies and interests of the children or adults. In fact, the economic status also has an influence over their general outlook on life.

10. Differences in interests

Thre can be several factors responsible for the variances in the interests of the individuals. These include elements like their gender, family background, economic status, the level of development of the environment they belong too, their race, nationality among other determinants.

11. Emotional differences

Individuals also differ from each other with respect to the way they react to a particular situation. Emotionally, while some people are known to be very calm and composed, others lose their temper quite easily. For example, in a particular situation, depending on the emotional make-up, one individual may surpass his/her threshold of anger and commit heinous crime while another might brush off the issue with a hearty laughter.

12. Personality differences

Individuals differ from each other in terms of personality too. In fact, there have been many researchers who have categorized humans based on their personalities into different classifications.

German philosopher and psychologist Spranger came up with a six-part personality classes:

Theoretical, economic, social, aesthetic, political and religious.

Swiss philosopher and psychologist Carl Jung, on the other hand, divided people into three groups: Introverts, extroverts, and ambiverts. This was further divided into a total of eight personality types.

Trottor was of the opinion that personalities can be divided into two types: stable minded and unstable minded.

Jordon, in his study propounded that personalities can be categorized active or reflective type.

Thorndike has created four classes for people based on their thinking: Abstract thinkers, ideational thinkers, object thinkers, and thinkers with predominant sensory experience.

Terman uses the base of intelligence for categorizing people into nine different classes. These are in the descending order: genius, near genius, very superior, superior, average, backward, feebleminded, dull and idiot.

It is a very common fact that not every individual can be the same. While some people are known to be honest, others don't give honesty the same importance in their behaviour; some people are short-tempered, others are very calm even like the eye of the storm; some are the life of the party, while others feel more comfortable alone; some are blunt and others prefer staying a little sympathetic. It can be observed that the variances in the personality are a result of the specific personality traits. In a classroom, it is very important for a teacher to be aware of the differences in the personalities of the students, so that each can be taught in the best manner possible.

4.2.3 Causes of Individual Differences

Various different factors can be responsible for the rising of the individual difference. We will look at the major causes in the following section.

1. Heredity factors

This is the top most and crucial factor of individual difference. There are numerous things that an offspring inherits from his/her parents. These include physical features like eye colour, hair and skin type, susceptibility to certain diseases like cancer and TB, shape of skull etc. Then there are mental traits which include the level of intelligence, aptitudes, prejudices and notions etc. Hereditary differences are infact based on the variances in the make-up of the unique proportion and the rate of development of the physical and mental features.

2. Immediate environment

Environment too plays a crucial role in reflecting in the individual differences. A very basic example can be observed through a young child, whose personality alters because and with the change in the environment. In psychologically terms, the total amount of stimulations a person receives throughout his life can be called as the person's environment.

Environment is a very complex term. It is consistent of varied forces like consists of physical, political, moral, social, intellectual, economic and cultural elements. These forces act together to represent the individual differences. Modern psychologists are of the belied that heredity and environment together are responsible for the individual differences. Thus, it can be said that personality results from the mutual interaction of the two forces of environment and heredity.

3. Caste, nation and race

There can be seen very prominent differences between individuals belonging to varied castes and races. What this implies is that, it has been believed that the son of person belonging to a Kshatriya displays bravery more prominently while the grit for business is more visible in the child of a trader.

As discussed before, we tend to associate different nations with different personalities. These may be attributed to the cultural, social and geographical environment they live in. Various studies have shown prominenet distinctions between people from different communities like the Americans and Negros, Chinese and Japanese etc.

4. Difference arising due to sex

There is also the individual difference due to the way the female and male body develops. There is a gap of close of one to two years between the development of the body in girls in comparison to the boys. Girls tend to weigh more and taller in height than the boys in between the age of 11 and 14. But post fifteen years of age, boys overtake them.

Even behaviour wise, although they might be considered as stereotypes, girls are found to be more sympathetic, affectionate, kind and tender in nature. Boys on the other hand, display emotions of are courage, roughness, and competency.

5. Age and intelligence

With the ascending of the ladder of age, there is also generally an upward growth in the physical, intellectual and emotional development. Individuals differ from each other on the basis of their mental capabilities. When it comes to learning, individuals with below average intelligence and mental age have problems in learning while the people who have average intelligence are comparatively quick learners.

s6. Stability in temperament and emotions

It can be observed that people differ from each other in terms of temper, humour and wit. Stability in terms of emotions reflected in the individual differs because of varied physical, mental and environmental elements. This difference is stability related to the emotions then results in differences in individuals.

7. Other causes

Individual differences may also rise due to other factors like interests, achievements, aptitudes, sentiments, educational, character and background.

8. Economic condition and education

Financial situations of the parents and the level till which the child has completed his/her education too guides the differences in individuals. Generally, it is seen that children from different economic backgrounds do not have similar traits or attitudes.

4.3 CONCEPT AND TYPES OF INTELLIGENCES

There is no agreed definition of intelligence. In fact, there are as many definitions of intelligence as there are writers on the subject. P.B. Ballard (1913) has observed: 'While the teacher tried to cultivate intelligence and the psychologist tried to measure intelligence, nobody seems to know what intelligence was'. On account of the different ways in which intelligence is interpreted, it has become less acceptable and more exposed to criticism by psychologists. Nevertheless, it is traditionally acknowledged by the parents and the teachers that intelligence is the single most important variable which affects success in school and in life. In general terms, intelligence means the manner with which an individual deals with facts and situations. Intelligence is the aggregate or the global capacity of the individual to act purposefully, to think rationally, and to deal effectively with the environment. To quote Prof. R.R. Kumria: 'Call it practical wisdom; call it commonsense; call it genius, it is just the same in different names and grades.'

4.3.1 Fourfold Classification of Definitions of Intelligence

A variety of definitions of intelligence have been suggested by the psychologists, which can be classified into at least four distinct groups.

The first group of definitions places the emphasis upon the adjustment and adaptation of the individual to his total environment or to its limited aspects. According to this group, intelligence is general mental adaptability to new problems and to new situations of life.

The second group of definitions of intelligence 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 definitions.

These categories of definitions are not, and perhaps cannot be mutually exclusive. They intersect and overlap at many points.

I. Ability to adjust

1. *Binet* (1905)—'Ability of an individual to direct his behaviour towards a goal.'

2. *Boyniton*—'It is an inherited capacity of 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.'

3. *Burt* (1949)—'It is the power of readjustment to relatively novel situations by organising new psycho-physical coordination.'

4. *F.N. Freeman* (1937)—'Intelligence is represented in behaviour by the capacity of the individual to adjust himself to new situations, to solve new problems, to learn.'

5. *Johnson*—'It stands for an ability to solve the general run of human problems to adjust to new situations.'

6. *J. Piaget* (1926)—'Adaptation to physical and social environment.'

7. *Peterson*—'It is a mechanical means for adjustment and control.'

8. *Pinter* (1921)—'The ability of the individual to adapt himself adequately to relatively new situations to life.'

9. *Stern* (1941)—'Intelligence is a general capacity of an individual, consciously to adjust his thinking to new environment.'

10. *Van Wagemen*—'It is the capacity to learn and to adjust to relatively new and changing conditions.'

11. *William James* (1907)—'It is the ability to adjust oneself successfully to a relatively new situation.'

12. *William McDougall* (1923)—'It is the capacity to improve upon native tendency in the light of past experience.'

II. Ability to learn

13. *Buckingham* (1921)—'Intelligence is the learning ability.'

14. *Calvin*—'It is the ability to learn.'

15. *Spearman* (1927)—'Intelligence may be thought of in terms of two abilities i.e., "g" or general and "s" or specific.'

16. *Thurstone* (1946) defines intelligence in terms of five primary abilities (discussed in the following pages).

17. *Woodrow*—'It is the capacity to acquire.'

III. Ability to do abstract reasoning

18. *C. Spearman* (1927)—'General intelligence which involves mainly the education of relations and correlates.'

19. *E.L. Thorndike* (1931)—'We may define intelligence in general as the power of good responses from the point of view of truth or fact.'

20. *Gates and Others* (1955)—'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.'

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21. *Henry Garrett* (1946)—'The abilities demanded in the solution of problems which require the comprehension and use of symbols, i.e., words, numbers, diagrams, equations, formulae.'

22. *J.M Hunt* (1966)—'The technique that a child acquires for processing information supplied by his senses.'

23. *L.M. Terman* (1921)—'An individual is intelligent in proportion as he is able to carry on abstract thinking.'

24. *Munn*—'Intelligence is the flexibility or versality to the use of symbolic processes.'

25. *P.E. Vernon* (1927)—'Allround thinking capacity or mental efficiency.'

IV. Operational Definitions

26. *Boring* (1948)—'Intelligence is what intelligence tests.'

27. *Dockell* (1970)—'Intelligence might be taken to mean "ability" i.e., what a person can do at a moment.'

28. *D.O. Hebb* (1949) describes three situations in which the term intelligence could be used.

29. *D. W. Wechsler* (1950)—'Intelligence is the aggregate or the global capacity of the individual to act purposefully, to think rationally and to deal effectively with the environment.'

30. *G.D. Stoddard* (1943)—'Intelligence is the ability to undertake activities.'

