

FOUNDATION OF EDUCATION

BA

Second Year

Paper-II



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.

SYLLABI-BOOK MAPPING TABLE

Foundation of Education

Syllabi	Mapping in Book
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Unit-II: Western Schools of Philosophy Naturalism, Idealism, existentialism and Pragmatism and their impact on educational thought and practice.	Unit-2: Western Schools of Philosophy (Pages 25-45)
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Unit-V : 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-5: Education and Social Change (Pages 145-167)
Unit-VI: 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-6: Growth and Development (Pages 169-192)
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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.

NOTES

UNIT 1 EDUCATIONAL PHILOSOPHY

Structure

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NOTES

1.0 INTRODUCTION

Education is a very important factor in the growth and development of human beings. It is a never ending process. It is therefore of great significance that the concept of education is understood in great detail, so that it can be used for the betterment of people existing in different societies. Philosophy is a subject which takes great interest in examining varied subjects. It is through philosophy that we come across various methods of approaching a concept to choose the best fit in a given circumstance. Educational philosophy will then help all the stakeholders involved in the field of education to understand the subject in a much better way.

In this unit, you will learn about the concept of educational philosophy, the contributions of philosophy to the field of education, the relationship between education and philosophy and the aims of educational philosophy.

1.1 UNIT OBJECTIVES

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

- Discuss the concept of educational philosophy
- Explain the relationship between education and philosophy
- Describe the aims of educational philosophy
- Discuss the various agencies of education

1.2 CONCEPT OF EDUCATIONAL PHILOSOPHY

NOTES

Education and philosophy are two sides of the same coin—life. Sir John Adams said that education is the dynamic side of philosophy. Ross put it thus, ‘Education is the active aspect of philosophical belief, the practical means of realizing ideals of life.’ T.P. Nunn has said, ‘educational aims are correlative to ideals of life’. Henderson has expressed similar views, ‘Educational aims cannot be determined apart from the ends and aims of life itself for educational aims grow out of life’s aims. To determine what constitutes worth living has been one of the chief tasks of philosophy.’

All Great Philosophers as Great Educators

A close analysis of the concept of education as given by various philosophers and educators will make clear that their views on education are based on their varying concepts of reality of knowledge and of values. The great philosophers of all times have also been great educators. Most of the educational movements were the expressions of their philosophical beliefs. Views of great thinkers like Socrates, Plato, Aristotle, Comenius, John Locke, Rousseau, Froebel, Dewey, H.G. Wells, Bertrand Russel, A.N. Whitehead and Alduous Huxley, offer an interesting example of the intimate connection between philosophy and education. The ancient sages in India were all educational philosophers. In recent times, this is fully illustrated in the case of Swami Dayananda, Swami Vivekananda, Sri Aurobindo, Tagore, Dr. Radhakrishnan and Mahatma Gandhi, etc.

Education is a growing science and its foundations are to be explored for a study of the subject as an interdisciplinary approach. Philosophy is the cornerstone of the foundation of education. But this does not mean that education should be enslaved to philosophy or some set of values created by human society. Philosophy should be interpreted as a vision in a wider perspective. This being so, education should be wedded to some philosophy in general. We need some frames of reference in which education has to fit. There have been various schools of philosophy presenting their views with much optimism. Education is the process of enabling people not merely to live but to live adequately. There are various types of education: academic, aesthetic, moral, physical, social and spiritual. Theories of education have been formulated and different values emphasized.

1.2.1 Philosophy and Education

While the goal of philosophy is to explain the baffling mysteries of universe, the place of man in the universe and the various problems created out of his wisdom and folly; the chief means of philosophy is ‘education’, which has been correctly described as the ‘dynamic side of philosophy’. Education is a practical activity of philosophical thought. Every educational practice is supported with the backdrop of philosophy. The speculative, normative and critical function of philosophy affects not only the direction of moral guidance that the teacher gives but also affects the direction and the emphasis of the curriculum, the colour of the teacher’s attitudes from day to day, even from hour to hour. No practice is good and scientific unless rooted in the philosophical thought which gives logic, rationale, sequence and system to education. Since philosophy speaks the language

of analysis and reason, there is hardly any problem of education which is not solved by the calm lights of philosophy.

Fichte, therefore, very rightly observed, 'the art of education will never attain complete clearness without philosophy.' Gentile stated, 'Education without philosophy would mean a failure to understand the precise nature of education.' Dewey said, 'Philosophy is the theory of education in its most general phases.' If education is a set of techniques for imparting knowledge, skills and attitudes, philosophy is the foundation to vitalize these. Philosophy is the foundation and education is the superstructure. Without philosophy, education would be a blind effort and without education, philosophy would be a cripple.

NOTES

1.2.2 Contribution of Philosophy to Education

1. Philosophy assists education in understanding man, his life, his actions, ideals and problems.
2. Philosophy assists the educator in formulating beliefs, arguments, assumptions and judgements concerning learning and teaching, character and intellect, subject matter and skill, desirable ends and appropriate means of schooling.
3. Philosophy assists education in the determined effort to find out what education should do in the face of contradictory demands of life and factors arising out of experience which brings meaning and direction to thinking.
4. Philosophy assists education in giving unity of outlook to the diverse interests of the individual, his family, community and the state.
5. Philosophy provides logical vigour that is essentially connected with transcendence and disciplined imagination which when taken out from the person will find him a barren mass of flesh.
6. Philosophy provides reasons with faith.

With these endowments, philosophy creates responsibility, effort and faith in a teacher. It creates that sense of 'commitment' which builds in him the value-system to respond to the challenges which face him in the discharge of his duties.

Philosophy and the Curriculum

The need of philosophy of education is felt very seriously in the area of curriculum planning. The philosophical approach to life is the guiding factor in the choice of studies to be included in the curriculum. Mahatma Gandhi's scheme of Basic Education was an expression of his philosophy. The scheme of studies, therefore, is related to the interests of the rural population: spinning, weaving, village-art and crafts.

To fulfil the needs of a technological society, the high schools of the USA stressed the study of automobile repair, electronics and aeronautics in the school curriculum. Similarly, the use of calculators and computers forms an important part of the school curriculum from the ninth grade in many schools in the USA. In India, the recent Review Committees on Education i.e. Ishwar Bhai Patel Committee (1977) and the Adishesiah Committee (1978) have laid great stress on the inclusion of socially useful productive work as an integral part of the school curriculum.

Philosophy and the Teachers

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It is felt that the basic understanding of the philosophical themes on the part of all teachers regarding ancient and contemporary philosophical systems of thought will enable them to formulate their own philosophy and beliefs, help them to understand the problematic situations in the class-room discipline, under-achievement of students and many other such problems and ultimately enable them to determine the manner in which they will handle these problems.

Philosophy and Discipline

In a democratic set up, discipline is viewed as inner discipline as well as social discipline based on group work. In the totalitarian state, discipline is strictly controlled and assumes the form of a military discipline, and is based on the fear of the teacher. There is little concern for the individuality of the child in a totalitarian type of discipline. The idealists emphasize the impact of impression of the teacher on his students. 'Free discipline' is the slogan of the naturalist.

Philosophy and Educational Organisation, Administration and Supervision: Democratic philosophy lays emphasis on the participation of the staff and the students in running some programmes of the educational institutions. Philosophy of communism provides little scope for such involvement and the head decides everything.

1.3 RELATIONSHIP BETWEEN EDUCATION AND PHILOSOPHY

Education is the most important human activity. It is the process of observing, thinking, learning and understanding the laws of nature. Once the knowledge is accumulated, it can be stored in the form of facts, rules and principles. This process is continuing since the time unknown and has contributed to the growth and development of human kind on the earth. In the Indian tradition, the process of education is believed to have started with the grant of Vedic scriptures by the God himself to the four pious hearted hermits named Agni, Vayu, Aditya and Angira. This wealth of Vedic texts was later expended into Brahmins, Aranyakas, Upanishads, Sutras, Smrities and other Vedic literature.

'Education is the most powerful weapon you can use to change the world'—these words of Nelson Mandela, the first black president of South Africa and the winner of Nobel Peace Prize in 1993, are apparent testimony of the importance of education in the life of individuals, societies and nations. The process of education helps to flourish the innate capabilities and environmental inclinations of man to make him a valuable asset for the humanity. Trilling and Hood (2000) specify that 'Education has ever been an agent that contributes to upgrade human society, flourish personal talents, fulfill civic responsibilities and carry tradition forward.' Education as a touch-stone, bears the quality of changing the destiny of man and takes him to the heights of knowledge, wisdom, wealth, position and prosperity.

Etymologically, the word 'education' is made of three Latin words viz. 'Educare'—to bring up or to nourish, 'Educere'—to lead out or to draw out (Wherein 'E' stands for 'Out' and 'Ducere' means 'to lead') and 'Educatum'—to train, act of teaching or training. Hence, education means both the acquisition of knowledge and experiences and the development of skills, habits and attitudes. It is a process of training the individual through

Check Your Progress

1. What are the various facets of education?
2. Name the dynamic side of philosophy.
3. Mention the guiding factor in the choice of studies to be included in the curriculum.

various experiences of life. In Indian terms, there are three words used to indicate the process of learning. These are as follows:

1. **Knowledge**—to know through the senses and application of mind, brain and intellect, such as identifying people, things and places or feeling of own or others emotions.
2. **Skill**—the art of doing an activity with perfection, such as archery, pottery and story writing.
3. **Learning**—the activity of knowing, understanding and concluding the observation.

NOTES

1.3.1 Definition of Education

We cannot give a complete definition of education, since it is associated with many dimensions of human life. Education is an abstract and dynamic entity. It is a continuous process. Education has passed through many ages and stages in the process of its evolution. At different times, it had different meanings, aims and objectives according to the conditions that prevailed there and then. The concept of education is still in the process of evolution and this process will never come to an end. It must continuously grow and change to be able to cope with the changing demands. Education is consciously and deliberately planned for the modification of behaviour. Education is pursued with a set of time-bound goals through the institutions specially established and maintained for this purpose. Yet, a number of philosophers and educationists have given their definitions to elucidate the meaning of education. Some of them are mentioned hereunder:

- ‘Education develops in the body and in the soul of the pupil, all the beauty and all the perfection of which he is capable.’—Plato.
- ‘Education is the creation of a sound mind in a sound body. Education develops man’s faculty, especially his mind so that he may be able to enjoy the contemplation of supreme truth, goodness and beauty.’—Aristotle.
- ‘Education is the natural, harmonious, and progressive development of man’s innate powers.’—Pestalozzi.
- ‘Education is the manifestation of what is already enfolded in the germ. It is the process through which child makes internal external.’—Froebel.
- ‘What nutrition and reproduction are to the physiological life; education is to social life.’—John Dewey.
- ‘Education is the complete development of the individuality of the child so that he can make an original contribution to human life according to the best of his capacity’—T.P. Nunn.
- ‘Education is the deliberate and systematic influence by the mature person upon the immature; through instruction, discipline and harmonious development of physical, intellectual, aesthetic, social and spiritual powers of the human beings according to individual and social needs and directed towards the union of educant with his creator as the final end.’—Redden.
- ‘We need the education by which character is formed, strength of mind is increased, intellect is expounded and by which one can stand on his own feet.’—Swami Vivekananda.

NOTES

- ‘Education means enabling the mind to find out the ultimate truth which emancipates us from the bondage of the dust and gives us the wealth, not of things but of inner light, not to empower but to love.’—R.N. Tagore.
- ‘By education, I mean an all-round drawing out of the best in child...is mind, body and spirit.’—Mahatma Gandhi.
- ‘Education is the process of the individual mind getting to its full possible development.’—Dr. Zakir Hussain.
- ‘Education ought to be related to the life, needs and aspirations of the people so as to be a powerful instrument of social, economic and cultural transmission.’—Indian Education Commission 1964-66.

Basic Characteristics of Education

Having known the nature and definitions of education, it is clear that it is an important activity which develops human society in all aspects of individual, social and national life. It is the instrument of modernity and globalization in the current era. Education is a path-breaking activity ensuring emancipation from age old misbeliefs and superstitions. It inculcates an advanced thought and outlook to the people. To understand the real face of this activity, a list of basic characteristics of education is laid hereunder:

- Education is a dynamic and life long procedure
- It is the process for the realization of various inner capabilities
- Education is a psychological and physiological process
- Education is a deliberately planned activity
- It is a child centered process of socialization
- Education is important for value inculcation and enculturization
- It is considered as a bipolar and tri-polar process
- Education is not teaching, instructing or certificate awarding

1.3.2 Types of Education

Let us discuss the different types of education.

- **Formal:** This type of education is consciously and deliberately planned for the modification of behaviour with a particular aim in view for a specific time period. It is provided through the institutions specially established and maintained for this purpose such as schools and colleges. The formal education is regulated by the government, education department and school management at different levels. It starts at preprimary level and lasts up to university stage. Strict entry and exit age, regularity, punctuality, impermeable nature of discipline, fixed syllabi, vast curriculum and teacher centredness are some of the basic characteristics of this type of education.
- **Informal:** This type of education is not given by any established or preplanned institutions. It is for this sort of education that the saying of ‘womb to tomb’ fits suitably. It is provided by the informal institutions such as home, neighbourhood, peers, society, television, newspaper, temple, market and so on. It is quite incidental, spontaneous and inspired by individual needs. Contrary to the formal setup of education, it has no provisions of entry or exit, timings, norms, rules or regulations, degree or certificate. It goes without any planning, curriculum, time slot, internal or external motivation, and certification. Being self-motivated activity, its acquisition depends upon the ability of one’s interaction ability and learning instinct.

- **Non-formal:** This sort of education is provided through correspondence, summer classes or part-time classes. Open schools and open universities are conducting a number of courses through this mode of learning. This type of education has a mixture of norms and qualities of formal and informal education systems. Such as, it is a formal process of educational upgradation with fixed curriculum and a system of degrees or certificate allotment at the end of the process. But on the other hand, it does not have strict entry or exit age, regular classes and customary teacher taught interaction as formal institutions.

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1.3.3 Agencies of Education

The very concept of the agencies of education describes the various support systems of the process of education. For example, good visual, acoustic, intellectual and supportive surroundings are means to good and sound learning. As a result, an individual with all such faculties and facilities gains considerable knowledge and understanding of countless issues regarding self and contiguous environment. With this exercise an individual gains certain qualities, capabilities and perception regarding self, which makes him a better human being. Hence, it may be said that education is an activity which is self-supportive in some means and externally motivated in other aspects. This discussion reveals the role of individual and external faculties supporting the process of education.

Internal agencies of education

Thinkers like Sri Aurobindo, Swami Vivekananda, Rabindranath Tagore and Mahatma Gandhi felt that more than externally, education emerges from within. Teacher, books and schools are mere stimuli which make the individual respond and gain experience out of the activity. Upon the individual gains of education, Sri Aurobindo considers education as helping the growing soul to draw out that is in itself. Aadi Shankaracharya also supports Aurobindo by saying that 'education is realization of the self'. The view of Swami Vivekananda also supports the previous standings by saying 'education is the manifestation of divine perfection already existing in man. Education means, 'the complete exposition of man's complete individuality'. All these views and thoughts declare that education is individually supported activity. Without active involvement of the individual, there is no possibility of education and knowledge generation. Hence, it may be said that education is the process of unfolding of inner capabilities through scholastic and co-scholastic experiences of an individual.

External agencies of education

As already mentioned, education is self-motivated activity but it cannot prevail without external stimuli and support. This support is very important and decisive with regard to the acquisition, assimilation and understanding of knowledge and its application in practical terms. Since birth, a child lives amidst several individuals of family, neighborhood and society. While growing up, the individual comes in close contact with friends, peer group, school, society, media, bazaar, temple, festivals and various socio-political organizations. All these factors enhances his knowledge, experience, learning, art of living, philosophy and makes him a socialized individual and a valuable citizen of the nation and the world. The role of some of these agencies of education is so important that it needs proper attention at this verge. A brief introduction to the prominent agencies of education and their contribution in personality development is explained hereunder:

1. **Family:** Family is the oldest, basic and fundamental unit of human society. By family, we mean a system of relationship existing between parents and children.

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Functions of family include physical, emotional, lingual, mental, social, moral and religious development. It also helps in the development of innate tendencies, character, interests, habits, individuality and transmission of culture. Accepting the importance of home in a child's life Maria Montessori called the school as home.

Illustrating the importance of family as an agency of education, Pestolozzi has stated that 'Home is child's first school'. Similarly, Mazzinni mentioned that 'Child's first training in citizenship is in the mother's lap and father affection'. Hence, it is clear that family is an important agency of education of an individual.

As far as specific mentioning of the contents of education delivered by the family is concerned, it may be said that the attributes of health, self-concept, self-esteem, behaviour-pattern, values, culture, habits, hobbies, religion, outlook and philosophy are given by the family by direct or indirect, overt or covert means of instruction and interaction.

- 2. Peer group:** A peer group is a group of friends that a certain person will try to impress to get their bond, social status, and interests. Developmental psychologists Vygotsky, Piaget, and Sullivan have all argued that peer relationships provide a unique context for cognitive, social, and emotional development with equality, reciprocity, cooperation and intimacy maturing and enhancing children's reasoning abilities and concern for others.

Peer groups are an important influence throughout one's life, but they are more critical during the developmental years of childhood and adolescence. There are often controversies about the influence of a peer group versus parental influence, particularly during adolescence. Recent studies show that parents continue to have a significant influence, even during adolescence, a reassuring finding for many parents. It appears that the power of the peer group becomes more important when the family relationships are not close or supportive.

- 3. Peer pressure:** The term 'peer pressure' is often used to describe instances where an individual feels indirectly pressured into changing their behaviour to match that of their peers. Taking up smoking or consuming alcohol underage are two of the best known examples.

In spite of the often negative connotations of the term, peer pressure can be used positively.

- 4. School:** The word school is derived from Greek word 'skhole', originally meaning 'leisure', and also 'that in which leisure is employed'. School is a place where children go to get education.

School is an educational institution offering studies at different levels to groups of pupils of various ages; instruction may be given by one or more teachers. It may be contained in a single structure or a group of separate buildings; may be under private or public auspices. School is an institution designed to allow and encourage students to learn, under the supervision of teachers. The common qualities offered by school for personal and academic development of children may be listed as pronunciation / accent of language, self-concept, self-esteem, behaviour-pattern, values and culture, hobbies and principles like regularity, punctuality, discipline; life skills such as critical thinking, analysing peer and media influences, attitudes, values, social norms and beliefs, identifying relevant information and information sources.

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Among the personality enhancement task of schools, the skills for increasing internal locus of control, self-esteem and confidence-building skills, self-awareness skills including awareness of rights, influences, values, attitudes, strengths and weaknesses, goal-setting skills, self-evaluation, self-assessment, and self-monitoring skills, skills for managing feelings anger management, dealing with grief and anxiety, coping skills for dealing with loss, abuse, trauma, etc., are provided by the schools through different curricular and co-curricular activities.

Schools also are important centres for the inculcation of skills for managing stress, time management, positive thinking, relaxation techniques; interpersonal communication skills like verbal and nonverbal communication, active listening, expressing feelings; giving feedback (without blaming) and receiving feedback, negotiation and refusal skills like negotiation and conflict management, assertiveness skills, refusal skills; empathy like the ability to listen to and understand others, needs and circumstances and express that understanding; cooperation and teamwork like expressing respect for others' contributions and different styles, assessing one's own abilities and contributing to the group; advocacy skills like skills of influence and persuasion, networking and motivation skills, outlook and philosophy. The superego qualities of universal brotherhood, humanity, equality, justice, secularism etc. are also the outcome of school learning. Hence, it is established that school is certainly an agency of overhauling of human personality.

5. **Society:** It is a group of people connected to one another by shared customs, institutions, culture and, to a lesser extent, territory. Society is a group of humans broadly distinguished from other groups by mutual interests, participation in characteristic relationships, shared institutions and a common culture. Society is dynamic. It grows and changes with time. Maintaining its basic structure intact, a society develops and transforms its cultural heritage.

Qualities offered by the society for personal and academic development of children are almost same as promoted by other agencies. The prominent among them may be listed as language, behaviour-pattern, values, culture, habits, outlook, preferences, thought-pattern; social skills like cooperation, empathy, etc.; understanding and coping with diversity, dressing sense; constraints, i.e. dos and don'ts; traditions and behaviour; faith and beliefs, celebrations and social skills like singing, dancing, cooking, dressing, arts and crafts, etc.

6. **Mass media:** Young people are in a stage of life where they want to be accepted by their peers, they want to be loved and be successful. The media creates the ideal image of impressive men and women and tells about the characteristics of a successful person. Media uses such influencing instruments that children get fascinated by them immediately and start demanding the same without contemplating the positives and negatives of it. Smoking, sex, purchasing branded items and copying current fashion trends are apparent examples of media influence.

The media has a huge effect on the society and also on the public opinion. They can shape the public opinion in different ways depending on what is the objective. Psychological research has shown three major negative effects of media on children.

- Children may become less sensitive to the pain and suffering of others
- Children may be more fearful of the world around them

- Children may be more likely to behave in aggressive or harmful ways towards others

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Television is also blamed for children being unable to distinguish between fantasy and reality. Teachers spend hours helping students ‘unlearn’ what TV has taught them. Children who are prematurely exposed to fear, violence and hatred, have problems later on, because their natural development into loving adults had been disrupted and confused. Even then there are several qualities which are offered by mass-media for personal and academic development of children. These include knowledge and information regarding social, political, economic, human issues, understanding of society, trends, costumes, views, feelings and diversity, current trends regarding language, fashion, behaviour, jobs, education, travel, and the worldview state of plurality.

State: It is a self-governing political entity bearing four components of land, people, governance and sovereignty. It exercises strong influence on the quality of life of the group of people living in that particular territory. The agency of state has a two-pronged effect upon the personality and life of children. One of them is the direct effect through administrative means and indirect effect by the means of policy making and execution of the legislations.

Some prominent qualities imparted by the State for personal and academic development of children by direct method are offered through education. Commissions, Committees, Ministry of Human Resource Development, education ministries of states, Municipal Corporations and local self-governments running educational institutions at various levels. Along with the education, policies of the Central and State governments regarding the content, methodology, infrastructure and human resource for educational institutions also lay due effect upon the personality development and professional growth of individuals. Funding and management of schools, higher educational institutions, training and management institutions also has unending consequences upon the growth and development of the future citizens of the nation.

The State also affects the course of personality development of its citizens through indirect means. This effect is laid through the policies of other ministries influencing job opportunities, current extant and establishment of industries. Contracts and collaborations with other nations, which open opportunities for academics and earning also lay far reaching consequences upon the lives of individuals.

1.3.4 Dimensions of Education

There are different dimensions of education. Let us briefly discuss them here:

Narrow meaning of education

Though education happens to be an instrument for the all-round development of individuals but as per the objective there may be a narrow dimension of this activity. This contraction of the dimension of education may be on several issues like academic attainment, professional development, skill enhancement and accomplishment of discipline to explain the nature of the narrow sense of education G.S. Mill has stated that ‘the culture which each generation purposefully gives to those who are to be its successors, in order to qualify them for at least keeping up and if possible for raising the level of improvement which has been attained.’ Thus, it may be said that education in narrow sense means a conscious and deliberate process, planned to modify the behaviour of the individuals in

desirable and socially supported channels and to bring about in them the specific knowledge, understanding and skills. The characteristics of the narrow dimension of education may be listed as:

- This type of education is imparted through the institutions specially planned for this.
- It is the deliberate, conscious and systematic influence exerted by the mature person i.e. teacher on the immature person or student.
- It is limited to the delivery and practice of the pre set syllabi through classroom activities.
- This type of education is intentional rather incidental. There is limited scope for informal learning.
- This system of education considers learning as an accumulation of knowledge, information and details of experiences of the human kind in the history.
- The example of this type of education may be sought in the traditional setups of education such as Buddhist and medieval systems of education where the activity of education was limited to the achievement of pre decided goals.
- Control redirection and sublimation of instincts, character formation and moral development, preparation for life, inculcation of social feelings and satisfaction of needs and achievements of material as well as metaphysical prosperities may be names as the chief objectives of such learning.

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Broader meaning of education

The broader meaning of education is a novel concept and refers to the expansion of the dimensions of education covering scholastic and co-scholastic areas of learning and experiencing. This type of learning broadens our outlook and deepens our insight towards the educational activities in classrooms and schools. The broader concept of education may include the physical, mental, intellectual, cultural, ethical, moral, social, political, religious and spiritual dimensions of individual personality. The wider dimension of education is well-defined by the noted educationist sir R.C. Lodge 'In the wider sense, all experiences of educants in schools are said to be educative. The bite of a mosquito, the taste of watermelon, the experience of falling in love, of flying in airplane and of being in a storm in a small boat; all such experiences have a direct educative effect on us.' The child educates the parents, the pupil educates his teachers; everyone we may say think or do educates us no less than what is said or done to us by other beings, animate or inanimate. Thus, it may be concluded that education in wider sense is life and life is education as well.

The broad concept of education is helpful in achieving the social and national goals of education. These goals are related to the understanding of society, contribution towards social good through widening of contemplation, feeling of equality and understanding other's feelings, needs and psychology. Further, the national perspective of education demands for more literate, vigil, conscious and intelligent citizen force who have the inculcation of civil duties, availability of skilled and who could fill up the increasing demand of man-power. The development of national consciousness is the most important demand of broader education. Illustrating the broad concept of broad education, John Stuart Mill says that not only does education include whatever we do for ourselves and whatever is done by others for us for the express purpose of bringing us somewhat

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nearer to the perfection of our nature, it does more, in its larger acceptance, it comprehends even the indirect effects produced on character and on human faculties, by things of which the direct purposes are quite different, by laws, by forms of government, by the industrial arts, by the modes of social life, not even by physical facts not dependent on human will, by climate, soil and local position.

1.3.5 Interrelation between Philosophy and Education

There is a strong interrelation between philosophy and education. Philosophy guides the path of education. Philosophy is also the inspiration behind education and creates the need for education by providing incentive to continued learning and knowledge generation. Taking them as two sides of the same coin; philosophy happens to be the contemplative side and education as the active side. Philosophy provides aims and objectives to education and education, on the other side, makes them practical. Almost all great philosophers have also been great educators. All the basic questions of education such as aims of education, curriculum, methods of teaching, the content, role of teacher, methods of teaching, discipline etc. are still determined by the philosophy. To further explore the interrelation between philosophy and education a point to point reference is presented hereunder:

- **Philosophy begins with learning and develops learning:** Observation, contemplation and fact finding are the basic processes in philosophical development. All these activities are related to education. Thus, it may be said that philosophy starts with learning, continues with learning and enhances the process of learning. Education, on the other hand, takes direction from philosophy in deciding all the important points of its course.
- **Philosophical principles of learning are adopted by education:** Many learning principles developed by the philosophy in the past are still used in the development and transformation of learning in schools. These principles include discussion, question and answer, lecturing, contemplation, logical thinking and experimenting. In this aspect, education owes much to philosophy. Education, on the other hand, has contributed much towards the developing the novel learning methods and contributed towards developing advanced methods of philosophical inquiry.
- **Philosophy is contemplative and education is applicative:** History proves that all the life changing principles developed by philosophy are adopted by education. The Vedic, Buddhist and Muslim educational systems which prevailed in India in different time periods of history adopted the philosophical principles of their own, practically and religiously.
- **The absolutism of philosophy is balanced by education:** Many principles of philosophy have been too ideal to be implemented practically. For example, philosophy would say that oneness in thinking, speaking and doing is the truth. But, the well accepted fact is that such, practice is too high a goal for an average human being. In such cases, education provides the guidance and examples.
- **Education as a means to dissolve the conservative disputes of philosophy:** The dispute between the structure and principles of natural, idealistic, humanistic and pragmatic theories of philosophies is as old as the emergence of these theories. The originators and followers of these theories could do nothing to bring harmony among the basic principles of the existing theories. But, the modern education system is wise enough to accept the suitable principles of different educational

philosophies quite harmoniously. In any system of schooling we may easily observe the principles of natural, idealistic, humanistic, pragmatic and other prominent theories working for the good of the education and the educant.

- **Philosophy and education are both working for the human good:** Philosophy, since its beginning, has done much to make human life more and more contemplative and contented. It has suggested that man should be more and more contemplative and give importance to the basic realities of life. Philosophy has inspired man to live an ideal life with being driven away by worldly pleasures. Education is another inspiring agent to guide mankind towards the ultimate good. Education takes the help of philosophy in taking the principles and examples of ultimate goal of life and ensuring their implementation in the real life. Hence, the ultimate objective of both education and philosophy is one and the same and that is the welfare of human kind.
- **There is a direct correlation between the philosophical opinions and educational practices:** Psychologists who study human personality recognize that a personality can be broken down into certain factors or dispositions. A cluster of statements to which someone assents can be highly correlated with a cluster of actions in which he engages. It would seem reasonable that there should be a correlation between the advocacy of a set of philosophical opinions and the tendency for an educational practitioner to behave in a certain way in the classroom or administrative situation. Furthermore, if particular philosophical doctrines are correlated with particular personality characteristics, we would expect that each major personality type is correlated with a major philosophical system. Empirical studies have actually been done which tend to confirm these predictions.
- **Philosophy and education as cultural institutions:** Both education and philosophy are correlated as verbalization and manifestation of the spirit of a culture. Since the ethos of a culture is the culmination of all its institutions, a change in one institution, i.e. either philosophy or education, may produce a corresponding change in one or more other institutions. If philosophy is viewed as utopian, then it performs its classical function by promoting a reconstruction of the social and educational order in conformity to the tenets of some great Truth. If philosophy is viewed as ideological, then it serves as a verbal battleground between the expressed rationalizations of vested interests. In both the cases, philosophy acts as an agent to the survival of the culture. Education, on the other side, is also an agency of ensuring the enculturization of the upcoming generations studying in schools.

From the above discussion, it is evident that there is an overt and inter-dependent relationship between education and philosophy. Both of these not only support each other, but also fulfill the diverse needs of people with different personality types. This correlation is so time-tested and reliable that there is no sign of imbalance between the two since the prehistoric time till date. It must therefore be accepted that philosophy and education are mutually dependent and complementary in all areas of their existence.

1.4 AIMS OF EDUCATIONAL PHILOSOPHY

Having known about the relations between education and philosophy it is evident that there is a need to view the two as complementary entities for all educational as well as philosophical purposes. Here comes the term known as ‘Educational Philosophy’, which

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Check Your Progress

4. What is the non-formal type of education?
5. State the functions of family.
6. What is the broader meaning of education?

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indicates the philosophical foundations of education or educational implications of philosophy. In its broadest possible sense, the term educational philosophy is indicative of the use of philosophical principles in viewing the basic factors of education and educational practices. These include the aim, objectives, methodology of content transaction, methodology of content transaction, role of teacher in the process of teaching and learning and the concept of discipline.

Perspective of education: Education is undoubtedly the most vital activity of human beings which paves the path to success and ensures the accomplishment of all the desired goals of individual as well as social life. Various philosophies have viewed education from different perceptions.

Idealism, one of the most original philosophies of the West, views education as the refinement of ideas, feelings and experiences. Since ideas, thoughts and spiritual principles are everlasting and immortal and the material world is ever changing and destructible; spirituality or idealism is the outcome of education. In idealist philosophy, man is considered a spiritual being, having faith, morality and religion in the core of personality. This difference in the human personality is due to education. Hence, education, in idealist philosophy, is the man making activity. ‘Know thy self,’ the *mool mantra* of idealism can also be achieved through educational activities.

Humanism, another philosophy of education, believes that education is the instrument of creating and restoring human values in mankind. This philosophy assigns the utmost value to the behavioural aspect of education and considers that true education makes an individual sensitive towards all other human beings of the world. In pragmatic philosophy, it is considered that education is the natural as well as the social necessity of man. Natural, because human offspring depends upon the adult members of the society for their developmental needs; and social, because it helps children to be socialized and become useful members of the society. Since pragmatism is a practical and utilitarian school of philosophy, it has influenced education to the maximum extent. This philosophy preaches education to be imparted with reference to human needs. It should enable the child to solve his existing problems and also to lead a better and happier life. Education therefore must have its own intellectual, moral, aesthetic, social and physical aspects. The philosophy of naturalism rejects all authority, which interferes with spontaneous and natural development of children and advocates the concept of education that helps in the development of natural capabilities in the most harmonious way.

1.4.1 Philosophy and Aims of Education

In the words of Bode, ‘Unless we have some guiding philosophy in the determination of objectives we get nowhere at all.’ Robert Rusk corroborates this by saying, ‘Philosophy formulates what should be the end of life while education offers suggestions how this end is to be achieved.’ It is in this sense that philosophy becomes handy to the teacher for formulating his/her objectives in education.

Philosophy means looking at the question as a whole without restriction or simplification, looking at aims and purposes. It implies a skepticism and has nothing to do with compromise. A philosophy of education, therefore, should take into account the conflicting notions of life and education.

It is through philosophy that one’s outlook broadens. Without the help of philosophy education proves very weak. The modern philosophy in education builds up with the development of critical thinking and reason. It involves a rational outlook which takes into consideration the entire problem before finding its conclusion.

Aristotle noted the conflict in the educational practice and questioned as to whether the curriculum should be chosen for its pragmatic values, as one can see that educational practice is perplexing. But how to find out a solution? This search for principle is in a nutshell the mainspring of study of philosophy.

A philosophic method of extending and refining commonsense moves in a direction different from the scientific one. It aims not at a solution of a limited number of factors but also aims at other remote objectives.

‘No system of education’, says Acharya J.B. Kripalani, the noted Gandhian philosopher, ‘can be properly appraised and appreciated, unless it is studied in connection with the ideas and ideals which it represents.’ The Soviet system of education can properly be understood only in the light of the philosophy of Marxism and Leninism. To gain insight into the British system of education, it is necessary to have the correct perspective of the synthesis between progressivism and conservatism, which the Butler Act tried to achieve.

The Chinese, with their natural distrust of present-day education in the West, emphasize that it is the paramount duty of the state to train the people for the purpose of the state. In ancient Sparta, the ideal was to defend the country’s honour and hence the aim of the Spartan system of education was to prepare citizens to be soldiers and patriots. On the other hand, the Athenian system of education aimed at the cultural development of each individual, in conformity with the Athenian philosophy of that era.

All educational philosophies have suggested vast and varied aims and objectives of educational process. These include physical, mental, intellectual, spiritual, emotional, ethical, moral, cultural, social, academic, lingual and pragmatic development of human personality. This may be termed as holistic development or the fullest development of human personality. Various philosophies have set different aims of education as per their perception of education.

For example, the philosophy of idealism suggests self-realization, i.e., complete knowledge of self through physical, psychological and spiritual faculties as one of the aims of education. All these may guide the man to discover the underlying link between the individual soul and the universal soul. Cultural enhancement is another goal of education. It means the conservation, promotion and transmission of cultural heritage. Cultivation of moral, social and ethical values, enhance morality, humanity and spirituality in mankind. Education should develop the capability to know, understand and rationalize the purpose of all objects and phenomena in nature. Education should provide such environment, situations and opportunities which are directly related to the development of spiritual values in a child. Such an education will help the child to lead happy, harmonious as well as contended life and finally to attain self realization.

Humanistic philosophy lays more stress upon the respect for intellectuals, freedom of expression, propagation of democratic principles, respect for ancient values, ethics and culture as the aims of education. According the humanists, education should be need based and must promote the process of self-actualization through self-discipline and self-control activities. Naturalism says that education should be planned according to the nature of the child and its aim should be to prepare a natural man. ‘The natural man is not the savage man but a man governed and directed by the laws of his own nature rather than by these of social institutions’.

In the words of McDougall, ‘Education should aim at the redirection and sublimation of instincts for achieving socially desirable ends’. Darwin says that, ‘The

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aim of education is to equip the individual to struggle for existence and thus to ensure his survival'. The sum of all these can be presented as self-expression and self-preservation to attain the most suitable input from the atmosphere, redirection and sublimation of instincts towards the socially acceptable norms, struggle for existence to become the fittest and to ensure the survival. Education, according to natural laws, should aim at the abstinence of frustration and dissatisfaction. It should attain the perfect development of individuality to meet to ultimate goal of human life.