31. *Hein*—'Intelligence activity consisting in grasping the essentials in a situation and responding approximately to them.'

32. *Well*—'Intelligence is the property of recombining our behaviour pattern as to act later in novel situations.'

4.3.2 Historical Review and Evaluation of Definition of Intelligence

A. Binet (1905), a French psychologist, was the first to take interest in intelligence. He defined intelligence as the ability of an individual to direct his behaviour towards a goal, to make adaptation in his goal-oriented behaviour when necessary, to know when he reached the goal. Comprehension, invention, direction and censorship: intelligence lies in these four words. A.L. Terman (1916) defined intelligence as an individual's ability to carry on abstract thinking. In the words of Thompson, 'the definition presented by Terman probably reflects most adequately our present functional definition of intelligence'. E.L. Thorndike (1926) further elaborated the definition given by Terman. He defined intelligence in terms of three somewhat independent dimensions: (i) attitude, (ii) breadth, and (iii) speed. In 1946, L.L. Thurstone identified the following more or less mutually exclusive components of intelligent behaviour:

S, or *space factor*: the ability to visualize flat or solid objects, heavily involved in mechanical aptitude.

N, or *number factor*: ability in the carrying-out of the rather simple numerical exercise similar to those used by a cashier.

V, or *verbal comprehension factor*: ability to deal with verbal concepts, e.g., verbal reasoning, and vocabulary availability.

W, or *word fluency factor*: ability to produce words in a restricted context, i.e., a child may be fluent even though he has a small vocabulary.

M, or *memory factor*: ability to store and reproduce perceptual-conceptual materials.

Induction factor: facility in discovering the principle or rule that applies to a series of problems.

Deduction factor: only a small amount of evidence for—ability to apply a given principle to a series of specific problems.

Flexibility and speed to closure: ability to interpret instructions quickly. Facility to size up a problem situation quickly; flexibility is the ability to abandon one configuration in favour of a more promising one.

G.D. Stoddard and B.L. Wellman (1934) offer a seven-category definition of intelligence:

'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, and
  (7) The emergence of originals and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional force.'

J.P. Guilford (1950) thinks that these definitions ignore the important concept of creativity and thus provide a narrow approach to intelligence

D. Wechsler (1950) concludes that general intelligence is more than a combination of the cognitive functions identified by Thurstone and others.

In Wechsler's view, general intelligence is influenced by certain conative factors like drive, will, perseveration and persistence; by certain emotional factors like anxiety and impulsiveness; and by other more general personality characteristics.

G. Thompson (1975) sums up the discussion in these words: 'There is no absolute definition of intelligence. A theoretical construct may be changed at any time. According to the law of parsimony, the simplest yet most fruitful definition will eventually prevail. Thurstone's approach to the definition and measurement of children's intelligence is challenging. Whether this approach will be more valuable than those of Binet and Terman is of course unknown.'

Intelligence and scholars of ancient India

Kautilya defines it as the ability for work.

According to Visnusarma, it is the power which enables human beings to control the world.

The *Brahmasutra* tells us that intelligence is the gift of God and it is fixed at birth.

The *Agnipurana* prescribes diet for infants to help the growth of their intelligence.

Agadhabuddhi or intelligence that cannot be measured or superior intelligence.

Mahabuddhi or great intelligence, *malin buddhi* or dull intelligence

Sthirabuddhi or calm intelligence.

Atpabuddhi or little intelligence.

In ancient India, intelligence was measured through conversation, physical features, gestures, gait, speech, changes in the eye and facial expression.

4.3.3 Chief Characteristics and Generalizations on Intelligence

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 a 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 fourty knows more than 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.

- **Intelligence and influence of environmental factors:** It is certainly justifiable to assume that love, affection, concern and generosity judiciously bestowed on growing children, have very desirable effects with regards to intelligence. Poor environments retard development of intelligence.

  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.

- **Intelligence, adjustments and inventions:** An intelligent person has the ability to adjust himself to the changing circumstances with ease, efficiency and speed. He has the capacity to assimilate ideas very quickly and clearly. He can cope with new situations very successfully. All the inventions of the world can be attributed to persons of very high intelligence.

  The unintelligent or the dullard fails to think of new situations. They are always guided by others. They lack originality.

- **Distribution of intelligence:** The majority of the school children, say about 60 per cent, are found in the I.Q. range 90–110 and are referred to as 'normal' or 'average'.

- **Intelligence and sex differences:** Generally speaking, the research studies show that the average scores of the sexes are strikingly similar.

- **Intelligence and race differences:** Every racial and cultural group contains some gifted children. Franz Boas states, 'if we were to select the most intelligent, imaginative, energetic and emotionally stable third of mankind, all races would be represented'.

Three Broad Areas of Intelligent Behaviour

Thurstone has suggested that we may recognize at least three broad areas of intelligent behaviour:

(i) *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.

(ii) *Mechanical Intelligence*—This includes, 'the ability to clean, to understand and manage things and mechanisms, such as a knife, a gun, a moving machine, and automobile, a boat, a lathe'.

(iii) *Social Intelligence*—This is the 'ability to understand and manage men and women, boys and girls to act wisely in human relations'.

Intelligence Curve

If we plot a measure of intellectual development against chronological age from birth to adolescence using a random subject we will obtain S = shaped curve (Figure 8.1).
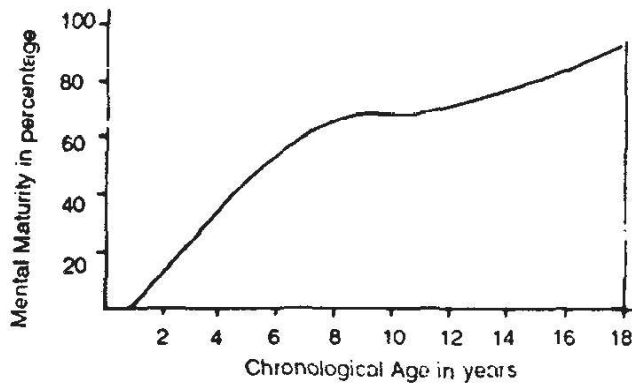

Fig. 8.1 *Intelligence Curve*

The following points come to light from the curve:

1. During early childhood, there is a period of relatively rapid growth of intelligence followed by a slower rate during adolescence.

2. During childhood, the curve is more or less linear.

3. Mental development reaches almost at its maximum during early adult years.

Non-definable nature of intelligence

Some argue, '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.'

Intelligence and different occupations: Usually scholars, executives in business and government and scientist possess high abstract intelligence.

A successful civil engineer presumably possesses high abstract as well as high mechanical intelligence. Similarly, other types of engineers possess a combination of like abilities.

A successful criminal lawyer possesses high abstract as well as social intelligence.

Mechanics, expert carpenters and plumbers possess above normal mechanical intelligence.

Of course, these are crude generalizations.

4.3.4 Types of Intelligence

The various types of intelligence are as follows:

1. Naturalist intelligence

This type of intelligence designates the human ability to discriminate among living things (plants, animals) as well as sensitivity to other features of the natural world (clouds, rock

configurations). This ability was clearly of value in our evolutionary past as hunters, gatherers, and farmers; it continues to be central in such roles as botanists or chef. It is also speculated that much of our consumer society exploits the naturalist intelligences, which can be mobilized in the discrimination among cars, sneakers, kinds of make-up, and the like.

2. Musical intelligence

Musical intelligence is the capacity to discern pitch, rhythm, timbre, and tone. This intelligence enables us to recognize, create, reproduce, and reflect on music, as demonstrated by composers, conductors, musicians, vocalist, and sensitive listeners. Interestingly, there is often an affective connection between music and the emotions; and mathematical and musical intelligences mayshare common thinking processes. Young adults with this kind of intelligence are usually singing or drumming to themselves. They are usually quite aware of sounds others may miss.

3. Logical-mathematical intelligence

Logical-mathematical intelligence is the ability to calculate, quantify, consider propositions and hypotheses, and carry out complete mathematical operations. It enables us to perceive relationships and connections and to use abstract, symbolic thought; sequential reasoning skills; and inductive and deductive thinking patterns. Logical intelligence is usually well developed in mathematicians, scientists and detectives. Young adults with lots of logical intelligence are interested in patterns, categories, and relationships. They are drawn to arithmetic problems, strategy games and experiments.

4. Existential intelligence

Sensitivity and capacity to tackle deep questions about human existence, such as the meaning of life, why do we die, and how did we get here.

5. Interpersonal intelligence

Interpersonal intelligence is the ability to understand and interact effectively with others. It involves effective verbal and nonverbal communication, the ability to note distinctions among others, sensitivity to the moods and temperaments of others, and the ability to entertain multiple perspectives. Teachers, social workers, actors, and politicians all exhibit interpersonal intelligence. Young adults with this kind of intelligence are leaders among their peers, are good at communicating, and seem to understand others' feelings and motives.

6. Bodily-kinesthetic intelligence

Bodily kinesthetic intelligence is the capacity to manipulate objects and use a variety of physical skills. This intelligence also involves a sense of timing and the perfection of skills through mind–body union. Athletes, dancers, surgeons, and craftspeople exhibit well-developed bodily kinesthetic intelligence.