Curriculum: It is based on the aims of education that the curriculum is developed. It is the sum totality of all the activities taking place in schools for the education of pupils. It contains both the scholastic and co-scholastic components of the school activities and ensures the fullest development of the individuals. Keeping the aims in view, all the philosophies have suggested various components of curriculum to achieve the objective of education. Idealism suggests that thoughts, feelings, ideas and values should be given greater importance than the child and his activities. The curriculum should be concerned with the whole humanity and its experiences. This philosophy suggests three types of activities in the curriculum which ensure the all-round development of the future generation studying in schools. These types include intellectual curriculum for the enhancement of languages, literature, social studies, mathematics and physical development of pupils. The second type of curriculum is aesthetic which includes drawing, music, poetry, handicrafts, fine arts and craft work for the development of skills and creativity in students. The third type of curriculum is moral syllabus which gives importance to religion, metaphysics and ethics with spirituality for the achievement of self-realization goal of education.

The humanist curriculum gives due regard to the ancient culture and history. It suggests the study of mathematics and sciences for reasoning and logical thinking; art, crafts and other aesthetic expressions for appreciating beauty in nature; physical training for developing physical well being and training in good manners, values and ethics for the cultural development of students. Presenting a unique approach of curriculum, the naturalist philosophy proposes the implementation of a flexible curriculum in which every child is given the right to determine his own curriculum. The child is expected to learn directly from nature through personal experiences. It is not merely an acquisition of information but an expansion of natural powers. Therefore, the naturalist curriculum does not aim at educating the child but merely preparing him for education. Naturalists give prominence to subjects like languages, history, agriculture, gardening, art and craft, sciences, mathematics, geography and astronomy, because these are closely related with the nature around the child. These subjects should be correlated with the games, activities, experiments and experiences of the child and with the life around him. All these subjects have different values and uses to ensure the all round development of child's personality.

The pragmatic philosophy does not favour any previously fixed curriculum. Pragmatists keep certain principles in mind and draw an outline of the curriculum to be evolved. Therefore, they always have a flexible curriculum which changes frequently to meet the requirements of the situations. Pragmatism follows certain principles in the course of developing a curriculum. Some of these principles are principle of activity, principle of utility, principle of natural interest and principle of integration. Pragmatists believe in the unity of knowledge and skill. In the words of Descartes, 'all the true learning must be integral and the educators ought to abstain from dividing and parceling out what nature has made one and indivisible'.

Methodology: Another aspect of education which is affected by the aims set out are the methodology adopted by the teachers. This term is used to indicate the ways and means adopted by the teachers or educators to transfer the content to the educant. This may be in the form of lecturing, discussion, question-answering, project presentation and so on. As far as philosophical view of this academic activity is concerned, there are several very useful and commendable methods suggested by various philosophies. Idealism, for example, has served as many as six traditional methods for content transaction. These are question and answer method suggested by Socrates, discourse method adopted by Plato, inductive–deductive approach of Aristotle, simple instruction method of Herbert Spencer and play-way of Froebel. Humanism has added few more methods such as experimentation, arranging-repeating and debate to the list of methodology of content transmission.

The naturalist philosophy is richer and innovative with respect to the transactional methodologies. J.J. Rousseau, the most ardent presenter of naturalism considers education as a process of living. Being a process, it lasts throughout the child's life. Naturalists are not in favour of direct teaching, but they always stress over the direct experience of things and believe the principle of learning by doing. The most prominent methods advocated by naturalist philosophers include the heuristic or direct experience method. Against the traditional chalk and talk or lecture method, naturalists suggest the least use of words in written or in spoken form. They suggest that all subjects should be taught through practical experiences play-way method. Observation, experimentation and self-learning are the other methods suggested by the naturalists to make the learning more lively and permanent. Naturalists also emphasize open-air schools where all essential learning apparatus is made available for the students' use and self-learning.

The pragmatic philosophers also have worked hard upon finding more practical and student oriented teaching methods for modern learning situations. It clearly denies all traditional, lifeless and rigid practices in education. Considering the individual difference in mind; pragmatism advocates for varied, individualistic and self-inspiring techniques in teaching. The teaching methods that are related to the child's interest and involve practical work, activity and productive experiences are preferred in this philosophy. Some of them are learning by doing, integrated learning, project method and self spaced learning method. These methods ensure active and dynamic learning experience through self effort.

1.4.2 Role of Teacher

The role of teacher in teaching learning process inside the classroom has been a matter of discussion in all the educational philosophies. Some philosophies place the teacher at the pivotal place, without whom, the activity of education loses its possibility. Contrary to this, there are other schools of philosophy which makes the teacher to sit behind the curtain and observe and evaluate the performance of the pupils. For example, teacher plays a very important and glorious role in idealistic education. He must essentially be saturated with a high degree of self-knowledge, self-dynamism and spirituality. He must be full of love, sympathy and purity and creates an atmosphere where students could attain full mental and spiritual development. Similarly, the humanist philosophy also assigns a pivotal place to the authority of teacher. Above academic qualifications, it is the outlook of a teacher which determine success or failure of students as a human being. The teacher helps the students to find unity in the multiplicity of their experiences. He should be specially trained to lead the children towards their goal of chastity and humanity.

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In contrast, the naturalist philosophy of education considers teacher's place to be behind the scene. Teacher, in this philosophy, is a mere spectator of child's learning activities rather than an informer, director or moulder of character. He is not supposed to interfere in the activities of the child. Teacher's duty is to see and ensure that there is free development of the pupil's interests and natural impulses as a result of the academic activities imparted to him. In naturalist concept, the teacher is only a setter of the stage, a supplier of materials and opportunities, a provider of an ideal environment and creator of conditions conducive to the natural development of pupils. This outlook of a teacher is supported by the pragmatic philosophy also. The chief function of a pragmatic teacher is to create real life situation in which children or pupils face realistic problems and try to get out of them on their own. The pragmatic teacher is a friend, philosopher and guide for his pupils. The two requisites that a pragmatic teacher requires are capacity to come into close contact with children and understanding regarding the needs, aspirations and trends of society. He must be a practical man.

Discipline: The word 'discipline' has been controversial in the arena of philosophy as well education for a considerable time. The concept of discipline was very much regarded in the traditional setup of education, as it ensured the sublimation and redirection of natural instincts of an individual as per the needs of society. The traditional system of discipline was very strict and allowed all sorts of physical and psychological punishments. But with the passage of time, the perception of discipline underwent drastic changes and came to be realized as a process of internal maturity. The philosophy of idealism suggests maintaining such state of discipline where a child could attain perfect mental and spiritual development. This discipline should be impressionistic and expressionistic or totalitarian. This includes control over undesirable activities and gradual freedom to attain spiritual advancement. Humanist philosophy suggests that children should be made to feel pride in being disciplined and should have an ambition for it rather than fear of rigorous punishment.

Appreciating the notion of discipline, the naturalist philosophers express that a child can achieve the maximum development when he is allowed to develop in an atmosphere of freedom with minimum possible guidance. They do not advocate any sort of punishment for the child except that he is allowed to suffer the natural consequences of his actions. External stress and strain is not desirable as it stands in the way of the child's natural development. Rousseau and Spencer, the two most prominent figures of naturalism assert that, whenever a child goes the wrong way, natural reaction comes as proper punishment for him.

From this discussion on the functions of educational philosophy, it is evident that education and philosophy are interdependent on each other. Both of these disciplines have contributed much to the sustenance and development of each other since the time unknown. Now also their interrelation is so vivid and vital that the concept of educational philosophy continues to be popular and practical for the education system of the day.

Check Your Progress

7. In the philosophy of humanism, what is the meaning of education?
8. What are the three types of curriculum as per idealism?
9. Enlist some of the methods suggested by naturalists to make learning more lively and permanent.
10. State the chief function of a pragmatic teacher.

1.5 SUMMARY

- Education and philosophy are two sides of the same coin—life. Sir John Adams said that education is the dynamic side of philosophy.
- Views of great thinkers like Socrates, Plato, Aristotle, Comenius, John Locke, Rousseau, Froebel, Dewey, H.G. Wells, Bertrand Russel, A.N. Whitehead and

Aldous Huxley, offer an interesting example of the intimate connection between philosophy and education.

- Education is the process of enabling people not merely to live but to live adequately. There are various facets of education: academic, aesthetic, moral, physical, social and spiritual.
- While the goal of philosophy is to explain the baffling mysteries of universe, the place of man in the universe and the variegated problems created out of his wisdom and folly; the chief means of philosophy is ‘education’, which has been correctly described as the ‘dynamic side of philosophy’.
- Philosophy is the foundation and education is the superstructure. Without philosophy, education would be a blind effort and without education, philosophy would be a cripple.
- The need of philosophy of education is felt very seriously in the area of curriculum planning. The philosophical approach to life is the guiding factor in the choice of studies to be included in the curriculum.
- Education is the most important human activity. It is a process of observing, thinking, learning and understanding the laws of nature.
- Etymologically, the word ‘education’ is made of three Latin words viz. ‘Educare’—to bring up or to nourish, ‘Educere’—To lead out or to draw out (Wherein ‘E’ stands for ‘Out’ and ‘Ducere’ means ‘to lead’) and ‘Educatum’—to train, act of teaching or training. Hence, Education thus means both the acquisition of knowledge and experiences and the development of skills, habits and attitudes.
- The concept of education is still in the process of evolution and this process will never come to an end. It must continuously grow and change to be able to cope with the changing demands.
- Education is a path-breaking activity ensuring emancipation from age old misbeliefs and superstitions. It inculcates an advanced thought and outlook to the people.
- There are three types of education: formal, informal and non-formal.
- Internal agencies of education refers to the process of unfolding of inner capabilities through scholastic and co-scholastic experiences of an individual. External agencies of education include family, peer group, peer pressure, society, mass media and state.
- There are two dimensions of education: narrow and broad.
- Education in narrow sense means a conscious and deliberate process, planned to modify the behaviour of the individuals in desirable and socially supported channels and to bring about in them the specific knowledge, understanding and skills.
- The broader meaning of education is a novel concept and refers to the expansion of the dimensions of education covering scholastic and co-scholastic areas of learning and experiencing.
- Educational philosophy is dependent on a lot of things like perspectives,

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1.6 KEY TERMS

- **Peer pressure:** It is a term used to describe instances where an individual feels indirectly pressured into changing their behaviour to match that of their peers.

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- **Non-formal education:** It is a type of education which has a mixture of norms and qualities of formal and informal education systems.
- **State:** It is a self-governing political entity bearing four components of land, people, governance and sovereignty.
- **Curriculum:** It is the sum total of all the activities taking place in schools for the education of pupils.

1.7 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. There are various facets of education: academic, aesthetic, moral, physical, social and spiritual.
2. The dynamic side of philosophy is education.
3. The philosophical approach to life is the guiding factor in the choice of studies to be included in the curriculum.
4. Non-formal education is a type of education which has a mixture of norms and qualities of formal and informal education systems.
5. Functions of family include physical, emotional, lingual, mental, social, moral and religious development.
6. The broader meaning of education is a novel concept and refers to the expansion of the dimensions of education covering scholastic and co-scholastic areas of learning and experiencing.
7. In the philosophy of humanism, education is the instrument of creating and restoring human values in mankind.
8. The three types of curriculum as per idealism are intellectual curriculum, aesthetic curriculum and moral syllabus.
9. Some of the methods suggested by naturalists to make learning more lively and permanent are observation experimentation, self-learning, etc.
10. The chief function of a pragmatic teacher is to create real life situation in which children or pupils face realistic problems and try to get out of them on their own.

1.8 QUESTIONS AND EXERCISES

Short-Answer Questions

1. Enlist the contributions of philosophy to education.
2. What are the basic characteristics of education?
3. Define the different types of education.
4. Discuss briefly the different perspectives of education.
5. What is the concept of educational philosophy?

Long-Answer Questions

1. Explain the different agencies of education.
2. Discuss the dimensions of education.

3. Write an essay on the interrelation between philosophy and education.
4. What is the role of a teacher as per different philosophies of education? Discuss.
5. Assess the aims of educational philosophy.
6. Explain the relationship between philosophy and science with suitable examples.

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1.9 FURTHER READING

Shukla, C.S. 2004. *Development of Educational System in India*. Meerut: International Publishing House.

Aggarwal, J.C. 2008. *Reading in Foundation and Process of Education*. New Delhi: Vikas Publishing House Pvt. Ltd.

Brubacher, J. S. 1969. *Modern Philosophy of Education*. New Delhi: McGraw Hill.

Dasgupta, S.N., 1975. *A History of Indian Philosophy*, Vol. I. New Delhi: Moti Lal Banarsi Dass.

UNIT 2 WESTERN SCHOOLS OF PHILOSOPHY

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Structure

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2.0 INTRODUCTION

In this unit, we will discuss the aims and goals of education as envisaged by Western thinkers. Western ideologies have been influencing the aims and practice of education all over the world. On analysing the Western thoughts, the pattern of thinking on education that could be identified is grouped under three facets, viz., Idea, Experiences and Praxis. Idealists and phenomenologists believe in the existence of an idea: the only concept that is real, true and ultimate. Therefore, the aims of education which are provided by these people, are influenced by their philosophy about reality, knowledge and value.

Another group of Western thinkers like Bacon, Rousseau, Dewey and others, who have converged their educational thoughts, emanating from experiences through one's own senses, perceptions and interactions, have come out with varying shades of experiences. They are empiricists, naturalists, realists, pragmatists, etc., whom we shall also discuss in the context of aims of education.

There is another group of thinkers who attach more importance to the social forces, which influence education. Marxists recognize the value of social and non-pre-suppositional sources of knowledge that determine the educational aim and operation.

Education reflects the socio-cultural needs, knowledge and values of society through its formulation of aims and goals that further control the choice of curriculum, methods of teaching, etc. There has been a great and dominating impact of Western

thoughts on education so far. Therefore, the aims and goals that are being discussed here relate to the sources of the respective category of philosophical orientations: idealists, naturalists, pragmatists and existentialists.

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2.1 UNIT OBJECTIVES

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

- Explain the philosophical basis of the systems of education
- Analyse the fundamental thinking about metaphysics, epistemology and values according to various schools of thought
- Categorize the aims of education according to idealists, naturalists, pragmatists and existentialists

2.2 IDEALISM

In the realm of philosophy, one finds various schools of thought or 'ism'. These schools of thought emerged due to their differences in the ways they perceive reality, knowledge, and values. Hence, a school of thought is understood as a set of ideas regarding reality, knowledge and values. These three aspects of a school of thought are very important in influencing the aims and practices of education. There are three branches of philosophy, which deal with these aspects. These are meta-physics, epistemology and axiology. Meta-physics helps a person to understand the nature of reality. Epistemology deals with nature of knowledge and its conditions, and means. Axiology deals with ethics and aesthetics. Ethics is concerned with the problems of values, morality, and good and bad, whereas aesthetics explains the beauty.

Aims and goals of education of western thoughts: While discussing the aims of education according to various schools of thought or 'ism', we will explain the meta-physics, epistemology and axiology as propounded by different schools of thought.

Idealism

'Idea' is a category of philosophical emphasis, under which idealists and phenomenologists have been grouped because both share a somewhat similar kind of thinking. Plato and Descartes, who are called 'idealists,' believe that only ideas are permanent and the reality consists of ideas. There is a universal idea of 'Table', for example, which is imperfect. These ideas are prior to man's world. Similarly, phenomenologists like Husserl, Alfred Schutze and Mannheim have not recognized the existence of a physical world but have given a great notice to a symbolically endowed world of meaning.

In the Western world, a wave of philosophical thinking developed which was sponsored by Plato, Socrates, Descartes, Berkeley, Fichte, Hegel, Hume, Kant, Schelling, Schopenhauer, Spinoza and Gentile. They are known as idealists because they stressed more on mind and the self—leading to the belief that the creation of the universe is a reflection of the mind. As a result of this, a philosophical school of thought gained prominence as idealism.

Idealism is the oldest system of philosophy known to man. Its origin goes back to Plato in the West. Its basic viewpoint holds the human spirit as the most important

element in life. The universe is viewed as essentially nonmaterial in its ultimate nature. All the idealist philosophers agree on the fact that (i) the human mind is the most important element in life; (ii) the universe is not composed of material in its ultimate nature. In the philosophic sense, idealism is a system that emphasizes the pre-eminent importance of mind, soul or spirit.

Metaphysics of idealism

For idealists, only the mental or the spiritual power is ultimately real and hence, the universe is taken as an expression of a highly generalized intelligence and will—a universal mind. Reality is reducible to one fundamental substance—spirit. Matter is not real; rather it is a notion, an abstraction of mind. It is only the mind that is real. Therefore, all material things that seem to be real are reducible to mind. The chair you are sitting on is not material; it only seems material. Its essential nature is the reflection of the mind.

Idealists such as the transcendentalists have used the concepts of macrocosm and microcosm to explain their version of reality. Macrocosm refers to the universal mind, the first cause, creator or God. The macrocosmic mind is continually thinking and valuing. The microcosmic is a limited part of the whole—an individual and lesser self.

In educational terms, the student can be conceived of as a spiritual entity that is also part of larger spiritual universe.

Epistemology of idealism

Idealists believe that all knowledge is independent of some experience. The act of knowing takes place within the mind. Idealist knowledge is based on the recognition or reminiscence of talent and ideas that are already present in the mind. Such ideas are a priori, that is, they concern knowledge or concepts that exist prior to, and independent of, human experience about them. Man can know intrusively, that is to say, they can apprehend some truths without utilizing any of their senses. Man can also know truth through the act of reason by which an individual examines the logical consistency of his ideas. Plato was one who held that knowledge is a matter of recall. Objective idealists such as Plato think that ideas are essences, which have an independent existence. Subjective idealists such as Berkeley reason that man is able to know only what he perceives. His only knowledge is of mental states. Existence depends on the mind that is derived ultimately from God and God is the infinite spirit.

Axiology of idealism

According to the basic theory of idealists, as has been explained above, the purpose of education is to contribute to the development of the mind and self of the pupil. The school should emphasize intellectual activities, moral judgment, aesthetic judgment, self-realization, individual freedom, individual responsibility and self-control in order to achieve this development.

2.2.1 Idealism and Aims of Education

Let us analyse the aims of education according to the philosophy of idealism.

- **Self-realization:** According to idealism, the aim of education should be to make the individual aware of his 'self' i.e. full knowledge of the self or total development of the inherent powers of man. There are four stages of this aim of self-realization—first is the physical and the biological self, second is the social self which determines

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the social relations and self-acceptance of social values, third is the mental self, i.e., the self-directed reasoning and fourth is the spiritual self. At the level of the spiritual self, the total transformation of personality takes place.

- o Attainment of the attributes like Satyam, Shivam and Sundaram or truth, goodness and beauty
- o Development of rational knowledge intended to understand the universe
- o Appreciation of beauty, which includes artistic activity through which the ultimate unity is expressed
- o The development of personal moral character and social justice
- o Establishing a conscious relation of man with the universal self

Thus, the aims of education according to idealists should be the development of the mind and self, intellectual capability, moral judgment, aesthetic judgment, self-realization, individual freedom, individual responsibility and self-control. Thus, the inborn nature of a person is converted into a spiritual nature and prepared for a holy life. Idealists have contributed immensely in suggesting the aims of education.

- **Development of spiritual values:** Idealists give greater importance to spiritual values as compared to material gains. Besides developing mental and moral characteristics in children, spiritual characteristics must also be developed.
- **Cultivation of truth, beauty and goodness:** Idealists assert that to develop spiritual values in the individuals, pursuits of highest ideals namely truth, beauty and goodness should be encouraged more. The more an individual realizes these ideals, the more spiritually developed he will become. Hence, education must strive its utmost in developing the child morally and spiritually so that he achieves self-realization.
- **Conservation, promotion and transmission of cultural heritage:** God has endowed man with a keen and penetrating intellect, intelligence and an enormous capacity of assimilating knowledge of the world. Therefore, his mental and intellectual capacities must help him in assimilating cultural values and characteristics. Culture treasures all the peculiarities of human life in all its aspects. The purpose of education must be to preserve, transmit and develop the cultural heritage. A child is expected to be acquainted with his cultural heritage so that he conserves, promotes and transmits it to the younger generation.
- **Conversion of inborn nature into spiritual nature:** According to idealists, the inborn instincts and inherent tendencies of the child should be sublimated into spiritual qualities and values. This is the real development of the individuality. The purpose of education, hence, is to attain the fullest and highest development of the personality of a child.
- **Preparation for a holy life:** Idealists are of the view that education must provide an environment, which is conducive to the development of spiritual values in a child. If a person has a life full of piety and good ideals, he will naturally emerge as a fully developed personality with a sense of self-realization.
- **Development of rationality:** Idealists advocate the development of intelligence and rationality in children so that dialectically they may discover the absolute truth. Only highly developed minds can perceive and understand the all-pervading force.

2.2.2 Idealism and the Method

Idealists suggest that the method of education must be oriented towards achieving the complete development of all the innate abilities of the child and to train him for self realization. Specific methods suggested are:

- **Instruction:** It is the most important tool to impart information. But, it does not mean, as held by idealists, a tool for stuffing the child's mind with junk material. It implies modification and refinement of child's mind. It has to be, therefore, supplemented by sympathetic guidance. Idealists stress that training of all kinds must be provided in the school.
- **Activity:** Like naturalists and the pragmatists, idealists also recommend activity-based teaching and learning. The child must learn through doing. Lectures must be followed by questioning by students. But, more important than this is the creative activity. The creative activity has to be natural, continuous and progressive. This helps in child's approaching nearer to self-realization as through this child's innate tendencies are manifested. The instruction has to be active.
- **Experience:** The child's own experience should be, as far as possible, the basis of his education. The task of the teacher is not to stuff his own experience in the educand's mind but to provide the child some insight through his own experience. Teacher's guidance must help the child to get rid of his frustrated and repressed tendencies. Independence and freedom is an essential pre-requisite for experience.

2.2.3 Idealism and Curriculum

The determinants of what should be taught in the schools, according to idealists, are the spiritual development of the child and the preservation and creation of cultural heritage of the human race. Hence, they said that curriculum has to be man-centred not child-centred, ideals and values-centred not freedom-centred, character and morality-centred not expediency centred. Ideals for children should be the objective of curriculum transition. As asserted by Socrates, 'Not man but reasons are the measure of all things; not individuality but universality, not percepts but concepts and ideals are the norms for all human experience including these of children.'

Idealism approaches the problem of curriculum from the domain of ideas rather than from the child and his present or future activities. To them, present experience of the child is not very important. What is more important is the experience of the human race as a whole. Hence, the curriculum must reflect its broad divisions: (a) science, and (b) humanities. T.P. Nunn (1923) said that a nation's schools should consolidate its spiritual strength, maintain its historic continuity, secure its past achievement, and guarantee its future. To achieve this, the idealists stress that the curriculum must reflect those activities that are of greatest and most permanent significance in the wider world, and grand expressions of the human spirit. These activities are of two kinds (a) those that safeguard the conditions and maintain the standards of individual and social life such as the care of health and body, manner, social life, morals and religion, and (b) creative activities. Hence, the curriculum must comprise: (i) literature, (ii) art (including music), (iii) handicrafts, (iv) science, (including mathematics), and (v) history.

From psychological point of view, the idealists held a belief that the curriculum should reflect: (a) what man knows, and (b) what man does or strives to do. Looking from this point of view, the idealists' curriculum should represent the major modes of

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man's thinking enshrined in language and literature, science, mathematics, history and geography which constitute the traditional intellectual studies. In addition to this art, poetry and music which represent man's modes of feelings should also be included in the scheme of studies. Representatives of what man does or strives to do, such as major crafts, should also form part of the curriculum.

Role of teacher

The idealists attach greater importance to the role of the teacher in organizing education for the pupils. They consider educator and the educand as two essential parts of an organic plan. They assign to the teacher the most important responsibility of creating a specific kind of environment for the desired development of the pupils. The teacher, as they say, must provide appropriate guidance to pupils, so that they may progress towards perfection and a well-rounded ideal personality. The teacher in the scheme of the idealists is like a gardener who by his art sees to it that both his cabbages and his roses achieve the finest form possible. The teacher by his efforts must help the pupils, who are developing according to the laws of their respective natures, to attain levels that would otherwise be denied to them. Ross says that the relation between the educator and the educand is such that both of them work out in the process of education through self-realization and interaction with one another. Eucken Ross says that the educator can help the pupil towards true self-realization by regarding him not as 'a particular and exclusive individual being: but as a being in whom a new and universal life seems to emerge'.

Idealism and the discipline

Just contrary to naturalism and pragmatism, idealists stress the value of discipline as a part of the educative process. However, this does not mean that pupils' freedom and liberty are not important to them. Freedom to follow any and every inclination of action is, certainly, not acceptable to them. Such freedom to the idealists is license, not true freedom. On the other hand, true freedom is 'discipline' or denying himself this freedom one 'becomes master in his own house achieving the higher freedom to follow the light that is in him, unhampered by the chains of his lower nature. Self-realization is the only freedom worthy of the name. That man is free who is conscious of himself as the author of the law which he obeys. Thus, discipline not the freedom is the cry of the idealists.' Ross further says, 'if the educand is to succeed in realizing his spiritual possibilities, he must submit to a process of discarding which will enable him to apprehend the great values of life that are stressed by idealists.' Almost all idealists emphasize that the child should be taught to discipline himself and to contribute to the disciplined behaviour of others. Pupils' learning to be self-disciplined is an important educational value for the idealists. Punishment and strict external control to enforce discipline are not advocated. Idealists, on the other hand, recommend influence and impressions left on pupils by the teachers, parents and members of society, to be the most practical methods for this purpose. They emphasize that, for achieving this purpose, the educators themselves should be disciplined; in their own behaviour they must present the highest ideal of self-discipline. They stress that the entire natural, social and spiritual environment in which the child lives should be so fashioned that it should encourage the desire for self-discipline in the child.

Implications in education

Comenius is believed to be the originator of idealism in the sphere of education. According to idealism, man is born with the spiritual self. It is through education that we can realize its spirituality. Rusk says, 'Education is stated to enlarge the boundaries of

the spiritual realm.’ Home says, ‘Education awakening to the life of God in the soul of man, involving praise, prayer and worship. Idealism has talked more of objectives and aims of education and less of its devices, methods and organization.’

2.3 NATURALISM

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Ward described naturalism as ‘a doctrine which separates nature from God, subordinates spirit to matter and, sets up laws as supreme’. By robbing God of nature, it does away with the supernatural, and restricts itself only to what is natural; by marginalizing mind, it consolidates what is material, and is often called as materialism; and by setting up unchangeable laws of nature and matter, builds up a world-view rooted in scientific attitude, approach and method. The revolutionary changes in physical sciences in the 18th century were instrumental in developing naturalism.

Metaphysics of naturalism

Naturalists believe that nature is the whole reality. They are not prepared to accept that there is any superpower. They endorse an attitude of mind that denies the existence of an order transcendent nature and sense experience. It regards human life as a part of the scheme of nature. Naturalism has two-fold importance for education: one is as a philosophy and the second is the attitude towards education in the form of aims and methodology of education.

It is entirely a distinct concept which seeks to base education on the experience of the child. Its motto is ‘follow nature’. Jean Jacques Rousseau (1712–1778) was the most important naturalistic philosopher of education who cried, ‘What is this? Man is born free and I find him everywhere in chains’. This cry transformed the face of Europe and its echoes were heard far and wide throughout the world. Man is the supreme creation of nature. Naturalists believe that there is no other world that is real other than the world of nature that exists in the form of matter. Therefore, the reality cannot only be understood in terms of physical sciences.

Epistemology of naturalism

Rousseau and Herbert Spencer (1820–1903) were the philosophers who criticized the aims and methods of the various schools of their time. Rousseau’s concept of negative education is the real method of gaining knowledge. He said that the first education of the child ought to be purely negative. This he described as not teaching any virtue, value or truth by shielding the heart of the child from vices and mind from errors. In other words, it would mean providing no education, no information of any kind to the child, but rather the sense organs and the power of reasoning strengthening. Rousseau said ‘Nature wants that child should remain a child till he becomes an adult’. He called this education of his times a positive education. By negative education, he would mean changing the old sequence of positive education by allowing the child to grow his own way of seeing, thinking and experiencing and thereby saving the child from groaning under the dead weight of the old imposed meaningless education.

Thus, negative education is self-education. It is the education of the sense organs and the body. Thus, the self-experiences, which are acquired through the senses are the real sources of gaining or determining knowledge.

Check Your Progress

1. Name the three branches of philosophy.
2. Mention the element which is the basis of idealist knowledge.
3. What are the determinants of curriculum as per the idealists?

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Axiology of naturalism

Since the realists converge on the point that reality is matter, and that God, soul, mind, heaven and hell, as well as freedom of will, moral values, prayers and superhuman wonders are all illusions, therefore, there is no existence of eternal or universal values — rather, a child develops his own value system from his interaction with the external world of matter and the environment around. All concepts of goodness and morality cannot be taught if they are left to the individual to be learnt by him. For these values are transitory not permanent. They may change with the changing interaction of the individual with the outer world.

As a result of the theoretical conception of reality, knowledge and values of realists, three shades or forms of naturalism became more important which are:

Physical naturalism

It lays emphasis on studying the processes of matter and phenomena of the external world. It explains human activities and experiences in terms of material objects and natural law.

Mechanical naturalism

Naturalists feel that that the universe is a lifeless huge machine, which gets its form through matter and motion. In its movement, no spiritual power is needed.

Biological naturalism

It is based on Darwin's theory of evolution. According to this theory, man has evolved from lower animals by the gradual process of development. It emphasizes the development of man's natural impulses, natural propensities and inborn tendencies, which have developed, with the principles of adaptation to the environment, struggle for existence and survival of the fittest.

Naturalism and education

As a philosophy, naturalism has influenced the aims and objective of education apart from discussing and describing its methods, curriculum and a few other aspects of education. In the field of education, naturalism is neither the positivism of the physical world, nor mechanical positivism or even biological naturalism. It is entirely a different concept which seeks to base education on the experience of the child; and thus is a negation of all textbooks teaching. It adopts a scientific posture and seeks to base all education on psychology. Its motto is 'follow nature'. Jean Jacques Rousseau (1712–1778) was the most important naturalistic philosopher of education. Another such widely known philosopher was Herbert Spencer (1820–1903), who published his naturalism in education. Like Rousseau, he also criticized the methods and curriculum of schools of his times. Rousseau's negative education is one concept which is sometimes very misunderstood. Hence, before discussing other aspects of education, this concept is discussed in the following section:

Negative education

Rousseau believed in the concept of negative education and deemed it to be absolutely necessary for small kids as their first education. It would mean imparting no deduction, no information of any kind to the child in the very early years of life. He said, 'In childhood, the aim of education is not to utilize time but to loose it'. Elsewhere he said, 'A

12-year old child should know nothing. Attention should be paid to the child only, not to knowledge.’

The emphasis in negative education of Rousseau was on nourishing and honing the sense organs and the power of reasoning. Rousseau criticized the system of education of his times saying that it was barbarous as it sacrificed child’s present in favor of his uncertain future: It was trying to make the child an adult. He called this education of his times positive education. Explaining his new system of education Rousseau said, ‘Give me a student of 12-years of age I will teach him so much as other children read in 15 years of early life’.

The concept of negative education is negative in the sense that it was a negation of the old system of teaching-learning, negation of classroom learning, negation of teacher’s teaching in formal ways negation of teaching morals and values. Rousseau said that if all the time you are teaching morals to the child you will make him a fool; if you are all the time giving instruction, then child’s mind will become useless. Whatever the child learns in the playground is more useful than what he learns in the classroom.

2.3.1 Naturalism and Aims of Education

Different philosophers have expressed and emphasized different aims and objectives of education. Even among the different forms of naturalism, variations are found with regard to educational goals. Mechanical naturalism suggests that education should aim at the efficiency and perfection of the human being. This, however, is not the representative view of naturalism as a whole. Biological naturalism stresses proper adaptation or adjustment of the child to environment. Herbert Spencer described education to be a preparation and training for complete life. As described by Ross, the aim of education according to naturalism seems to be the present and future happiness, pleasure and happiness that are lasting and permanent are more worthwhile in the long run. But McDougall denied the truth of this hedonistic view of aims of education. According to McDougall, the aim of education is the transition of the energies of the inclinations, the redirection, coordination and harmonious working of the native impulses. As described by McDougall, education should enable the individual to attain the goals set for him by nature in ways that have individual and social value.

Naturalists also believe that education should prepare the pupils, equip them and through them the nation for the struggle for existence and survival. From another point of view, education is seen as the process of adjustment to environment, enabling the individual to be in harmony with and well adapted to his surrounding. Health of body and mind is stressed and the ideal is a well adjusted happy being with no discontent. Bernard Shaw, another naturalist, saw education as man’s deliberate effort on accelerating the pace of evolution itself. To him, the aim of education is the preservation, the handing on and the enhancement of racial gains from one generation to another.

Statewide aims of education, as stressed by Rousseau, are:

- During the first five years, the aim of education should be child’s bodily development, and the development and strengthening of every part of the body. The child should grow up healthy and strong through complete liberty.
- During childhood from 5th to 12th year, the education should aim at developing child’s sense organs through experience and observation.
- During adolescence from 12th to 15th year, the child is ready for systematic education. At this stage, education should aim at the development of adolescent’s

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personality through hard work, guidance and study. The adolescent should be given knowledge of various kinds.

- The youth (15–20 yrs) as pointed out by Rousseau, should be taught moral and social qualities. The aim of education of the youth should be bodily, sensory, mental, social and moral envelopment of the individual.

The aims of education, according to Herbert Spencer were as follows:

- Self-preservation, i.e., preservation of body and mind
- Earning a living, i.e., education in all the sciences
- Establishing family and upbringing of children
- Citizenship development
- Use of leisure time devoted to study and practice of painting, music, sculpture, poetry and also recreation
- Moral development

The naturalists of 19th and 20th century, however, believed that education should achieve a synthesis and adjustment between the individual and the society, between man and nature.

2.3.2 Naturalism and Curriculum

What should be taught in the school is the matter to which not all naturalists have the same answer. To have an all-embracing glimpse, one has to extract a common factor from various views presented by several naturalists. The extreme form of naturalism emphasizes the present experience, activities and interests of the child himself. So, they say, it is these which should determine the content of the curriculum. Their motto is 'knowledge for the sake of knowledge'.

The latest naturalistic movement in educational theory and practice had been expounded by A.S. Neill in a series of books. He tried to make Summer Hill, a residential school, the happiest school in the world; a place where the child's curriculum is dominated by play to the extent that if the child wishes he can play all the day, where teaching-learning matters little. Books are of little value and examinations are hated. The school's curriculum consists of creative arts and activities having pottery room, wood and metal shop where children make whatever they want.

As a system of philosophy, naturalism has been exceptionally susceptible to the development of science. The naturalists attach greater importance to evolutionary theory, empirical teaching and scientific analysis. They recommended physical and social sciences to be taught at every level of education. They also said that language and mathematics being the tools for the learning of science should also be taught.

Yet, there are found differences and contradictions among the views of the naturalists with regard to the curriculum theory. For example, Comenius wanted the educand to study every subject without making selection, while Locke said every educand should not be required to learn every subject for reasons of individual differences. He emphasized that the curriculum should be modified to suit the needs of the individuals. Similarly, Herbert Spencer wanted science to be the nucleus of the curriculum. He gave the arts subjects, a secondary place in the curriculum. T.H. Huxley, another naturalist attached greater importance to cultural aspects of life in comparison to science.

Thus, it is very difficult to say what exactly the curriculum of the naturalism was. In fact, all eyes of the naturalists were fixed on the child and his freedom. About other aspects of education they were only cursorily glanced.

2.3.3 Naturalism and Methods of Education

The naturalists' conception of education was that it is the child himself rather than the educator, the school, the book or the curriculum that occupies the central position. Stanley Hall calls this the andocentric attitude which is said to be the keynote of 20th century movement and is essentially naturalistic. Naturalistic conception of education is based on psychology.

As regard the method of teaching, the naturalists stressed the direct experience of things. As Rousseau said, 'give your scholar no verbal lessons; he should be taught by experience alone.' Things rather than words was the slogan of the naturalists. They said that science should not be taught from readers or by 'chalk and talk' lessons; it should rather be learnt by the pupil through his own work in the laboratory or wherever possible through a direct study of the natural phenomena. Similarly, geometry should be taught not by arguments and problems in the textbooks, but by means of actual survey of the school field, playground, etc. In the same way, geography should be taught through school journeys and actual excursions rather than taught from books and maps. Rights and duties of citizens should be taught not through talks but through the organization of the school as a free natural society where every pupil is encouraged to participate. Students' self-governments should be the methods for teaching these qualities. Thus, the most important method of teaching, according to naturalists, is to leave the child free to learn from nature.

Authoritarianism in teaching, rote learning, book-learning, classroom learning, and theoretical teaching were denounced by the naturalists. Child's own experience was considered the most comprehensive book from which the child should learn, according to naturalists.

Play way method of learning was very much emphasized by all naturalist philosophers. Artificiality of any kind was very much condemned by them, informal atmosphere in the class and the school was considered important. Participation of children in extracurricular activities was emphasized. The naturalists had a conviction that, left to him the child will himself evolve the method which suits him best.

Naturalism and Discipline

Almost all naturalist philosophers discarded the traditional concept of discipline, which was imposed on the child from outside. Particularly, they opposed the method of physical punishment for they believed that this generated undesirable confects and strain in the mind of the child. Rousseau said, 'Freedom and not the power is the greatest good'.

If the child makes a mistake, he will get his reward from nature itself and thus he will learn to distinguish between right and wrong through the consequences of his own actions. Thus, discipline through consequences of behaviour was emphasized. This, however, should not be understood to mean giving license of doing anything and every thing to the child. As hinted by Dewey, it becomes necessary sometimes to scold the child, to caution him or even to punish him.

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Naturalism and the Teacher

Least important is the position of the teacher in the scheme of Naturalistic education. He is barely tolerated. His interference with child's education is considered unfavourable. He is forbidden to resort to any forceful or patronizing method. He may not even seek to influence the child. As said by Ross, 'Teacher's place, if any, is behind the scene, he is an observer of the child's development rather than a giver of information, ideas, ideals and will power or a molder of character. These, the child will forge for himself.' The teacher's role according to naturalists is that of the setter of the stage, the supplier of materials and opportunities, the provider of an ideal environment, the creator of conditions under which the natural development of the child may take place. Influenced by naturalism, several systems such as Montessori System, Dalton Plan, Project Method, etc. developed and they all assigned to the teacher a similar status. In Froebel's Kindergarten system, the teacher is considered to have the same position which a gardener has in the garden. His only function is to make sure that the plants grow according to their own nature and that their development is not hindered.

Educational Implications

- **Paidocentric movement:** This tendency, as highlighted by John Adams means that it is the child himself rather than the educator, the school, and the book on the subjects of study that is in the foreground of the educational picture.
- **Emphasis upon psychology:** Naturalists' emphasis on child's natural development resulted into psychological studies of the child's nature. Concepts like child's nature, his adjustment to the environment, individual differences with regard to their nature etc. brought psychology into prominence.
- **Freedom of the child:** Learning through one's own experience, an important principle of teaching-learning in education, was an outgrowth of naturalistic philosophy. Rousseau considered experience as the best way of teaching as against verbal lessons.
- **Play way method:** This is an important contribution of the naturalists towards children's growth and learning. The principle emphasizes that young children be given enough opportunity to play. Through play activities, children develop their creative and constructive powers.

2.4 PRAGMATISM

Pragmatism

Pragmatists like Charles S. Pierce, William James, George Herbert Mead (1863–1931), John Dewey (1859–1952) and Bertrand Russell (1872–1970) believe in the doctrine which evaluates any assertion solely by its practical consequences and its impact on human interests. Pierce stressed the use of scientific method in validating ideas; James applied pragmatic interpretations to psychology, religion and education; Mead emphasized the development of a child as learning and experiencing human being; Dewey in particular wrote extensively on education. Because of their thinking a kind of philosophical speculation called pragmatism emerged. The theory which was propounded by these thinkers is called the pragmatic theory of philosophy. According to the emphasis laid by

Check Your Progress

4. What is the two-fold importance given to education by naturalists?
5. State the teacher's role according to the naturalists.

these eminent philosophers, there are four important forms of pragmatism: (i) Humanistic pragmatism, (ii) Experimental pragmatism, (iii) Nominalistic pragmatism, and (iv) Biological pragmatism. Humanistic pragmatism asserts that all truths are human truths to be verified on the criterion of reality. Experimental pragmatism holds that truth is that which may be experimentally proved. According to Nominalistic pragmatism, the results of an experiment are always particular and concrete, never general and abstract. Biological pragmatism extends that the ultimate aim of all knowledge is harmony of man with his environment. It further asserts that the school is a miniature society which prepares the child for future life.

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Metaphysics of pragmatism

Pragmatists reject metaphysics as a legitimate area of philosophical inquiry. Reality, they argue, is determined by an individual sense experience. Man cannot know anything beyond experience. Therefore, questions pertaining to the ultimate nature of man and universe simply cannot be answered because these problems transcend one's experience. For example, there is no way for any living being to determine whether there is life after death because he cannot experience life after death while living. Thus, unless we can experience the phenomena in question, it is impossible to verify any solution suggested for such problems. Attempts to answer metaphysical questions are little more than guessing games, in their opinion.

Epistemology of pragmatism

Pragmatists do not accept the dualism that separates the perceiver from the object that is perceived. Man is both in the world of perception and of the world of his perception. All that can be known is dependent on experience. This experiencing of phenomena determines knowledge. Because the phenomena are constantly changing, it follows that knowledge and truth must similarly be dynamic. Truth is something that happens to an idea. Whatever is considered true today must also be considered as possibly changing tomorrow. Circumstances do alter cases. Thus, the person is constantly changing, the environment is constantly changing and the experiences or transactions are also changing. Each time a human experience is reconstructed to solve the problem; a new contribution is added to humanity's fund of experiences.

Values of pragmatism

According to pragmatists, values are relative to time, place and circumstances. What contributes to human and social growth and development is regarded as valuable, what restricts or contracts experience, is unworthy. It is necessary then, to test and examine value assumptions in the same way that scientific claims are subjected to verification. According to pragmatists, education is inductive and based on the scientific method. Tentative assertions are based on empirical experience and must be tested.

Thus, value in ethics and aesthetics depend upon the relative circumstances of the situation as it arises. Ultimate values cannot exist, for truth is always relative and conditional. Nevertheless, value judgments are useful as a means to an intelligent life that is successful, productive and happy.

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2.4.1 Pragmatism and Aims of Education

The pragmatists do not accept development of eternal spiritual values, discovery of pre-existing reality and universals and teaching of moral standards to pupils, as the aims of education which were the heart of the idealists' scheme of education. Pragmatists assert that any effort on the part of the educator to prescribe specific goals or to decide the child's purposes for him nullifies true education.

The aim of education as described by most pragmatists is the cultivation of a dynamic, adaptable mind which is resourceful and enterprising in all situations, one which is powerful enough to create values in an unknown future. The pragmatists accept growth or development of the child as the aim of education. But, the forms and standards of these are not pre-existing, not permanent and fixed. They are to be discovered in future. All the aims of education, they say, must be concerned with the present and the future, and must be subject to modification.

According to Dewey, education as such has no aims; education is an abstract idea. Only persons have aims. And the aims of persons are indefinitely varied deferring with different children, changing as children and their teachers grow. Stated aims do more harm than good unless they are taken only as suggestions, not to be taken literally. Even these aims must possess three elements in order to be useful. These elements are: (i) they must be based on educand's actions and needs, (ii) They must elicit educand's cooperation, and (iii) They must be specific and temporary, not permanent and general.

American pragmatism, however, is certainly not guilty of neglecting the social aspects of education, as it emphasizes that education must aim at realizing democratic values in life. It should instill in the educand a respect of the democratic institutions. Kilpatrick said, 'The classrooms must become living democracies; in a democracy it is self-directing personalities that we try to build; the kind that can carry forward life even more successfully in a developing world; and the progressive development of a better life for all men is the basis out of which morality and moral conduct arise.' Thus, it may be concluded that the pragmatists favour the democratic ideals of education.

Pragmatism is emphatically humanistic. It also assumes, like Protagoras, the sophist that 'man is the measure of all things' and emphasizes human purposes and the satisfaction of human wants rather than 'one grand purpose towards which the universe is to move'.

2.4.2 Pragmatism and Curriculum

The pragmatists favour that curriculum which satisfies the following criteria:

- **Utility criterion:** This criterion would mean that whatever is put in the curriculum, it should do good to the pupils, it should be of some utility, some use for the child. The knowledge that is provided to the child must help him in his later life in solving his problems and adjusting to his environment. 'The school must store up experience that is to stand the child in good stead.' The curriculum must include the knowledge and skills that the child requires not only for his present life as a child, but also for his future life as an adult. In view of this criterion, it was suggested that the curriculum for the young child of elementary school must include language, arithmetic, health and physical training, history, geography, domestic science for girls, agriculture for boys and training for some vocation.
- **Reality criterion:** The curriculum should be real, i.e., it should be concerned with the realities of child's nature and of life. Hence, its content should be selected

from different activities of real life. The determining principle should be the natural interests of the child.

- **Child's experience as the criterion:** This principle implies that the curriculum should be based on the child's experience. It means that practical work should constitute as an essential ingredient of the curriculum. Teaching through books should be supplemented by programmes which provide actual experience to the child.
- **Child's interest as the criterion:** This criterion implies that while selecting material for constructing curriculum, child's own interests must be taken into account. Genetically, children have four kinds of interests—talking, searching or discovering, creative and artistic. Hence, the curriculum should include reading, counting, handicraft, painting, etc.
- **Purposiveness criterion:** The curriculum, according to pragmatist should be purposive. It means the knowledge to be incorporated in the curriculum should be such as it serves some purpose in the life of the child.
- **Integration criterion:** This criterion emphasizes that the different subjects should not be completely differentiated from each other as knowledge is one single whole. This is an important criterion which has been much emphasized by the pragmatists. Knowledge contained under various subjects should be organized in the curriculum in an integrated manner as far as possible.

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2.4.3 Pragmatism and the Method

Pragmatic methods of education are based on psychology and sociology subject to the conditions that they give adequate scope for active participation by the educand and also that the method adopted must be dynamic and changeable. The method suggested is the 'project method' which is the most characteristic and valuable contribution of the pragmatists. This method focuses on the learning process which involves some practical problem to be solved by the child.

The project as defined by Stevenson as a 'problematic act carried to completion in its natural setting'. Thomas and Lang define it as 'a voluntary undertaking which involves constructive effort or thought and eventuates into objective results.' Educational projects may be of individual or social character. Social projects are a sort of 'socialized activities' and they are preferred to individual projects. In case of very young children, projects may take the form of play such as playing the roles of the school teacher, or running a family or a post office, etc. At higher levels, more complicated activities such as production of a play, or a concert involving elocution, music, literature, craft work, needle work, etc, may be organized in the form of projects. In all subjects such projects may be prepared. But, it is not like this that the whole of teaching may be done through projects. Nor can projects be suggested readymade from outside. It is the educator's insight that is needed for successful selection and completion of the project. What is more important is not the project itself but the incidental learning that takes place as a byproduct of the project method.

The great principle involved in the project method of teachings is learning by doing, experience-based learning, one's own learning. Pragmatism offers more help in the methods than in the aims of education. The pragmatists assert that education is not so much teaching the child things he ought to know, as encouraging him to learn for himself through experimental creative activity. It is action which is emphasized by them rather than reflection. It was the belief of the pragmatists that true knowledge does not

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come from books; it comes from child's own doing. The most general method of education, according to pragmatists, is putting the child into situation with which he wants to grapple and providing him, at the same time, with the means of dealing with them successfully.

Pragmatism and the educator

The pragmatists consider the role of the educator important unlike the naturalists who like him to be banished from the scene. The educator has to be there in the capacity of an adviser and a guide of the pupils as well as a servant of society. His job is to create in the school an environment which may help in the development of the child's social personality and enable him to become a responsible democratic citizen. Dewey gives the educator so great an importance as he calls him God's representative on earth. But, unlike the idealists he has not to impose himself on pupils, rather he has to see how best he can help the pupils to grow and develop naturally in conformity with their interests and potentialities. He has to identify most appropriate educational project, motivate and guide students to carry them out, facilitate and provide essential materials needed for completing the projects. How efficiently, successfully and fruitfully the project method is used depends very much on the educator's insight and wisdom. He has to be a model for the pupils.

Pragmatism and discipline

What discipline is and how discipline should be enforced are discussed in detail by the pragmatists. They stress self-discipline instead of discipline as control and restraint from outside. True discipline comes from child's own inner striving. Strict control imposed by authorities, ultimately, does harm to the child. True discipline is the result of developed social consciousness of the educand. It is this social consciousness which prevents the child from indulging in anti-social activity. Pragmatists believe that freedom is the root of true discipline. Freedom and discipline are inseparable according to them. Self-discipline is the best discipline to them.

For developing self-discipline, it is essential that the educand must understand and realize the importance of discipline. This realization emerges, according to the pragmatists, from the educand's engagement and participation in those activities which lead to the fulfillment of his social obligations. Participation in responsibility, inspiration, insight, cooperation, compassion, etc. will make him a good, responsible citizen. Blind obedience to rules is no discipline, they say. True discipline is responsible behaviour emerging from the sense of social responsibility. This developed sense leads the educand to be self-disciplined. Dewey maintained that discipline is not the sole function of child's personality; it is very much dependent upon the socio-psychological environment in which the child is placed. Hence, acquiring the habit of being self-disciplined is the consequence of environmental manipulation. School activities may generate the kind of environment needed. Free, happy and purposive activity of the pupil is likely to result in permanent attitudes, initiative and independence. Training in citizenship, character-formation, moral education come from school activities which, ultimately, lead to self-discipline on the part of the child.

Check Your Progress

6. Why do the pragmatists reject metaphysics as a legitimate area of philosophical inquiry?
7. What is the aim of education as described by most pragmatists?

2.5 EXISTENTIALISM

The newest and most recent movement in the European school of thought and intellectual scene is coined as existentialism. This philosophical theory was developed by existentialists as a response against both naturalism and idealism. Søren Kierkegaard (1813-1855) was an Existentialist Philosopher and was regarded as the father of existentialism.

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Existentialism is a philosophy in which individual existence, choice and freedom are given the utmost importance. According to it, in a universe as irrational and diverse, humans lay emphasis on making rational decisions and define their own meaning in life. It is touted as a philosophy of extreme individuality and many of the renowned existentialist thinkers reject being classified as belonging to this or any other group of philosophers and thinkers. However, all the existential philosophers tend to exhibit common agreement on some very important areas. Philosophers such as Kierkegaard (1813–55), Martin Heidegger, Karl Jaspers, and Jean-Paul Sartre (1905) have contributed towards the development of existentialism.

Metaphysics of existentialism

As per existentialists, individual existence is what forms reality. Existence precedes essence in individual development. They believe that, first, one exists and only then he becomes something. It is the will that everyone possess which gives them the freedom to make choices and to create their own purposes for existence. This is their essence, i.e., to continually become. When a person is aware of his identity as an individual, he realizes his liable nature. Whatever emotion or feeling a person goes through, be it a sense of anguish, loneliness or despair, he or she still has the freedom to make his or her own choices. It is by one's own choices and actions that one defines oneself. And that is how one makes his or her own essence.

Epistemology of existentialism

According to existentialists, a person learns through various levels of experiences. It is only when one is aware of the existence of the things and beings in themselves; one is functioning upon the highest level of human experience, which is, the level of awareness. There are no absolute truths as truth is always relative to an individual's judgment and each person must individually make a conscious decision as to what is true for him. Hence, it is up to the individual to choose the knowledge that he or she wishes to possess.

Values of existentialism

Existentialists believe that rather than an outside criteria, it is the free choice of individuals that determine their values. According to them, values are not absolute and assert that the basic value for each individual is existence. Values are relative to one's individual circumstances.

Conforming to social norms and values of one's society, just for the sake of conformity is discouraged. If such values are imposed on an individual by the society or any institution for that matter, then the individual loses authenticity and humanity. For existentialist philosophers, values are a matter of complete personal and individual concern.

There are various assumptions of existentialism. These are as follows:

- Centre of existence is man, not the truth.
- Man is unique, being a composite of emotions, feelings, perceptions and thinking.
- Man makes the universe meaningful.
- Man is not alone in the universe and therefore the real living person is more important than anything else.
- Man is free and capable of shaping his own life and choosing his destiny.

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2.5.1 Aims of Education

It is asserted by the existentialists that the main objective of education is to serve the individual human being. Education makes an individual aware of his condition and promotes his successful commitment to a significant and meaningful existence. Some of the other important aims of education are as follows:

- The aim of education is humanitarian, as asserted by existentialists. That means it focusses on inner development of man, development of real consciousness or real self. Therefore, imparting knowledge of self-existence is the chief aim of education.
- Existentialists lay emphasis on the education of man as a whole. It focusses on the development of all aspects of his being, i.e., his inner-self, his feelings, emotions, thinking and so on and so forth. This leads to the man realizing what he is, what his purpose of life is and what he has to ultimately become. Education must create an environment that is conducive to this kind of realization.
- The development of individual awareness is consistently advocated by the existentialists. According to them, the choices an individual makes helps him grow and develops him as a self-determined person.
- Education must create an opportunity for free and open choices that are ethical. Since an existentialist's choice making is personal and subjective, which means are emotional, aesthetic and poetic, education must provide open learning environments for them to freely express themselves.
- Existentialists firmly believe that the aim of education should be to encourage the development of self-knowledge. The philosophers understand and realize that we live in a world of physical realities and that we have developed a useful and scientific knowledge about these realities. The most important function of education is to encourage students to engage in philosophizing about the meaning of human experiences of life with the help of their own self-examination of choices. This group of thinkers undermines the importance of objective reality and prefers subjective knowledge.
- Further, as asserted by the existentialists, the aim of education is to develop a sense of self responsibility. This can be developed by extending a context from where children may learn to make and implement independent decisions. Human freedom requires that a person freely decides his own commitments, adds meaning to them and that becomes the source of moral and social responsibility.
- Education must aim at providing those virtues of life which are essential to make an individual feel his essence. It is imperative to inculcate virtues like freedom, self-examination, self-awareness, humanism, inner peace, and self-realization in children.

Check Your Progress

8. State the opinion of existentialists about values.
9. What do the existentialists prefer, objective reality or subjective knowledge?

2.6 SUMMARY

- Aims and goals of education have been perceived by Western philosophers according to their respective philosophical as well as educational sensitivity. The thinkers who shared common thinking were grouped in their respective categories.
- In the writings of Plato, Descartes, the emphasis is placed on an idea, which is the ultimate reality and exists independent of matter, space and time. Therefore, the

aims of education according to idealists were self-realization, character building and spiritual and moral development. Likewise, Edmund Husserl, Schultz and Mannheim refuted the idea of physical environment and advocated the acceptance of the world of meanings to be understood symbolically.

- As the focus of understanding about the world, man and society shifted from idea to experiences, various dimensions of experience figured in the cognition of thinkers, whether they were empiricists (Bacon), naturalists (Rousseau), realists (Mulcaster), pragmatists (Dewey), deconstructionists (Theodore Brameld), positivists (A.J. Ayer), analysts (G.C. Moore and Bertrand Russell), existentialists (Jean Paul Sartre) and others.
- The Western thinkers made ‘experience’ as a deviating point from each other with regard to metaphysics, epistemology, values and the aims of education given by them are the consequence of their respective philosophical thinking.
- Empiricists suggested that education must develop the ability to arrive at empirical understanding; according to realists the aim of education is to provide the pupil with the essential knowledge one requires to survive in a natural world. Accordingly, naturalists advocate the inculcation of the power of self-expression and self-existence as aim of education.
- Apart from these, there are sociologists like Theodore Brameld, Carnap and Dewey who perceived education as a social thing and interpreted education from a sociological point of view. Therefore, Brameld proposed the aim of education as being the capacity to bring about a social reconstruction of experience.
- Carnap was of the opinion that education must develop the ability to provide logical solutions to the problems. John Dewey emphasized on the meaningful construction of experience as the aim of education to make it socially useful and productive. Marxists also provide the socialistic aim of education.

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2.7 KEY TERMS

- **School of Thought:** It is understood as a set of ideas regarding reality, knowledge and values.
- **Macrocosm:** It refers to the universal mind, the first cause, creator or God.
- **Idealism:** It is a school of philosophy, which holds the human spirit as the most important element in life.
- **Naturalism:** It is a doctrine which separates Nature from God, subordinates spirit to matter and, sets up laws as supreme.
- **Pragmatism:** It refers to the doctrine which evaluates any assertion solely by its practical consequences and its impact on human interests.
- **Existentialism:** It is a school of philosophy which advocates that reality is a matter of individual existence.

2.8 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. The three branches of philosophy are meta-physics, epistemology and axiology.
2. Idealist knowledge is based on the recognition or reminiscence of talent and ideas that are already present in the mind.

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3. The determinants of what should be taught in the schools, according to idealists, are the spiritual development of the child and the preservation and creation of cultural heritage of the human race.
4. Naturalism has two-fold importance for education: one is as a philosophy and the second is the attitude towards education in the form of aims and methodology of education.
5. The teacher's role according to naturalists is that of the setter of the stage, the supplier of materials and opportunities, the provider of an ideal environment, the creator of conditions under which natural development of the child may take place.
6. Pragmatists reject metaphysics as a legitimate area of philosophical inquiry as reality, they argue, is determined by an individual sense experience. Man cannot know anything beyond experience. Therefore, questions pertaining to the ultimate nature of man and universe simply cannot be answered because these problems transcend one's experience.
7. The aim of education as described by most pragmatists is the cultivation of a dynamic, adaptable mind which is resourceful and enterprising in all situations, one which is powerful enough to create values in an unknown future.
8. Existentialists believe that rather than an outside criteria, it is the free choice of individuals that determine their values. According to them, values are not absolute and assert that the basic value for each individual is existence.
9. Existentialists prefer subjective knowledge and undermine the importance of objective reality

2.9 QUESTIONS AND EXERCISES

Short-Answer Questions

1. Write a brief note on different schools of thought.
2. What are the aims of education according to idealism?
3. What is the role of teacher according to idealism?
4. List different types of naturalism.
5. What is negative education according to Rousseau with reference to naturalism?
6. What are the aims of education as per naturalism?
7. Write a note on pragmatism and curriculum.
8. What are the aims of education as per existentialism?

Long-Answer Questions

1. Explain the mean of idealism and discuss its different dimensions.
2. Give a detailed view of naturalism and its aims and aspects.
3. What is pragmatism? Explain the different aspects of pragmatism.
4. Define and explain in detail the concept of existentialism, its scope and its views on education.

5. 'Aims of education of a particular school of thought are generally deduced from the way it perceives and interprets the reality or truth.' Discuss this in the context of any school of philosophy.
6. How do idea, experience and praxis decide the aims of education? As a professional in education which of these three would you give more importance to and why?

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2.10 FURTHER READING

- Brameld, Theodore. 1956. *Towards a Reconstructed Philosophy of Education*. New York: Dryden Press, Inc.
- Brubacher, J. S. 1969. *Modern Philosophy of Education*. New Delhi: McGraw Hill.
- Butler, Donald. 1968. *Four Philosophies and their Practice in Education and Religion*. New York: Harper and Row.
- Dewey, John. 1944. *Democracy and Education*. New York: MacMillan Co.
- Heidegger. 1949. *Existence and Being*. London: Vision Press.
- Kneller, G. 1967. *Contemporary Educational Theory in Foundation of Education*. New York: John Wiley and Sons.
- Harry, S. Broudy. 1961. *Building a Philosophy of Education*. New Jersey: Prentice Hall.
- Power, Edward J. 1982. *Philosophy of Education*. New Jersey: Prentice Hall.
- Russell, Bertrand. 1977. *Education and Social Order*. London: Unwin Paperbacks.
- Russell Bertrand. 1969. *History of Western Philosophy*. London: Allen and Unwin.
- Satre, Jean Paul. 1952. *Existentialism*. New York: The Philosophical Library.

UNIT 3 INDIAN AND WESTERN THINKERS

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3.0 INTRODUCTION

The field of education is a critical one. On it, depends the psyche of the future generation. It is the one factor which can be used to influence even in a very minor way the outcomes of the future. This is why this field has seen a lot of theorizing from varied philosophical geniuses and visionaries of different time periods. Every one of the philosophers have brought their own unique theory on what could be the ideal way of imparting education to the little children. Some have blended various schools of thoughts, while others have been focused on a singular ideology. These theories have reflected themselves in the aims set out for education, the different methods of teaching and the curriculum composition. In this unit, we will study four great philosophers and their contribution to the field of educational philosophy. These four philosophers are M.K.Gandhi, Rabindranath Tagore, John Dewey and Jean Jaques Rousseau.

3.1 UNIT OBJECTIVES

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

- Discuss Gandhian philosophical thoughts on education
- Explain Tagore's philosophy on methodology of teaching and curriculum
- Describe John Dewey's contribution to educational thought and practice
- Interpret Rousseau's approach towards education

3.2 GANDHI'S PHILOSOPHICAL THOUGHT IN EDUCATION

Mohandas Karamchand Gandhi (1869–1948) was born on 2 October 1869, in Porbandar, a seacoast town in Gujarat. He belonged to the Bania caste. His father and grandfather had been Prime Ministers in Kathiawar. They were traditional Vaishnavas. His mother was a saintly woman, who had a strong influence on him. He passed his matriculation examination in 1887 and later pursued his higher education in the Samaldas College at Bhavnagar. On the advice of one of his best friends, he sailed for England to qualify himself for the Bar. He qualified for the Bar in 1891 at the age of twenty-two and sailed back home. He started his practice in Bombay, but with little success. Seeing no promising career in India, he accepted a post as a legal counsel in South Africa, where his political feelings were awakened. He founded the Natal Indian Congress and became its first secretary. He considered his legal work as secondary to the public service. In 1896, he gained international fame with the famous 'Green Pamphlet' 'The grievances of the British Indians in South Africa.' The essence of greatness of Mahatma Gandhi not only lies in his achievements in social, economic and political field for the emancipation of his countrymen in South Africa or for the liberation of India from the British rule, but also in attuning a high degree of transformation in himself and in the lives of his followers. Gandhi looked upon his life as a series of experiments with truth and concluded that 'life consists of nothing but experiments.' His life proved that human transformation is possible through a 'life process of experimentation in day-to-day activity.'

Gandhi's Philosophy of Life

The political, economic, educational and other ideas of Gandhi are parts of a whole, integrated philosophy of life. Yet Gandhi was not a philosopher in the accepted sense of the word, nor has he left behind him a systematic statement of his thought. He was essentially a man of action, and it was through the adventure of living, his 'experiment' with truth, that he came to formulate ideas that are strewn over thousand of pages of writings, speeches and correspondence. That meant, among other things, that he was ever learning and evolving, and in the process ever refining and restating his thoughts. 'Moreover, his greater experiments were yet to be made.' Anyway, he was a versatile philosopher-cum-statesman. Some of his prominent philosophical doctrines are his concept of God, truth, morality, non-violence (Ahimsa), Satyagraha, labour, economic equality, citizenship, brotherhood of man, etc.

Society and its institutions

Gandhi's philosophy relating to society and its institutions seem to be centred on his concept of: '(a) human happiness and development and (b) the place of man in society

and the relationship between the two.’ His concept of man (or God) and non-violence (ahimsa) developed slowly in the course of the pursuit of his human and social ends. On truth and non-violence, Gandhi built the entire edifice of his thought and action.

His concept of truth (God)

Gandhi believed truth to be the ultimate reality and that God could be realized only through truth. In course of his inner evolution of thought through the test of reason and experience beginning with a popular faith in God, he came to a high understanding of ‘God being truth and finally of truth-being God.’ Therefore, he says ‘I have no God to serve but Truth.’ He gave preference to God in his own words. ‘The denial of God we have known, the denial of Truth we have not known.’ Truth is manifested both externally, and internally, and it is expressed through the inner voice, which is the ‘Voice of God.’ In the words of Gandhi, ‘Everyone who wills can hear the voice.’ It is within everyone. But like everything else, it requires previous and definite preparation. This spiritual journey has led the scholars like D.P. Chattopadhyaya to go to the extent of saying ‘that the ethical contents of Gandhi’s thought could be defended without any theistic postulate.’ Thus, he sought a concept of God which could be acceptable to all men, religious and non-religious alike.

His concept of Karma Yoga (the discipline of action)

Gandhi was influenced by the second and third chapters of the Bhagavadgita which specifically discusses the life of karma yoga (the discipline of action). The Gita gave him the much needed motivation for a religious dedication to the service of man. A karmayogin, according to the Gita is one who does not separate religious life from an active role in the society.

Gandhi followed this noble idea in this life. In his words ‘you cannot divide social, economic, political and purely religious work into watertight compartment. I do not know any religion apart from human activity.’ Thus, Gandhi speaks about integration of all life with the supreme. On the Gita he wrote, ‘Action takes its origin from the imperishable Brahman; therefore the imperishable Brahman is present in all kinds of sacrifice of service.’ Thus according to Gandhi, society and social work are integral to life and they are sacred activities. An identity with this dedication to the welfare of his religion of service is a commitment to the Indian people and through this commitment a karmayogin gets ‘Nirvana’ (self-realization).

His concept of non-violence

Non-violence of Gandhi was equivalent to love. He looked upon it as the extension of familial love. Neither Hinduism, Jainism, Buddhism nor in the writings of the Indian sages does non-violence become synonymous with love. Love was not inherent to the concept in the past. His concept of non-violence retained deep continuity with Indian spirituality. It was a bridge between tradition and modernity. His concept of ‘ahimsa’ or non-violence finds expression in self-sacrifice, self-suffering and redemptive love. Non-violence of Gandhiji was a means and not an end. In his words, ‘The supreme consideration is man, and the end to be sought in human happiness combined with full mental and moral growth.’ His pursuit of truth was essential for the fulfillment of ‘the end’ as defined above.

His concept of Stayagraha (truth-grasping)

Gandhi’s concept of Satyagraha or truth-grasping was a dynamic aspect of non-violence and a tool which created a human context for social conflict. Truth is the end and non-

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violence is the means to human activities. Satyagraha was to transform absolute truth to relative truth as an ethical norm capable of being formed and utilized within a social context.

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The term Satyagraha is derived from a Gujarati word 'agraha' which means firmness, but it went far beyond its meaning. The Sanskrit verb 'grah' means to 'seize, to take hold of, gain possession.' The adjective 'grah' means perceiving. Seizing, gaining. For Gandhi satyagraha is a dynamic quality of non-violence and the progressive manifestation of non-violence (ahimsa) and truth (satya). Thus, it is a perception of love and truth. Satyagraha for Gandhi was a truth force for acting socially and humanely.

His idea of decentralization

Gandhi was against concentration of power and individualism of the capitalism. He wants a kind of society where the economic and social structure is decentralized on the basis of industry and agriculture.

His idea of machine

Some people are of the opinion that Gandhi opposed the modern technology society. Technology, according to Gandhi, is not a force of nature that man cannot control. Man can surely bend technology to his purpose. That is what Gandhi had meant when he said that he was not against the machine, but he did not want it to become the master of man. He opposed machine because it created unemployment and exploitation of the poor workers by the capitalists and too much dependence of man on machine. Therefore, he suggested limiting the manufacture of machines.

His concept of village

The village according to Gandhi was a manageable small group of people, constituting a unit of society. As the ideal village was to be a self-governing autonomous community, he considered it necessary that it should be self-sufficient in the matter of its vital necessities-food, clothing, shelter. Secondly, his village was not an agricultural community; there had to be a balance between agriculture and village industries. Thus, he desired to create an agro-industrial community.

Gandhi's gram raj (village self-government)

The idea of 'gram-raj' or village self-government of Gandhi was a rare description. In his words, 'My idea of village swaraj (self-government) is that it is a complete republic, independent of its neighbours for vital wants and yet independent for many others in which dependence is a necessity. Thus, every village's first concern will be to grow its own food, crops and cotton for its cloth. Again he added 'there will be no castes such as we have today with their graded untouchability.'

His views on morality

The end of all knowledge for Gandhi was the development of morality. The society and individual can progress only through morality, i.e. purity in thought, speech and deed. Therefore, a solid foundation of truth and purity should be established through education.

Gandhi's Philosophy of Education

Gandhi has synthesized the three important philosophies Idealism, Naturalism and Pragmatism and on the basis of such a basic ground, he gives the meaning of education.

In his words, ‘By education, I mean all-round drawing out of the best in the child and man—body, mind and spirit’. Literacy, according to him, is neither the end of education nor even the beginning. It is one of the means whereby man and woman can be educated. Literacy in itself is not education.’ Right education is that which draws out and stimulates the spiritual, intellectual and physical faculties of the children. Hence, education should not ignore any aspect of human development.

Thus Gandhian education has been characterized as encompassing the head, the heart and the hands. It is a dynamic side of the philosophy of life. Therefore, Mathur, in his book *Gandhiji as an educationist* says, ‘Man is neither mere intellect, nor the gross animal body, nor the heart or soul alone. A proper and harmonious combination of all the three is required for the making of the whole man constitutes the true economics of education.’ Thus, Gandhi’s purpose of education is to raise man to a higher order through full development of the individual and the evolution of a ‘new man.’

3.2.1 Aims of Education

Gandhiji’s concept of education has two-fold aims—ultimate and immediate.

Ultimate aim of education

Self-realization is the ultimate aim of life as well as of education. It is spiritual education which provides knowledge of God and self-realization. Faith in God is an indispensable condition for achieving this aim. In the words of Gandhi, ‘True education should result not in material power but in spiritual force. It must strengthen man’s faith in God and not weaken it.’ He further adds, ‘development of the moral character, development of the whole all were directed towards the realization of the ultimate reality—the merger of the finite being into the infinite.’

Immediate aims of education

The immediate aims of education of Gandhiji are many as they are related to different aspects of life. They are education for character building, education for community (community-centred education), self-supporting aspects of education, cultural aims of education, social and individual aims of education, sex education, etc.

Education for character building

Character building was the fundamental enterprise in Gandhi’s ideal school. Development of personality was more significant than accumulation of intellectual tools and academic knowledge. Good education is ‘that which draws out and stimulates the spiritual, intellectual and physical faculties of children.’ His concept of personality was based on the ideal man of the ‘Gita’ who is an integrated personality, a *Sthita prajna* or a sage of settled intelligence.

Community centred education

Gandhi advocated community-centred education. According to him, the school is basically a community linked to social achievements. It should be an organized society itself which is engaged in some faithful activity contributing to the greater society. Students should learn how to live together in a community on the basis of cooperation, truth and non-violence. He experimented this idea in the *Sevagram Ashram*, where the community was created on the basis of cooperation, sympathy and self-help.

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Self-supporting aspect of education**NOTES**

Gandhi aimed at the self-supporting aspect of education. He advocated knowledge through work. The use of craft at all levels and at all stages of education was his concept of 'Karma-Yoga'. This introduction of craft n education was an extension of his theory of 'Bread Labour.' Thus, he wanted to teach children the dignity of labour and make them learn to regard it as an integral part and a means of their intellectual growth and to make them realize that it was patriotic to pay for their training through their labour. He was against bookishness and excessive verbalizing in teaching. His aim was to bridge the gap between education and life by drawing upon the cultural, social and vocational potentialities of the students and to make education 'life centred'.

Cultural aim of education

Gandhi does not ignore the cultural aspects of education. In his words, 'I attach far more importance to the cultural aspect of education than to the literary. Culture is the foundation, the primary thing which the girls ought to get from here. It should show in the smallest detail of your conduct and personal behaviour, how you sit, how you walk, how you dress etc., so that anybody might be able to see at a glance that you are the product of this institution. Inner culture must be reflected in your speech, the way in which you treat your visitors and behave towards one another and your teachers and class.' Thus, Gandhi laid much emphasis on the cultural aim of education and recommended that Gita, and Ramayana be taught as a means of introducing students to their rich cultural and spiritual heritage.