7. Linguistic intelligence

Linguistic intelligence is the ability to think in words and to use language to express and appreciate complex meanings. Linguistic intelligence allows us to understand the order and meaning of words and to apply meta-linguistic skills to reflect on our use of language. Linguistic intelligence is the most widely shared human competence and is evident in

poets, novelists, journalists, and effective public speakers. Young adults with this kind of intelligence enjoy writing, reading, telling stories or doing crossword puzzles.

8. Intra-personal intelligence

Intra-personal intelligence is the capacity to understand oneself and one's thoughts and feelings, and to use such knowledge in planning and directioning one's life. Intra-personal intelligence involves not only an appreciation of the self, but also of the human condition. It is evident in psychologists, spiritual leaders, and philosophers. These young adults may be shy but they are very aware of their own feelings and are self-motivated.

9. Spatial intelligence

Spatial intelligence is the ability to think in three dimensions. Core capacities include mental imagery, spatial reasoning, image manipulation, graphic and artistic skills, and an active imagination. Sailors, pilots, sculptors, painters, and architects all exhibit spatial intelligence. Young adults with this kind of intelligence may be fascinated with mazes or jigsaw puzzles, or spend free time drawing or daydreaming.

4.4   MEANING AND NATURE OF PERSONALITY

The meaning and definition of any term is arbitrary. This also holds true in case of the word personality. To arrive at its meaning, we have to trace the historical root of the word. The term personality has been derived from the Latin word '*Persona'* that was associated with Greek theatre in ancient times. *Persona* meant a mask, which the Greek actors commonly used to wear when they worked on the stage. In our own country, actors in Ram Lila and Krishna Lila use masks when they enact the role of a particular character from the epics.

The mask, worn by the actors, was called a persona. According to the concept of mask, personality was thought to be the effect and influence that the individual wearing a mask left on the audience. Even today, for a layman, personality means the effect that an individual leaves on other people. Precisely, we can say that the mask or persona of the actor implied a cover for the real person behind it. It was developed on the basis of Plato's idealistic philosophy, which said that personality is a mere facade for some substance.

1. ***Personality as a stimulus:*** Some psychologists define personality in terms of its social stimulus value. How an individual affects other persons with whom he/she comes in contact, whether he/she is impressive or repulsive, whether he/she has a dominating or a submissive personality. Personality, from this point of view, becomes identical to reputation and impression, mostly in terms of physical appearance, clothing, conversation and etiquette. Generally, we use this concept of personality in selecting applicants for various jobs and courses. The interviewers take into consideration the total picture of an individual's organized behaviour.

2. ***Summative approach:*** The second approach of defining personality emphasizes the importance of sum total of different processes and activities of the individuals as, for example, innate dispositions, habits, impulses, emotions, etc. This approach was criticized by Gestalt psychologists who objected to the idea of aggregation or sum total of parts without introducing the concept of organization and integration of parts into a total whole.

3. ***Integrative approach:*** The definitions of this category lay emphasis on the integrative aspects of personality and its definite pattern of organization. Warren's dictionary defines personality as, 'personality is the integrative organization of all the cognitive, affective and physical characteristics of an individual as it manifests itself in focal distinction from others.' G.W. Hartman defined it as, 'personality is integrated organization of all the pervasive characteristics of an individual as it manifests itself in focal distinctiveness from other.'

4. ***Totality view:*** This approach to define personality puts more emphasis on integration than the first category of definitions given above. It forgets the part. According to this view, the general characterization or pattern of an individual's total behaviour is his personality. A man's personality is the total picture of his organized behaviour, especially, as it can be characterized by his fellowmen in a consistent way. Mark Sherman in his book *Personality: Inquiry and Application* (1979) has defined personality as, 'the characteristic pattern of behaviour, cognitions and emotions which may be experienced by the individual and/or manifest to others.'

5. ***Personality as an adjustment:*** An individual, since his birth, attempts to adjust to his environment. The behaviour of an individual can be defined as an adjustment to his environment. Every individual develops his own unique way of adjustment in the society. According to this approach, personality is an individual's characteristic pattern of behaviour. An individual, through his/her continuous reactions, attempts to adjust himself/herself in his/her environment. We can say that the sum of the individual's movements as he/she adapts himself to the environment is his personality.

We have described the various approaches to define the term personality. We will now examine the important definitions of personality. Fredenburgh, in his book, *The Psychology of Personality and Adjustment,* tried to summarize the various definitions in a single definition, which is,

> 'Personality is a stable system of complex characteristics by which the life pattern of the individual may be identified.'

Allport (1961) who devoted most of his time for research on personality defines, 'Personality is the dynamic organization within the individual of those psychophysical systems that determine his unique adjustment to his environment.' The definition given by Allport is very comprehensive and includes all aspects of an individual's personality. Some terms used in the definition need explanation. A dynamic personality is one that is undergoing constant changes but is still organized. It constitutes two types of systems, i.e., psycho (mental) and physical and these two systems interact with internal and external environment. The word 'determine' emphasizes that it is the psychophysical system that activates the organism for action.

The unique adjustment of the individual to his environment means that each individual employs different methods of adjustment resulting in unique adjustment. Guilford (1959) defines personality as 'an individual's personality, then, is his unique pattern of traits. A trait is any distinguishable, relatively enduring way in which one individual differs from another.'

Thus, we see that different approaches have been taken to define personality but there is no agreement on a single definition of personality. Though there is diversity of views but even then all psychologists agree on certain common basic characteristics. One basic fact is that personality is unique. No two individuals, even identical twins, have the same personality. The second basic fact regarding personality is that it is the product of its own functioning. What we do today depends on our accumulated experiences of the past. The experiences are accumulated daily and shape our personality by a continuous interaction with the external environment. The third common characteristic of most definitions is that they stress on the need to understand the meaning of individual differences. Personality is what makes an individual unique. It is only through the study of personality that the relevant differences among individuals can be made clear.

4.4.1 Development of Personality

According to Allport, personality development is related to the concept of self or propium. It includes all the aspects of personality that make for internal unity. The propium develops through conditioning, reinforcement, habits and other aspects of learning. Allport outlines the following stages of the development of propium or self or personality:

1. ***Bodily self (Birth to first year):*** During infancy, sensations provide the anchor. It is the feelings or awareness of one's own body.

2. ***Self-identity:*** After about eighteen months, the child is capable of recognizing himself/herself as a distinct 'person' and not merely a 'body'. He is aware of his likes and dislikes and his relationship with others in the immediate surroundings. The continuity of experience is made possible through the development of language.

3. ***Self-esteem (2 – 3 years):*** From second through third year of life emerges a sense of autonomy. The child is no more dependent on parents and experiences pleasure (pride) over his accomplishments and humiliation over his failure. He also develops negativism, *i.e.,* refusal to obey or receive orders from others. This results in the development of self-esteem.

4. ***Self-extension (4 – 6 years):*** The child meets people and develops new interests and habits and develops self-image. He develops conscience. He learns to confirm to the expectations of others. The child develops good and naughty selves. He is sensitive to praise and reprimand.

5. ***Self as a rational coper (6 – 12 years):*** The individual develops reasoning power and uses problem-solving approach. Allport calls this rational coper.

6. ***Propriate strivings (12 years – Adolescence):*** As the child reaches adolescence, he is able to distinguish between peripheral and propriate motives. Peripheral motives include impulses, drives and striving for immediate gratification of needs. Fulfilment of peripheral motives reduces tension. Propriate motives are our efforts to increase tension rather than to reduce it. The individual strives for important goals in life. The conversion of peripheral motives to propriate motives is called 'functional autonomy'.

7. ***Self as knower:*** It includes all the previous aspects of the propium.

According to Allport, traits differ in intensity and magnitude in general population from individual to individual. No two individuals are alike in their behaviour. They operate in their unique way in the environment. Each individual is unique in his adjustment to the world around.

4.4.2 Genetic and Cultural Factors of Personality

Let us analyse the genetic and cultural factors of personality.

Genetic

Let us first explain the meaning of the term heredity. Heredity is of two types: *biological heredity*, which the child inherits from his forefathers in the form of chromosomes and second is *social heredity*, which means all that one generation gets from preceding generations in the form of social traditions, customs and skills, etc. Each generation transmits the acquired skills and knowledge to the succeeding generations.

Principles of Heredity

Even a layman knows that a cat gives birth to kittens, lions have cubs and human beings have babies. Children generally resemble their parents or relatives. But we also find that in many cases children do not resemble their parents. There are numerous instances where intelligent parents have dull children or handsome parents have not-so-handsome children. This variation is universal in nature and is called the principle of variability of inheritance. There are two principles: one is of resemblance and the other of variability.

Genetic Material

We know that a tiny seed carries within itself all the elements from which there will emerge a full grown tree. In the same way, germ cells carry all the characteristics of a potential child. This is called the biological heredity of the child.

Mechanism of Heredity

When the human sperm and egg unite, the fertilized egg is called zygote. Each parent provides twenty three pairs of chromosomes, for the process of fertilization. The literal meaning of the term 'chromosome' is 'coloured body'. Every cell in the body contains the same number of chromosomes. The number of chromosomes in a cell is constant for a given species but varies widely from one species to another. All human cells have fourty-six chromosomes; half of the chromosomes come from the mother and half from the father. Within the chromosomes, there are thousands of genes. These genes are the carriers of heredity characteristics from one generation to another. Genes are minute particles located in the chromosomes.

The Genetic Code

In the year 1962, the Nobel Prize winners discovered the structure of the material of heredity which throws new light on the traditional views of the composition of chromosomes. Chromosomes are made up of long organic molecules whose substance, deoxyribonucleic acid (DNA) is found in the chromosomes as two long strands periodically connected by chemical bonds.

The most constant feature of genetic material is the order of four basic compounds connecting the two strands of DNA. Our heredity information is not in the long strands of DNA but in their order of appearance between the two strands of DNA. The sex of the individual is determined by genes. One pair of chromosomes is concerned with the sex of the child. Women have two special sex chromosomes called *X* chromosomes. Men have an *X* and a longer *Y*. Thus, we see that a male has both *X* and *Y* chromosomes while the female has only *X* chromosomes. If one of the *X* sperm unites with an egg, also carrying an *X* chromosome, then the child will be a girl. If a *Y* sperm meets an egg, the offspring will be a male child.

Dominant and Recessive Traits

Genes, the carriers of human traits, are of two types; dominant and recessive. Genes occurring in paired positions along the chromosomes carry contributions toward the same characteristics but can give information of development. One gene may cause development of blue eyes while matched gene in the other chromosome may act to produce brown eyes. When both genes of the chromosomes act to foster identical characteristics in the offspring, this is said to represent the homozygous condition. If the information concerning a given characteristic differed in the paired gene position, the condition is called heterozygous. In many cases, one of the tendencies of the pairs of genes found in the heterozygous condition will dominate. Thus, when a child inherits a gene for blue eyes from one parent and a gene for brown eyes from the other, the child will have brown eyes. Therefore, we call the gene for brown eyes dominant.

Genetic Influences

Laws of Mendel: Gregor Mendel (1866) published the results of his continuous painstaking observation of cross-breeding of plants. He discovered the laws of inheritance in hybrid peas growing in the garden of an Austrian monastery. His principles of inheritance have been found applicable to plants and animals when the particular characteristic is determined by a single gene.

The Mendelian law of inheritance may be summarized as, 'If a man who is homozygous for blue eyes marries a woman homozygous for brown eyes, the children of this couple will have only brown eyes.' Now what happens if a heterozygous man marries a heterozygous woman? The distribution of children from this marriage will be such that one-fourth of them will be homozygous for brown eyes (*BB*); one-half of them will be heterozygous (*Bb*), and one-fourth will be homozygous for blue eyes (*bb*). Mendel's most valuable contribution is that all genetic information comes to the individual in units rather than in a graduated series. In other words, we receive from our ancestors genes controlling the development of specific unitary characteristics, not a mixture of various tendencies.

A second conclusion which may be drawn from the study of Mendel is that characteristics of men and animals tend to vary continuously along a dimension. As is the case with intelligence, we do not find a cluster of bright or dull people, but rather we find intelligence to be distributed in what appears to be a normal distribution among the population.

Cultural determinants

Every society is characterized by its cultural heritage which is transmitted from generation to generation in the form of social heredity. Indian society has a very rich cultural heritage and that could have a deep influence on children. Personality of an individual is gradually shaped by the culture he is born in. E.B. Tyler, the famous anthropologist, defined culture as, 'It is that complex whole which includes knowledge, beliefs, morals, law, custom and many other capabilities and habits acquired by man as a member of society.'

Culture refers to total life activities of a society. What people think or do and feel constitute the culture of a society. It is the physical way of life, social institutions and psychology of the people fused together. Biological inheritance is the same in human beings all over the world but it is the difference in their cultural conditions which develops distinctive personality characteristics in the individuals of different cultural groups. We

can easily identify people reared in different cultures by the personality patterns they possess. English, American, African and Indian can be identified by their cultural backgrounds. India is a big country having many sub-cultures within a broad culture. The personality of individuals within these sub-cultures is molded by the customs, beliefs, rituals and religious faiths and early childhood training of children. Culture is a great educator of human beings, sometimes directly and sometimes indirectly by the methods of training and passing on great social heritage, it leaves permanent impression on the personality of the child.

The importance of cultural forces in the development of personality is very great. The influence can be understood by an example. Suppose there are three identical twins who are adopted in three sub-cultures—homes of Muslim, Christian and orthodox Hindu. They are reared and trained in three different cultural backgrounds. It is obvious that the impact of culture will produce three distinctive types of personalities. Our attitudes, needs and aspirations are regulated by our culture. C. Kluckhohn, emphasizing the importance of culture in the life of the individual, said, 'Culture regulates our lives at every turn. From the moment we are born until we die there, whether we are conscious of it or not, constant pressure upon us to follow certain types of behaviour that other men have created for us.' In the course of development, society stabilized certain patterns of behaviour which are followed by the members of a society. It develops certain common personality characteristics in the members. Common characteristics develop in the members of a cultural group on three principles:

(a) Early experiences which the child gets in a culture.
(b) Child-rearing practices are culturally patterned so that children in a society are subjected to similar early experiences.
(c) Similar experiences lead to similar personality configuration.

Culture influences the personality development of an individual in the following ways:

(i) Internalization of values, ideas, beliefs and customs through the process of learning. A child since his birth is reared in a definite cultural background where he is taught values, customs, and beliefs, etc. which create distinctive personality characteristics in the child.

(ii) Institutionalization: Buildings of various religious prayers, books and cultural programs.

Many religions, faiths and creeds are found in India that follow different religious faiths, beliefs, prayers and cultural programs which create unique personality characteristics among the followers of different religions.

Anthropologists have made a study of the impact of culture on personality development. Margaret Mead conducted a study on adolescents in Samoa, a primitive culture. She concluded in her study that cultural conditions play an important role in moulding the personality patterns of individuals. According to her findings, the development of the sense of security seemed to be one of the chief factors determining the formation of personality.

4.4.3 Theories of Personality

Psychologists have developed several theories of personality to study its structure and growth. Some of these are as follows:

- Type theories

- Trait theories
- Psychoanalytic theories
- Phenomenological theories
- Learning theories of personality
- Social Behaviour theories
- Rotter's Expectancy–Reinforcement model

We will discuss the type theory, trait theory and the psychoanalytic theory in this section.

- **Type Theories**

It has been the nature of people, from ancient times, to name and classify objects of the environment and human beings into different categories called types. The old system of typology still continues and in modern times. Greek physicians were the first in 5 BC, who classified people four broad categories on the basis of emotional and temperamental characteristics. One of Aristotle's pupils theorized that human body consists of four fluids. The personality of an individual is typed by the dominance of one of them in the body. The four types of fluids are as follows:

S.No.	Humour	Temperament	Characteristics
1.	Blood	Sanguine	Active, hopeful
2.	Yellow bile	Choleric	Irritability, quick to anger
3.	Phlegm (Mucus)	Phlegmatic	Calm, temperamentally sluggish
4.	Black bile	Melancholic	Depressed, slow and pessimistic

If we study our own scriptures we find that in ancient India there existed an advanced system of Ayurveda, in which our ancient physicians broadly categorized all human beings on the basis of three elements in the body. The predominance of one of the three decided the category of the person. The three elements, which the Indian physicians theorized are *pitt* (bile), *bat* (wind) and *kuf* (mucus). It appears that this system of Hippocrates and Indian physicians were, more or less, similar. A number of typologies have been attempted for constitutional, temperamental and behavioural types of persons by philosophers and psychologists in the ancient and current literature.

Constitutional type

Ernest Kretschmer, a German psychiatrist, classified human beings on the basis of physical constitution. He attempted to establish relationship between personality characteristics and body type.

S.No.	Type	Characteristics
1.	Pyknic	Stocky, full-chested, popular
2.	Asthenic (Leptosomic)	Weak, tall, sensitive and thin
3.	Athletic	Strong
4.	Dysplastic	Mixed type

Somato type

William H. Sheldon, an American surgeon, divided all human beings into three broad categories of physical dimensions and their corresponding temperamental characteristics. He believed that physical structure of the body is the determinant of personality characteristics.

S.No.	Physical characteristics	Temperament
1.	Endomorphic (soft, round)	Viscerotonic (Sociable, extrovert affectionable) Love of physical comfort
2.	Mesomorphic (muscular and strong)	Somatotonic (energetic and muscular, love of risk and chance)
3.	Ectomorphic (thin and tell)	Cerebrotonic (fearful, artistic introvert and restrained)

Spranger's type

E. Spranger, German philosopher, divided human beings on the basis of interest, in the following categories:

(a) *Theoretical:* Persons who are theoretical in nature neglect social and political participation

(b) *Economic:* Persons who are interested in money-hoarding

(c) *Aesthetic:* Persons who are lovers of beauty and are busy in sensuous gratification

(d) *Social:* Persons who are interested in social activities

(e) *Political:* Persons who are dominating and desirous of power

(f) *Religious:* Persons who devote themselves to religious activities and mysticism

Jung's Typology

Jung, as we have referred to before, attempted to classify human beings on two behavioural dimensions: extrovert and introvert. His typology is widely known and is most influential among professional workers. The major characteristics of two types are as follows:

1. **Introvert:** Defined as a person who tends to withdraw into himself, especially when facing emotional conflicts and stress in the environment. An introvert individual is shy, avoids people and enjoys being alone. Scientists and philosophers may be termed as introverts.