Social and individual aims of education

The aim of education of Gandhi is both social and individual. He wanted individual perfection and a new social order based on 'Truth and Non-violence.' We cannot think of social good without the individual and vice versa he stands both for social service and individual development, when he says, 'I am a humble servant of India and in trying to serve India, I serve humanity at large.' Thus, according to Gandhi, the individual and social developments are interdependent.

Problem of sex-education

Gandhi desired that instruction in sexual science should form a part of the educational system in India. It has been considered necessary for each and every individual to know something about the function of sex. According to Gandhi's instruction, controlling or overcoming the sexual passion is an integral part of education. He was against the stimulation and feeling of the sexual urge and considered it to be harmful and dangerous. The objective of sex education should be the conquest and sublimation of the sex passion. 'Such education should automatically serve to bring home to children the essential distinction between man and brute.' Thus, Gandhi considered the conquest of the sex drives as the highest endeavour of man's or woman's existence.

3.2.2 Fundamentals of Gandhian Basic Education (Wardha Scheme)

In the year 1937, Gandhi finalized a scheme of education out of his experiments and tried for its adaptation throughout the country. He initiated discussions in the columns of 'Harijan' on a scheme of national education. He also placed the salient feature of his

scheme of education in the All India National Education Conference convened at Wardha on the 22–23 October 1937. He was the President of the Conference. It was attended by education ministers of seven provinces. A scheme popularly known as the ‘Basic Education Scheme, was drawn up according to the ideals of Gandhi. To prepare a detailed syllabus, a committee was appointed under the Chairmanship of Dr. Zakir Hussain which submitted its report on 2 December 1937. This report contained the detailed syllabus and made suggestions about several aspects like training of teachers, supervision, examination, administration etc. This report is known as ‘Wardha scheme’ or ‘Basic National Education.’

Again at the Sevagram Conference in 1945, Gandhi put before our country his entire scheme of pre-basic, basic, post-basic and adult education. He designed pre-basic education for the children under six years of age. At this stage principles of sanitation hygiene, nutrition, work and helping parents in the home were emphasized. Basic education was meant for the children under age group seven to fourteen and was a seven year plan. Post-basic education was for the students of age group fourteen and eighteen. It was an extension of the basic education with greater emphasis on self-sufficiency. Education at the university stage aimed at national and social needs and adult education programme aimed at social service and community improvement. Gandhi reintroduced Wardha Scheme in the year 1947 and tried for its full adaptation in the country.

What urged Gandhi to place his theory of education

Gandhi once said, ‘I have given many things to India, but this system of education together with its technique is ‘I feel’ the best of them. I do not think I will have anything better to offer the country.’ These words of Gandhiji prove that he devoted his time, energy and resources to develop his new scheme of education for the reasons stated below:

- Gandhi considered the British system of education as an imposition upon the people of India.
- The British system of education was impractical and destructive of the Indian imagination.
- The British education ignored every thing India had discovered in its educational experience. These experiences included strong student–teacher relationships, appreciation of Indian culture, integration of children with environment, etc.
- The British education created a new caste known as the English speaking caste. The people who learnt English felt themselves superior to others.
- British education gave undue emphasis on literary education. Gandhiji opposed this idea and said ‘Literacy in itself is no education.’

Significance of the term ‘basic’

The term ‘basic’ has been derived from the term ‘base.’ He calls his scheme of education basic for the following reason:

- His scheme of education is intimately related to the basic needs and the interest of the Indian children.
- It lays emphasis on the innate potentialities of the children.
- Basic education is closely related to the basic occupations of the people living in the villages.

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- Irrespective of caste, creed, colour, sex and religion, this scheme of education lays emphasis on the minimum educational standards which every child should receive.
- His scheme of education is based on the ancient culture of India.
- His scheme of education is meant for the common man who is considered as the backbone of our country.
- The British scheme of education was artificial and unreal. In the words of Gandhiji: 'I am convinced that the present system of education is not only wasteful but positively harmful. Most of the boys are lost to the parents and to the occupations to which they were born. They pick up evil habits, effect urban ways and get a smattering of something which may be anything but education.'

The curriculum of British education was English dominated. In the words of Gandhiji, 'The present system of education does not meet the requirements of the country in any shape or form. English has been made the medium of education in all the highest branches of learnings and has created a permanent gulf or barrier between the highly educated few and the uneducated many.'

Features of basic education

According to a pamphlet published by the Ministry of Education, Government of India: 'This basic education, is not only a valuable and integral part of the priceless legacy that Mahatma Gandhi left to the nation, but embodies certain educational ideas and principles of great significance that have been welcomed and endorsed by distinguished and discerning educationists in India and abroad.' The Zakir Hussain Committee stated that, 'economically considered, carried out intelligently and efficiently, the scheme will increase the productive capacity of our workers, and will enable them to utilize leisure advantageously.'

Free and compulsory education

Gandhi advocated that within the age group 7 to 14, there should be free, compulsory and universal education. He wanted to combine the primary education with secondary education and called it, 'English less-matriculation.' Thus, matriculation minus English was his aim of education.

The curriculum

The Gandhian curriculum consisted of 'the craft, the mother tongue of the students, mathematics, social studies, natural science and music.' English, as medium of instruction, according to him was the greatest handicap in the prevailing system of education. It hindered understanding, obstructed clarity of thought and put a check on self-expression. He considered Hindustani to be the common language which can be used both by the Hindus and Muslims. Gandhi introduced the following subjects in the curriculum.

- **The craft:** The basic national education aimed at providing education through the medium of craft or productive work. The basic craft which may be agriculture or spinning and weaving or cardboard, wood and metal work, gardening, leather work, etc. is suitable to local conditions. His curriculum was activity centred which should transform the schools into 'places of work, experimentation and discovery.'

- **Mother tongue:** Gandhi emphasized mother tongue to be the medium of instruction and the subject of study. If learning is imparted through the medium of English, it will hinder the development of understanding and precision of thought or clarity of ideas. Mother tongue would enable the children to express themselves effectively, clearly and lucidly. It can acquaint the child with his heritage, ethical and moral values.
- **Mathematics:** This subject was introduced in the basic system with a view to enable the students to solve numerical and geometrical problems connected with craft and community life. In teaching of mathematics, emphasis was laid on practical measuring and field work. Experience of business practice and book-keeping was also provided to the students. Teaching of mathematics helped the students to develop their reasoning capacities.
- **Social studies:** It was a combination of some subjects like History, Geography, Civics and Economics. It was introduced to enable the students to understand and appreciate their own culture and also to understand the nature and functions of the family, the state and the nation and their interrelationship.
- **General science:** Subjects like nature study, Botany, Zoology, Chemistry, Astronomy, Hygiene, Physical Culture and Knowledge of Stars were included in General Science. The objective of the teaching of General Science has been given by the Zakir Hussain Committee in the following way: (i) To develop among students an intelligent and appreciative outlook on nature, (ii) To form in the students, the habit of accurate observation and of testing experience by experiment, (iii) To enable them to understand the important scientific principles exemplified: (a) in the natural phenomena around, and (b) in the application of science to the service of man; and (iv) To introduce them to the more important incidents in the lives of great scientists whose sacrifices in the cause of truth make a powerful appeal to the growing minds.
- **Drawing and music:** Drawing and music were included in the curriculum to develop creativity in boys and girls. The Zakir Hussain Committee opines that the aim of teaching drawing is to train the eyes to distinguish various kinds of forms and colours, to develop the faculty of appreciating the beautiful and to create an ability in the students to make drawing of objects and pictorial graphs. For the introduction of music in the curriculum Gandhiji says, 'The modulation of voice is as necessary as the training of the hand. Physical drill, handicrafts, drawing and music should go hand in hand in order to draw the best out of the boys and girls and create in them a real interest in their education. That, this means a revolution in the system is admitted. One has only to visit any primary school to have a striking demonstration of slovenliness and disorderliness and discordant speech.'
- **Hindustani:** Gandhiji believed that Hindustani is the combination of Hindi and Urdu. Therefore, he desired to make it a compulsory subject in the basic school and the lingua franca of India.

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Criticisms against the Wardha Scheme

The Wardha Scheme has been criticized from different angles by the critics. Some criticize it as a utopian idea, while others remark it to be educationally unsound, so far as self-supporting aspects are concerned. If the child remains engaged in productive work, the cultural aspect will be totally neglected and they will become materialists. There would be an enormous waste of materials at the hands of small children. The quality of

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the products will be rough and crude. It would not be able to compete in the market. The all round development of the child would be affected. Moreover, the schools would become trade centres which will produce only craftsmen. This will become a sort of legalized child labour. Let us now discuss the criticisms made against the basic scheme of education in detail under the following heads.

1. Craft-centredness

It is feared that this craft accent on basic scheme is not in keeping with the rapid technological advances. The machine is replacing the man at a break-neck speed. Thus too much emphasis on the craft may keep the country industrially backward, but a deeper probity into the underlying principles will show that it is not opposed to industrial advancement. Learning a craft will be a sort of preparation for later industrial training. Working on the craft in the earlier stages will provide co-ordinated training in the use of the hand and the eye. It will uphold the dignity of manual labour and the students will get training in practical skill and observation. It will definitely be a change for the better as the present day education, which is too much academic in nature, produces a strong prejudice in our students against all kinds of practical and industrial work.

- (i) All the same, it is widely admitted that learning of crafts leading to cottage industries with its unique and individualized products can always exist along with large scale industries.
- (ii) It is said that the emphasis on the craft will only produce weavers, farmers, carpenters etc. rather than men of high tastes and leaders in society. This fear is baseless, for craft is not to be taught as such. It is only to be the medium of education. We aim at the development of the whole personality of the child. Basic scheme envisages the all round development. Cultural subjects are included in the syllabus along with skill subjects. A good craftsman will also be an intelligent cultured citizen.
- (iii) It is felt that the concentration on a single craft for 8 years will make the course dull and boring and it will cramp the young mind. But we forget that the sense of achievement in learning that craft will more than offset this attitude. Moreover it is not that the same is to be mechanically repeated over all the 8 years. The charge that the daily timetable is rather out of proportion for intellectual and vocational education is also not sound. The time allotted for the practice of the basic craft includes the time to be spent on oral work, instructions regarding the theory of the craft and other allied discussions.
- (iv) The other charge is that emphasis on the craft will prematurely determine a vocation for the child before we have known his aptitudes and interests. This too early specialization is not in the interest of normal intellectual development. Of course, this practicing of the craft is not to be confused with the choice of a vocation. It is only an amplification of the principle of 'Learning by doing.'

2. Self-sufficiency

- (i) There is no other aspect of basic education than the 'self-sufficiency'. This aspect has been made the target of trenchant criticism. It is feared that the psychological effect of 'the self-sufficiency' nature of the scheme will not be a healthy one. Admitting that the schools will not be turned into mere manufacturing concerns and there will not be an exclusive emphasis on the mechanical operation of the

craft, yet it may lead to the exploitation of the student's labour as the teacher's pay will be in direct proportion, to the sale of children's product. Thus it may have a demoralizing effect on the entire school atmosphere.

- (ii) The expenditure on the craftwork may much exceed the income. The articles manufactured by the children may be very crude and may not come to the standard of the finished goods in the market. The Sergeant Report and the Zakir Hussain Committee realized this and observed, 'Even if it were not self-supporting in any sense it should be accepted as a matter of sound educational policy as an urgent measure of national reconstruction.' But if we take into consideration, the entire scheme from the first grade into the post-basic stage, the school may become self-supporting, provided the government takes the entire production of the school on reasonable rates. We can have ill-equipped schools and low paid teachers only at the cost of quality and efficiency.

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3. Correlation

Another charge against basic education is that of forced correlation. It is complained that it is unnatural and impracticable to teach all the subjects in all their aspects through the basic craft. The principle of correlation is pedagogically sound but too much of everything is bad. There should be no forced or unnatural correlation. As far as possible, knowledge may be correlated with the craft, the physical environment and the social environment. The lacunae or gaps left may be filled by direct teaching. Efforts may be made to connect the knowledge with work as correlation lays emphasis primarily on the activity and only secondarily on the subject. The principle of correlation should not be made too tight and far removed from factual knowledge in its natural setting.

4. Neglect of aesthetic side

It is regretted that the basic scheme neglects the development of artistic ability. Fine tastes are not developed. Fine arts and other cultural subjects are not given their due. Dr. Pires points out, 'there is little or no real musical education. The songs merely deal with the Takli, Charkha, Plough or the Rashtra Bhasha. Beautiful phenomena of nature around lovely blue skies, running streams, resplendent sun, lotus decked pools etc. are totally neglected.'

It is also charged that there are no decorations in the classrooms of the basic schools. But, it is not a drawback of the basic scheme. It all depends on the organizers of the school. Basic education, no doubt aims at simplicity, but that simplicity should not be at the cost of aesthetic envelopment.

5. No cultivation of taste for reading

As basic scheme restricts learning either from direct experience or indirect experience from the teachers; it sadly neglects the cultivation of test for reading. Too much dependence on the teacher's knowledge stinks of indoctrination. The students will have a limited and patchy knowledge. It is only through the study of magazines and books that our mental outlook is widened. Without books, history degenerates into mere stories. Books must supplement the teachers' work. Self-study habits are always useful. Hence there is dire need of good literature written on basic lines, to be given to basic school children for study. Extra reading should also be encouraged.

6. Need for objective evaluation

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As the basic scheme envisages doing away with examinations and substitutes internal assessment in its place, there is the charge of too much subjective valuation in students' work. There is the need for objective type of tests to supplement the internal assessments in the form of progress charts and records.

7. Lack of teachers

Basic scheme, for its successful implementation, requires well trained teachers, qualified by education, experience, zeal and temperament. This is one of the greatest determining factors for the success of the entire programme. This situation necessitates a new pattern of pre-service and in-service teacher education. Teachers should be properly trained to carry out the scheme. Low qualified teachers and inadequate training is a stumbling block in the progress of basic education.

Thus, in a nutshell, basic education provides enough data at present for research. The value of books cannot be gained and additional crafts may find a place in the basic scheme. In the light of the experience gained and researches made, the scheme may be modified to suit the time temperament.

Basic scheme of education inherits in itself a deep-rooted silent social revolution. It envisages a new social order based on truth, non-violence, justice and fair play, where the individual worker learns through work the lessons in appreciating the dignity of labour and is enabled to support himself and thereby increase the welfare of the society of which he is a member.

The scheme has a rural bias. It takes us to the rural India to see India great and prosperous.

Criticism is unsound

The criticism against the basic system is unsound. Gandhiji believed that without the use of hands and feet, brain would be the home of Satan. 'Papa pays and baby plays,' should be changed to 'Earn while you learn.' Imparting education through activity is a sound and universally accepted principle. By self-sufficiency, Gandhi does not mean that children should be able to meet all expenses of the school. Nor does he mean sale of the school's finished articles in the market. The self-sufficiency aspect of education is much more important from the psychological and educational point of view. Therefore, Zakir Hussain Committee has warned us against such an attitude and says, 'we wish to make it quite clear that we consider the scheme of basic education as outlined by the Wardha Conference to be sound in itself. Even if it is not self-supporting in a sense it should be accepted as a matter of sound educational policy and as an urgent measure of national reconstruction.'

3.2.3 Influence of Gandhi on the Practices of School Education

Let us analyse the various aspects of education as envisaged by Gandhi. Gandhi's views on university education and his concept of Nai Talim is very important.

1. Basic education, as conceived and explained by Mahatma Gandhi, is essentially an education for life and an education through life. It aims at creating a social order free from exploitation and violence. That is why productive, creative and socially useful work in which all boys and girls may participate, irrespective of any distinction of caste, creed or class, is placed at the very centre of Basic Education.

2. The effective teaching of a Basic craft is an essential part of education at this stage. It makes the acquisition of much related knowledge more concrete and realistic. It makes a powerful contribution to the development of personality and character and instills respect and love for all socially useful work. The sale of products of craftwork is expected to contribute towards a part of the expenditure on running the school and the products may be used by the school children for getting a mid day meal or a school's uniform or may help to provide some of the school furniture and equipment.
3. The fundamental objective of Basic education is the development of the child's total efficiency as well. In order to ensure that the teaching of the Basic craft is efficient and its educative possibilities are fully realized, we must insist that the articles made should be of good quality, as good as children at that stage of their development can make them socially useful and, if necessary saleable. The acquisition of skills and the love for good craftsmanship have deeper educative significance than merely playing with the tools and raw materials. The productive aspect should in no case be relegated to the background. Directly as well as indirectly, efficiency in the craft contributes to the all round development of the child, but the productive aspect should not be allowed to take precedence over the educational aspect. It sets up before children high standards of achievement and gives them the right kind of training in useful habits and attitudes like purposeful application, concentration, persistence and thoughtful planning. While the teacher should endeavour to explore its economic possibilities fully, in any way, they should not conflict with the educational aims and objective. However, in the upper classes of junior Basic schools and in the senior Basic Schools, it should not be difficult to lay down certain minimum targets of production in the light of carefully assessed experience.
4. In the choice of Basic crafts a liberal approach should be adopted. Only such crafts may be taken up which (a) have significance from the point of view of intellectual content and (b) provides scope for progressive development of knowledge and practical efficiency. The Basic craft must be such as will fit into the natural social environment of the school and hold within it the maximum of educational possibilities. The idea that has been wrongly created in the minds of some people that the mere introduction of a craft in school, e.g., spinning, can make one a Basic school, does grave injustice to the concept of Basic education.
5. In Basic education, as indeed in any good scheme of education knowledge must be related to activity, practical experience and observation. To ensure this, Basic education rightly postulates that the study of the curricular content should be intelligently related to three main centres of correlation viz. craftwork, the natural environment and the social environment. The well trained and understanding teacher should be able to integrate most of the knowledge that he wishes to impart to one or to two of these centres of correlation, which form the important and natural foci of interest for the growing child. There may be certain items in the syllabus which cannot be easily correlated directly with any of the three above centres. In such case, which should occur only infrequently, there should be no objection to these being taught according to the methods of teaching adopted in any good school. In such lessons, the principle of interest and motivation and value of expression work should be utilized. In any case, forced and mechanical 'associations' which pass for correlation in many schools should be carefully avoided.

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6. The emphasis on productive work and crafts in Basic School should not be taken to mean that the study of books can be ignored. The Basic schemes does postulate that the book is not the only or the main avenue to knowledge and culture and that, at this age, properly organized productive work can in many ways contribute more richly both to the acquisition of knowledge and the development of personality. But the value of the book, both as a source of additional systematized knowledge and of pleasure, cannot be denied.
7. The Basic scheme envisages a close integration between the schools and the community so as to make education as well as the children more social-minded and co-operative. It endeavors to achieve this firstly, by organizing the school itself as a living and functioning community with its social and cultural programmes and other activities. Secondly, by encouraging students to participate in life around the school and in organizing various types of social service to the local community. Student self-government is another important feature in basic education which should be envisaged as a continuous programme of training in responsibility and in the democratic way of living. In this way, the Basic school not only helps in cultivating qualities of self-reliance, co-operation, and respect for dignity of labour, but also becomes a vital factor in the creation of a dynamic social order.
8. Basic education should no longer be regarded as meant exclusively for the rural areas. It should be introduced in urban areas as well because of its intrinsic suitability and also to remove the impression that it is some inferior kind of education designed only for the village children. For this purpose, necessary modification may be made in the choice or basic crafts for urban schools and even in the syllabus but, the general ideals and methods should remain the same.

Causes of the failure of basic education

Gandhiji's educational ideas were the outcome of his lifetime training, experience, and experimentation of the Basic schemes of education at the Tolstoy farm, the Sabarmati Ashram and the Satyagraha Ashram. Since his scheme of education was based on ancient Indian culture and was related to the basic needs and interests of the child it become known as basic education. Most of the countries of the world are having their own national system of education developed by an educationist of their own state. American education is influenced John Dewey's system of education. Education in Soviet Russia is influenced by the Marxist philosophy. But in India we do not have such a type of education. The education that we are imparting to our children is borrowed from other countries. We are not prepared to accept the scheme of education developed by the Father of our Nation. Nathuram Godse, a fanatic assassinated Gandhiji, but we the people of India gave a deathblow to his scheme of education. His scheme of education failed due to the reasons stated below:

- **The concept of basic education is not made clear:** Most of our educationists, educational administrators and teachers are not clear about the concepts and fundamentals of basic education. They are in a state of confusion in the understanding of this concept. As a result of this the general masses fails to understand the significance of basic education. The Government of India does not take any steps to make clear the concepts and fundamentals of this system of education.
- **This system is not accepted by the rich:** Since this system is not appreciated by the rich and learned people of our country, this system became unpopular.

These people send their children either to a Public School or to an English medium school.

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- **Muslims opposed this system:** People belonging to the Muslim community felt that it is in opposition to their culture due to the ideology of Ahimsa. Yet the plan did not presuppose the acceptance of non-violence for one to support it.
- **Teaching of academic subjects through a craft was not appreciated:** Basic education made education craft-centered. Craft laid emphasis on economic aspects only. Students became money minded. They were interested in money rather than study. In the words of P.S. Naidu, 'It is impossible to establish any natural association between craft and all the subjects of culture value which any sane system of education should cover through its curriculum. Teaching should be concrete and should be based on the child's active experience in his environment. But it is absurd to hang all knowledge from the peg of a single craft.' Craft as the centre of education was not liked either by the educators or the government.
- **Faculty timetable:** In the basic education more time was devoted to craft. Other people did not like this system of education. A critic like R.K. Singh says, 'In a basic school only two third of half the normal time is given to academic education, the rest being taken up by crafts. Further, since on the timetable academic subjects generally come after the craft work, mostly agriculture, students are sometimes too tired to take the academic work kindly.'
- **Development of some epithets:** The critics developed some epithets and propagated them in order to abolish this system of education. Some called this system a fad because it does not have either a psychology basis or pedagogical basis. Others called this a fallacy because the very fundamental of this system was wrong. Another group of critics considered this system as a farce because it was impracticable. The articles prepared by the students were stored to show them to the visitors. Basic Education was also criticized as a fraud being committed on the country by those who were in power.
- **Lack of qualified teachers:** Gandhiji developed a new pattern of education taking into consideration the Indian situation. This system of education had many new features. The teacher occupied the position of a mother in this new education our traditional teachers failed to understand this philosophy of Gandhiji. There was no scope for imparting training to the teachers. For the lack of qualified teachers this system failed.
- **This system lays less emphasis on primary education:** Basic education started as primary education. As a result of this secondary education and higher education suffered a lot under this scheme. Besides this, secondary education and higher education became subordinate to primary education, as a result of which this system failed. No doubt Gandhiji emphasized on secondary education and higher education in his scheme of Nai-Talim, but much attention was paid to the improvement of primary education at the cost of the other two.
- **Apathy of the Kothari commission:** The Indian Education Commission or Kothari Commission was set up in the year 1966. It gave recommendations for the improvement of different stages of education beginning from the primary stage. But it is a matter of great regret that the commission completely ignored basic education. In spite of this, the Ministry of Education, Government of India conducted a seminar at Sevagram on Gandhian Education, in 1970. The seminar

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emphasized on ‘dignity of manual labour through the use of work as part of the educational programme.’ But in the Fourth Five-year plan, the Central Government did not mention anything about basic education.

- **The plan was not tested at the national level:** M.S. Patel and N.P. Pillai, two supporters of Gandhian education felt that the scheme of education of education of Mahatma Gandhi was not really tested on a national scale. Our country also rejected Gandhi’s conception of education, especially its motion of self-support and its emphasis on primary education.
- **Apathy of the administration:** The Indian administrators failed to understand the problem of basic education. Pillai, therefore says, ‘It may be seen that the scheme of basic education now accepted by the Government of India is not the same as the one which Gandhi had originally outlined.’
- **Matriculation minus English:** Gandhiji emphasized that until matriculation stage, English should not be taught to the student. Because of this attitude many students did not like to attend these schools.
- **Want of research:** For the improvement of this new education, research activities were not encouraged.
- **Want of adequate staff and equipment:** Basic education required adequate staff and equipment. But the government failed to provide all these.
- **Want of textbooks:** In basic education textbooks were not emphasized. No standard textbook was developed by anybody.
- **Development of white-collar attitude:** Because of the impact of Western education, the students of India completely forgot their own culture. After completing their education they wanted to become white-collar ‘Babus’. In basic education manual work was emphasized. One has to work hard at the time of study. It is not possible to become a ‘Babu’ in this scheme of education. Therefore, many parents and students did not like this education.
- **Report of the Kher Committee:** B.G. Kher in his report recommended that basic education is meant for the rural people of urban areas who did not develop any interest in basic education.

Gandhi’s Views on other Aspects of Education

In this section, we will study, Gandhi’s views on several other factors of education.

Gandhi’s View on Teachers

Gandhi advocates devotion to the teacher (Guru-bhakti). He says, ‘Education of the heart could only be done through the living touch of the teacher.’ Education becomes effective and faithful only to the extent to which there is a personal touch between the teacher and the taught. A flower in bloom is loved by all and in this lies its glory. Similarly, man may be viewed as having achieved everything in life when he becomes perfect in character. If the best flowers among mankind take to teaching, society is abundantly enriched. Therefore, teachers should develop such character which will help them to elicit devotion from the students. It will be very difficult to achieve character building in the absence of devotion to the teacher. Gandhiji anticipated a non-violent personality in the teacher. He should have a devotion to the duty, to the students and to God. He is to play the role of a mother. Therefore, Gandhiji in his book *My Views on Education* says ‘one who cannot take the place of a mother cannot be a teacher.’ An

ideal teacher in Gandhi's word is the 'Mother-teacher'. In his book *True Education* he says, 'I have not used the word teacher in this article. I used the word mother-teacher', in its place, because the teacher must really be a mother of children. The child should never feel that he is being taught. Let her (the Mother-Teacher) simply keep her eye upon him and guide him.'

Gandhi on correlation

Like John Dewey, who correlated all useful knowledge with project method, Gandhi made an original contribution to pedagogy by introducing craft as the centre of correlation. The whole range of desirable subjects are integrated round the productive activities on the physical and social environment. In basic education he introduced three centres of correlation namely, craft work, natural environment and social environment. All these provide an opportunity to the child to be engaged in productive activities. Gandhiji believed that correlation should be natural and not forced.

Gandhi's views on women's education

Gandhi considered women as the mother of the race. Women should not be an instrument of pleasure. They should be regarded as man's helpmate. Gandhi opined that English education is meant for men and women will not profit by it. A life of materialism is meant for men and not for women. Therefore, a proper training should be given to them, so that they can discharge their responsibilities well. On women's education Gandhiji says, 'Man and woman are of equal rank, but they are not identical. They are a peerless pair being supplementary to one another, each helps the other, so that without the one the existence of the other cannot be conceived, and therefore, it follows as a necessary corollary from these facts that anything that will impair the status of either of them will involve the equal ruin of both.'

Gandhi's views on adult education

Gandhi desired that adult education must touch the life of all the villagers at all points—the economic, the hygienic, the social and the political. He wanted to drive out illiteracy and ignorance from the masses by selected teachers and selected syllabus. Villagers should acquire some useful knowledge through the programme of adult education. He did not like to provide the knowledge of three Rs only, but to provide literacy of the whole personality.

Gandhi's views on religious education

'Religion is a way of life' according to Gandhiji. Religious education can be imparted through the virtues like truth and non-violence, because they constitute a true religious life. Gandhiji feels it essential for a teacher to develop a religious life so that he can influence his students. Therefore, Gandhiji desires to include religious education in the regular curriculum which will develop a liberal outlook on religion. He was against narrowness or fanaticism. He wanted to train the students to develop understanding and appreciation of the doctrines of all great religions of the world. Gandhiji bridges the gulf between life and material life and says:

'In my opinion the author of the Gita has dispelled this delusion. He has drawn no line of demarcation between religious life and worldly pursuits. On the contrary he has shown that religious education is to be imparted to the students through the teachers "living the religion themselves.' Personal character of a teacher is more effective than book instruction or preaching.

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Gandhiji criticized the prevailing system of university education in which the students have no participation, involvement or activity. He felt that students in the prevailing system of university education are dying of boredom and their bottled-up energies are running riot in wrong channels. It prepares them only for a white collar job. In the words of Gandhiji, 'Today the youth educated in our universities either ran after Government jobs or fell into devious ways and sought outlet for their frustration by fomenting unrest. They were not even ashamed to beg or sponge upon others. Such was their said plight. The aim of university education should be to turn out true servant of the people how would live and die for the country's freedom.'

Gandhi supported higher education and emphasized on originality, character-building, development of full personality and to make it a creative process. He also emphasized on self-respect, self-sufficiency, and economic independence for the university products. 'It should be an extension and continuation of the basic education course.'

Nai Talim

The Indian National Congress launched the Quit India Movement on August 9, 1942. The national workers diverted their attention from basic education to the movement. Gandhiji was also imprisoned during this movement. As a result of which basic education was neglected. After he was released from the jail, he came out with a new idea of Nai Talim or New Education.

What is Nai Talim?

According to Gandhiji, Nai Talim or New Education is education for life. Education begins from the moment a child is conceived in the mother's womb to the moment of death. Thus, education is a lifelong process. It covers the whole of life leaving no aspect of life untouched. Gandhi says 'there is nothing in life, however small which is not the concern of education.'

This new education is not different from Basic Education. It is just an evolution of Gandhiji's educational ideas. He simply extended the scope of Basic Education in order to include the education of every body at every stage of life. The Basic Education system was meant for children from 7 to 14 years of age. But the Nai Talim is lifelong education. The programme of Nai Talim includes the following four stages:

Stages of Nai Talim

- **First Stage:** The first stage of Nai Talim begins with the parents and community. At this stage, the programme of education is extended to the community as a whole and all the members for a self-reliant, happy, clean and healthy life. Men and women in all stages of life are to be educated. If the parents receive education, they can understand the importance of education in life and will extend their hand of help for the progress of education.
- **Second Stage:** This is the stage of pre-basic education or the education of children under 7 years of age. Education at this stage aims at the envelopment of all the faculties of the child before he undergoes a formal schooling. It is to be conducted by the school teachers in co-operation with the parents and community in schools in the town and in the village. Gandhiji said, 'The real education begins from conception as the mother begins to take up the responsibility of the child. If a

mother is correctly instructed and prepared for her coming responsibility, then that will be the education of the child as well.’

The pre-basic education is to begin with adult education, i.e., education of the parents in wise parenthood. It has been widely recognized that foundations of education are laid in the earliest years of childhood. But, pre-basic education is much wider in scope. It includes:

- i. Education of the entire village i.e. happy and healthy community life.
 - ii. Education of the parents in wise parenthood.
 - iii. Education of the children below seven years of age.
- **Third Stage:** This stage of education is the 8 years programme of basic Education for both boys and girls between 7 to 15 years. It is rightly basic scheme that education should centre around some form of manual and productive work. All other activities to be developed or training to be given should as far as possible, be integrally related to the central craft chosen. It is also to be self-supporting to the extent of covering teacher’s pay. Children are to pick up knowledge through self-activity. ‘Learning by doing’ is the guiding principle. Not only has this, learning by doing been to be supplemented by learning while earning. The scheme is constructive and creative in nature so far as the methodology of imparting education is concerned. The most salient features of Basic Schemes are:
 - i. Craft-centeredness.
 - ii. Correlated and integrated curriculum.
 - **Fourth Stage:** The fourth stage is the period of post-basic education or education of adolescents, who have completed basic education. It is keenly felt that village life must be stabilized and modernized. Therefore, the development of the rural secondary education is conceived as the educational nurture of adolescent youth from the 14th or 15th to the 18th year of life. It is, so to say, a contention of the Basic Scheme based on education for self-sufficiency. But post basic education becomes education through self-sufficiency.

This post-basic education is yet in its infancy and not much progress has been done in this direction. There are a very few post-basic schools, those too yet in the experimental stage. The first batch of post-basic students in Sevagram and Bihar completed its course in 1951.

The school at this stage is to be residential and is to provide opportunities for a wide range of productive activities. The main programme of post-basic schools is the rural reconstruction through crafts, like agriculture, dairy farming, smithy, carpentry and weaving, etc. such post-basic schools are to be organized on the lines of the Folk schools of Denmark and other Scandinavian countries.

‘The life of the school should follow the course of life in a good village, except that about half the working time would be given to study and half to farming, building carpentry and cabinet making, house making, weaving, street cleaning and other useful village work. The subjects of study are to be related to the practical work and life of students.’

Naturalistic, Idealistic and Pragmatic Tendency in Gandhian Education

Dr. M.S. Patel in his book *The Educational Philosophy of Mahatma Gandhi* calls Gandhi’s. ‘Educational philosophy as naturalistic in setting, idealistic in aims and pragmatic in method. Gandhi has synthesized these three philosophies into his philosophy

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of education and brings a harmonious blend of these diverse philosophies which we may call eclecticism.

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Gandhi is a naturalist when he advocates that the children should be taught ‘in an atmosphere free from superimposed restriction and interference.’ He opposes pedantry and emphasizes on simplicity in life, in language and literature. He wanted children to have sufficient freedom for their natural growth and development. But for their fullest development, discipline and training are essential. He had faith in the inherent good of the child’s nature. His Nai Talim was natural for he saw it as an extension of the home as related to child’s development.

Nai Talim takes place in an atmosphere of play which is child centred. His philosophy of education becomes naturalistic in setting as he gives importance to activity and craft common to the locality, etc.

Gandhiji’s faith in God or the universal spirit is the idealistic goal in his educational theory. He not only aims at ‘self-realization’ but also to realize God and be on with him. Spiritual realization is the self-realization which can be achieved by seeking after truth and Non-violence and doing service to mankind. This spiritual realization is an important aspect of education of the youth. His views on education as a preparation for total life (and not necessarily for a specific profession) was another idealistic aim when he emphasized on harmonious development of personality which includes spiritual, intellectual, moral and physical development of the child.

In method, Gandhiji is a pragmatist as he emphasizes on learning by experience. He did not like to inflict information on the unwilling students. He wanted to keep the student engaged in many-faceted activities, throwing them from one excitement to another, which will provide to each student hectic activity and scope for showing creative genius and organizing capacity. His aim was to grow aesthetic, moral and artistic potentialities that are in the Gandhian principles of ‘Learning by doing’. Like John Dewey, Gandhi believes that truth can be experimentally verified. He advocates that progress in the school should be pragmatic, based on rigorous habits of investigation and experimentation through scientific thinking. He condemned bookishness and excessive verbalizing in teaching and advocated realistic education.

Gandhi like John Dewey believed in the elements of social life in the school system. his emphasis on the use of craft at all levels and stages of education is nothing but a ‘Karma-yoga’ which is an ample testimony that Gandhi was a pragmatist. Thus Dr. M.S. Patel is true when he says that Gandhian philosophy of education is ‘naturalistic in setting idealistic in its aim and pragmatic in its methods and programme of work.’

Check Your Progress

1. Who is a karmayogin according to the Gita?
2. Which books were suggested by Gandhi as a means of introducing students to their rich cultural and spiritual heritage?
3. Name the subjects which were introduced by Gandhi in the ‘basic education’ curriculum.
4. Which term is used by Gandhi to describe a teacher and why?
5. What is the fourth stage of Nai Talim?

3.3 TAGORE’S PHILOSOPHICAL THOUGHT IN EDUCATION

Rabindranath Tagore, the brilliant poet of India and the founder of Visva-Bharati was born in 1861 in Calcutta in the most cultured and creative family of Tagore Brahmins. At the time of Tagore’s birth, India was passing through three revolutionary currents the religious, the socio-political and literary. These three movements had a formative influence on Tagore and helped him to grow into a high Relational Personality. In course of time, he developed widest possible outlook with universal human interests.

The religious movement

The religious movement, which took place during his youth, may be defined as Hindu Renaissance. His family was one of the most cultured and creative in all Bengal at the time. It was a sacred home, where art, literature, music, drama and philosophy from the East and West found continual play. It received its spirit from Ram Mohan Roy and Brahmo Samaj movement. His father was an associate of Roy and he himself formed another society for a new understanding of religious philosophical Hinduism. He gave a subtle direction to the development of the young. Tagore assimilated Roy's spirit in his own effort towards harmony.

The socio-political movement

The 19th century socio-political movement developed national and international consciousness in Tagore. He joined the freedom movement. Though he was a close friend of Gandhiji, he did not support the idea of strike, boycott, fasts and marches to achieve freedom. Therefore, he stated that 'Swaraj is not our objective. Our fight is a spiritual fight-it is for man.'

He was shocked beyond words at the inhuman firing at Jallianwala Bagh in 1919. As a protest against this incident he gave up his knighthood. He returned from his exile in a dream world to the real society, and started work as an educator. He considered building of schools as a divine work. To give practical service to Indian society, he founded Santiniketan, an ashram school; and to give service to the people of the world, he opened, Visva-Bharati, the international university.

Literary movement

In 19th and 20th centuries, Bengal took greatest leadership in the literary field under the able leadership of Bankim Chandra Chatterji, Michael Madhusudan Dutta and Behari Lal Chakravarty. Tagore, to a great extent was influenced by these writers and considered writing as a *Sadhana* (spiritual discipline). His poetic creativity was reflected in his work *Gitanjali* and *Gitimalya*. For *Gitanjali*, he won the Nobel Prize in 1913.

Thus, from the above three important movements Tagore got impetus to become a Relational Personality.

Rabindranath was the youngest of the fourteen children of his father. He had little formal schooling and had withdrawn from the school by the age of fourteen. He was taught by his probate tutor, who taught him different subjects. In 1878, he went to London and studied law for two years, but returned to India without a degree. Schooling had no influence in his life.

The international consciousness, which Tagore helped to create in India, is one of the finest contributions of our human society. He embraced both his own nation and the world. He attempted to build a community which would recognize no geographical boundaries. India has produced prolific writers before, but no other Indian writer at present has contributed so much to literature and language. Emerging as a prophet of an educational renaissance in India, he started reflecting on the best educational thought of the world, past and present.

It was on 7 August 1941 that he breathed his last while still painting and writing poems on 'man, death and morality,' he was mourned world over.

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Philosophical outlook of Tagore was guided by the principle of harmony. Therefore, he has been called 'the supreme reconciler, harmonizer and peacemaker in the domain of modern thought.' He desired to reconcile all extremes and harmonise all contradictions.

Tagore, a follower of Ananda Yoga

Tagore is known to the world of letters as a follower of Ananda Yoga, a device through which the aesthetic sense is cultivated and universal harmony achieved. According to him, yoga (the Path) should be full of Ananda (joy), so that creativity in man can be developed.

Tagore, a Vedantist

A close study of Tagore's philosophy reveals the fact that he is a Vedantist. He had faith in one Supreme Being, the Brahma. The various manifestations of nature representing Him and Brahma pervades through all these forms. He finds unity among diversities and a spiritual unity between man and man. The relationship between God and man must be like the relationship between 'Love and Joy.' He believes both the personal and impersonal aspect of God. Therefore, he says, 'It will not do to reject the impersonal aspect of truth altogether.' He believes in the concept Aham Brahma Asmi (I am Brahman). When an individual realizes that he is the 'Brahman' (Absolute) the true salvation takes place.

Tagore, an idealist

Like most of the Indian sages he believed that man should realize the 'ultimate truth' which will liberate him from the cycle of birth and death. Experience, according to him, is within the world of Maya (appearance or the illusive power of Brahman.) he views the world as the place of both truth and appearance. Maya holds the truth within itself, as it is found in the relationship within the world of appearance.

The idea of 'Surplus in Man' is an original contribution of Tagore. Man is born with enormous surplus far in excess of his physical requirements. This surplus is nothing but the limitless potentiality of human personality. It is a source of human creativity. In this, lies the infinite future of man. The surplus manifests itself in man's religious consciousness. In the words of Tagore, 'Religion can have no meaning in the enclosure of mere physical and material interest. It is in the surplus we carry around our personality the surplus which is like the atmosphere of the earth, bringing to her a constant circulation of light and life and delightfulness.'

Man 'according to Tagore' is an artist. By art, man can experience the wholeness of life. The fine arts were nothing but spiritual discipline. Kama (desire) can be spiritualized by the Bhakti (devotion).

Tagore, a humanist

Love and universalism is the core of the philosophy of his life. He had a desire to establish harmony between man and the universe by establishing a universal religion. Thus, he had deep faith in the brotherhood of man and fatherhood of God. Like most of the Indian monks, Tagore believed in the concept of humanism. He advocated that man should live for the ultimate Truth which liberates us from the bondage of death and unites us with good. In his words, 'Dust thou art, to dust thou returnest was not spoken of the soul.' Again he says, 'Reality in human and Truth in human.' Thus, Tagore is a humanist.

For the political liberation of India, Tagore advocated purification of mind, dignified suffering and rural reconstruction. Young men and women should live in the countryside and should mix with the people. With this ideal, he managed his own estate of Shantiniketan and founded the Department of Rural Construction in Viswa-Bharati.

Tagore, a naturalist

According to Tagore, nature is the greatest teacher. It is not hostile to man, but it is the form of 'mother nature.' Nature is kind, benevolent and generous. In his language, 'Education divorced from nature has brought untold harm to young children.' Just as man develops his relation with his fellowman, he should develop his relation with nature. God is found in the midst of nature. God revealed himself through different colours, forms and rhythms of nature. God therefore, desires that there must be a close relationship between Man, God and Nature.

Among the goals of life, Kama or desire is considered by Tagore not only, as the fulfillment of passion or emotion of an individual but also as the development of aesthetic and artistic qualities in man. It is bhakti or devotion which spiritualizes 'Karma.' Spiritualization of 'Karma' is the duty or dharma of an individual. Thus, the entire philosophy of Tagore is an attempt to accept 'Ananda Yoga' as the way to salvation. He grew into a Relational Personality to harmonize all the extremes.

3.3.1 Tagore's Philosophy of Education

The educational idea and ideals of Tagore originated out of his own home, life and the freedom he had experienced within it. His father did not send him to school, but educated him at home with the help of tutors. So he says, 'Whatever I learned, I have learned outside of class.' He felt that his school at home was an educational prison disassociated from the context of life. Such education was 'The parrot's training.' The parrot is within the golden cage. The cage is education, its builders are the educators and the caged parrot is the child, who received education. Tagore, therefore, emphasized that true education can be imparted in the midst of freedom and cultural surroundings. Learning must be linked organically to the whole of life, the people, the land and its culture. With this ideal in view, he developed his own educational theory-Basis Principles of Tagore's Philosophy of Education.

Realization of harmony with all things

Tagore advocated that true education is the realization of an inner quality of man, a realization that places human life in harmony with all existence. An individual should develop harmony with the universe, the supreme person, who possesses the various levels of consciousness and experience corresponding to an individual's life, mind, physical self and also the soul within. India, according to Tagore, is a land of harmony. It has the special power of binding together and bringing about synthesis of the various elements of man's being. Thus, realization of harmony has been specified in the educational ideas and ideals of Tagore.

Principle of freedom, sympathy and joy

Another important aspect of Tagore's educational ideas is freedom, sympathy and joy. The life of a child is life of freedom. Freedom from specialization, freedom from social and professional conventionalism. Man can attain his fullness of growth only through freedom. True education is that which liberates. Man can realize freedom, only when he

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realizes his own being. Throughout the ages, all the Indian philosophers have idealized freedom (moksha). Through freedom man can relate himself with the universe, nature, man and finally with the universal man.

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Sympathy and joy are two important educational values. Man can attain full personality with all forms of life. Sympathy can be developed by intimate contact between nature and man. Natural environment can provide the child with education in sympathy.

During his student life, Tagore realized that education in India was 'joyless education.' When he developed his own theory of education, he emphasized that education should wed joy to knowledge. The noblest work in life is that work which is wedded to joy. Thus, the right path to education is the path (Yoga) full of joy (Ananda). So he is popularly known as an 'Anandayogi' and Ananda-yoga is his most original contribution to the theory and practice of education. Freedom, sympathy and joy constitute the educational thought of Tagore.

The union of man and nature

One of the major themes of the educational philosophy of Tagore is the union of man and nature. Nature, according to Tagore, is the animate world of trees, flowers and birds and the world of the physical universe with its forces and energies. Through aesthetic imagination and appreciation one can develop intimacy with nature. It is the pulse of nature which quickens the spirit of the child. Therefore, the child should receive education being surrounded by nature and natural objects. The child should learn 'to see fire, air, water, land and the whole universe as pervaded by a universal consciousness.' Any education outside nature is harmful and dangerous for the child.

Education for the first seven years of the child should be left to nature. He should be given freedom to love and appreciate nature. The child develops the power of enquiry and creativity in the midst of nature.

With these objectives in view, Tagore designed his school at Santiniketan as an 'ashram,' a community modeled like the ancient gurukula system of education of ancient India. Like Rousseau, Tagore is also branded as a naturalist for his ideals stated above.

Literature as the true vehicle of education

Literature, according to Tagore, is the true vehicle of education. It can carry education beyond schools and colleges. Therefore, he encouraged the knowledge of folk literature to grasp the psychology of the people and to acquaint the people with their own culture. He used to encourage the students to read merely books of entertainment.

Unity of all races of the world

Tagore advocated a sweet interblending of the East and West. His philosophy of education is based on the ideal of spiritual unity of all races of the world. His institution of Visva-Bharati represents this ideal of co-operation spiritual unity, mutual love, mutual truth, mutual aid etc. He believed that the East had to give a lot to the West and in return it could assimilate the best that Western civilization can offer. He welcomed the process of synthesis. Thus, Tagore was one of the pioneers of this movement of universality.

Emphasis on the child's mind

The educational thought of Tagore is based on his experience of the child's mind. Education is a bi-polar process where students and teachers play their respective roles. A school

becomes complete only through the students. He was of the opinion that the child should be treated as a child not as an adult. The sub-conscious mind of the child is more important than the active mind of the child. In his words, 'The young mind should be saturated with the idea that it has been born into a human world which is in harmony with the world around it.' For the education of the student, Tagore advocated three important principles: 'freedom, fullness, and vastness.'

Meaning of education

Tagore was not an educationist in an academic sense. He did not write a single word systematically on education. From his countless writings both on education and other subjects, some of his ideas of philosophy of education are found. He has expressed these views from his observation on the various problems of education. To understand his philosophy of education, it is required to collect his numerous direct and indirect expressions and put them together.

Tagore's theory of education is marked by synthetic, naturalistic, aesthetic and international character. He had a belief that 'The widest road leading to the solution of all our problems is education.' He also studied the educational ideas of Rousseau, Froebel, Pestalozzie and Herbart. But he was not influenced by anybody. He tried to bring about a synthesis between the East and the West in both ideals and methods.

Tagore's educational idealism is based on the pursuit of the whole man. Man alone can pursue and ultimately realize his fullness. Education can develop a new pattern of life culminating in the realization of universal man. Therefore, Tagore's system of education emphasizes on the organic wholeness of human individuality. Education provides to our personality a unity, a harmony, a wholeness, whereby no separation of relationships exists in the perfection of the intellectual, physical, social, moral, economic and spiritual aspects of human life. Thus, an educated man becomes an integrated personality.

3.3.2 Aims of Education

The most important aim of education, according to Tagore, is the development of individual leading to the harmonious development of personality. Personality should develop to the fullness. In the words of Tagore, 'To attain full manhood is the ultimate end of education; every thing else is subordinate to it.' He further adds, 'To give spiritual culture to our boys was my principle object in starting my school at Bolpur.' This school should be a home and a temple one where development of an individual was another important aim of Tagore's system of education.

Tagore also emphasized on the intellectual development of the child. By intellectual development, he means the development of imagination, free thinking, constant curiosity and alertness of the mind. He is against bookish education. Education through free thinking was another aim of his educational philosophy.

Tagore's educational philosophy also aimed at the physical development of the child. He gave much importance to a healthy body.

Tagore is popularly known as the Relational Personality. He held that the entire universe is one big family. Education alone can teach people to realize their oneness with other individuals of the universe. Education for international understanding and universal brotherhood of man was another important aim of his education.

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3.3.3 Curriculum

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Curriculum was meant to attain the aims of education; Tagore advocated that it was wide and comprehensive. It referred to all aspects of human life, physical intellectual, moral and spiritual. The curriculum was designed to acquire, 'fullness of experience' from multiple source. He interpreted curriculum in terms of certain activities to be undertaken. He was against bookish knowledge of the passive and mechanical kind. Keeping in view the 'spontaneous interest' of the child, he organized the curriculum.

Subjects included in the curriculum

- Languages and literature, mother tongue, other Indian languages and other foreign languages like German, Latin, Chinese, French, and Russian.
- Mathematics.
- Natural sciences like physics, chemistry, botany, zoology, general science and health education.
- Social sciences like history, civics, geography, economics and sociology.
- Agriculture and technical subjects.
- Arts, music, dance etc.
- Religion, philosophy and psychology.

3.3.4 Methods of Teaching

Tagore was against the mechanical and parrot like repetition used by our teachers. He was an ardent lover of children. He had an implicit faith in the child's inborn potentialities. So, he wanted to give the child opportunity for full development of his potentialities. For the expression of these potentialities, Tagore felt that the environment is more important than the formal rules and methods, techniques and textbooks, building and equipments. He was concerned with the association between body and mind to establish a harmony. Therefore, he advocated that the child must express himself with his whole body. The education of the body should have contact with air, water, earth and light. Tagore says, 'The school master is of opinion that the best means of educating the child is by concentrating on mind but the mother nature knows that the best way is by dispersion of mind.' Nothing readymade should be given to the child. He should rather be made to experiment and create. Tagore emphasized the following methods of teaching

- **Teaching while walking:** While discussing about the methods of teaching, Tagore opined, 'Teaching while walking is the best method.' He believed that subjects like History, Geography and other Social Sciences can be effectively taught through frequent excursions and tours. By these activities students will get an opportunity to observe numerous facts of interest and gain knowledge through direct experience.
- **Activity method:** Tagore believed that for the development of body and mind, learning through activities is essential. Therefore, he included activities like climbing the tree, dramatic activities, jumping, plucking fruits, shouting etc. in his Bolpur School as important methods of techniques of teaching.
- **Debate and discussion method:** Debating activities were organized in the Bolpur School to develop oratorical abilities of the students. Students were encouraged to solve various problems through discussion.

- **Heuristic method:** Tagore introduced heuristic method in Santiniketan as an important method of teaching. When the teaching activities begin, first the students ask questions to clarify their doubts and the teachers try to satisfy them by their matured answers. Then the teachers ask questions to evaluate how far the students are able to comprehend the problems discussed in the class.
- **Medium of instruction:** Tagore emphasized on the study of mother tongue as the medium of instruction. He publicly opposed the study of English in Indian schools. He had a faith that the harmony in language will be only through the study of one's own language. It will help an individual to bring together language and thought. He advised for the bifurcation of language medium. Mother tongue should be used for imparting basic education. For social and literary use, other languages may be used.
- **Literature:** Literature, according to Tagore, is the true vehicle of education. He advised the study of literature and folk literature of cultural significance and for the study of mass psychology.
- **Social service:** Social service was one of the important objectives of Tagore's theory of education. According to him, it is a bond which knitted the human beings into communities and communities into nations and so on. Education is to bring about a synthesis between individual and society. His concept of society was an international society based on universalism.
- **Religious and spiritual education:** Tagore declared 'To give spiritual culture to our boys was my principal object in starting my school at Bolpur.' Religious teaching cannot help to have an experience about the spiritual world. It can be gained by living in the world. Formal education cannot impart religious education. It can be assimilated where there is a living relation. Any type of artificial teaching or religion is against religion and education. It should, therefore, be imparted in a natural atmosphere of piety. Religious education can take place in a community where a religious atmosphere is created. It can strengthen the spiritual bond in the community. According to Tagore, all true religion evolve out of life itself. Religion with him was thus to be lived and not taught.
- **The school system:** According to Tagore, a school does not lay the foundation for the development of man. It only lays seeds. A free atmosphere is better than the classroom teaching. So a natural harmonious, free, open and simple atmosphere should be provided to the children of school.
- **The student:** The educational thought of Tagore is based on his experience of the child's mind. Education is a bi-polar process where students and teachers play their respective roles. A school becomes complete only through the students. He was of the opinion that the child should be treated as a child and not as an adult. The sub-conscious mind of the child is more important than the active mind of the child.
- **Student teacher relationship:** According to Tagore, the most important medium for human development is teacher-student relationship 'upanayana' (the classical Hindu rite of initiation) which binds the students and teachers together. Tagore tried to create this atmosphere in his school. He tried to create our traditional intimacy between the teacher and the student. In this process, both the students and the teachers lived together in natural surroundings leading the disciplined life of celibacy (Brahmacharya). The minds of the teacher and the students are

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awakened through this process. They come close to learn from each other. The teacher has to create an atmosphere in the Ashram. Tagore says, 'They only deserve to be teachers who are patient and tolerant.' A teacher should be prepared to accept his students as his friends. On the ideal teacher, Tagore says, 'Only he can teach, who can love. The greatest teachers of men have been lovers of man. The real teaching is a gift. It is a sacrifice, it is not a manufactured article of routine work, and because it is a living thing, it is the fulfillment of knowledge of the teacher himself.'

Tagore lays much emphasis on the role of the teacher in the educative process than on the methods of teaching. In the 'ashram school', the teacher alone can create a creative atmosphere. He is the leader, a pioneer. He is the person who can 'knock on doors of mind.' Therefore, those who desire to be teachers must have a natural feeling of respect even for the very young.

- **Discipline:** Tagore being a lover of children was against rigid discipline. He supported free-discipline. He criticized corporal punishment by a teacher holding a cane. He wanted to give the child maximum opportunity for the discovery of his innate potentialities in an atmosphere of complete liberty. Like Rousseau, Tagore was a naturalist. His naturalism consists of love of nature and harmony with nature's creatures. In order to be in harmony with nature, the education of the child should be carried out in natural surroundings. Therefore, freedom must be given to the child for his self-activities and for the development of his potentialities. Emerging as a prophet of an educational renaissance in India, Tagore considered education as the solution of all problems of life. Hence education is an integral part of human life. Casting a look at the innovations brought about by great educators like Rousseau, Froebel, Herbart and Pestalozzie. He experimented his own philosophy of education at Bolpur School.

3.3.5 Influence of Tagore on the Practices of School Education: Shantiniketan and Visvabharati

To give practical shape to his educational ideas, Tagore established an educational institution in Bolpur, one hundred miles north of Calcutta, on 22 December 1901. He named it 'Shantiniketan' the Abode of Peace. In his words, the school was a work of art and not a Pedagogical Laboratory. This school had all the characteristics of a garden school, 'Ashram' like and 'gurukula.' The school was running under the direct supervision of Tagore. While starting this school, he had in his mind, the Tapovana, the forest hermitage of ancient India.

Special Features of Shantiniketan

- **Homely atmosphere:** The school was a 'Gurukula' (a residential hermitage), where students and the teachers were living together in a very simple manner. All the students reside on the premises, eat, drink and sleep together without the distinction of caste and creed. Simple and cheap food was cooked and served by the students themselves. The students perform most of their own work, drew water from well, kept their rooms tidy and also washed their clothes. Thus, he experimented his own philosophy of 'simple living and high thinking.'
- **Religious and spiritual atmosphere:** Being a great visionary and a man of wisdom, Tagore wanted the emancipation of man from material bondages with

the help of religious and spiritual education. He aimed at perfection, not only that of body and mind only but also that of the soul. In Shantiniketan, he made provision for the study of the religious ideas of the Hindus, Buddhists, Jains, Muslims, Sikhs, Christians and other religions of the east and the west. He advocated spiritual realization 'in amity, good fellowship and cooperation between the thinkers and scholars of both eastern and western countries from all antagonisms of race, nationality, creed or cast.' Tagore saw spiritual significance in natural facts. Since his school was situated in natural environment, it was the best means for spiritual progress. In his opinion, the best means of deriving divine inspiration is to lose oneself in the contemplation of nature.

- **Natural atmosphere:** Shantiniketan was a garden school. Students were receiving education in the open air. The whole life of the school was going on out of the doors. Classes were held under the shades of the trees. Students were free to enjoy the flowers of the spring and the harvest of autumn the heat and the dew storm, rain and the quiet moonlight nights. Tagore created a Tapovana, the forest hermitage of ancient India, where the students and the teachers would be the seekers of truth and would be able to lead a life of truth in the natural beauties of the forest.
- **Organization of classes:** Activities of school at Shantiniketan began at 4.30 a.m., when the choir boys would go round rousing the sleepers up into the beauty of the calm of early dawn. All the regular classes get over by noon. In the afternoon session, extra subjects like Indian painting, Indian dancing, music, physical training etc. were taught.

There is scope for the use of 'drama' for educational purposes. If the song of a bird interrupts teaching work, the teaching is stopped and the bird is listened to. The children were active to the delight provided by the chirping birds and blooming flowers in the school. Creative work in literature and art were encouraged. There was competition in study, poetry and easy writing. To develop the sense of discipline, good behaviour, respect for others, orderliness, modesty, cleanliness, etc. were practiced.

Programme of Daily Activities at Santiniketan

Early morning: At 4.30 a.m. a group of student singers would go around the ashram and wake up the students. After waking up, the students clean their rooms and take up physical work. After taking rest for some time they take their bath. Before sun rise, they meditate for ten minutes under the trees. Then they have their breakfast.

Forenoon and afternoon: The morning session continued from 8 a.m. to 11.30 a.m. during this session, students are engaged in hard work. They perform light work in the evening. In the forenoon session, students are engaged in preparing lessons, group discussion, games and other creative activities. They take their launch at about 12 noon. Just before sunset they devote a few minutes for meditation. They eat their last meal after mediation. At night, students are engaged in activities like dramatics, singing, story telling etc. they go to bed at about 9.30 p.m. At this moment, the choir boys sing once again. Thus, life at Santiniketan begins with songs and ends with songs. Tagore felt Santiniketan 'as the divine humanity working in his mind and compelling him to practical activities.'

Vishva-Bharati: Tagore laid the cornerstone of Vishva-Bharati, the international university at Shantiniketan on 22 December 1918. The name Vishvabharati indicates a

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place of universal knowledge and world culture. His aim was, 'Yatra Vishwam bhati ekanidam' where the whole world forms its one single nest. In 1951, ten years, after the death of Tagore, it was raised to the status of a national university and a universal institution about the aims of this institution. Tagore said, 'I had all along experienced the want of an institution in India which should be a true centre for all the different eastern cultures, concentrating in one spot the varied ideals of art and civilization which have been contributed to the world by the various countries of Asia.'

This university consisted of four important divisions. They were higher secondary, college, research and cultural education. Here he could do a synthesis of Asian culture, and through this institution, the Asian mind can be reflected to the rest of the world. It was a meeting place of the cultures of the East and West.

The aims and objectives of Vishva bharti, as contained in the prospectus of the university are:

- To study the mind of man in its realization of different aspects of truth from divers points of view.
- To bring into more intimate relation with one another, through patient study and research, the different cultures of the east on the basis of their underlying unity.
- To approach the West from the standpoint of such a unity of the life and thought of Asia.
- To see to realize in a common fellowship of study the meeting of the East and the West and thus ultimately to strengthen the fundamental conditions of world peace through the establishment of free communication of ideas between the two hemispheres.

Thus, Visva bharti as an international centre of education was based on the philosophy of education which aims. At universality now this great institution has been taken over by Government of India and elevated into the fourth Central University through an Act specially enacted by the parliament in the year 1951. It has several departments like Vidya-Bhawan or a School of Research, Siksha-Bhawan or a college, Cheena Bhawan or a School of Sino-Indian Studies, Kala Bhawan or a School of Fine Arts, Sangeet Bhawan or a School of Music and Dancing, Sri Niketen or an Institution of Rural Reconstruction, Silpa Bhawan or a School of Industries, Adhyapak Siksha Bhawan or Training College, Patha Bhawan or a School etc. Many of the classes are held in open air. Tagore is no more now. But his 'personality' reflected conception of the educative process as an effective harmony of relationship.

Conclusion

The history of Shantiniketan is the history of Tagore's spiritual voyage. His own personality reflected a divine humanity which inspired both the student and teachers. He goes by the name Rabindranath which means the 'day's light.' Through the light of his personality, he enlightened his student's and associates. This institution was the result of Tagore's experiences and experiments. He evolved not necessarily a new system of education but a new pattern of life, joyful and free within education. His centers of learning still survives to prove his achievements as a humanistic educator.

Check Your Progress

6. Define Ananda Yoga.
7. What is the Heuristic method of teaching?
8. Enlist the features of Shantiniketan as developed by Tagore.

3.4 JOHN DEWEY'S PHILOSOPHICAL THOUGHT IN EDUCATION

John Dewey was born in 1859. After graduating from University of Vermont in 1879, he started his career as a schoolteacher and had the actual experience of teaching in a class-room. His philosophy is not simply speculative but based on the actual experiences in the school. In April 1882 he wrote his first article entitled, 'The Metaphysical Assumption of Materialism' in *Journal of Speculative Philosophy*.

After leaving his job as a schoolteacher, Dewey joined Johns Hopkins University and obtained his degree of Ph.D. in philosophy in 1884. Thereafter, he worked as a professor of philosophy at the universities of Minnesota, Michigan and Chicago.

It was at Chicago in 1896 that Dewey founded the ideal University Laboratory School. This school served him as a scientific laboratory in obtaining knowledge of facts and laws still unknown to the educationists of the world. It was here that he tested, modified and clarified his theories after practical experience of school situations.

He was invited by the University of Peking to deliver a lecture on philosophy and education and later on the Government of Turkey asked him to draw up a report on the reorganisation of national schools in Turkey.

Dewey's Philosophy

Dewey's philosophy and programme has been variously termed as 'Experimentalism', 'Functionalism', 'Instrumentalism', 'Operationalism', 'Progressivism', 'Practicalism' and above all 'Pragmatism'. All these indicate his emphasis on the dynamic and everchanging character of life. Dewey tests every hypothesis or belief or principle by the way it works or by its consequences. He does not believe in the existence of any absolute values or ultimate moral principles which are at once 'unassailable and unimprovable'. He said that there are no fixed beliefs. He also insisted that the intellect was subordinate to practical ends. 'Utility' was the touchstone of every value. Pragmatism teaches that which is useful, what works in a practical situation is true; what does not work is false. Truth thus becomes not a 'fixed', 'eternal' thing, but something that is subject to change. According to pragmatism, what is true to-day may be false tomorrow.

Five values stressed by Dewey:

1. Aesthetic taste or capacity.
2. Conscientiousness.
3. Efficiency.
4. Scientific spirit.
5. Sociability and social efficiency.

Experience and Experimental Method

Dewey explains that where there is experience, there is a living being. In the orthodox view, experience is regarded primarily as a knowledge affair, but to eyes not looking through ancient spectacles, it assuredly appears as an affair of the intercourse of living being with its physical and social environment. To learn from experience is to make a backward and forward connection between what we do to things and what we enjoy or suffer from things.

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‘The new philosophy of education is an experimental philosophy. All experiences cannot be educative ... The traditional education gave pupils experiences but not of the right type ... The business of the educator is to set a kind of experience which while being agreeable promotes having desirable future experiences. The central problem of an educator based upon experience is to select the kind of present experiences that live fruitfully and creatively in subsequent experiences. The continuity of experience is the philosophy of Educative Experience. It is held that education is a development within, by, and for Experience ... Education by, of, and for Experience ... Thus a full integrated personality exists only when successive experiences are integrated.’ Experimental methods have the following merits:

1. Experimental method is the foe of every belief that permits habits and wants to dominate invention and discovery, and readymade system to override verifiable fact. Constant revision is the work of experimental inquiry.
2. Experimental method is fatal to dogmatism because it shows that all ideas, conceptions, theories, however extensive and self-consistent and aesthetically attractive they maybe, are to be entertained provisionally until they have been tested by acting upon them.
3. Experimental method is not just messing around nor doing a little of this and a little of that in the hope that things will improve. Just as in the physical sciences, it implies a coherent body of ideas, a theory, that gives direction to effort.

Selectivity in experience: Mere activity is not experience. A stream of meaningful experiences have to be provided. That kind of present experience should be selected and emphasised which lives fruitfully and creatively in the course of future experiences.

Education in growth: Dewey is a protagonist of the conception of education as growth and direction. Life is growing and education is the process of this ever-increasing growth. What is of enormous significance for Dewey is the present life and its possibilities. He criticises the conception of education as a ‘preparation’ for the realisation of some remote future goal. It is essential that the immediate situation should be interpreted in such a meaningful way that it may provide the maximum stimulus for the responsive cooperation of pupils and the utilisation of their energies.

Education a moral process: According to Dewey, ‘Discipline, culture, social efficiency, personal refinement, improvement of character are but phases of the growth of capacity nobly to share in such a balanced experience. And education is not a mere means to such a life. To maintain capacity for such education is the essence of morals.’

3.4.1 Influence of Dewey on the Practices of School Education

Dewey thinks that education is a continuous process of adjustment, having as its aim at every stage an added capacity of growth.

Two sides of the educative process: *Psychological and social.* According to Dewey, the educative process has two sides—one psychological and the other sociological, and neither can be subordinated to the other or neglected without evil results following.

Social view of education: Prof. Dewey states the social function of education in *The School and Society*. ‘What the best and wisest parent wants for his own child, that must the community want for all of its children. Any other ideal for our schools is narrow

and unlovely; acted upon, it destroys our democracy. All that society has accomplished for itself is put through the agency of the school, at the disposal of its future members.'

Education proceeds by the participation of the individual in the social consciousness of the race: Dewey believes that all education proceeds by the participation of the individual in the social consciousness of the race. This process begins unconsciously almost at birth and is continually shaping the individual's powers, saturating his consciousness, forming his habits, training his ideas, and arousing his feelings and emotions. Through this unconscious education, the individual gradually comes to share in the intellectual and moral resources which humanity has succeeded in getting together. He becomes an inheritor of the funded capital of civilisation. The most formal and technical education in the world cannot safely depart from this general process. It can only organise it or differentiate it in some particular direction. Dewey believes that true education comes through the stimulation of the child's powers by the demands of the social situation in which he finds himself.

School: A Social Institution

Dewey says, 'I believe that the school is primarily a social institution. Education being a social process, the school is simply that form of community life in which all those agencies are concentrated that will be most effective in bringing the child to share in the inherited resources of the race, and to use his own powers for social ends.' 'I believe that the school must represent present life—life as real and vital to the child as that which he carries on in the home, in the neighbourhood, or on the playground.'

The moral training given by the school community: According to Dewey, there cannot be two sets of ethical principles, one for life in the school, and the other for life outside the school. As conduct is one, so also the principles of conduct are one. The tendency to discuss the morals of the school as if the school were an institution by itself is highly unfortunate. The moral responsibility of the school, and of those who conduct it, is to society. The school is fundamentally an institution erected by society to do a certain specific work, to exercise a certain specific function in maintaining the life and advancing the welfare of society. The educational system which does not recognise that this fact entails upon it an ethical responsibility is derelict and a defaulter.

Functions of the School

The first office of the school is to provide a simplified environment. It should select the features which are fairly fundamental and capable of being responded to by the young. Then it should establish a progressive order, using the factors first acquired as means of gaining insight into what is more complicated.

In the second place, it should be the business of the school environment to eliminate, so far as possible, the unworthy features of the existing environment. It should establish a purified medium of action. Selection should aim not only at simplifying but at weeding out what is undesirable. The school has the duty of omitting trivial things from the environment which it supplies, and thereby doing what it can to counteract their influence in the ordinary social environment. By selecting the best for its exclusive use, it should strive to reinforce the power of this best. As a society becomes more enlightened, it realises that it is responsible not to transmit and conserve the whole of its existing achievement, but only such as make for a better future society. The school is its chief agency for the accomplishment of this end.

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In the third place, it is the office of the school environment to balance the various elements in the social environment, and to see to it that each individual gets an opportunity to escape from the limitations of the social group in which he was born, and to come into living contact with a broader environment.

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Laboratory School

Dewey's philosophy grew out of his experiments to establish an ideal school—the University Laboratory School, founded in 1896. Dewey wanted that the training of scholars in the school should be such as to enable them for a complete living in the social world of today. Dewey posed the following problems and attempted to find their solution:

- How to bring the school life into closer relation with the home and surrounding life?
- How to introduce subject-matter in history, science and arts to give a positive value and real significance in the child's life?
- How to correlate instruction in different subjects with everyday experience and occupation?
- How to cater to individual powers and needs?

Manual Occupations in the School

Dewey found the answer to the above mentioned problems in the introduction of the following occupations in the school:

- Shopwork with wood and tools
- Cooking work
- Work with textiles (sewing and weaving).

A central place was given to occupations and other subjects were treated incidentally as ancillary to practical activities. In the Laboratory School, 'Science is required in the study of the fibres, of geographical features, the conditions under which raw materials are grown, the great centres of manufacture and distribution, the physics involved in the machinery of production.' 'You can concentrate the history of all mankind in the evolution of flax cotton and wool fibres into clothing. The children can get a good deal of chemistry in connection with cooking, of number work and geometrical principles in carpentry, and a good deal of geography in connection with their theoretical work in weaving and spinning. And history comes in with the origin and growth of various inventions and their effects on social life.'

Child as the Core of the Educative Process

Dewey observes, 'Education must begin with a psychological insight into the child's capacities, interests, and habits ... These powers, interests, and habits must be continually interpreted, we must know what they mean. They must be translated into terms of their social equivalents—into terms of what they are capable of in the way of social service.' (*My Pedagogic Creed*).

Observation of Child's Interests: Dewey tells us that only through the continual and sympathetic observation of childhood's interests can the teacher enter into the child's life and see what it is ready for, and upon what material it could work most readily and fruitfully.

‘The more a teacher is aware of the past experience of student, of their hopes, desires, chief interests, the better will he understand the forces at work that need to be directed and utilised for the formation of reflective habits.’ (*How We Think*)

3.4.2 School Curriculum

Development of social insight and interest: The task of educating so many children at so many different educational levels with such a variety of abilities, needs and goods requires a completely different approach. With this increase in a diversified school population, Dewey advocates that broader curricular programmes are needed and emphasis should be placed on the total development of the person as being equally important as the intellectual and the academic. Such a curriculum acknowledges that the social responsibilities of education must present situations where problems are relevant to the issues of living together, and where observation and information are calculated to develop social insight and interest.

According to Dewey, social life cannot be cut into pieces of knowledge. Departmentalisation of the curriculum and the systematic succession of studies have to be replaced by an elastic programme of activities.

The subject-matter of geography, arithmetic and grammar should come out of school situations in answer to social needs.

The curriculum must grow out of child’s interests, experiences, impulses and needs. The curriculum must be child-centred. He stressed that the school subjects should be woven around the child’s activities. Lessons should begin with social topics such as food, shelter, modes of communication, speech, reading, drawing, modelling. etc. While laying stress on the needs of the children, Dewey also took into account the needs of the community in which the children live.

Following are the main characteristics and principles of the curriculum:

1. Curriculum should reflect the social life and social activities. It should have utility.
2. It must follow the principle of progressive organisation of knowledge consisting of educative experiences and problems of the learners
3. The new experiences and problems should grow out of the old ones.
4. The experiences should be flexible and changeable in accordance with the child’s interests and should be graded.
5. Dewey said, ‘All learning must come as a by-product of actions and for its own sake’. This reveals his concepts of observation and direct experience. According to him, a child learns through participation in various activities. He advocated ‘learning by doing’ and ‘learning by living’. He recommended the project method which is based on problems, activities, experiments and interests of the learners.

Dewey has explained the project method of teaching in his books: *How We Think* and *Interest and Effort in Education* as, ‘The processes by which the mind of the individual comes into relation with the objective world. Interest and self-activity are the characteristic features’. It is a method which deals with the intellectual processes that are antecedent to induction and deduction.

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Dewey briefly recommended the following methods of instruction:

- (i) Learning by doing.
- (ii) Learning by integration and correlation.
- (iii) Learning through productive and creative activities.