2. **Extrovert:** In contrast to the introvert type, an extrovert person's orientation is towards the external world. He deals with people intelligently in social situations. He is conventional, outgoing, social, friendly and free from worries. Social workers, politicians, business executives may be typed as extroverts. These two broad categories have been further classified on the basis of rational and irrational processes.

Jung's system of classification of human beings is eight-fold and not two-fold as is popularly known. A person, according to Jung, may be extrovert for one function, for example, feeling and the same person may be introvert in intuition. All persons can be divided into eight types, based on the dominance of one of the above factors. Modern writers have introduced the type 'ambivert', between two extreme poles of extroversion

and introversion. Ambivert refers to those persons who can be classified as neither extroverts nor introverts.

Freud's typology

Freud, on the basis of his theory of psycho-sexual development, identified three types of personality. The type depends on the fixation of sexual energy at a particular stage of sex development. The three types are as follows:

1. ***Oral-erotic type:*** According to Freud, sex in infancy is located within a month of birth. There is a membrane in the mouth which, when irritated gives pleasure to the infant. Sexual gratification at this stage involves activities related to mouth. Oral-erotic type of personality shows excessive degree of pleasures associated with oral activity. Sucking, biting or putting anything in the mouth gratifies sex in infancy. Fixation at the oral stage results in two types of personality in later life.

   (i) Oral passive type: This type of person is dependent, optimistic and immature in his/her thinking and other activities like a child. He/she expects help from other people.

   (ii) Oral sadistic type: This type of person is pessimistic. He/she is suspicious and aggressive. He/she is often bitter in his/her dealings with others.

2. ***The anal type:*** The second stage of sex development is anal, when the child obtains gratifications through anal activities. These activities generally relate to the expulsion of fecal material through the anus or the retention of these materials in response to the social demands of toilet training. Some traits of personality which develop due to fixation of sex energy at this stage include obstinacy, miserliness, orderliness, etc., in later life.

3. ***The phallic type:*** The third stage of psycho-sexual development is phallic. This type of person shows self-love and exhibitionism. He tries to draw the attention of others. These characteristics are found in early adolescence.

Evaluation of the type approach

Classification of human beings into, types, has been generally criticized by psychologists on the basis that typologies tend to place emphasis upon one or another phase of development. They deal with extreme rather than mediocrity of human nature. It is very difficult to categorize individuals under one of the types as proposed by some typologists. Two or three types are wholly inadequate to describe human varieties of behaviour into a few limited categories. The second criticism of typology is that types are discontinuous and non-scalable. There is multiplicity of type theories, which are very difficult to apply in practice.

Criticism does not mean that typology is useless. Typology has its historical value in the sense that it was the first attempt to typify people, which generated a great deal of research. The second important contribution of typology is that it attempts to assess the personality of an individual as a whole. It does not study personality in fragments of traits. The type-approach is very useful for psychologists who attempt to comprehend the personality of an individual as a whole.

The third advantage of typology is that types are useful and valuable from the point of view of experiments in physical science, where attention to certain process in a relatively pure form is uncontaminated by accidental and confusing factors. Lastly, we can say that they serve one very important function as reference points or guides for the examination of dimensions of personality by different psychologists.

• **Trait Theory**

Typology and trait approaches are interrelated to each other in the sense that typology includes a wide variety of traits in classifying human beings in broad types while in trait approach we label or call a person by a specific mode of behaviour, which he shows in a variety of circumstances.

In modern psychology, the type approach is not so widely used as the trait approach to understand the development of personality. In our daily life, we label traits as honest aggressive, fearful, dependent, lazy, dull, etc. In the simplest sense, by trait we mean a mode of behaviour manifested in a number of life situations consistently. It is any distinguishable, relatively enduring way in which one individual varies from other. Trait may be defined, 'as a property within the individual that accounts for his unique but relatively stable reactions to the environment.'

Walter Mischel, in his book, *Introduction to Personality*, states, 'trait is a continuous dimension on which individual differences may be arranged quantitatively in terms of the amount of the characteristics, the individual has.'

Let us now explain the process of development of trait theory. 'Trait' in daily life, first, is used simply as an adjective, for instance, 'Ram behaves in a lazy way in several situations'. The description is generalized from individual behaviour to the individual Ram, we say that he (Ram) is lazy. Laziness becomes a trait of Ram's personality, a characteristic mode of his behaviour.

Development of friendliness

Stimuli	Trait	Responses
1. Meeting friends		1. Helpful
2. Meeting with strangers	Friendliness	2. Pleasant
3. Dealing with poor, disabled children		3. Warm and interested

Some properties of traits

- **Scalability**: Traits are scalable. They can be measured and scaled quantitatively.

- **Inference from behaviour:** Personality traits are not directly observable but are manifested in a number of activities and verbal expression. We infer a trait from the behaviour of the individual.

- **Flexibility:** Traits are not static in nature. Traits are flexible in childhood. They become stable with the maturity of the person with age but some variability is always present.

- **Universality:** There are certain traits, which are universal in nature like height and weight.

- **Functional unity:** The trait must have functional utility. It means that there must be different indications, which may vary or are manifested consistently in the behaviour of the individual.

- **Traits are higher order habits:** Edwin R. Guthrie conceived that a trait is a higher order habit, which recurs in behaviour frequently.

- **Traits are mental sets:** Some psychologists define traits as a mental set. It is a readiness to respond to any variety of situations in a consistent way. Cason stated that there is a generalized tendency in some people to be annoyed easily.

- **Traits are frame of reference:** The personality of an individual is an organized whole of beliefs, emotions, etc., about the environment. In this reference, traits are organized frames of references.
- **Traits are learned:** Traits are learned during interaction with the environmental stimuli. They are biologically determined as neuroticism and other traits, which depend on the disposition and intellectual potentialities of the individual.

G.W. Allport's Classification

G.W. Allport is one of the most outstanding trait psychologists. His conception and research on trait approach to personality has had an immense influence on psychologists. He has conceived that traits have a real and vital existence. He defined a trait, 'as a generalized and focalized neuropsychic system with the capacity to render many stimuli functionally equivalent and to imitate and guide consistent forms of adaptive and expressive behaviour.' The definition given by Allport is a comprehensive one. It emphasizes that traits are not linked with a small number of stimuli but are general and enduring in nature. He classified all human traits into three broad categories as follows:

 (i) **Cardinal traits:** Traits that appear the most in the behaviour of an organism are called cardinal. It may be illustrated with the example of achievement in life. Some people are so devoted to achievement that this trait pervades their entire life.

 (ii) **Central traits:** Central traits are less pervasive than cardinal traits but are generalized dispositions.

(iii) **Secondary dispositions:** Secondary dispositions are specific and narrow traits. They are also known as attitudes.

   According to Allport, traits differ in intensity and magnitude in general population from individual to individual. No two individuals are alike in their behaviour. People operate in their unique way in the environment. Each individual is unique in terms of adjustment to their environment.

R.B. Cattell's Classification

Raymond B. Cattell is another ardent propounder of the trait theory of personality. The basic structural element for him is the trait. He stated that a trait is the structure of personality inferred from behaviour in different situations. He classified traits into four categories:

 (i) **Common traits:** There are certain traits, which are widely distributed in general population or among all groups. They are known as common traits. Generally, aggression and cooperation can be considered as common traits.

 (ii) **Unique traits:** These traits are possessed by particular persons like temperamental traits, emotional reactions, etc.

(iii) **Surface traits:** Traits that can be easily recognized by overt manifestation of behaviour are called surface traits, such as, curiosity, integrity, honesty, tactfulness and dependability.

(iv) **Source traits:** Source traits are the underlying structure of sources that determine behaviour. Dominance and emotionality are source traits. Cattell, through the factor analytic approach, determined the contribution of hereditary and learning factors in the development of traits in the individual. He emphasized on the

importance of interaction between hereditary and environmental influences in personality development.

H.J. Eysenck's Classification

H.J. Eysenck, a British psychologist, devoted much of his research studies to explore the trait dimensions. He conducted extensive research on trait dimensions by applying quantitative techniques of factor analysis. He conducted research on ten thousand soldiers and by statistical analysis isolated two dimensions in personality:

(i) Introversion and extroversion

(ii) Neuroticism

Later on, he isolated another personality dimension as psychoticism. According to Eysenck, psychoticism is an independent dimension of personality. It is quite different from the introversion-extroversion dimension. Eysenck has found three fundamental dimensions of personality.

(i) Introversion vs. extroversion

(ii) Normality vs. neuroticism

(iii) Psychoticism

The first two dimensions given above may be taken as the part of normal personality. Their relationship is presented as follows:
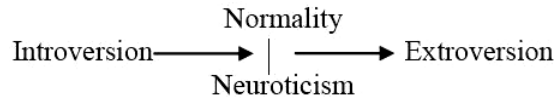
Eysenck developed personality inventory to test the traits of personality. His findings have generated research activities by several psychologists. His most important contribution is that he tried to prove that personality is genetically caused. He traced neuroticism to the autonomic nervous system and introversion-extroversion to central nervous system. He emphasized the importance of heredity in the development of traits of personality as against the concept of American psychologists who are biased in favour of the environment.