6. **Concept of Discipline:** Dewey held that the natural impulses of the child ought to be directed and disciplined through the cooperative activities of the school. 'Out of doing things that are to produce results, and out of doing in a social and cooperative way, there is born a discipline of its own kind and type'. Dewey believed that the child's activities—intellectual, social, moral and physical—are disciplinary in their effect if they are carried out in cooperation with others.

7. **The role of the teacher:** The teacher is engaged not simply in the training of individuals, but in the formation of proper social life.

Every teacher should realise the dignity of his calling; that he is a social servant set apart for the maintenance of proper social order and the securing of the right social growth.

In this way, the teacher always is the 'prophet of the true God' and the usherer in of the true kingdom of God. He also said, The teacher is a guide and director; he steers the boat, but the energy that propels it must come from those who are learning. The more a teacher is aware of the past experiences of students, of their hopes, desires, chief interests, the better will he understand the forces at work that need to be directed and utilised for the formation of reflective habits.

8. **Concept of Democracy and Democratic Values in Education:** Dewey states that democracy is the political and moral philosophy of education. 'If education is equivalent to genuine living, then democracy is the moral foundation of education. The essence of education is the extension of shared areas of meaningful action and this is also the essence of democracy.'

The school as the 'democratic society in miniature' should provide for the participation of the students in the activities of the school on the one hand and on the other hand, it should realise the significance of the experiences, needs and interests of the child as a personality.

Democracy postulates full freedom of enquiry into social and political problems and solving them. Likewise, the schools should promote a spirit of enquiry in educational thinking. Discussion should be freely permitted.

The schools should become guardians of academic freedom. Intellectual or moral freedom is the basis of political freedom.

The schools should become living examples of the practices of freedom of enquiry, experimentation and intelligent communication.

Excessive heavy routines and rules are not conducive to self and social disciplines.

Dewey advocates that the teacher should be provided opportunities to 'participate in the formation of the controlling aims, methods and materials of the school of which he is a part'.

To sum up, Dewey wants that education should reflect democratic principles and practices in the matters of school organisation, selection of activities and experiences and other matters.

3.4.3 Dewey's Concept of Discipline

Dewey would like to develop discipline by engaging the pupils in performing their part of work faithfully. This implies the solicitation of the active co-operation of the pupils in the work of the school in terms of the participation of the learners in educational activities that are pregnant with relevant aim capable of immediate realisation and full of deep significance.

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Dewey's Contribution to Educational thought and Practice

1. Dewey's social theory of education coupled with the logic of experimental method has been very influential in the development of modern education practices.
2. The greatest change has been in the recognition of the worth of the experiences of the child. The child is no longer regarded as a passive subject meant for the imposition of external information but is considered an active living being whose interests have to be stimulated by participation in socially significant experiences. This kind of participation, if intelligently and devotedly engaged in, is a kind of moral experience. Thus instead of the old emphasis on mechanical memorising of subject-matter, it is essential to stress the meaningful dimensions of the process of learning.
3. Dewey has been one of the significant leaders who have tried to introduce a more human touch in the processes of education.
4. He has been a powerful influence in interpreting the school as a community for the realisation of the significance of the immediate experiences and present opportunities of the child, if he is to be a contributor to the march of the social process.
5. His insistence on activities of diverse kinds in schools is also another aspect of his social theory of education.
6. The pragmatic method of instrumentalistic experimentation reacts against all kinds of mysticism, transcendentalism and absolutism.
7. The supreme contribution of Dewey to the philosophy of education is the theory of scientific democratic humanism.
8. Dewey is quite right in pleading for the wide use of the experimental methods of science in education.

Limitations of Dewey's Philosophy

The very richness of Dewey's educational writings may lead to some confusion. For all his systematic exposition of ideas, he is not the author of a system. Only broad outlines can be made out and even then the variety of Dewey's thought is such that opposing ideas can be hauled out of context and made to give a scrambled picture.

Dewey's writings lend themselves to ambiguity. There is another problem in Dewey's educational philosophy. His writings coincide with the rise of so-called 'progressive education.' Thus in the popular mind, and often in the professional mind, the name of John Dewey and that of progressive education 'have been far too firmly linked.'

It is very difficult to verify scientific objectivity and to reconcile it with democracy which in practice means numerical majority. Dewey's neglect of religious education may result in the destruction of the roots of humanistic values and social ethics.

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Dewey is one of those significant figures whose ideas have influenced not only the thought of people, but also powerfully moulded practice. Prof. V.P. Verma thinks, 'The strength of Dewey lies in his immense grasp of the realities of life. He does not soar in the transcendental regions of the motionless spiritual being but both his feet are firmly planted in the pressing situations of the day.'

The same author thinks, 'The quest for the three goals—scientific method, humanistic ethics and democratic theory—represents the great contribution of Dewey to educational theory'.

In his book *American Ideas and Education*, Fredrik Mayor observes, 'In Dewey the voice of the pioneer, the stirring energies of the reformer, the patient method of the scientist and the faith of the teacher are united in a search for a new education through which man can survive in a chaotic age.'

Whitehead rates Dewey's services to American Civilisation analogous to those of Bacon, Descartes, Locke and Comte to the modern world.

Rusk thinks, 'In education we cannot but be grateful to Dewey for his great services in challenging the old 'static storage ideas of knowledge' and in bringing education more into accord with the actualities of the present day life.'

Irwin Edman regards John Dewey as 'one of the makers of American Tradition'.

To quote Irwin Edman 'Dewey brought ... a reviving approach to education as function of society, learning as an experience in growth and experience ... like the acquiring of one's native speech—a mutual communication, a cooperation. At the school level, this view helped transform the rigidities of the old fashioned martinet type of discipline and the tradition of learning by rote. At a more advanced level, it was the source of that wide dissemination of the conception of 'general education' and the new social studies which have so extensively affected the colleges and universities of this country. The breakdown of the violation of school from society, of book learning from vital experience, of the individual from his environment—the extent to which schools and colleges have removed these separations is a measure of the direct impact of refreshing reconstruction of Dewey's thinking'. (In the *Introduction to John Dewey, 1955*)

J.S. Brubacher, in *Fiftyfourth Year Book of the National Societies for the Study of Education*, states about Dewey: 'Except for the emergence of John Dewey and the persistent challenge of his pragmatism to every phase of contemporary education, it is unlikely that educational philosophy would have had anywhere near the rise to prominence it has had in this century. His writings were not only the inspiration for others who wrote in the same vein but, much more important for richness and breadth in professional literature, he provoked opponents of his view to make explicit a variety of philosophical defenses of traditional or conservative educational practices which had only been implicit hitherto.'

F.G. Garforth writes in *John Dewey, Selected Educational Writings*,

Whatever criticism may be levelled at him, whether as philosopher or educationist, the stature of the man is something that cannot be denied; nor can the present-day student of education disregard his immense and civilising influence on the practice of education both in his own country and throughout the world. Moreover, despite his greatness he remained essentially a simple man, patient, humble, and courageous, displaying in his life and character that integrity which even his critics must admit to belong to his thought.

Prof. Ulich states in *History of Educational Thought*, Through placing the ideas of action and interest in the character of his educational philosophy, Dewey has decisively challenged the handling of the method and subject-matter in American schools.

Again he writes,

Dewey is one of the most astute, if not the most astute, among the modern philosophers who try to explain the quality and purpose of human life from an immanent and sociological point of view. His work offers one of the most helpful means of understanding the functioning of the human mind within a society of men who want to communicate with one another and to preserve themselves. Dewey's work encourages an experimental and scientific attitude; it prevents us from fixing our minds on things and ideas only because we happen to find them in the storehouse of tradition; it shows what men can achieve if they rely on their reason and courage instead of clinging to their prejudice; it teaches tolerance and respect for man without unduly edifying him—in short, it is a great corrective of false ideologies as well as a guide towards active, manly virtue.

Rush thinks,

In education we cannot but be grateful to Dewey for his great services in challenging the old 'static cold storage ideal of knowledge' and in bringing education more into accord with the actualities of present-day life. The general principle underlying the developments in his philosophy and his applications of these in education appears to be that both philosophy and education should reflect the main currents of contemporary thought and incorporates the techniques that have so signally contributed to modern industrial and social progress.

Joe Park observes in *Philosophy of Education*: 'As a pragmatist, Dewey rejected the authoritarian and classical approach to education, which he thought stressed the ability to talk about things rather than the ability to do things. He built his philosophy on a biological base, pointing out that man is an organism living in an environment, an environment which helps to shape man, but which, in turn, can be modified by man. Dewey thought things were to be understood through their origin and function. To him the only reality for man was experience; the business of education was to improve the quality of experience that human beings had. This he hoped to accomplish by carefully defining the nature of experience and establishing criteria for judging its value.'

Dewey's Philosophy is a Programme of Action

'Dewey's philosophy is a programme of action. His philosophy looks for desired as well as desirable practical consequences and will never be contented with bare logical consistency or theoretical comprehensiveness', wrote Sing-Nan-Fen in 'Essays for John Dewey' published in 1950. 'His philosophy is problem-oriented and his problems are problems of this world, not philosophical problems as such, nor problems about another problem. Furthermore, as a philosopher, Dewey is not only a problem-formulator, but also a problem solver.' This is why, as a philosopher, Dewey was very much interested in education both in theory and in practice.

A Great Teacher and an Encyclopaedia Reader

Charles W. Coulter and Richard S. Rimanoczy describe his contributions, 'John Dewey, a great teacher, an encyclopaedia reader, thoroughly familiar with the American as well as the European background of pedagogy, dedicated himself to sparking a revolution in the theory and practice of education, not only in America but throughout the world.'

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‘The newness of Deweyism lies mainly in the regrouping, reorganising, and integrating of selected previously postulated ideas and methods (particularly of Rousseau, Pestalozzi and Froebel) into an educational system to meet the social and economic needs of 20th century America.’

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Left His Mark all over the World

Robert S. Brumbaugh and Nathanul M. Lawrence in their book, *Philosophers on Education*, evaluate the work of Dewey as, ‘Dewey is the one philosopher in whom philosophy and educational theory are virtually indistinguishable. No philosopher has written so extensively on education. In civilised countries between the two wars he left his mark everywhere, not only in the western hemisphere, but in Turkey, China, and Japan as well. Even in Russia, Dewey was well received until the time of his vindication of Trotsky against Stalin. Plato alone competes with Dewey for having shaped contemporary civilisation educationally; and Plato’s influence comes by way of a series of modifications beginning with Aristotle.’

3.5 ROUSSEAU’S PHILOSOPHICAL THOUGHT IN EDUCATION

Jean Jacques Rousseau lost his mother at an early age, was brought up by his father; had no experience of being a pupil in a class; received his early education under the care of a tutor; tried unsuccessfully all sorts of occupations; though not a successful tutor but this experience awoke in him a keen interest in the problems of education; at about twenty-five he studied Hobbes, Locke, Montaigne, Pascal, Fenelon Voltaire, Malebranche, Leibnitz and Descartes; was awarded a prize by the Academy of Dijon.

On leaving school at the age of twelve, he became apprenticed first to a notary and then to an engraver. Abandoning his apprenticeship in 1728, he began a series of personal adventures which are recorded in *The Confessions*. After a number of journeys, affairs, a desultory study of Catholicism, music, and a survey of all the sciences, Rousseau arrived in Paris in 1741 and became music critic to the *Encyclopedie* four years later. In 1749, he was awarded the essay prize of the Academy of Dijon for his *Discourse on the Arts and Sciences* and began serious writing on political subjects. *Emile* and *The Social Contract* were completed in 1762. Rousseau’s relations with the Encyclopaedists were embittered by personal quarrels. He incurred the enmity of the French authorities by his attacks on political institutions and religion. He lived many years in exile, first in Prussia, then in Berne, and finally, in 1766, in England as the guest of David Hume. Rousseau returned to France and died there.

Philosophy of Rousseau

Rousseau was greatly influenced by three factors viz., the state of time, extremely varied experience of his life and his impulsive and emotional nature. His philosophy is usually designated by the term ‘Naturalism’. The keynote of his philosophy is to have a ‘State of Nature’, ‘Natural Man’ and ‘Natural Civilisation’. He contends that all the ills and miseries of civilisation are due to a departure from a ‘State of Nature’. ‘Return of Nature’ was his method to cure the world of ills and miseries. In the opening sentence of *Emile*, Rousseau reveals the tilt of his philosophy. ‘Everything is good as it comes from

Check Your Progress

- 9. Mention the five values stressed by Dewey.
- 10. What is the second important function of school as per Dewey?
- 11. State the supreme contribution of Dewey to the philosophy of education.

the hands of the Author of *Nature*; but everything degenerates in the hands of man.’ Again Rousseau has observed, ‘Civilised man is born, lives and dies in a state of slavery. At his birth he is stitched in swaddling clothes; at his death he is nailed in his coffin and as long as he preserves the human form he is fettered out by institutions. Leave him alone.’

Life according to Rousseau was genuine. ‘Reason’, he said ‘should be the guiding principle in producing both the Natural civilisation and Natural man.’ This ideal of the state of ‘Nature’ was, ‘a simple farming community or state without evils.’

Three Sources of Education

According to Rousseau, following were three sources:

1. **Education of nature:** ‘The constitutional exertion of our organs and faculties is the education of nature.’
2. **Education given by men:** ‘The uses we are taught to make of that exertion, constitute the education given to us by men.’
3. **Education from circumstances:** ‘And in the acquisitions made by our own experience, on the objects that surround us, consists of our education from circumstances.’

Rousseau has observed, ... ‘It matters little to me, whether any pupil be designed for the army, the bar, or the pulpit. Nature has destined us to the offices of human life ... To live in the profession I would teach him. When I have done with him it is true, he will be neither a lawyer, a soldier, nor a divine. Let him first be a man, he will on occasion as soon become any thing else, that a man ought to be, as any other person whatever. Fortune may remove him from one rank to another as she pleases, he will be always sound in his place.’

Education by Nature will restore unsophisticated man, whose sole function is to be a man. In the natural order of things, all men being equal, their common vocation is manhood; and whoever is well trained for that, cannot fail to perform any vocation connected with it.

Natural and Negative Education

The approach of Rousseau in the field of education is out and out naturalistic. He had no faith in the established order of the society. When he talks of negative education, he believes that the child should be subject to a natural order and free from a social order. Negative education means to allow the child to move freely in nature, so that he is able to perfect the organs of his body, which are the instruments of acquiring knowledge. This free movement will not mean teaching virtue or truth, but protecting the heart of the child from the evil ways of the society.

The negative education of Rousseau has the following implications:

1. **To lose time wisely:** Rousseau considered that childhood is a period when the child should know how to lose his time wisely. It is not a period when time is to be saved for an intensive study of books. The child should run, jump, play all day long, thus developing his organs which will enable him to acquire knowledge when the right occasion comes for it.

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2. **No place for book learning:** Rousseau does not believe in imparting education with the help of books. He holds that reading is a curse and books have no place in the education of the child. He advocates that the child should think for himself and learn with his own efforts.
3. **No formal lessons:** Rousseau is also against any formal teaching in the class. He believes that verbal lessons are useless burden on the memory of the child and a sheer waste from the educational standpoint. The child is not able to interpret and assimilate on the basis of cause and effect theory, hence it is easily forgotten.
4. **No habit formation:** Rousseau also does not believe in any habit formation at this stage. 'The only habit a child is to form is not to form any habit at all.' He believes that everybody is a slave to his habits and the same may be true about the child. He was against all social habits. He, however, favours natural habits and holds that the child should be left to have natural habits.
5. **Non-moral education:** The child is the purest thing in nature and therefore there is no place for any moral teaching. Morality is something which is beyond the understanding power of children. The reason behind this assumption is that morality and reasoning do not go together. The child, therefore, should be left to learn from the lessons of nature. If he commits a mistake, he will suffer and learn in a natural way. A burnt child dreads the fire.
6. **Back to nature:** The state of nature in which man lived long ago was a blissful state. Modern civilisation is the main cause of the misery of mankind. The alternative before mankind is going back to nature. The customary procedures of the civilised society should be done away with and the natural state may be accepted again.

3.5.1 Influence of Rousseau on the Practices of School Education

Rousseau was against the oral and theoretical methods of teaching which was pursued in his time. Instead, he recommended play way method of teaching learning. Real education to him was self-education acquired through experience observation.

Rousseau's Views on Methods of Teaching

1. **Individual instruction:** Rousseau emphasised the due importance of individual instruction. He believed that the individuality of the child should be recognised by the educator and duly respected by him. He was right when he said that children are children before they become men.
2. **The principle of learning by doing:** He lays stress on the principle of learning by doing. He says, 'teach by doing whenever you can and only fall back on words when doing is out of question.' He believes that the child should take part in various activities and learn in a natural way. When the child wants to do something with his own hands, his urge for creative activity must be satisfied.
3. **Direct experiences of the child:** Rousseau would like *Emile* to learn from his own experiences and not from books. Knowledge acquired from books is second-hand and easily forgotten. Personal knowledge directly acquired, from various learning situations, is something permanent, which the child will not forget. This will constitute the permanent nature of his character.
4. **The heuristic method:** Rousseau also advocates the heuristic method of teaching. He would like to place the child in the position of an original discoverer. The child

will learn science with self-made and self-invented apparatus. The same method is to be applied to other subjects of the curriculum.

5. **Example is better than precept:** For imparting moral education, Rousseau believes in the principle that example is better than precept. There is no use lecturing on morality to him, he should have an example of moral behaviour and opportunities may be provided to him to practise virtue.
6. **Social knowledge by social participation:** The child in his period of adolescence will get knowledge about social relations by actually visiting places and coming in contact with the members of the community.

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Freedom of Child—Discipline by Natural Consequences

He believes in the freedom of the child. It is only in a free atmosphere that the child will be able to develop his inborn and innate capacities. He does not believe in punishing the child so as to correct his future behaviour. The reason behind this assumption according to Rousseau is very simple, the child is not able to link up the punishment administered and the mischief done by him. Children, therefore, should be left alone to experience the consequences of the mischief done by them. Nature, according to Rousseau, is a great teacher. If children commit mistakes and violate the principles of nature, they naturally invite the retribution of nature. This conception in the field of education is known as ‘discipline by natural consequences’.

Secondly, in the field of normal education, Rousseau starts with the assumption that the nature of child is essentially good, hence he should have freedom in his actions. Firstly, he believes that the child will not commit any immoral act, and secondly, even if he commits any, he will learn morality by the natural consequences of the action done.

‘Emile’

This is Rousseau’s main treatise on education. R.S. Brumbaugh and Nathaniel M. Lawrence would like to treat the theme of book *Emile* as, ‘A certain man, discovering late in life that his own life has been corrupted by the variety and ignorance of society, so that it has been inauthentic and has contributed little to human progress, determines to rectify this past by creating another self, free of his own vices, who will be the sort of example and parent the tutor wishes he himself had been. He will thus carry into the future the author’s ideal self rather than his actual unsatisfactory self. The central theme more specifically, is the story of Jean Jacques who, dissatisfied with the way he himself was trained and his own natural development misdirected, sets about creating in his adopted son and pupil, *Emile*, the ideal person that Jean Jacques himself might have been, had every social and educational influence in his past been the opposite of what it was. In this combination of the motifs of a pygmalion myth and the past recaptured, the father can in a sense relive his own life, give concrete realisation to the better possible person he might have been, and bequeath to the future a son who transmits the father’s ideal rather than his sad example.’

The *Emile* is a treatise on education cast into the form of a novel in which there are three characters; Emile, who may be regarded as ‘Rousseau’ while a boy, and his tutor, who is obviously Rousseau, as a man and Sophie, who is destined to be the mate of Emile. *Emile* has been described by Lord Morley as ‘One of the seminal books in the history of literature, and of such books the worth resides less in the parts than in the whole. It touched the deeper things of character. It filled parents with a sense of the dignity. It cleared away the accumulation of clogging prejudices and obscure inveterate

usage, which made education one of the dark formalistic arts. It admitted floods of light and air into the tightly closed nurseries and school rooms. It effected the substitution of growth for mechanism . . . It was the charter of youthful deliverance.’

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Book I deals with the infant, Book II with childhood; Book III with the preadolescent between the ages of twelve and fifteen; Book IV with adolescence; and Book V with the education of girls.

The Parliament of Paris criticised *Emile* very severely. It was ordered to be burnt publicly. Orders for the arrest of Rousseau were issued and he had to fly away from France to Switzerland. The reading of *Emile* was forbidden by the Archbishop of Paris. The book was condemned on account of ‘Containing an abominable doctrine, ready to subvert natural law and to destroy the foundations of the Christian religion . . . tending to trouble the peace of States, to cause subjects to revolts against their sovereigns; as containing a large number of prepositions false, scandalous, full of hate against the Church, derogatory to the respect of holy scriptures . . . erroneous, impious, blasphemous and heretical.’

Emile had a great effect on thought and action of education in the eighteenth century. It was immediately translated into several languages as it aroused a deep interest in the problems of childhood and youth. In the words of William Boyd “Society women began to nurse their own babies, mothers and fathers attempted to bring up their children as Emiles and Sophies, some more enthusiastic than the rest kept diaries in which they recorded their observations of their little ones, many of the nobles installed workshops in their homes to give their sons a training in some craft, writers produced a new literature for the young. . . There was general agreement that no form of education could be regarded as satisfactory which did not account of the nature of the child.’

Art of Observing Children

‘I wish some discreet person would give us a treatise on the art of observing children. An art which would be of immense value to us but of which fathers and schoolmasters have not as yet learnt the very first rudiment.’ (*Emile*, p. 185)

‘The highest function of the teacher consists not so much in imparting knowledge as on stimulating the pupil in its love and pursuit.’

‘To know how to suggest is the art of the teaching.’

Tender Regard for Children

‘The age of cheerfulness and gaiety is spent in the midst of tears, punishments, threats and slavery. We torment the poor creatures, for their future good: and perceive not that death is at hand, and ready to seize them amidst all this sorrowful preparation for life. Who can tell how many children have fallen victims to the extravagant sagacity of their parents and guardians? Happy to escape such cruelty, the only advantage the poor sufferers reaped from the evils they endured, being to die without regretting a life of misery.

Man, be humane! It is the first, the chief of moral duties, to exercise humanity to everything, of what age or condition soever, that is relative to man. What ! Is wisdom void of humanity? Have a tender regard for children.’

Reasoning on the Part of the Child in Place of Authority of the Teacher

‘Direct the attention of your pupil to the phenomena of nature, and you will soon awaken his curiosity, but to keep that curiosity alive, you must be in no haste to satisfy it. Put questions to him adapted to his capacity, and leave him to resolve them. Let him take

nothing on trust from his preceptor, but on his own comprehension and conviction, he should not learn, but invent the sciences. If ever you substitute authority in the place of argument, he will reason no longer, he will be ever afterwards handed like a shuttlecock between the opinions of other.’

Objects and not Words

‘... Talk not to children in a language they do not comprehend, make use of no pompous descriptions, no flowers of speech, no tropes and figures, no poetry, taste and sentiment are at present quite out of question. Simplicity, gravity, and precision are all that are yet required; the time will come but too soon when we must assume a different style.’

Hatred for Books

‘I hate books; they only teach people to talk about what they do not understand ... Since we must have books, there is one already, which in my opinion, affords a complete treatise on natural education. This book shall be the first *Emile* shall read. In this, indeed, will, for a long time, consist his whole literacy, and it will always hold a distinguished place among others. It will afford us the text, to which all our conversations on the objects of natural science will serve only as a comment. It will serve as our guide during our progress to a State of reason; and will even afterwards give us constant pleasure, unless our taste be totally vitiated. You ask impatiently, what is the title of this wonderful book? Is it Aristotle, Pliny, or Buffon? No. It is Robinson Crusoe. This romance, beginning with his shipwreck on the island, and ending with the arrival of the vessel that brought him away, would, if cleared of its rubbish, afford *Emile*, during the period we are now talking of, at once both instruction and amusements. I would have him indeed personate the hero of the tale, and be entirely taken up with his castle, his groats, and his plantations, he should make himself minutely acquainted, not from books, but circumstances with everything requisite for a man in such a situation ... I would have him when at a loss about the measures necessary to be taken for his provision or security upon this or the other occasion examine the conduct of his hero; he should see if he omitted nothing, or if anything better could be substituted in the room of what was actually done, and on the discovery of any mistake in Robinson, should amend it in a similar case himself; for I doubt not but he will form a project of going to make a like settlement.’

True Balance between the Exercises of the Body and Mind

‘... The great secret of education is to make the exercises of the body and the mind serve as a relaxation to each other.’

No religious education: ‘... Let us beware of divulging the truth to those who are incapable of understanding it; for this is the way to substitute error in the room of it. It were better to have no idea of God at all, than to entertain those which are mean, fantastical, injurious, and unworthy of a divine object, it is a less crime to be ignorant of, than insult him.’

Nature and society: Rousseau’s idea that civilised society makes the child corrupt seems to be one-sided and over-stated. However, one is inclined to agree with him when he argues that human nature, plastic though it is becomes noble and lovable if it is allowed to develop in its own way. This idea seems to be working behind all educational reforms of the present times.

Education of women: Rousseau thinks that a woman is especially made for man’s delight and if this principle is accepted, she ought to make herself pleasing in his eyes

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and not provoke him to anger. Her strength is in her charm. 'But the woman who is both virtuous, wise, and charming, she who, in a word, combines love and esteem, can send them at her bidding to the end of the world, to war, to glory, and to death at her behest. This is a fine kingdom and worth the winning.' For developing such qualities Rousseau advocates that a woman must be trained carefully but strictly, her taste followed rather than thwarted.

The feminine arts like needle work should be taught to her. She should learn all the details of house keeping, cooking, cleaning, calculating the price of the food and maintaining accounts accurately. She should be prepared to manage her own house. She must be taught to love cleanliness.

She must be devoted to the service of God and to doing good. Instead of long sermons about piety, the parents should preach by their examples which would be engraved on her heart.

Her education should be given in such a way that she remains chaste and good till her dying day.

3.5.2 Rousseau's Views on Curriculum

As given in *Emile*, Rousseau recommends curriculum in accordance with the stage of the child.

Curriculum at the first stage (from one to five years) would be such as it develops physical strength. The child should be allowed to wander freely in the countryside. His play-things should be very simple such as branches with fruits and flowers and no expensive toys. 'Let him not be pampered! Let him not be subdued'.

Curriculum at the second stage (between five to twelve years) should lead to the development of senses. Rousseau thinks that if senses are not trained properly, independent reasoning and judgement are impossible. *Emile* is to be given the greatest freedom of physical movement, simple diet and light clothing. There will be no verbal lessons for him. He will not be instructed in language, history and geography. *Emile* is to learn from his own experience. No moral instruction is to be given. Exercise the body, the organs, the senses and powers but keep the soul lying fallow as long as you can. Training for senses means learning to judge, foresee and reason through them. It is more than the mere use of them. All learning must come by play method. There is no need for the child to learn anything by heart. For *Emile*, there is no curriculum. He has to learn by activity and experience.

Curriculum at the third stage of pre-adolescence (twelve to fifteen years) should be built around curiosity which should create an urge for knowledge. Rousseau states that this is the period for developing intellect. *Emile* is introduced to studies that reveal nature, astronomy, science and the arts and crafts. Rousseau emphasises the learning of manual and industrial arts partly to make *Emile* independent and partly to overcome his prejudice held against manual work. Rousseau wanted that the boy must be taken from one workshop to another and he must try his hand at every trade. In this way, Rousseau wanted to teach him industrial exchange, banking and transportation. Rousseau does not recommend the study of books. The only book he recommends is *Robinson Crusoe*, a study of life according to nature.

In the fourth stage of the adolescence period (fifteen to twenty years of age), training of heart should receive attention. In the earlier stages, the boy was an individual working for self-perfection and self-development. Now he has to be social and adapt

himself to the conduct and interest of others. The study of society, politics, economics, history and religion are the appropriate studies for the youth to understand complex social relationships. *Emile* must be given moral education about his relations with his fellow men and moral qualities such as benevolence, kindness, service and sympathy. Rousseau recommends that moral education should be given through activities and occupations and not through lectures on ethics. History will be utilised as a means of moral instruction. Travel is recommended for knowing the world and the institutions of the neighbouring countries. At this stage, the youth undergoes a new birth on account of the appearance of sexual impulse. Sex instruction is to consist of direct moral exhortation on chastity and an explanation of the mysteries of creation in the world of plants, animals and men in a dispassionate manner.

Education of Sophy. Rousseau maintained that women were the makers of men. They were, 'the chaste guardians of our morals, and the sweet security of our place.' Their education was to be different from men. Rousseau believed that 'Woman is made specially to please man.' She has, therefore, 'to be taught to be soft and sweet and learn to suffer and bear the wrongs of her husband without complaint.' The duty of women towards man is 'to train him in childhood, to tend him in womanhood, and to counsel him throughout his life.' Rousseau, therefore, advocated that her studies should be practical. Intellectual interests, he believed, destroyed her nature. He stated, 'I would a hundred times prefer a simple girl, rudely brought up to a girl of learning.'

From this piece of work, a lot of Rousseau's philosophies can be understood.

Limitations of Rousseau's Philosophy

No habit formation: Rousseau does not believe in forming habits of any kind by the child. Habits have been called as second nature and a set of good habits is also essential for good character.

No place for books: Rousseau was against any learning from books and totally condemned them. They however are very valuable media of education. They lead to confirmation and registration of ideas in the mind of the child and hence cannot be easily ignored. Perhaps, he rejected the use of books in the educational process because they were not written keeping in view the nature of the child.

Faulty conception of discipline: His doctrine of discipline by natural consequences is also doubtful. The child at his tender age without foresight, without reason and without developing his correct understanding cannot correct his behaviour. He requires mature and wise guidance of the parents and the teacher. If the child is left to his own judgement and wisdom, he might receive a blow, which may harm his entire personality.

3.5.3 Evaluation of Rousseau

Herbert Spencer in England and Pestalozzi and Froebel on the continent received much of their inspiration from the revolutionary work of Rousseau. Rousseau considered education to be the moving force in a revolution that would eliminate oppression and bring about freedom for mankind.

'Return to Nature' was the theme of his two educational novels, *The New Heloise* published in 1761, and *Emile* published in 1762.

His *Social Contract*, *The New Heloise* and *Emile* were among the most brilliant, provocative, incendiary and widely read of the popular writings of the century.

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‘It is singular that this depraved, neurotic, immoral Frenchman should have exercised the influence in politics and education that he did.’

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Opportunistic, unreliable, unscrupulous though he was in his private life, his writings had such an influence on the temper of his time that they must be considered as a turning point in education.

At times a gigolo, kept by a woman of rank, at other times a liar, a thief, and the unacknowledged father of several illegitimate children by his non-confession, he had the flash of genius that seemed to attract friends and followers despite his personal shortcomings.

Rousseau was the arch enemy of child neglect. His *Emile* made Europe child conscious as no writing had done for centuries and became an inspiring source of the eighteenth century reforms.

Coulter, Charles W. and Rimanoczy, Richard S. describe the impact of Rousseau as, ‘It will never be known whether or not this Frenchman was deeply sincere concerning his educational theory, but sincere or not his theory swept Europe and left its mark on the future of education. If Rousseau was not an educator, he was at least a gadfly who made Europe more child-conscious and the formal European Educational system more self-conscious.’

‘Rousseau’s character and personality were so complex that they affect different people in different ways, and even the same person may feel inclined to change the emphasis of his judgement according to his mood at the moment,’ remark S.J. Curtis and M.E.A. Boulwood.

‘In spite of the defects of much of his work—its sentimentality, its lack of historical sense, its crude-psychology, its exaggeration, and eccentricities—his essential ideas have exerted a tremendous influence on education, and have not yet wholly spent their force. There is still much to be learned about him that can be learned from no other teacher.’

Sir Monro Main writes in *Ancient Law*: ‘We have never seen in our own generations—indeed the world has not seen more than once or twice in all the course of history—a literature which has exercised such prodigious influence over the minds of men, over every cast and shade of intellect, as that which emanated from Rousseau between 1740–1762.’

Robert R. Rusk observes: ‘Rousseau nevertheless stands to modern education as Plato to ancient education; the heading of almost every chapter in *The Schools of Tomorrow* is a quotation from Rousseau.’

P.P. Graves observes in *A Student’s History of Education*: ‘Disregarding the weak and offensive personality of the author, and forgetting the inconsistencies and the contradictions of the work itself, the *Emile* has always been accounted a work of great richness, power and underlying wisdom and each of its defects is more than balanced by a corresponding merit.’

In *History of Western Education*⁶ William Boyd makes these observations: ‘In spite of an element of paradox and extravagance that occasionally disfigured it, the ‘*Emile*’ was by far the most considerable book written on education in the eighteenth century. Judged by effects on thought and action indeed perhaps the most considerable book ever written on education.’

1. *Philosophy of Rousseau.* 'God makes all things good.'
2. *Functions of education.* 'Plants are fashioned by cultivation, man by education.'
3. *Aims of education.* 'Teach him to live rather than to avoid death', 'the attainment of fullest natural growth.'
4. *Sources of education.* 'Education comes to us from nature, from men or from things.'
5. *Child centred education.* 'Begin by making a more careful study of your scholars.' 'Love childhood, indulge in sports, its pleasures, its delightful instinct.'
6. *Education through doing.* 'Teach by doing whenever you can, and fall back upon words when doing is out of question.'
7. *Teaching through things.* 'Never substitute the symbol for the thing unless it is impossible to show the thing itself.'
8. *Very little of books.* 'I hate books. They only teach us to talk about things we know nothing about, 'words, words, words..... To conceal their deficiencies teachers choose the dead languages.'
9. *Sense training.* 'Since everything that comes into the human mind enters through the gates of senses, man's first reason is a reason of sense experience.'
10. *Play-way in education.* 'Work or play are all one to him, his games are his work, he knows no differences.'
11. *Heuristic method.* 'Let him not be taught science, let him discover it.'
12. *Role of the teacher.* 'Study the subject you have to act upon.'
13. *Discipline.* 'Leave him (child) alone. Childhood has ways of seeing, thinking, and feeling, peculiar to himself, nothing can be more foolish than to substitute our ways for them.'
14. *Vocational education.* 'It is clear and useful (the art of carpenter), it may be carried on at home; it gives enough exercises; it calls for skill and industry, and while fashioning articles for everyday use, there is scope for elegance and taste.' 'To live in the trade I want to teach him.'
15. *Physical education.* 'All wickedness comes from weakness. The child is only naughty, because he is weak; make him strong and he will be good.'
16. *Women education.* 'Women's education must, therefore, be planned in relation to man. Women is especially made for man's delight.'
17. *Education through rural or natural environment.* 'Cities are the graves of human species.'

NOTES**Contribution of Rousseau**

It is sometimes observed that Rousseau 'a vagabond without family bonds or social status, with no literary training, has influenced the philosophy of education, its meaning, aims, method, curriculum and organisation more than Montaigne, with all his wisdom or Comenius with all his philanthropy or Locke with all his reason and truth.' His chief contribution may be summarised as:

1. His emphasis on the 'discovery' and 'recognition' of childhood traits has brought about revolutionary change in the thinking of educators.

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2. His stress on the ‘concrete’ led to ‘learning by doing’.
3. Rousseau anticipated modern heuristic method when he declared the child as a ‘discoverer’.
4. Showed the way to the teacher that he must study the child thoroughly.
5. Rousseau propounded the new gospel of faith in nature in place of the old laws.
6. Rousseau showed the value of motivation of creating problems and of utilising the senses and activities of the child.
7. Present day emphasis on vocational education finds its root in Rousseau.
8. His conceptions of freedom, growth, interest and activity are noteworthy in educational theory and practice.
9. It is due to Rousseau that the need of sense training and physical activities in the earlier development of the child have been recognised in the modern system of education.
10. Rousseau has shown to the world the value of craft.
11. Rousseau with his stress on facts and enquiry into nature’s laws has given us the basis for scientific tendency in modern education.

Concluding Remarks

We may conclude in the words of R.H. Quick, ‘Rousseau .did in the world of ideas what the French Revolutionists afterwards did in the world of politics; he made a clean sweep and endeavoured to start afresh.’

3.6 SUMMARY

- The essence of greatness of Mahatma Gandhi not only lies in his achievements in social, economic and political field for the emancipation of his countrymen in South Africa or for the liberation of India from the British rule, but also in attuning a high degree of transformation in himself and in the lives of his followers.
- On the social front, he theorized on various themes including ahimsa, machine, village, karma yoga, satyagraha, and decentralization among others.
- Gandhi has synthesized the three important philosophies Idealism, Naturalism and Pragmatism and on the basis of such a basic ground, he gives the meaning of education.
- Gandhiji’s concept of education has two-fold aims—ultimate and immediate.
- Basic education was meant for the children under age group seven to fourteen and was a seven-year plan. Post-basic education was for the students of age group fourteen and eighteen. It was an extension of the basic education with greater emphasis on self-sufficiency. Education at the university stage aimed at national and social needs and adult education programme aimed at social service and community improvement.
- The subjects which were introduced by Gandhi in the ‘basic education’ curriculum were craft, mother tongue, mathematics, social studies, general science, drawing and music and Hindustani.

Check Your Progress

12. What are the three sources of education according to Rousseau?
13. Define negative education.
14. State Rousseau’s opinion on individual instruction.
15. Which book does Rousseau recommend for Emile?

- The criticisms against the scheme were that it was too craft-centered, unhealthy focus on self-sufficiency, forced correlation, neglect of aesthetic side, no cultivation of taste for reading, need for objective evaluation, and lack of teachers.
- Gandhi also opined on several subjects related to education like teachers, correlation, women's education, adult education, religious education and university education.
- According to Gandhiji, Nai Talim or New Education is education for life. Education begins from the moment a child is conceived in the mother's womb to the moment of death. Thus education is a lifelong process.
- The failure of basic education can be attributed to varied reasons like unclear concept, opposition by Muslims, lack of acceptance by the rich classes, lack of qualified teachers, apathy of administration among others.
- At the time of Tagore's birth India was passing through three revolutionary currents the religious, the socio-political and literary. These three movements had a formative influence on Tagore and helped him to grow into a high Relational Personality. In course of time, he developed widest possible outlook with universal human interests.
- Tagore was known to be a follower of Ananda yoga, a vedantist, idealist, humanist and a naturalist.
- Tagore believed in the realization of harmony, principle of freedom and joy, union of man and nature, unity of all races, and literature as the true vehicle of education.
- Tagore's theory of education is marked by synthetic, naturalistic, aesthetic and international character. He had a belief that 'The widest road leading to the solution of all our problems is education.'
- The most important aim of education, according to Tagore, is the development of individual leading to the harmonious development of personality.
- Tagore's favoured methods of teaching were, teaching while walking, debates, activity method, heuristic method, literature, a traditional intimacy between teachers and students, discipline among others.
- To give practical shape to his educational ideas, Tagore established an educational institution in Bolpur, one hundred miles north of Calcutta, on 22 December 1901. He named it 'Shantiniketan'. This school had all the characteristics of a garden school.
- Dewey's philosophy and programme has been variously termed as 'Experimentalism', 'Functionalism', 'Instrumentalism', 'Operationalism', 'Progressivism', 'Practicalism' and above all 'Pragmatism'.
- The five values stressed by Dewey are aesthetic taste or capacity, conscientiousness, efficiency, scientific spirit and sociability and social efficiency.
- To learn from experience is to make a backward and forward connection between what we do to things and what we enjoy or suffer from things.
- Various aspects of education as per Dewey: there are two sides of the educative process, there is a social function of education, and that education proceeds by the participation of the individual in the social consciousness of the race.
- As per Dewey, there are three functions of school: providing a simplified environment, eliminating unworthy features of the existing environment and to see the success fruition of different elements of the school environment.

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- Dewey advocates that broader curricular programmes are needed and emphasis should be placed on the total development of the person as being equally important as the intellectual and the academic.
- Rousseau was greatly influenced by three factors viz., the state of time, extremely varied experience of his life and his impulsive and emotional nature. His philosophy is usually designated by the term 'Naturalism'.
- According to Rousseau, the three sources of education are the education of nature, education given by men and education from circumstances.
- Negative education means to allow the child to move freely in nature, so that he is able to perfect the organs of his body, which are the instruments of acquiring knowledge.
- Rousseau's method of teaching includes favour for individual instruction, principle of teaching by doing, direct experiences of the child, heuristic method, example being better than precept and social knowledge by participation.
- Emile, Rousseau's main treatise on education, provides us with significant information regarding Rousseau's thoughts about education including freedom of children, art of observing children, tender regard for children, reasoning of the child instead of authority of teacher, objects and not words, hatred for books and the true balance between exercise of body and mind.
- Rousseau recommends curriculum in accordance with the stage of the child: at the first stage it is to develop physical strength, at the second stage to develop sense, at the third to build and nurture curiosity, and at the fourth stage to train heart to receive attention.
- Rousseau maintained that women were the makers of men. They were, 'the chaste guardians of our morals, and the sweet security of our place.' Their education was to be different from men. Rousseau believed that 'Woman is made specially to please man.' She has, therefore, to be taught to be soft and sweet and learn to suffer and bear the wrongs of her husband without complaint.'

3.7 KEY TERMS

- **Karma yoga:** It is a concept explained in Bhagavadagita, which can be explained as the discipline of action.
- **Satyagraha:** It refers to a dynamic quality of non-violence and the progressive manifestation of non-violence and truth.
- **Nai talim:** It is a form of education as propounded by Gandhi. It refers to the concept of education for life.
- **Ananda yoga:** It is a device through which the aesthetic sense is cultivated and universal harmony achieved.
- **Negative education:** It refers to a type of education which says that the child should be allowed to move freely in nature, so that he is able to perfect the organs of his body, which are the instruments of acquiring knowledge.

3.8 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. A karmayogin, according to the Gita is one who does not separate religious life from an active role in society.
2. Gandhi recommended Gita and Ramayana as a means of introducing students to their rich cultural and spiritual heritage.
3. The subjects which were introduced by Gandhi in the ‘basic education’ curriculum were craft, mother tongue, mathematics, social studies, general science, drawing and music and Hindustani.
4. Gandhi uses the term ‘mother-teacher’ to describe a teacher, because he thought the teacher must really be a mother of the children. The child should never feel that he is being taught.
5. The fourth stage of Nai Talim is the period of post-basic education or education of adolescents, who have completed basic education.
6. Ananda Yoga is a device through which the aesthetic sense is cultivated and universal harmony is achieved.
7. When the teaching activities begin, first the students ask questions to clarify their doubts and the teachers try to satisfy them by their matured answers. Then the teachers ask questions to evaluate how far the students are able to comprehend the problems discussed in the class.
8. The features of Shantiniketan are homely atmosphere; religious and spiritual atmosphere; natural atmosphere and organization of classes.
9. The five values stressed by Dewey are aesthetic taste or capacity, conscientiousness, efficiency, scientific spirit and sociability and social efficiency.
10. The second important function of the school is to eliminate, so far as possible, the unworthy features of the existing school environment and to establish a purified medium of action.
11. The supreme contribution of Dewey to the philosophy of education is the theory of scientific democratic humanism.
12. According to Rousseau, the three sources of education are the education of nature, education given by men and education from circumstances.
13. Negative education means to allow the child to move freely in nature, so that he is able to perfect the organs of his body, which are the instruments of acquiring knowledge.
14. Rousseau emphasized the due importance of individual instruction. He believed that the individuality of the child should be recognized by the educator and duly respected by him. He was right when he said that children are children before they become men.
15. Rousseau recommends the book **Robinson Crusoe** for Emile.

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3.9 QUESTIONS AND EXERCISES

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Short-Answer Questions

1. Briefly discuss Gandhi's major philosophies in life.
2. Write a brief evaluation of Dewey's contribution to educational thought and practice.
3. Write a short note on Rousseau's contribution to educational philosophy.
4. What are the different types of methods of teaching that Tagore emphasizes upon?
5. Describe the different stages of Nai Talim.
6. What are the aims of education as per Gandhi?
7. What are Rousseau's views on methods of teaching?

Long-Answer Questions

1. Explain the introductions made by Gandhi in his basic curriculum.
2. Discuss the causes of failure of basic education.
3. Explain Tagore's philosophy of education.
4. Describe the special feature of Shantiniketan.
5. Discuss John Dewey's opinion on schools and their functions.
6. Analyse the features of curriculum as explained by Dewey.
7. Explain Rousseau's concept of negative education.
8. Discuss Rousseau's opinions on curriculum.

3.10 FURTHER READING

Chadha, Y. 1997. *Rediscovering Gandhi*. London: Century.

Morsy. 1952. *Thinkers in Education*, Second edition, Vol. 2. Paris: UNESCO.

Kriplani, K. 1980. *Rabindranath Tagore: A Biography*. Shantiniketan: Viswa Bharathi.

Dewey, J. 2007. *Experience and Education*. New York: Simon and Schuster.

UNIT 4 EDUCATION AND SOCIETY

Structure

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4.0 INTRODUCTION

Every society has features which makes it different or unique compared to the other societies. There are varied factors based on which the inhabitants of the society are ranked or positioned in the social ladder. Their respective placement may be rigid or free depending upon the dynamics of the particular society. Education then must be planned and developed according to the rules of the society. There have been various theories on the way social stratification and education works. Education carries the power of increasing the worth of a person. If it is not controlled by a despotic authority, it can be used by the members of the society to better their position in the society. Education in one form or another starts from the moment of birth. And the nature of society then has a major role to play in the way education is utilized. This is why it is important to learn about the nuances related to the manner in which education functions in different societies.

In this unit, you will learn about social stratification and education, functions of social stratification, social mobility and education. The meaning and agents of socialization and the concept of modernization and the role of education is also explained in this unit.

4.1 UNIT OBJECTIVES

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

- Discuss the concept of social stratification and education
- Explain the functions of social stratification

- Describe social mobility and education
- Analyse the meaning and agents of socialization
- Discuss modernization and the role of education

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4.2 SOCIAL STRATIFICATION AND EDUCATION

The similarity among human beings ends with their body structure. In short, we can say that no two individuals are exactly same. They differ from each other in various important aspects such as appearance, economic status, religious and political inclination, intellectual and philosophical pursuits, and adherence to moral values. Due to all these parameters of differentiation, human society is not homogeneous but heterogeneous. In fact, diversity and inequality are inherent in the human society.

Human society is stratified everywhere. Let us understand what does stratification imply. Actually, all societies assign roles to their members in terms of superiority, inferiority and equality. This vertical scale of evaluation of people's ability and their placement in strata or levels is called 'stratification'. People in the top stratum enjoy more power, privilege and prestige as compared to those placed in the strata below them.

Society Compares and Ranks Individuals and Groups

It is natural for members of a group to draw comparisons among individuals while selecting a mate, or employing a worker, or dealing with a neighbour, or developing friendship with an individual. It is also common to compare groups such as castes, races, colleges, cities, and sports teams. These comparisons serve as valuations. When members of a group agree on certain comparisons, their judgments are termed as 'social evaluations'.

As stated earlier, all societies differentiate their members in terms of their roles. However, they attach different degrees of importance to different roles. Some roles are given more importance or considered socially more valuable than others. Those discharging highly prestigious roles are rewarded handsomely. With regard to individuals' ranking, we may term stratification as a process of differentiation whereby some people are ranked higher than others.

Definitions

- **Ogburn and Nimkoff:** 'The process by which individuals and groups are ranked in a more or less enduring hierarchy of status is known as stratification.'
- **Gisbert:** 'Social stratification is the division of society into permanent groups of categories linked with each other by the relationship of superiority and subordination.'
- **Melvin M. Tumin:** Social stratification refers to 'arrangement of any social group or society into a hierarchy of positions that are unequal with regard to power, property, social evaluation, and/or psychic gratification'.
- **Lundberg:** 'A stratified society is one marked by inequality, by differences among people that are evaluated by them as being "lower" and "higher".'
- **Raymond W. Murry:** 'Social stratification is a horizontal division of society into "high" and "lower" social units'.

The Universality of Social Stratification

No society is free from social stratification, which is a ubiquitous phenomenon. Generally, age, sex, professional status and personal characteristics serve as criteria of social differentiation of population. For example, the roles and privileges of army generals differ from those of the soldiers. Similarly, normally the role of adults is to look after children, not the other way round. Some criteria of ranking change with the values of society.

Customarily, a society giving equal opportunities to all its members to succeed to any status is not termed as stratified. However, in reality, a purely equalitarian society does not exist, though societies may follow a low or high degree of stratification. Supporting this view, P.A. Sorokin writes in *Social Mobility* that an ‘uncertified society with real equality of its members is a myth which has never been realized in the history of mankind’. Here an apt example is of Russia which attempted to create a ‘classless society’. But like societies elsewhere, the Russian society could not avoid ranking people according to their functions.

Social Differentiation and Stratification

We already know that all societies have some sort of hierarchy in which they place their members in different positions. Now, we will talk about the concepts on whose basis people are graded or placed in a society’s hierarchy. These concepts are—‘social differentiation’ and ‘social stratification’. In social differentiation, people are stratified or classified on the basis of a certain kind of trait which may be: (i) physical or biological such as skin-colour, physical appearance, sex, etc., (ii) social and cultural such as differences in etiquette, manners, values, ideals, ideologies, etc. Social differentiation serves as a sorting process according to which people are graded on the basis of roles and status.

Through social stratification, people are fixed in the structure of the society. In other words, social stratification tends to perpetuate the differences in people’s status. In some cases, like in caste-based stratification, people’s status may become hereditary. Social differentiation may be considered as the first stage preceding stratification of society, that is, sorting and classifying society into groups. However, every differentiation does not lead to stratification in society.

4.2.1 Characteristics of Social Stratification

M.M. Tumin describes the main attributes of social stratification as given below.

Social

As is clear from its name, stratification is social. It is considered social because it is not based on biological inequalities. Biological traits such as strength, intelligence, age and sex do serve as distinguishing features, but these features are no cause to deprive some sections of society power, property, and prestige in comparison to others. Until considered important socially, biological characteristics do not determine social superiority and inferiority. For example, the physical strength and age are of little help in making a person the manager of an industry unless he has the socially defined traits

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of a manager. Education, training, experience, personality, character, etc., are considered more important for a manager's profile than his biological equalities.

Tumin also associates the following features with the stratification system:

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- (i) It is governed by social norms and sanctions.
- (ii) It is likely to be unstable because it may be disturbed by different factors.
- (iii) It is intimately connected with the other systems of society such as political, family, religious, economic, educational and other institutions.

Ancient

Historical and archaeological records indicate the presence of stratification even in small wandering bands before the dawn of civilization. Since the ancient times of Plato and Kautilya, social philosophers have been deeply concerned with economic, social and political inequalities. In ancient times, age and sex were the main criteria of stratification. 'Women and children last' was probably the dominant rule of order. Almost all ancient civilizations produce evidence about the differences between rich and poor, powerful and humble, freemen and slaves.

Universal

In the words of Sorokin, all permanently organized groups are stratified. It implies no society is free from the differences between the rich and the poor or the 'haves' and the 'have-nots'. Even in the 'not literate' societies, stratification is very much present. So, stratification is a worldwide phenomenon.

Diverse forms

Societies have never followed a single form of stratification. For example, the ancient Roman society was stratified into two groups: the patricians and the plebeians. In India, the ancient Aryan society had four *varnas* (groups): the *Brahmins*, *Kshatriyas*, *Vaishyas* and *Shudras*. Freemen and slaves constituted two sections of the ancient Greek society, and the ancient Chinese society was stratified into mandarins, merchants, farmers and soldiers. In modern world, class, caste and estate seem to be the general forms of stratification. In civilized societies, the stratification system is present in more complex forms.

Consequential

Due to stratification, the things most required or desired by humans are distributed unequally. The two main consequences of the stratification system are: (i) 'life chances' and (ii) 'lifestyles'. Life-chances are more involuntary while lifestyles reflect differences in preferences, tastes and values of people. Life-chances refer to such things as infant mortality, longevity, physical and mental illness, childlessness, marital conflict, separation and divorce. Lifestyles include such matters as the type of house and residential area one lives in, one's mode of conveyance, education and means of recreation, parents-children relationships, the kind of books, magazines and TV shows one is exposed to, etc.

4.2.2 Theories of Social Stratification

Since the second half of the 19th century, four broad sociological theories have been used to explain and interpret the phenomenon of social stratification. They are:

- Natural superiority theory
- Functionalist theory
- Marxian class conflict theory
- Weberian multiple hierarchies theory

Natural Superiority Theory

Natural superiority theory, also referred to as Social Darwinism, was a popular and widely accepted theory of social stratification in the late 19th and early 20th century. The main advocate of Social Darwinism was Herbert Spencer, an English sociologist, who saw social organization as an environment. It is believed that certain individuals and groups had the requisite skills or attributes to compete and to rise in that environment. Others, not so skilled or less competitive, would fail. The Social Darwinists believed that their theory was part of the law of nature. Some other sociologists believed that the social inequality arising out of stratification is biologically based. Such beliefs are often heard in the case of racial stratification where, for example, whites claim biological superiority over the blacks. Even in terms of gender stratification, the underlying principle is that the men are biologically superior to women. However, the question of a relationship between the biologically based inequality and socially created inequality is difficult to answer.

Rousseau refers to biologically based inequality as natural or physical, because it is established by the nature, particularly with respect to the age, health, bodily strength, and the qualities of the mind. In comparison, socially created inequality consists of different privileges, which some men enjoy to the prejudice of others, such as that of being richer, more honoured, or more powerful. However, biologically based inequalities between men are treated as small and relatively unimportant, whereas socially created inequalities provide the major basis for systems of social stratification.

Functionalist Theory of Social Stratification

The functionalist theory is a theory that is most concerned with how societies maintain order. Generally, the functionalist theorists have tended to stress stability, consensus, and integration in society.

Functionalists assume that the society is similar to that of a human body, comprising several parts which form an integrated whole. Like the human body, the society's institutions must function properly to maintain the stability of the entire social system.

Further, certain functional prerequisites must be met if the society is to function effectively and in order. Social stratification, therefore, becomes a tool to see how far it meets these functional prerequisites. Talcott Parsons, the leading proponent of the functionalist model, differentiated societies as falling on a continuum between ascribed-status-based societies and achievement based societies. Societies in which individuals were value based on their family position, sex, race, or other traits of birth are viewed as the traditional end of the continuum. On the other end is the modern society, in which a

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system of rewards is used to aid in fulfilling a complex division of labour. According to Parsons, more difficult positions that demanded considerable responsibility required a system of rewards to motivate individuals to take them. In his view, stratification — which is, by definition, social inequality — was both necessary and agreeable. Parsons believed that stratification was necessary to provide rewards for people who would take on the additional responsibility tied to difficult positions, and in his view, stratification was desirable because it allowed the social system to function smoothly. Parsons's ideas on social stratification were further developed by two American sociologists, Kingsley Davis and Wilbert Moore in their essay 'Some Principles of Stratification', published in the *American Sociological Review* in 1945. They shared the common notions with Parsons in so far as stating that the social stratification is universal, functional, and integral to fulfilling the division of labour in society.

According to Davis and Moore, no society is classless or unstratified. Davis and Moore argued that it was necessary and functional for the society to have a varied set of rewards in relation to the varied levels of sacrifices required by some jobs. In other words, there are some jobs that require individuals to possess special talents or to develop special skills. These jobs may also require that the individual filling the position works with utmost care. Therefore, Davis and Moore find it logical that societies developed a system of rewards whereby those jobs requiring the greatest preparation and responsibility are rewarded more highly than other positions. The social order has developed a differentiated system of rewards, which has led to social stratification.

Thus, Davis and Moore argue that one of society's most important functional prerequisites is effective role allocation and performance. Namely, all roles must be filled by persons best able to perform them, who have the necessary training for them and who will perform these roles conscientiously. If the duties associated with various positions would be equally present to everyone and all would depend on the same talent and ability, then it would make no difference as to who got into which position. However, it does make a great deal of difference mainly because some positions are inherently more agreeable than others. Davis and Moore suggest that the importance of a position in a society can be measured in two ways, i.e., the degree to which the position is functionally unique, there being no other position that can perform the work satisfactorily (e.g., a doctor's role is more important than that of a nurse) and then by the degree to which other positions are dependent on the one in question.

In sum, Parsons as well as Davis and Moore present a view of structured inequality as being necessary to maintain social order and therefore society's survival, and as being based on general agreement among the members of society.

Marxian Theory of Social Stratification

The Marxist perspectives generally regard modern society as being divided primarily into two classes—the bourgeoisie and the proletariat—on the basis of property ownership or non-ownership of property. Marx understood classes to be economically determined by the difference between owners of the means of production and non-owning direct producers. Class differences, therefore, are determined by the mode of production.

Marx and Frederick Engels have divided history into five distinct epochs of production: primitive communism, Asiatic, ancient Greece and Rome, feudal society, and capitalism. Of these, only the ancient, the feudal and the capitalist phases received special treatment by both Marx and Engels. Ancient society was based on slavery;

feudal society was based on serfdom, and capitalism on wage labour. Each of these societies was divided into two major classes: the oppressors and the oppressed, or the exploiters and the exploited. In every case, the exploiters are made up of those who own the means of production but do not produce. The exploited are those who do not own the means of production but are the direct producers of social goods and services. Because the exploited do not own the means of production, they are forced, in order to live, to work for those who own and control the productive conditions of life. The exploiters live by means of the surplus produced by the exploited. As a result, the social mode of production also reproduces the social relations of production. Thus, the relationship between the exploiters and the exploited is constantly renewed and conserved. The Marxists, therefore, in contrast to the functionalists regard stratification as a divisive rather than an integrative structure, and the focus was on social strata rather than social inequality in general.

Marx also spoke of the hostilities between the two classes. Three terms—class consciousness, class solidarity and class conflict—are important in understanding the dynamics of class conflict in the Marxist approach to the study of stratification. Class consciousness is the recognition by a class, such as workers, of the role its members play in the productive process and their relation to the owning class. ‘Class solidarity’ refers to the degree to which workers collaborate to achieve their political and economic targets. Class conflict is further divided into: (1) the involuntary conflict between the workers and the capitalists for shares in the productive output at a time when class consciousness is not developed; and (2) the conscious, deliberate and collective struggle between the two classes when the workers become aware of their historic role. According to Marx, social change occurs as a sequel to class struggle. Marx said that the revolution of the proletariat will bring an end to the class conflict, i.e., the conflicting interests between the ruling class (bourgeoisie) and the subject class (proletariat).

The Weberian Theory of Social Stratification

The work of the German sociologist Max Weber represents one of the important developments in the stratification theory. According to Weber, stratification is based on the three types of social formation, namely class, status and power or party. Property differences generate classes, power differences generate political parties and prestige differences generate status groupings or strata.

Like Marx, Weber sees class in economic terms, classes as a group of individuals who share the same position in the market economy. Weber distinguishes four class groups in the capitalist society:

- Propertied upper class
- Property-less white collar workers
- Petty bourgeoisie
- Manual working class

In his analysis of class, Weber differs from Marx on some important grounds. For instance, Weber says that the factors other than ownership or non-ownership of property are significant in the class formation and he rejects the Marxist view of the inevitability of the proletariat revolution. Weber also disagrees with the Marxist view that political power is derived from the economic power. He says that groups form because their members share a similar status situation. While ‘class’ refers to the unequal distribution of economic rewards, ‘status’ refers to the unequal distribution of social honour. Weber also looks at ‘parties’ or groups which are specifically concerned with influencing policies and making decisions in the interests of their membership.

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4.2.3 Types and Functions of Social Stratification

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The nature, form, intensity and magnitude of social mobility depend on the nature and the type of social stratification. Class and caste are the two main types of stratification. In both the systems, the same kinds of opportunities are not provided for social mobility. Because, in both the societies, the factors that determine the statuses of the individuals differ radically. There is a close link between the way in which individuals obtain their statuses and the nature of social mobility. In the caste system, the status is determined by birth. Since birth cannot be changed, the status which is determined on the basis of birth cannot be changed. For example, a *Harijan* cannot attain the status of a *Vokkaliga*, or *Lingayat* or *Brahmin*. Similarly, a *Brahmin*, is born a *Brahmin* and dies a *Brahmin*. Caste statuses cannot be changed. Hence, the caste as a form of social stratification does not facilitate vertical society, the ‘immobile’ society.

In a class system, opportunities are provided for social mobility. Here, the status is determined mainly by the talents, intelligence, wealth and achievements of the persons. The status is not ascribed by birth but ‘achieved’ by individual attempts. For example, by his endless efforts and struggles a labourer may become the owner of a factory, a salesman of a business house, the owner of a business firm, and so on. There is a scope for the improvement of the social status in the class system. Hence, the class system is called an ‘open system’, and the open-class society, the ‘mobile’ society.

As and when the society becomes more and more complex, and the life of its members improves, individuals may find better opportunities for the expression of their abilities and talents. But in no society can all the deserving individuals obtain statuses of their liking, desires and expectations. As Sorokin has pointed out in ‘Social Mobility’: only in an ideal society all the individuals get employments and statuses in accordance with their capacities. At the same time, it is not possible to confine people to their status when once they occupy or assume a status without going away from it, or changing it in any manner. For example, even in a so-called ‘immobile’ society like India, though a *Harijan* cannot change his caste-status, he can change his educational, economic, employment and political status. In this sense, there are no completely open and mobile societies and completely ‘closed’ and ‘immobile’ societies.

Types of Social Stratification

This section will examine three major systems of social stratification—slavery, social castes, and the social classes. These systems can be seen as ideal types for analytical purposes. It may be pointed out that any social stratification system may include elements of more than one type.

(i) Slavery

The most radical, legalized, social inequality for individuals or groups is slavery. The most unique feature of this crushing system of stratification is that one human being owns another. These individuals are treated as possessions, just like household pets or appliances. Slavery has been practised in different forms. In ancient Greece, the main source of slaves consisted of captives of war and piracy. Though the slave status could be inherited, it was not permanent. A person’s status might be changed depending on the outcome of the military conflict between kingdoms. On the other hand, in the United States and Latin America, racial and legal barriers were established to prevent the freeing of slaves. In other words, in whatever form it existed, it had required extensive use of coercion in order to maintain the privileges of slave owners.

(ii) Social Class

A social class is a group of individuals who have more or less a similar wealth. The possession of wealth enables the individual to obtain those goods and services that are scarce and are valued by others. These goods and services differ from society to society. In a traditional society, the wealthy person may buy land and gold while in modern society he may invest in the stock market or buy luxurious cars or go aboard for vacations. Wealth allows the person to create more wealth, if he invests it prudently. Most modern societies have class-based stratification. However, many features of traditional stratification may be observed in modern societies such as elements of caste system and feudalism found in India. But with economic development, class based stratification is becoming increasingly important.

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Class is a Relatively Open Stratification System

Any society is said to be relatively open or closed depending on the number of opportunities available to its members for upward social mobility. Equally important, is the attitude of the society towards the mobility of its members. If the society offers a large number of opportunities and encourages members to achieve higher positions, then the society can be called an 'open stratification society'. On the other hand, if the society has a limited number of opportunities for upward mobility and its normative values prohibit its members from achieving higher positions, then that society is called a 'closed stratification society'. Along with development, the system of stratification becomes open and achievement oriented.

The class system is a form of open stratification system. An individual with his achievements can gain entry to a higher class and acquire prestige. There are examples of individuals who by their hard work and achievements rose from poverty and became millionaires. Modern society appreciates such individuals as they are seen as models for others.

Social mobility in modern societies is based on intelligence, merit, competence and achievement of individuals. However, in every society, in spite of the openness, factors like socio-economic background, parental status and resources, social networks and various ascribed factors play an important role in determining individual motivation, achievement and the availability of opportunities. Since these factors are not in control of the individual and cannot be easily modified to his advantage, it cannot be said that modern societies are fully achievement oriented and open.

That is why we have said class based societies are relatively open, that is, in relation to other societies. We will shortly study the caste system, which is a relatively closed stratification system.

Social hierarchy in traditional societies is formed by ascription while in class based societies, achievement plays an important role. In other words, the difference between traditional and modern social hierarchies lies in the difference between (status ascribed and status achieved being) the bases social stratification. Traditional social hierarchies are based on ascribed states, while modern social hierarchies are based on the achieved status.

The level of competition in modern society is high and only the fittest can survive.

Social workers have to remember two consequences of an achievement based society. Since achievement is stressed, failures of an individual are looked down upon by others and they lose their self-esteem. You may have read in the newspapers about

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school children committing suicide after failing in school exams. It is the desire for high achievement and fulfilling the high expectations of others that pressurize vulnerable students to take this extreme step. Secondly, an achievement based society should provide the minimum facilities of health, education and housing to individuals to make them fit for competition. In countries like India, we find that these essential facilities are not provided to all and many people are unable to compete with others on an equal basis. This makes the social situation unfair to these people. The government and voluntary organizations implement welfare and development programmes to enable disadvantaged people to enter the mainstream of society.

Impact of Class System in India

Membership of particular class groups influences the behaviour of its members. It makes them conscious about their position in society. But in the Indian context more importance is given to caste and related issues rather than class factors. The class character in India is quite different from Western societies. Here class and caste categories co-exist in India and class categories like upper, middle and lower are parallel to caste categories. They jointly determine the class status, power and prestige of the individual in the society. Studies have shown that the upper classes predominantly belong to the upper castes which are an ascribed status.

There have been significant changes in the last decades but the pattern still continues. The accumulation and distribution of resources including education is determined by the social position of the individual. Those who are higher in terms of the class and caste, control available resources to a great extent, leaving behind a section of the Indian population below and around the poverty line. The forces of globalization and liberalization seem to have widened the gap between the haves and have-nots, between the rich and the poor, between urban people and rural people and the upper caste and the lower class and lower caste.

(iii) Caste

Caste is a much debated topic in India. The word caste refers to the Spanish word '*casta*' which means 'breed' in Spanish. In the Indian context, it represents caste and its related social practice. The caste system influences the social life of the Indian in a number of ways, as it assigns ascribed status to its members. According to the Rig Veda, the oldest and most important of all the four Vedas, there are four *Varnas* which are placed in a hierarchical order — the *Brahmans*, the *Kshatriyas*, the *Vaishyas* and the *Shudras*. The profession of *Brahmans* is that of priests and teachers. The *Kshatriyas* are warriors and rulers. The *Vaishyas* are traders and other common people. The *Shudras* occupy the lowest position in the hierarchy and perform the menial tasks. According to some historians, there is a fifth *Varna*, the untouchables, and they are not considered as a part of society. The tribes and people of other religions are also considered outside the Varna system. Individuals are born into a caste and membership of a caste is determined by birth. An individual cannot change his or her caste. But there are instances where castes as a whole, after an improvement in the economic status and changes in the lifestyles have claimed a higher status in society. Such claims may or may not be accepted. The dominant castes might react adversely to the claim. But, even if the claim is accepted the caste system remains intact. However, the process of *Sanskritization*, inter-caste marriage and advancement of education has changed the degree of the rigidity of the caste system in India.

According to G.S. Ghurye, a noted anthropologist, caste has six characteristics:

- (a) **Hierarchy:** Hierarchy is superior-subordinate relationship between various individuals and groups. Hierarchy in one form or another exists in every society, but the principle of determining the hierarchy differs from society to society. In India, caste is the main basis of social hierarchy. The degree of ritual purity and impurity associated with a particular caste determines its position in the hierarchy. Wealth and power are not the determining factors. For example, a *Brahmin* whose economic status is lower than a *Rajput* is accorded a superior position because of his higher ritual status.

In reality, however, political and economic factors do play a significant role in determining the position of the caste. Sociologists have pointed out that high ritual status does not actually translate into a higher social status. For example, while a *Rajput* may not have as important a role in ritual matters as the *Brahmins*, it is unlikely that he will give a higher status to the *Brahmin* in other matters. According to sociologist, M.N. Srinivas, a dominant caste is that caste in the community that has a sufficiently high ritual status, numerical strength and material resources like land, wealth and access to power. It is the combination of these factors which keeps a caste high in the hierarchy. The dominant caste often has a major role to play in the village politics and its social life.

- (b) **Segmented Division of Society:** Castes are well-developed groups with membership based on birth and not by selection. The rights and duties of the individuals are controlled by caste councils, which exist in every caste. These councils have large powers to regulate the social life of its members. They can enforce order by punishing offenders for a variety of offences. Offences include adultery, causing injury to others, killing and punishments can include the imposition of fines, ordering corporal punishment and even the death sentence. Many castes have their own gods and goddesses that are not a part of the larger religious tradition. Thus, caste has a sufficient degree of autonomy in dealing with the issues related to its members, and is independent of the controls by the government.

- (c) **Restrictions on Feeding and Social Intercourse:** The exchange of cooked food between various castes is based on specific rules and conditions. Certain castes accept only certain kind of foods from members of other castes. Food items are divided into *pakka* and *kucha* food. *Pakka* is cooked in ghee and are considered superior to *kucha* food which is cooked in water. A *Brahmin* can take only *pakka* food from *Kshatriyas* and *Vaishyas* but not from *Shudras* and untouchables. On the other hand, *Kshatriyas* will take *kucha* food from a *Brahmin* but only accept *pakka* food from the *Vaishyas* who are lower than them. The distinctions in the offering and taking of food are based on the positions of the caste involved.

Such kinds of differences are seen in the maintenance of social distance between different castes. The physical distance between castes reflects the caste positions.

For example, in a traditional Kerala society, a *Nayyar* may approach a *Nambudri* but cannot touch him whereas a member of the *Tiya* caste (lower than the *Nayyar* caste) has to maintain a distance of 36 steps from the *Nambudri*.

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(d) **Civil and Religious Disabilities and Privileges of Different Castes:** Different castes in the hierarchy have different rights and privileges. The result is that the social life is segregated on the basis of caste. In the North Indian villages, impure castes are segregated while pure castes live together. In South India all castes tend to be segregated. In Tamil Nadu, for example, we find that the place where caste Hindus live are called *Ur* and where *dalits* live are called *Cheri*. The *Cheri* is situated at a distance from the village.

Ghurye gives a number of instances from the late 19th century and early 20th century to show how these disabilities were enforced. For instance, in Viakomom, a town in the princely state of Travancore, *Shudras* were not allowed to walk on the temple streets. A nationwide agitation by prominent leaders like Mahatma Gandhi and Periyar against these discriminatory practices changed the situation.

Similarly in Pune, a *Shudra* could not enter the city in the morning and evening as their long shadows would pollute the high caste members. We also find differential treatment in the punishments for committing similar crimes. For example, if caught stealing a *Brahmin* had to pay only a fine but for the same crime, a *Shudra* had to undergo corporal punishment. There are a number of places even today in India where *Shudras* are not allowed to offer prayers in the temples.

The religious practices reinforced this hierarchy and *Shudras* had liabilities that were attached to their caste status. They could not enter the most inner part of the temple, the sanctum sanctorum. Only *Brahmins* were allowed this privilege. In rural areas, even now, there is discrimination against the lower caste members. We often hear of caste violence after lower caste members were disallowed by higher caste members to take out a marriage procession or funeral procession on the main street.

(e) **Lack of Unrestricted Choice of Occupation:** Membership of the caste is hereditary and each caste had a traditionally assigned occupation. Regardless of the individual's aptitudes and skills, he had to adopt the occupation of his caste. In the same way, every occupation was linked to a specific caste. So, each caste has one occupation and that occupation was the presence of that caste only. For example, only a *Brahmin* could become a priest because of his birth in a *Brahmin* family. Education was imparted on the basis of caste. Young members would be attached to older members to train them in the occupational skills of the caste. There was no universal and common education. However, sociologists have pointed out that in spite of such restrictions on occupations there were certain occupations like weaving, agriculture and military that were open to all castes.

In pre-modern times, the economic relations between the various castes was in the form of the *jajmani* system. Each service caste performed a particular function for the landlords. They used to receive payment in kind and commonly on an annual basis. The service castes and the higher castes had a client-patron relationship. In modern times, their relation has undergone a change.