Common Features of Trait Theories

Though trait theorists disagree with the specific content and structure of the traits needed to describe personality, there is still an agreement on the general concept of traits:

- **Consistency of traits:** All theories agree that traits are consistent in an individual's behaviour. They are not temporary dispositions but enduring characteristics of the individual.

- **Trait dimensions:** There is agreement as regards to the various dimensions of traits as source traits and surface traits, common and unique, broad and narrow. Traits vary in breadth and generality.

- **Traits are dispositions:** Traits fluctuate or change in a person's position with respect to a disposition. All psychologists are committed in their search of broad and stable traits.

Criticism of trait theory

The trait theory of personality has often been criticized by many psychologists in recent years. The main points of criticism are as follows:

- There is no agreement among psychologists concerning the use of the terms.

- There is a view that a trait is a behavioural disposition, which is consistent and does not vary from situation to situation. In daily observation, we find that if a man possesses friendliness as a trait, he does not behave in a friendly manner in all the situations of life. Trait is not a permanent or a static characteristic of the individual because personality does undergo change.

- Another difficulty is the quantification of human traits as there is no zero reference and equality of units in trait measurement. There is no suitable measuring tool of trait dimensions. Generally, traits are measured with the help of paper-pencil tests, which can be manipulated by the subject by giving fake information.

- 'Halo effect' operates when a person rates an individual very high on a specific trait. He may rate the same person on other traits equally high.

- The behaviour of an individual cannot be predicted on the basis of scores on trait inventory. Traits are the only point of references. An examination of the personality traits of an individual enables us to make only probability statements about what the individual may do.

- The last criticism against trait theory is that it is still unclear whether a trait is viewed as an inner process that causes difference among individuals or is it the situation that brings into play certain organizational tendencies, which create the behaviour.

- **Psychoanalytic Theory of Personality**

We will now discuss different theories of personality that emphasize on the dynamics of human behaviour. We will outline the views of classical psycho-analysis and examine the views of neo-Freudians who deviate from Freud but claim to be psychoanalysts.

Freud's theory

Basic concepts

Sigmund Freud was the first psychologist who placed great importance on instincts as the determinant of human behaviour. He proposed two instincts: (i) Eros, (love and the self-preservation), (ii) Thanatos, (death instinct, as the ultimate cause of all human activity).

Psychic structure

Psychic energy, according to Freud, comes from libido. It denotes sexual energy. When Freud revised his theory, which included two groups of instincts, sexual libido was regarded as the primary driving force of personality. The dynamics of personality is seen as largely governed by the need to gratify the libido.

Id: It implies inborn and its main function is the discharge of psychic energy, which when pent up produces tension through the personality system. Identity operates on an animal level. It cannot differentiate between good and bad and operates on the principle of pleasure. The primary process of thinking and explaining id behaviour, resulting from

pent up tensions is described by Freud as frustration. The primary process attempts to discharge tensions by bringing into consciousness, memories associated with the source of frustration.

The ego: The id knows only the subjective reality of the mind. The second concept of Freud is the ego, which distinguishes between subjective reality and things in the external environment. It operates on the principle of reality. The ego is called the executive of personality. It obeys the reality principle and operates by means of secondary process. The pleasure principle is only concerned with whether an experience is painful or pleasant; the principle of reality is concerned with whether it is true or false. The ego formulates a plan for the satisfaction of the need and executes it, keeping into consideration the reality principle. It often integrates the conflicting demands of id, the super ego and the external world.

The ego is an organized portion of the id, which has been modified by the contact of external reality and experience. It comes into existence to forward the aims of the id. It brings a compromise between the instinctual urges of the id and demands and forces of the external environment. Freud remarked about the function of ego: 'The poor ego has to serve three harsh masters and has to do its best to reconcile the demands of all three.'

Explaining the relationship between ego and the id, Freud once said, 'Imagine that the relationship between the ego and the id is similar to the relationship between a horse (id) and its rider (ego). While the rider usually determines the direction of the horse, there are those times when it is the horse who leads the rider.'

The super ego: The third concept is the super ego. It is the agency that internalizes the parental influences and ideals of society through early childhood experiences. It represents the ideal rather than the real and strives for perfection. It works in accordance with the moral standards authorized by the agents of society.

Let us explain it with the help of an example: Suppose there is a beautiful toy in the room, a child sees it and runs towards it, this is the id level. The second stage occurs when the parents instruct the child, not to touch the toy. The child sees the toy but does not touch it out of fear of punishment in the presence of the parents. The third stage of development is when the toy is in the room and the parents are not there but the child does not touch the toy. This is the super ego. The super ego involves the internalization of parental control in the form of self-control. We can say that id is biological and seeks pleasure; ego is a psychological test reality. The super ego represents the social-self and seeks perfection.

The super ego develops gradually by the process of reward and punishment meted out by the parents to the child in early childhood training. The parental reward and punishment is substituted by self-control. An individual with a well-developed super ego refrains from bad or evil temptations, such as stealing or telling a lie, etc., even in the absence of the punishing agent. The process of adoption of the moral and ethical standards of family and society is called the process of introjections.

Dynamics of personality

According to Freud, the human organism is a complex energy system that derives its energy from the food it consumes. The energy created by biological factors may be transformed to psychic energy. The three parts of the psychic structure, i.e., id, ego and super ego are in constant conflict. The dynamics of personality involves a continuous

interaction and clash between id impulses seeking release and inhibition imposed by the super ego. The individual is in quest for immediate gratification of impulses, seeks pleasure and avoids pain in order to reduce tension. The drive for immediate satisfaction of instinctual demands leads to early clash between the individual and environment. Conflicts develop when the parents or other members impose restriction or control on expression. There is a perpetual warfare between the pressure of the environment and the demands of the id and super ego. The ego, in order to adjust in the social environment, utilizes a number of mental mechanisms to it and the demands of the id and the super ego reduce the tensions of the individual.

Educational Implications of the Theories of Personality

Theories of personality have important educational implications. Trait theory of personality acquaints the teacher with the various traits that need to be adequately developed in the students.

Conscious mind is just one-tenth of the mind and unconscious mind is nine-tenth of it. Knowledge of the unconscious mind of the students is a must for the teacher. A teacher cannot take effective measures for the personality development of the students unless he has adequate knowledge in this regard. He must understand that the students have depressed desires and it is his duty to make use of various defence mechanisms. The teacher should also understand the three tiers of the mind—the id, the ego and super ego. The teacher is expected to redirect the pent-up feelings of his students to healthy or normal channels Psychoanalysis brings out the importance of proper environment for the education of students. It has given impetus to such movements as *Child Guidance, Mental Hygiene* and *Freedom of the Child:*

- Adler has laid more emphasis on individual differences. This is a useful point for teachers.

- The concept of inferiority complex is a valuable concept for the teacher.

- Dream analysis of Jung indicates that disturbing complexes relate not only to the past, but also have implications for the present and the future

- The concept of introversion and extroversion is very helpful to the teacher to understand the personalities of his students.

4.5 CONCEPT AND PROCESS OF ADJUSTMENT

Teachers are more concerned with the concept of adjustment because the primary purpose of education is to train children to solve life's personal, social and economic problems. If you examine the various activities of an individual's life, you will find that most of them involve adjustment of the individual to his vocational, social and economic problems. The process of adjustment starts right from the birth of the child and continues till his death.

The concept of adjustment is as old as human race on earth. Systematic emergence of this concept starts from Darwin. In those days, the concept was purely biological and he used the term 'adaptation'. The adaptability to environmental hazards goes on increasing as we proceed on the phylogenetic scale from the lower extreme to the higher extreme of life. Insects and germs, in comparison to human beings, cannot withstand the hazards of changing conditions in the environment and as the season changes, they die. Hundreds of species of insects and germs perish as soon as the winter begins.

Check Your Progress

8. What is the meaning of the personality as an adjustment approach?

9. Name the stage of development according to Allport, at which the sense of autonomy emerges.

10. What are the three types of personalities as developed by Freud?

11. Give examples of source traits as observed by R.B. Cattell.

Psychologists have interpreted adjustment from two important points of view. First, adjustment as an achievement; and second, adjustment as a process. The first point of view emphasizes the quality or efficiency of adjustment and the second lays emphasis on the process by which an individual adjusts in his external environment.

Now, let us examine both of these approaches in detail.

1. **Adjustment as an Achievement:** Adjustment as an achievement means how efficiently an individual can perform his duties in different circumstances. Business, military, education and other social activities need efficient and well-adjusted men for the progress of the nation.

   If we interpret adjustment as achievement then we will have to set the criteria to judge the quality of adjustment.

2. **Adjustment as a Process:** Adjustment as a process is of major importance for psychologists, teachers and parents. To analyse the process, you should study the development of an individual longitudinally from his birth onwards. The child, at the time of his birth, is absolutely dependent on others for the satisfaction of his needs, but gradually with age, he learns to control his needs. His adjustment largely depends on his interaction with the external environment in which he lives. When the child is born, the world, for him, is a big buzzing, blooming confusion. He cannot differentiate among the various objects of his environment but as he matures, he comes to learn to articulate the details of his environment through the process of sensation, perception and conception. The child in his infancy can respond and think about only concrete objects of his environment. The process of abstraction comes afterwards. Young children lack the capacity of self-control of the instinctive impulses. They try to take hold of anything that appears bright to their senses. Their development is purely on an instinctive level. The nature of adjustive process is decided by a number of factors, particularly, internal needs and external demands of the child.

Adjustment Barriers

Sometimes, it is very hard to adjust to the change in the environment. For example, if due to transfer of the father to some other state, the child is admitted to a new school, it is very hard to adjust to the new friends and teachers. Thus, the child my have psychological barriers to adjust to the life and studies in the new school. Sometimes, the culture of the new school, such as timings, new course, medium of language (English/Hindi/regional language), etc. can pose as a barrier in the adjustment and fine-tuning of a newcomer.

Implications of cross-cultural training

Although psychological barriers to adjustment could be overcome with the passage of time, immense damage may take place during the initial, setting-in period in the aforementioned situations. Therefore, it is advised to the parents and teachers of such a child that they should help the child in overcoming such adjustment barriers by giving extra attention, enhancing confidence, focusing on cross-cultural differences which they face.

4.5.1 Adjustment Mechanisms

There are some common ways, which the individuals use to defend or escape from conflicts and frustration. These are known as defence or adjustment mechanisms. An

adjustment mechanism may be defined as 'any habitual method of overcoming blocks, reaching goals, satisfying motives, relieving frustration and maintaining equilibrium.'

Characteristics of Adjustment Mechanisms

The following are the characteristics of adjustment mechanisms:

1. Adjustment mechanisms are almost used by all people. They are constructs, which are inferred from the behaviour of the individuals. They have protective orientation. All mechanisms are used to protect or enhance the person's self-esteem against dangers. They defend the person against anxiety and frustration. They increase satisfaction and help in the process of adjustment if used within limit.

2. The danger is always within the person. He fears his own motives. The fear and danger are manifested in adjustment mechanisms.

3. Invariably in all adjustment mechanisms, the individual distorts reality in one way or the other, because the method of protecting against dangerous inner impulses or escaping from anxiety involves some kind of distortion of the conscious representation of the person's impulses.

4. The overall effect of adjustment mechanisms is to cripple the individual's functioning and development through falsifying some aspects of his impulses so that he is deprived of accurate self-knowledge as a basis for action. There is self-deception underlying all adjustment mechanisms. We deny and disguise the real cause of our behaviour in order to maintain the balance of our personality.

5. Adjustment mechanisms are learned in the environment. They are designed to deal with anxiety, inner conflicts and self-devaluation. They operate on habitual and automatic levels.

Some common adjustment mechanisms are as follows:

1. **Simple Denial:** The easiest way to maintain the balance of personality is to deny the fact, which could create conflict in the mind. When children are busy in play activities, if parents call them, the children will say they heard nothing. In fact, what was said was not allowed to penetrate into their consciousness.

2. **Aggression:** Aggression is a typical adjustment mechanism used as an attempt to hurt or destroy the source of frustration. It may be classified into two broad categories:

    (i) *Extrapunitive:* Extrapunitive responses are those in which the individual aggressively attributes the frustration to external persons or things.

    (ii) *Intropunitive:* Intropunitive responses are those in which the individual aggressively attributes frustration to himself. Sometimes, the person feels that he himself is the source of frustration.

    The release of pent-up feelings through aggression gives relief to the person. The teacher by his sympathy, fair treatment, and by organizing positive programmes for catharsis, can reduce aggression among children.

3. **Compensation:** Every person tends to makeup deficiency of one trait or area of development in another area. When a person feels weak and fails in one area, he compensates in another field. He works hard to become strong and successful. Needs, which are frustrated and unmet, are gratified in order to release tension and conflict. Compensation is generally of the following types:

    (i) Direct compensation

(ii) Over compensation

(iii) Substitute compensation

(iv) Indirect compensation

(v) Neurotic compensation

4. **Sublimation:** It is a substitute reaction, which may be classified as compensation. Among all the mental mechanisms of defence, sublimation is the most advanced, highly developed and constructive mechanism. Through the use of its operation, the energy of personally or socially intolerable impulses and drives is successfully directed into consciously acceptable channels.

   Sublimation has been defined as a major mental mechanism operating outside and beyond conscious awareness, through which instinctual drives, which are consciously unacceptable or blocked and unobtainable, are diverted so as to secure their disguised external expression and utilization in channels of personal and social acceptability. In successful sublimation, the direction and aim of the repressed drives have been deflected into new pathways of creative endeavour.

5. **Identification:** Identification is a mental mechanism operating outside and beyond conscious awareness through which an individual, in varying degree, makes himself/ herself like someone else; he/she identifies himself/herself with another person. Children identify themselves with their parents and parents frequently identify themselves with their children and with some justification, regard the achievements and successes of their daughters and sons as their personal trimphs. Hero worship is an obvious form of identification.

6. **Projection:** Attributing to and observing in others one's own impulses and traits is called projection. It is the most common adjustment mechanism, which is used by all people in daily life. Freud used projection as a process by which we ascribe to the external world the rejected impulses of the id. We defend ourselves against our repressed guilt feelings by projecting them into other things and people.

7. **Rationalization:** Rationalization has been defined as a mechanism by which the individual justifies his beliefs and actions by giving reasons other than those, which activated or motivated him. The window dressing of motives and actions is called rationalization. In order to preserve self-respect and the good opinion of others, most people, with conscious intent, substitute 'good' reasons for real reasons so that their actions may appear justified, logical and socially acceptable. Rationalization is the most popular adjustment mechanism, which is used almost by all persons in daily life. It is a response to reality that falsify circumstances.

8. **Regression:** Regression has been defined as, 'an unconscious back tracking' either in memory or in behaviour, which might have been successful in the past. The adult who has been frustrated in fulfilling his needs may return to more primitive modes of behaviour. He may cry like a child and have temper tantrums.

9. **Repression:** Repression is a dynamism, which is fundamental in Freudian theory of personality. It has been defined as motivated forgetting. White (1964) defined repression as 'the forgetting or ejection from consciousness of memories of threat and especially the ejection from awareness of impluses in oneself that might have objectionable consequences.' It is an attempt by the individual to push into the unconscious those experiences and thoughts which are in conflict with his moral standard or which are painful to contemplate.

10. **Reaction formation:** Reaction formation is also called reversal formation. In reaction formation, an individual controls undesirable or socially unacceptable urges to deny their existence and develops diametrically opposed traits that disguise and check the more basic motives. It is to substitute opposite reaction formation, which causes anxiety. Repression is accompanied by behaviour and feelings exactly opposed to the repressed tendency.

11. **Negativism:** Negativism is a mechanism by which an individual draws the attention of other persons. It is partly a defence and partly an escape mechanism. The person develops strong and irrational resistance in accepting the suggestions of others. The use of this mechanism is at a peak at the age of two to three years.

    Students have some negative feelings toward their teachers. Negative feelings do not serve some useful purpose but they hinder the achievement of goals.

12. **Fantasy:** It is a fact that, mostly, we think to reduce our frustrations. Our thoughts can be a realistic effort to remove the obstacles that make us anxious. They can also provide an escape from frustration by giving us imaginary satisfaction, hungry men dream of food, unsuccessful men dream of success. Fantasy is a mechanism of wish-fulfilling.

4.5.2 Neurotic Adjustment Mechanisms

The behaviour that deviates from conventional ways of responding is called neurotic behaviour. It implies that something is wrong either with the functioning of a person's nervous system or with his psyche.

1. Neurotic anxiety

An anxiety is a vague but enduring fear. Some anxiety is natural, rational and useful in leading a person to deal constructively with the causes of his fears. But when the amount of anxiety becomes disproportionate to the situation and persists for a longer period then we refer it as neurotic anxiety.

2. Obsessive-compulsive reactions

An obsession may be defined as a recurring thought or desire that a person regards useless or false but cannot help. A compulsion is an irresistible tendency to perform some action. A person who is obsessed with an idea, finds himself unable to get rid of the idea. For example, there was a lady who got her teeth uprooted because of an incurable disease, and was obsessed with the idea of teeth for more than five years.

The compulsive person knows that his actions are unnecessary and absurd but he cannot resist the temptation of doing those acts. There are technical terms for various kinds of compulsions. Some of them are as follows: Kleptomania (compulsion to steal); Pyromania (compulsion to set fire); Poriomania (compulsion to move from place to place); Dipsomania (uncontrollable desire to drink); Nymphomania (excessive sexual desire in females).

Hypochondria

It is neurosis when a person, in anticipation of some failure, develops a tendency to be sick. Actually, the person is not sick but he pretends to be sick to avoid painful situation

to maintain the balance of his personality. For example, a boy who feels that he will not pass in the examination, pretends to be sick on the eve of examination.

4.5.3 Psychotic Adjustment Mechanisms

A psychosis is any form of mental disturbance that is so severe as to make a person incapable of adjusting to his social environment. There are two types of psychotic disorders, which have been detected by clinicians. A brief description of the two types of psychotic disoders is as follows:

1. **Organic psychoses:** There are different causes of organic psychoses but one common cause is damage to brain or interference with the functioning of the brain. The behaviour of a psychotic is characterized by the impairment of intellectual functions, sensori-motor disturbances such as aphasia, paralysis, deterioration of conduct, etc.

   The main types of psychoses are as follows:
   - Infectious diseases as general paresis, encephalitis and meningitis
   - Psychotic disorders caused by brain tumour and head injuries
   - Psychotic disorders caused by toxic and metabolic disturbances
   - Epilepsies
   - Senil psychosis

2. **Functional psychoses:** Functional psychoses are broadly classified into three classes: schizophrenia, paranoia and affective disorders.

   (a) *Schizophrenia:* Schizophrenia was formerly known as dementia praecox. It is the most puzzling and serious disease. It is used for a wide variety of mental disorders characterized by disturbances of thought process, distortion of reality, delusion and hallucinations and the loss of integrated and controlled behaviour.

   - *Simple schizophrenia* is the preliminary stage marked by loss of interest, social withdrawal and flatness of emotional expression.
   - *Catatonic:* Schizophrenia is, generally, marked by two patterns of behaviour: stupor and excitement.
   - *The hebephrenic:* The individual suffering from hebephrenic schizophrenia behaves like a child.
   - *Paranoid:* The patient sees delusions of being persecuted. He hallucinates as if he is being followed by someone, delusions of grandeur can also be seen.

   (b) *Paranoia:* Paranoia is an intellectualized system of defences, which is characterized predominantly by delusions. Persons suffering from paranoia are hypersensitive. They maintain limited social functioning, have sufficient self-control and judgement to avoid hospitalization.

   (c) *Affective psychoses:* There are two major states of affective psychoses: manic state when the patient feels elated, extreme overactivity and tremendous energy. The second form is depressive reaction, which shows loss of enthusiasm and slowing down of physical and mental activity.

4.6   SUMMARY

- Variations or deviations from the average of the group, with respect to the mental or physical characters, occurring in the individual member of the group are individual differences.

- Individual difference can be of various types. It is based on the differences in physical features, intellectual capabilities, attitude, achievements, motor ability, sex, race, nationality, economic status, interests, emotions and personality.

- There are various factors responsible for individual difference. These include: heredity; environment; caste, nation and race; sex; age; intelligence; temperament; and economic condition and education level.

- The four categories in which the definition of the term intelligence can be classified into are: (i) ability to adjust, (ii) ability to learn, (iii) ability to do abstract reasoning and (iv) operational definitions.

- Intelligence is affected by the environment; adjustments and inventions; distribution; sex differences and race differences.

- There are various different types of intelligence: naturalist, musical, logical-mathematical, existential, interpersonal, bodily-kinesthetic, linguistic, intra-personal and spatial.

- The term personality has been derived from the Latin word 'Persona' that was associated with Greek theatre in ancient times. Persona meant a mask, which the Greek actors commonly used to wear when they worked on the stage.

- The various approaches to define the term personality are: stimulus approach, summative approach, integrative approach, totality view and personality as an adjustment.

- Allport outlines the following stages of the development of propium or self or personality: bodily self, self-identity, self-esteem, self-extension, self as a rational coper, propriate strivings and self as a knower.

- Heredity is of two types: biological heredity, which the child inherits from his forefathers in the form of chromosomes and second is social heredity, which means all that one generation gets from preceding generations in the form of social traditions, customs and skills, etc.

- Every society is characterized by its cultural heritage which is transmitted from generation to generation in the form of social heredity. Biological inheritance is the same in human beings all over the world but it is the difference in their cultural conditions which develops distinctive personality characteristics in the individuals of different cultural groups.

- There are different theories of personality: type theory, trait theory, psychoanalytic theory, phenomenological theories, learning theory of personality, social behaviour theory and rotter's expectancy-reinforcement theory.

- In the type theories, objects of the environment and human beings are named and classified into different categories. Some of the famous type theories are Constitutional type, Somato type, Spranger's type, Jung's typology, Freud's typology etc.

- In the trait theories, rather than including a wide variety of traits, only a specific mode of behaviour is focused upon. Some of the famous trait theories are: G.W. Allport's classification, R.B. Cattell's classification, H.J Eysenck's classification etc.

- Psychoanalytic theory of personality emphasizes on the dynamics of human behaviour. Sigmund Freud was the first psychologist who placed great importance on instincts as the determinant of human behaviour. He proposed two instincts: (i) Eros, (love and the self-preservation), (ii) Thanatos, (death instinct, as the ultimate cause of all human activity).

- Trait theory of personality acquaints the teacher with the various traits that need to be adequately developed in the students. Psychoanalysis brings out the importance of proper environment for the education of students. It has given impetus to such movements as Child Guidance, Mental Hygiene and Freedom of the Child.

- Psychologists have interpreted adjustment from two important points of view. First, adjustment as an achievement; and second, adjustment as a process. The first point of view emphasizes the quality or efficiency of adjustment and the second lays emphasis on the process by which an individual adjusts in his external environment.

- An adjustment mechanism may be defined as 'any habitual method of overcoming blocks, reaching goals, satisfying motives, relieving frustration and maintaining equilibrium.'

- Some common adjustment mechanisms are simple denial, aggression, compensation, sublimation, identification, projection, rationalization, regression, repression, reaction formation, negativism and fantasy.

- The behaviour that deviates from conventional ways of responding is called neurotic behaviour. It implies that something is wrong either with the functioning of a person's nervous system or with his psyche. These include neurotic anxiety and obsessive-compulsive reactions.

- A psychosis is any form of mental disturbance that is so severe as to make a person incapable of adjusting to his social environment. There are two types of psychotic disorders, which have been detected by clinicians. These are organic psychoses and functional psychoses.

4.7 KEY TERMS

- **Individual difference:** It refers to the variations or deviations from the average of the group, with respect to the mental or physical characters, occurring in the individual member of the group.

- **Intelligence:** It is the aggregate r the global capacity of the individual to act purposefully, to think rationally, and to deal effectively with the environment.

- **Personality:** It refers to the effect that an individual leaves on other people.

- **Social heredity:** It refers to all that one generation gets from preceding generations in the form of social traditions, customs and skills etc.

- **Culture:** It is the physical way of life, social institutions and psychology of the people fused together.

4.8 ANSWERS TO 'CHECK YOUR PROGRESS'

1. Life experiences, educational background and individual interests are the factors due to which there are individual differences in achievement.

2. German philosopher and psychologist Spranger's six-part personality classes are theoretical, economic, social, aesthetic, political and religious.

3. Heredity, environment, caste, nation and race, sex, age and intelligence, stability in emotions; economic situation and level of education among other factors are the causes of individual difference.

4. The four categories in which the definition of the term intelligence can be classified into are: (i) ability to adjust, (ii) ability to learn, (iii) ability to do abstract reasoning and (iv) operational definitions.

5. In ancient India, intelligence was measured through conversation, physical features, gestures, gait, speech, changes in the eye and facial expression.

6. Logical-mathematical intelligence is the ability to calculate, quantify, consider propositions and hypotheses and carry out complete mathematical operations.

7. Bodily-kinesthetic intelligence is the capacity to manipulate objects and use a variety of physical skills.

8. According to the personality as an adjustment approach, personality is an individual's characteristic pattern of behaviour. An individual, through his continuous reactions, attempts to adjust himself/ herself in his/her environment.

9. It is at the self-esteem stage which is from second through third year of life, when the sense of autonomy emerges.

10. Oral-erotic type, anal type and the phallic type are the three types of personalities as developed by Freud.

11. Dominance and emotionality are examples of source traits as observed by R.B. Cattell.

12. An adjustment mechanism can be defined as any habitual method of overcoming blocks, reaching goals, satisfying motives, relieving frustration and maintaining equilibrium.

13. Identification is the type of adjustment mechanism that operates outside and beyond conscious awareness through which an individual in varying degree, makes himself/ herself like someone else.

14. Kleptomania, pyromania, poriomania, dipsomania, and nymphomania are examples of technical terms for various kinds of compulsions.

15. The behaviour of a psychotic is characterized by the impairement of intellectual functions, sensori-motor disturbances such as aphasia, paralysis, deterioration of conduct etc.

4.9 QUESTIONS AND EXERCISES

Short-Answer Questions

1. What are the different types of individual differences?
2. State the four categories of definitions of the term 'intelligence'.
3. Write a short note on the historical perspective of intelligence.
4. State the different approaches to defining the term 'personality'.
5. Briefly discuss the development of personality as per Allport.
6. State the characteristics of adjustment mechanisms.

Long-Answer Questions

1. Discuss the various causes of individual difference.
2. Describe the types of intelligence.
3. Explain the genetic and cultural factors of personality.
4. Write an essay on the type theories of personality.
5. Discuss the trait theories of personality.
6. Describe Freud's psychoanalytic theory of personality.
7. Explain some of the common adjustment mechanisms.

4.10 FURTHER READING

Cattell, R.B. 1950. *Personality: A Systematic, Theoretical and Factual Study*. New York: McGraw Hill.

Jung, Carl G. 1939. *The Integration of the Personality*. New York: Farrer and Rinchart.

Thorndike, R.L. 1970. *Measurement and Evaluation in Psychology and Education.* New Delhi: Wiley Eastern Limited.

Eysenck, H. J.1982. *Personality, Genetics and Behavior.* New York: Praeger.

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