- (f) **Endogamy:** Endogamy refers to the marriage practice in which the members of a group marry within the group. Endogamy is an important characteristic of the caste system. In many castes, there is endogamy at the sub-caste level. For example, *Iyers* and *Iyengars* may not marry between each other even though both are Tamil *Brahmins*.

There are, however, exceptions to the rule. These exceptions pertain to hypergamy and hypogamy. When a higher caste man marries a low caste woman it is called hypergamy and when a lower caste man marries a higher caste woman it is called hypogamy. Hypergamy is allowed whereas hypogamy is strictly forbidden. It is a matter of prestige for the lower caste family, if their daughter had been accepted by a higher caste's man and family. An example of this practice is a marriage between a male *Nambudri* and a *Nayyar* woman.

Caste in Other Religions

Among the major religions of the world, caste exists only in Hinduism. But in India adherents of virtually all religions seem to have caste like divisions. The Muslims, the Christians, the Buddhists and the Sikhs, all seem to follow the principle of inclusion and hierarchy in different ways. Islam and Christianity believe in radical equality between its members. However, the existence of caste-like practices shows that in some aspects the social milieu in which a religion is practised influences it more than its theology. This is the case of Sikhism and Buddhism also.

Caste-like differences may be observed in religions other than Hinduism. In Sikhism, there are groups like *Jat Sikhs* and *Mazhabi Sikhs*. They do not intermarry. In Islam, four groups were identified that can be compared to castes: *Syeds*, *Sheikhs*, *Pathans* and *Mughals*. *Syeds* claim that they are the direct descendants of Prophet Muhammad, while *Sheikhs* claim that they are descendants of the tribe of Prophet Muhammad. *Pathans* and *Mughals* are considered to be the warrior class comparable to *Kshatriyas* in Hinduism. Other groups in Islam are based on professions they pursue like weavers, butchers, water carriers, etc. These groups are considered lower in status than *Syeds*, *Sheikhs*, *Pathans* and *Mughals*. Most of these groups are endogamous. There is limited social intercourse between these members. However, anyone from any social group, if competent in religious knowledge, can become a priest or *moulvi*.

Christianity is also an egalitarian religion and has encouraged conversions of people from all castes during different periods of history. Many of these castes have retained their caste identities even after their conversion to Christianity and this has influenced their social behaviour. However, Islam and Christianity have no concept of pollution and purity, which is central to Hinduism. Hence, these religions were less influenced by caste than Hinduism.

Functions of Social Stratification

The glimpse of the cultures of the world reveals that no society is 'classless', that is, unstratified. All the known established societies of the world are stratified in one way or the other. According to Wilbert Moore and Kingsley Davis, the stratification system evolved in all the societies due to the functional necessity. As they have pointed out, the main functional necessity of the system is: '... the requirement faced by any society of placing and motivating individuals in the social structure... Social inequality is thus an unconsciously evolved device by which societies ensure that the most important positions are conscientiously filled by the most qualified persons'. As analysed by H.M. Johnson,

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certain things here can be noted about the 'functional necessity' of the class stratification system.

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• Encourages Hard Work

One of the main functions of class stratification is to induce people to work hard to live up to the values. Those who best fulfil the values of a particular society are normally rewarded with greater prestige and social acceptance by others. It is known that occupations are ranked high, if their functions are high important and the required personnel is very scarce. Hard work, prolonged training and heavy burden of responsibility are associated with such occupational positions. People undertaking such works are rewarded with money, prestige, comforts, etc. Still we cannot say that all those positions which are regarded as important are adequately compensated for.

• Ensures Circulation of Elites

To some extent, class stratification helps to ensure what is often called 'the circulation of the elite'. When a high degree of prestige, comforts and other rewards are offered for certain positions, there will be some competition for them. This process of competition helps to ensure that the more efficient people are able to rise to the top, where their ability can best be used.

• Serves an Economic Function

The competitive aspect has a kind of economic function in that it helps to ensure the rational use of available talent. It is also functionally necessary to offer differential rewards if the positions at the top are largely ascribed as it is in the case of the caste system. Even in the caste system, the people at the top can lose their prestige, if they fail to maintain certain standards. Hence, differential rewards provide the incentives for the upper classes to work at maintaining their positions.

• Prevents Waste of Resources

The stratification system prevents the waste of scarce resources. The men in the elite class actually possess scarce and socially valued abilities and qualities, whether these are inherited or acquired. Because of their possession of these qualities their enjoyment of some privileges such as extra comfort and immunity from doing menial work, are functionally justified. It becomes functionally beneficial for the society to make use of their talents without being wasted. For example, it would be a waste to pour the resources of society into the training of doctors and engineers, and then make them work as peons and attendants. When once certain individuals are chosen and are trained for certain difficult positions, it would be dysfunctional to waste their time and energy on tasks for which there is enough manpower.

• Stabilizes and Reinforces the Attitudes and Skills

Members of a class normally try to limit their relations to their own class. More intimate relationships are mostly found between fellow class-members. Even this tendency has its own function. It tends to stabilize and reinforce the attitudes and skills that may be the basis of upper-class position. Those who have similar values and interests tend to associate comfortably with one another. Their frequent association itself confirms their common values and interests.

• Helps to Pursue Different Professions or Jobs

The values, attitudes and qualities of different classes do differ. This difference is also functional for society to some extent because society needs manual as well as non manual workers. Many jobs are not attractive to highly trained or ‘refined’ people for they are socialized to aspire for certain other jobs. Because of the early influence of family and socialization the individuals imbibe in them certain values, attitudes and qualities relevant to the social class to which they belong. This will influence their selection of jobs.

Social Control

Further, to the extent that ‘lower class’ cultural characteristics are essential to society, the classes are, of course, functional. In fact, certain amount of mutual antagonism between social classes is also functional. To some extent, upper-class and lower-class groups can act as negative reference groups for each other. Thus, they act as a means of social control also.

Controlling Effect on the ‘Shady’ World

Class stratification has another social control function. Even in the ‘shady’ world of gamblers and in the underworld of lower criminals, black-marketers, racketeers, smugglers, etc., the legitimate class structure has got respectability. They know that money is not substitute for prestige but only a compensation for renouncing it. Hence instead of continuing in a profitable shady career, such people want to gain respectability for their money and for their children and they try to enter legitimate fields and become philanthropists and patrons of the arts. Thus, the legitimate class structure continues to attract the shady classes and the underworld. This attraction exerts a social control function.

4.3 SOCIAL MOBILITY AND EDUCATION

Individuals are normally recognized through the statuses they occupy and the roles they enact. Not only is the society dynamic but also the individuals are dynamic. Men are constantly striving to improve their statuses in society, to rise upwards to higher positions, secure superior jobs. Sometimes, people of higher status and position may also be forced to come down to a lower status and position. Thus, people in society are in constant motion on the status scale. This movement is called ‘social mobility’.

‘Social mobility’ may be understood as the movement of people or groups from one social status or position to another status or position. For example, the poor people may become rich, than become big industrialist, and so on. At the same time, a big businessman may become bankrupt and the ruling class may be turned out of office, and so on.

4.3.1 Types of Social Mobility

Social mobility is of three types, namely (a) vertical social mobility, and (b) horizontal social mobility, and (c) spatial social mobility.

- (a) **Vertical mobility** refers to the movement of people of groups from one status to another. It involves change in class, occupation or power. For example, the

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Check Your Progress

1. What is the first stage preceding stratification of society?
2. State the four broad social stratification theories.
3. Mention the three terms which are important in understanding the dynamics of class conflict in the Marxist approach to the study of stratification.
4. Which factor determines status in the caste system?
5. Name the elements on which social mobility is based in modern societies.
6. What is the jajmani system?

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movement of people from the poor class to the middle class, from the occupation of the labourers to that of the bank clerks, from the power position of the opposition to that of the ruling class. By vertical social mobility, we refer to the relations involved in the transition of individuals from one social stratum to another. According to the direction of transition, there are two types of vertical mobility—ascending and descending or social sinking and social climbing. The ascending type exists in two principal forms as infiltration of individuals of a lower stratum into a higher one, the insertion of such a group into higher stratum, instead of going side by side with existing groups of the stratum. The descending has also two principal forms. The first consists of dropping of individuals from one higher position into lower existing one, without degradation or disintegration of the higher groups to which they belonged. The second is manifested in its degradation of social group as a whole. An example of vertical mobility is that in which the scheduled castes move upward by getting modes of education, new techniques, skills and adopting the ritual and manners of higher status caste groups, changing their caste names, home culture and occupation and maintain the higher position. The theory of ‘lagging emulation’ under the framework of reference groups is employed to understand this type of mobility both in the field of hierarchy and occupation. However, this type of mobility takes place from lower stratum to higher stratum.

- (b) **Horizontal mobility** refers to the transition of an individual or social object from one social group to another situated at the same level. Horizontal shifting occurs usually without any noticeable change. If we take occupation, shifting from one job or factory or occupation to another of the same kind would be referred to as horizontal mobility. An example of horizontal mobility is the citizenship shifting or shifting of individuals from one state to another. That does not mean the changing of citizenship, but it is called shifting of citizenship. It indicates a change in position, within the range of the status. For example, an engineer working in a factory may resign from his job and join another factory as an engineer and may work in more or less the same capacity. Similarly, a teacher may leave one school to join another as a teacher.
- (c) **Spatial mobility** refers to inter-generational mobility which is an outcome of migration or shifting of places, for example, it may happen as a result of migration from rural to urban community or social improvement of individuals within the family and hence provide the chances for change in culture. In this context, some of the scholars of change and mobility have discussed the units of mobility in the form of individual financial groups and corporate mobility. The study of mobility can be subsumed under the above pattern. So we can say that the social mobility is a part of the broader concept of social change. In a transitional society, modern education, industrialization, growth of cities, factories, bureaucracy and change in the occupational patterns are the main variants for the social mobility.

4.3.2 Factors Affecting Social Mobility

There are various factors, which are responsible for the social mobility are discussed below.

(a) **The supply of vacant status**

The number of statuses in a given stratum is not always or even usually constant. For example, the expansion in the proportion of professional, official, marginal and white-collar positions and decline in the number of unskilled labour positions

require a surge of upward mobility. These positions retain their relative social standing at times. Demographic factors also operate to facilitate mobility, when the higher classes do not reproduce themselves and hence create a demographic vacuum (Sorokin, 1959).

(b) **The interchange of rank**

Any mobility that occurs in a given social system which is not a consequence of a change in the supply of positions and actors must necessarily result from an interchange. Consequently, if we think of simple model for every move up, there must be a corresponding move down. Interchange mobility will be determined in a large part by the extent to which a given society gives the numbers of lower strata which means complete with those who enter social structure at a higher level. Thus, the lesser the emphasis a culture places on the family background as a criteria for marriage, the more will be the class mobility that can occur both up and down through marriage. The occupational success is related to the educational achievements which are open to all and hence the greater occupational mobility (Lipset and Zetterberg, 1966).

(c) **Modern education**

The education has particularly created new incentives and motivation to initiate and adopt the ideals, practices, behaviour patterns and style of life of the higher castes which M.N. Srinivas (1965) translates and explains under the process of *sanskritization* and westernization. *Sanskritization* is a process through which the lower castes imitate the traditions and cultural practices of the upper castes and sometimes even the nomenclature to push their case for a higher status in the society. There are many instances of the lower castes that have adopted the practices of higher castes in order to be upwardly mobile which is otherwise not possible in the traditional Hindu society. The process of Westernization in terms of adoption of the western ideals in life is also the most potential force in social mobility, especially in the urban and industrial centres. The new value orientations, motivation, behaviour patterns, formal relations, individualism, monetised attitude to social status and western technology are popular among the people. This popularity for status upliftment, encourages the migration to places where economic opportunities in terms of urban trade, industrial occupations and jobs in different governments are available.

(d) **Migration**

Migration to urban areas also contributes to the change in the social status of socially mobile individuals and groups. The traditional occupations slowly disappear and the modern industrial occupations are sought after. All these factors help in the improvement of the social position of the people. Normally, the higher the income of a particular occupation, the greater is the importance of education. However, though money makes the base of living, education decides the quality and mode of life and living. As a result, lots of changes have come in the living arrangements of the people in the modern societies. The changes also occur in the behaviour and manners of the people, which may be the outcome of social mobility.

4.3.3 Education and Social Mobility

As discussed earlier, education in the present day context is the most important and dynamic force in the life of individual, influencing his social development. It functions

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more as an agent of social change and mobility in social structure. It leads to economic development by providing ways and means to improve the standard of life. The positive attitude towards education leads to socio-economic mobility among the individuals and groups. That means, a person who is born in an agricultural family can, by means of education, become an administrator or any other government employee. Secondly, education leads to the changes in the lifestyles of people. It modifies the attitudes, habits, manners and their mode of social living.

Thirdly, education is responsible for inter-generational mobility among the individuals and groups. Through inter-generational mobility, the social groups are able to maintain their status and the status of their family. Therefore, it can be said that education plays an important contributory role in the mobility of individuals and groups regarding their social position, occupational structure, styles of life, habits and manners.

4.4 MEANING AND AGENTS OF SOCIALIZATION

Socialization is a term which one often comes across in the writings on sociology of education. What exactly does it mean? Socialization is a process, whereby people learn the attitudes, values and actions appropriate to individuals as members of a particular social group. Eskimo children, for example, learn to enjoy eating the raw intestines of birds and fish, while Chinese children learn to relish the stomach tissue of pigs. Just reading about these things may make us a little uncomfortable because unlike these people, we have not been educated or socialized to appreciate such food. Again, girls in India are socialized to walk, eat, talk and behave in a specific manner. They are encouraged to be quiet, docile, gentle and submissive. Boys on the other hand, are rewarded for their independent and assertive behaviour. So socialization is all about being in tune with what society expects from us depending on our age, gender, and social background. Socialization occurs through human interaction. We learn a great deal from our family members, best friends, teachers and from all those for whom we nurture affection and respect. We also learn, though to a limited extent, from the people on the street, characters, portrayals, and depictions of characters in films and magazines and other sources.

By interacting with people, as well as through our own observations, we learn how to conduct ourselves ‘properly’ and what reaction to expect if we challenge society’s norms and values. Socialization impacts the overall cultural practices of a society, and also influences the image that we develop of ourselves. In other words, socialization refers to the process whereby the ‘biological child’ acquires a specific ‘cultural identity’, and learns to respond to such an identity. The basic agencies of socialization in contemporary societies are the family, peer group and the school. It is through these agencies and in particular through their relationship with each other that the various orderings of society are made manifest.

At the time of birth, the human infant is just a biological organism with only animal needs and impulses. He knows nothing about what we call society or social behaviour. As it grows, under the careful guidance of mother it learns to control bowel movement and regulate hunger. The human child has an innate capacity to learn and to communicate. Therefore, he gradually earns the group-defined ways of behaviour. It is human company initially in the form of a family and later other social institutions like the community, peer group, school, etc., which educates the human child to be a responsible and useful member of society.

Check Your Progress

7. Which type of social mobility is the inter-generational mobility, which is an outcome of migration or shifting of places?
8. What is sanskritization?

The process of learning to internalize the values and norms into oneself or the mode of learning to live in society is called the 'process of socialization'. To internalize is to imbibe so deeply that it becomes a part of the individual's behaviour and personality. Therefore, socialization is basically the learning of socially desired values, norms and roles by the members of a particular group or society. It may be defined more comprehensively as a lifelong process of inculcation whereby an individual learns the principles, values and symbols of the social system in which he participates and the expression of those values and norms in the roles he enacts. The above discussion leads us to infer some important characteristics of socialization:

- It is a lifelong process.
- It helps in the inculcation of principles, values and symbols of a social system.
- It enables a person to enact certain roles.
- The roles that one enacts are in accordance with what he has learnt from the process.
- The roles a person enacts are the expressions of his social nature.
- The development of the social nature enables the person to participate in social life.
- The nature of what one communicates in society is determined by the influence of one's interaction with the society.
- Most human behaviour is learned, not instinctive. The capacity of the child to learn and to internalize is called the plasticity of human nature.

Role of Education in the Process of Socialization

At the time of birth, the child is totally unaware of his social obligations. He is self-centred. He does not care about the society or is least concerned about its welfare. It is only the process of education that brings him out of his selfish cell and makes him popular with other individuals. He also tries to make his own contribution to society. Hence the social significance of education is studied by educational sociology.

Education, as John Dewey says, 'is the process of living through a continuous reconstruction of experiences. It is the development of all those capacities in the individual which will enable him to control his environment and fulfil his possibilities'. This function of education is primarily a function for socializing the individuals living in society. Each individual learns from his predecessors and gets himself socialized. He learns how to make society richer by retaining all that is good and by eliminating all that is bad. Thus, education provides an opportunity to the people to be socialized and to lead the life of a normal human being.

John Dewey, in his book *Democracy and Education* emphasizes the importance of socialization of the individual with the help of education. He considers that through the participation of the individual in social consciousness, socialization takes place. He develops this consciousness by the help of education, thus making the process of education a social process. School is considered a miniature society as it purifies the society by providing the right education to the children.

Two eminent educationists Brookover and Gottlieb opine that education is synonymous with socialization. 'It includes any social behaviour that assists in the induction of the child into membership in the society or any behaviour by which the society perpetuates itself through the new generation'.

From the discussions made above, we come to the conclusion that socialization is a broad spectrum of social learning, whereby the child learns everything that he must

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know to become accepted as a member of society. The major socializing agencies in the life of a child are the home, the school, the peer group, religious institutions, youth organizations, political and economic institutions, the mass media, and in some cases the work environments. Some of these agencies such as the school, and the peer group are formally created and organized.

Role of Education in the Emerging Indian Society in the Process of Socialization

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 good features of the country were altogether disregarded. To the people of India, such an educational system was bestowed, which had its roots in the 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 socialize the people 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 Vinobhaba 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. India's need today is to equip its students with the sociologist's concept of equality, secular attitude, broadmindedness and cultural unity.

4.4.1 Stages of Socialization

The socializing agent does not try to teach everything at once. It concentrates on one task or on a few tasks at a time. Moreover, the process of accomplishing any one of the aims of socialization is gradual. Social scientists have earmarked four different stages of socialization from infancy to adulthood. These are:

- (i) The oral stage
- (ii) The anal stage

(iii) The oedipal stage

(iv) Adolescence

At the first stage, the infant develops fairly definite expectations about when his feeding time is, and he learns to convey his needs for attention. During this stage, the infant is not involved in the family as a whole. He is involved only in the subsystem consisting of himself and his mother.

The anal stage of socialization covers the period between the first year and third year of a child's life. Toilet training is the main focus of this stage. During this stage the child internalizes two roles: his/her own and that of his/her mother, now clearly separate. The child receives love and care and gives love in return.

The third stage extends from about the fourth year to puberty. During this stage, the child becomes a member of the family as a whole. The child identifies itself with the social role ascribed to him/her on the basis of his/her sex.

The fourth stage begins roughly at puberty. At this stage, young boy or girl wants to be free from the control of parents. The 'crisis' of this period is precisely the strain produced by much greater demands for independence. By the time the individual attains maturity, a major part of socialization is over, although it continues for whole for the entire life of the individual.

4.4.2 Types of Socialization

All types of socialization may be classified into two broad groups, viz., *primary socialization* and *secondary socialization*. This division is based on the primary and secondary needs of individuals. The basic physical needs such as thirst, hunger, etc., are called primary needs while, secondary needs are those which emerge to meet primary needs, e.g., the need for learning skills to earn a livelihood. The family satisfies the basic needs of human beings; therefore, it is called a primary institution, whereas a school is a secondary social institution because it meets the derived needs of the children. The parents are primary socializing agents of the child whereas the school teachers are the secondary socializing agents. Inculcation of norms and values within the family is called *primary socialization*, while the process of imbibing norms, values and behavioural patterns of school may be called *secondary socialization*. Primary socialization starts in infancy and childhood. This is considered the most important stage of socialization as the child learns the basic rules of conduct at this stage. Generally, secondary socialization starts at childhood and carries on till maturity. However the process of socialization never stops in life. The school, peer groups and other institutions in which a person is placed in 'life play' to play the role of socializing agent.

In the modern societies, where the social mobility of individuals and groups takes place more frequently, individual's loyalty to a particular social group weakens. He starts emulating the values, norms, behaviour patterns of another group in anticipation of being accepted as its member. This kind of socialization is called *anticipatory socialization*. It is based on the reference group theory. According to this theory the norms, values and the behaviour patterns of the individual are determined with reference to a particular group or groups. For example, individuals who have acquired wealth suddenly try to follow the values and lifestyle of upper strata of society. They tend to change their dress, behaviour and even their language and custom. For example, they start demanding dowry and force their women folk to observe *parda* system.

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4.4.3 Theories of Socialization

Social scientists have tried to analyse the processes of socialization in different ways. In this section, we shall discuss some of the major theories in regard to the processes of socialization.

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Charles H. Cooley's Theory of Socialization

Charles H. Cooley in his celebrated work *Human Nature and Social Order* (1902) propounded his concept of the 'looking glass' and explained how the self of an individual develops and socialization takes place. He emphasized the role of primary groups and social interaction, especially communication, in the formation of personality. Thus, the self develops within a context of social relationship. Self and others do not exist as mutually exclusive facts, therefore, self is social. Cooley's important concept of the reflected or 'looking-glass' self has three basic elements, which are involved in the development of self and formation of personality.

These are:

- The imagination of our appearance to the other person
- The imagination of his judgment of that appearance
- Some sort of self-feeling, such as pride or mortification

Cooley argues that social interaction or communication plays an important role in the development of individual's personality and his/her behaviour pattern. During interaction with people, the child becomes conscious of how others see his/her behaviour towards them. On the basis of their reactions, the child develops a feeling about himself/herself. If the behaviour is appreciated, it will be applauded or rewarded and if the behaviour is denounced by the people, the child will suffer from feelings of mortification. Regular condemnation of the child's behaviour may develop an insipid and introvert personality in him/her while continuous appreciation leads to the development of a confident and extrovert personality. Thus, the social self depends on the social interaction. Individual's values, ideas, attitudes and habits are shaped by those of the people around him. This is the base of his/her socialization.

The primary group, according to Cooley, plays a central role in socialization. Primary groups are recognized by their features of intimate, face-to-face association, direct cooperation and conflict, a relatively free play of personality and of sentiment. Though primary groups are present in all social organizations, according to Cooley, the family, play group and neighbourhood play crucial role in the process of socialization. Cooley called these groups primary because they are the nursery of human nature, providing the individual with his earliest and most complete experience of social unity. This group experience gives rise to social ideals such as the spirit of service, kindness, adherence to social norms, etc.

Mead's Theory of Socialization

Cooley's theory of socialization as we saw earlier is based on human imagination, whereas George Herbert Mead explains socialization in the light of resulting 'acts' of this consciousness. Mead started his theory with two basic assumptions: (i) the biological frailty of human organisms force their cooperation with each other in groups in order to survive; and (ii) those actions within and among human organisms that facilitate their cooperation, ensure their survival.

Mead further argues that the human being learns those behavioural patterns that provide gratification; and the most important type of gratification is adjustment to social context. Mind, self and other unique features of human being evolve out of efforts to adjust and consequently survive in the social environment. In his view, society could survive only from the capacities for mind and self among the individuals. Thus, the capacities for mind, self and society are intimately connected. Mead recognized that the unique feature of the human mind is its capacity to use symbols or language to designate objects in the environment. The focus of Mead's theory is on how this capacity first develops in infants. The mind arises out of a selective process in which an infant's initially wide ranges of random gestures are narrowed as some gestures which elicit favourable reaction from parents. Gradually, gestures begin to denote the same meaning to all the persons interacting with each other. Gestures that have such common meaning are termed by Mead as *conventional gestures*. These conventional gestures increase the capacity of organisms to adjust to one another and assume the perspective of those with whom they must cooperate for survival. By being able to put oneself in another place or to 'take the role of others' the probability of cooperative interaction acquires a new level of efficiency.

Thus, when an organism develops the capacity to understand conventional gestures, to employ gestures to take the role of others and to imaginatively rehearse alternative lines of action, then Mead believes, it has a 'mind'. Mead emphasizes the development of 'self' for the proper socialization of individuals. He points out that just as humans can designate symbolically other actors in the environment, so can they symbolically represent themselves as an object. The interpretation of gestures, then, cannot only facilitate human cooperation, but it can also serve as the basis for self assessment and evaluation.

As organisms mature, the transitory 'self-images' become crystallized into a more or less stabilized 'self conception' of oneself as a certain type of object. With these self-conceptions, individual actions take on consistency, since they are now mediated through a coherent and stable set of attitudes, dispositions or meanings about oneself as a certain type of person.

According to Mead, there are three stages in the development of self. The initial stage of role taking in which self-images can be derived is termed 'play'. The child identifies with the role of what Mead calls 'particular others' such as father, mother, etc. Later by virtue of biological maturation and practice at role-taking, an organism becomes capable of taking the role of several others. Mead termed this stage 'game' because it shows the capacity to derive multiple self-images from and to cooperate with, e.g., a group of individuals engaged in some coordinated activity. In this process 'I' converts into 'me'. So long as the child has not identified or understood the roles of others he/she is only 'I'. With his/her identification with other 'I' gets converted into 'me'. This conversion of 'I' into 'me' signifies the socialization of the child. The final stage in the development of self occurs when an individual can take the role of the 'generalized other' or 'community of attitudes' evident in a society. At this stage, individuals are seen as capable of assuming the overall perspective of a community, or general beliefs, values, and norms. Thus, it is this ever-increasing capacity to take roles with an ever-expanding body of others that marks the stages in the development of the self.

According to Mead, the individual and society are inseparable. Society represents the organized interactions among diverse individuals. Thus, the individuals create social

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environment. On the other hand, only society makes an individual a human being. As we have already seen, the self of the individual develops from interaction with others in society and interaction is made possible through communication. The communication is based on symbols with shared meanings.

Freud's Psychoanalytic Theory of Socialization

According to Sigmund Freud's theory of socialization, the human personality is the product of the interplay of biological, psychological and social faculties of the individual. While explaining the behaviour pattern and personality traits of individual, Freud formulated three basic principles. These are:

- (a) Every conscious action has a cause in the unconscious
- (b) That conscious is simply a puppet in the hands of unconscious
- (c) That whatever one becomes as an adult was determined to be so in his/her early childhood

Thus, according to Freud's principles a major part of human personality is formed in the childhood and during rest of the life it is elaborated and sharpened. In this sense, Freud reiterates the role of primary socialization in the formation of personality. According to Sigmund Freud, the human mind has three main regions:

- (a) Consciousness
- (b) Pre-consciousness
- (c) Unconsciousness

The conscious region of mind relates the individual with present events and activities in life. The preconscious region stores up memories, which easily enter the consciousness. Such a memory can readily be called to mind, for example, say the word school and you will recall an incident or a series of incidents from your school days. The unconscious region is the storehouse of all the repressed desires and bitter experiences which are unacceptable to the conscious mind. These repressed desires come to the level of consciousness either in a disguised form or in psychoanalysis.

The unconscious is the predominant content of the mind in relation to the amount, which is in the consciousness at any given time. The conscious is comparable to foam on the surface of the vast and deep sea of unconscious. It is much more powerful, ruthless, illogical and pleasure seeking than the consciousness. For a more comprehensive analysis of the human personality, in his later writings, Freud shifts his emphasis from the regions of the mind to the structure and function of personality. It is the interaction among 'id', 'ego' and 'superego' that gives a definite shape to the individual's personality.

Id is the source of mental and instinctive energy. It is seated in the unconscious and works on 'pleasure principle'. It believes only in what Freud calls 'true psychic reality'. It knows nothing about rules, regulations, values and moralities and never bothers about the objective reality in society. The main objective of id is to avoid pain and discharge tension. It must satisfy its needs, even if it has to arrange imaginary means such as nocturnal dreams. But such imaginary means is not really capable of reducing tension. For example, the image of food cannot satisfy hunger.

The second important system of personality is ego. As we have already seen, at birth, a child is capable of only a few instinctive responses. With gradual physical and

psychological development and due to some references from others the child develops the sense of 'I' 'my' 'mine' and 'me'. This is the beginning of the development of 'ego'. It occupies a central place in the structure of the psyche and is seated in all the three regions of mind. The basic difference between 'id' and 'ego' is that id knows only the subjective reality of the mind, whereas the 'ego' differentiates objective reality, i.e., concrete external reality from the subjective reality, i.e., imaginary reality. In order to avoid tension, the 'id' seeks to satisfy needs immediately, whereas the 'ego' restricts satisfying needs unless an appropriate object of satisfaction is found. The ego makes the decision as to what is right and what is wrong, what is acceptable and what is not acceptable or what is possible what is not possible. The 'ego' guides the individual in making a choice from among these alternatives on a realistic principle.

The 'superego' is the third and the last system of personality. It is described as the earliest moral code of the child and in this sense it is the direct antithesis of id. Superego is also seated, like 'id' in the unconscious region of mind. It stands for the values and norms of the society, which the child imbibes through the process of socialization. It strives for neither real, nor imaginary real. It is only concerned with what is ideal. Its primary function is to decide whether the chosen object of satisfaction of needs is right or wrong from the point of view of the moral dictates of society.

In this whole structure of psyche, the ego occupies a central place because it is expected to maintain a balance between the two opposite forces of 'id' and 'superego'. As we have already seen, the 'id' demands direct instinctual satisfaction whereas the superego as an internalized moral code checks the flow of the 'id' into undesirable and unapproved channels. According to Freud, the sole purpose of psychoanalysis is to strengthen the ego. A weak ego is prone to all disorders. If the ego remains weak and id becomes stronger, then the result would be an antisocial behaviour, delinquency or crime. If the superego starts dominating the psyche the result is suppression, leading to neurosis. Therefore, for the development of a healthy and socially useful personality, it is necessary to have a proper balance between the id, ego and superego.

4.4.4 Agencies of Education

It has been generally recognized that education is concerned with the development of the 'whole man'—his physical fitness, his mental alertness, his moral excellence and his social adjustment. To realize this objective of education, society has developed a number of specialized institutions like the school, the community, the family, the temple, the church, the library, newspapers, magazines, exhibitions, the radio, the cinema, television, etc. These institutions are known as the agencies of education.

Formal and Informal Agencies of Education

Agencies of education may be classified under two heads: the formal agencies and the informal agencies. The formal agencies are those institutions and organizations which are organized systematically. Processes of education in these institutions are deliberately planned. There is also a continuous effort on the part of the agency concerned to give certain knowledge, skill or attitudes. There is a prescribed curriculum. Teaching methods followed in these institutions are also definite and pre-planned. Students and teachers also follow a definite rule.

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Informal education, on the other hand is not a pre-planned process. It occurs automatically in the process of living. For example, the child from his early age learns the basic control and use of his body, his mother tongue and language of his own locality. He also learns rules of social etiquette and tries to adopt them. Informal education is a continuous process. It begins at birth and continues throughout life. An individual gathers new experiences in connection with love and sex, responsibility of marriage and parenthood, duties and responsibilities as a citizen, his identity, etc. As a young child, he learns to talk, and walk, makes friends and join in play-groups either inside or outside the home. His circle of social interaction is widened when the child goes to school or joins the information groups, hobby clubs or social groups, etc. Thus, all the time, from quite early years to maturity and till his death, different institutions operate on an individual and educate him. This classification of agencies of education has been illustrated Figure 4.1.

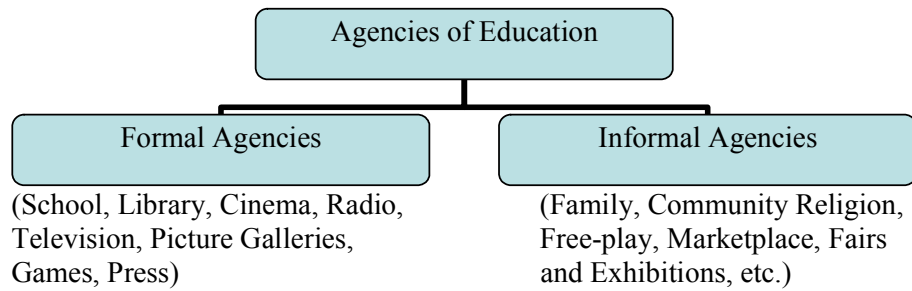


Fig 4.1 Classification of Agencies of Education

Active and Passive Agencies of Education

Agencies of education may further be divided into active and passive agencies. Active agencies are those which try to control the social process and direct it to a definite goal. In this agency, there is a direct interaction between the educator and the educand. They influence each other in the process of learning. The schools, the community, the family, the State, the social clubs, the religion etc., are known as the active agencies of education. The passive agencies, on the other hand, act in one way only. There is no such interaction between educator and the educand. These agencies influence the educand but are not influenced by him. Thus the child remains a passive recipient only. These agencies include radio, television, cinema, newspaper, magazine etc. In brief, we can say that while in active agencies, interaction between the child and the agency is possible, in a passive agency there is no such interaction.

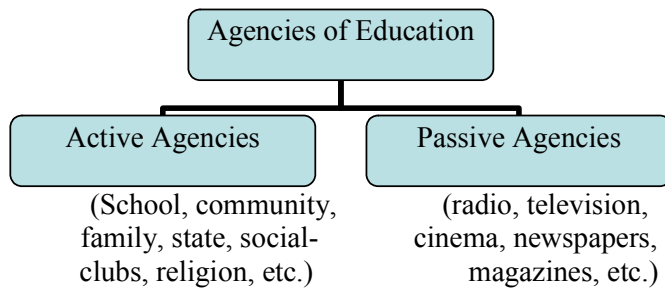


Fig 4.2 Active and Passive of the Agencies of Education

Schools as Agents of Education

The school, as an agency of education developed at the stage of social development when division of labour became pronounced and the need to create some special institution to educate people for several categories of social activities began to be felt. In ancient India, we had schools like *guru ashram*, *guru kula*, the *vihara*, the *sangha*, the *patasala* and the *vidhyapitha*, which played a prominent role in the process of socialization and transmission of the rich cultural heritage of the country. In the medieval period, we had *maktabs* (schools) and *madarsas* (colleges). The modern school system developed with the coming of the British to India.

In modern industrial society, the school system has emerged as one of the most potent agencies of socialization. Schools offer two contexts for the students. The first is the formal context of the classroom, wherein the context of socialization is decided by the prescribed curriculum. The second context is informal and can be perceived in the interpersonal relationship of students with teachers and those among the students.

Talcott Parsons (1959) in his essay the 'School Class as a Social System' argues that the school as a social system performs four important functions simultaneously:

- (a) Emancipation of the child from the family.
- (b) Internalization of social values and norms, at a higher level than as available in the family.
- (c) Differentiation of the school class in term of actual achievement.
- (d) The selection and allocation of human resources into the adult role system.

By going through this process, the child acquires the values of industrial society like achievement orientation, discipline, liberalism and rationality.

Origin of the term school

It is not known from where the term school originated. Probably it originated from the Greek word '*Skole*' which means leisure. If we open the pages of history we will find that in the ancient civilizations of India, Greece, China and Egypt, material prosperity increased to a great extent as a result of which leisure became available at least to the people belonging to the upper classes in the society. To spend their leisure hours profitably, they developed a special institution to educate themselves. The institution came to be known as school. Thus the school system developed out of surplus economy. Due to further development of material resources, the school became the most important agency of formal education in modern times. It has become the predominant mode of transmitting culture everywhere in the world. In modern times, the school has been used as an important agency of formal education to preserve and strengthen the cultural heritage of a society to control ideals, values, beliefs, customs and traditions.

Functions of the school

The school, as an active and formal agency of education performs the following functions:

(a) Conservation and Perpetuation of School Life

The most important function of the school is that it should conserve the existing social culture, which was won at a great cost of time and suffering. The continuity of social life can be maintained by the school by transmitting the customs, traditions, values and experiences of the society from generation to generation. Thus the school can teach the minimum general culture and civilization.

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NOTES***(b) Promotion of Culture and Civilization***

Conservation and transmission of culture from one generation to another is not the only function of the school. The school imparts adequate training for the enrichment and modification of culture. As a result of which a better and happier society can be established. Thus the school transmits cultural heritage and recognizes and deconstructs human experience for the promotion of culture and civilization.

(c) Deployment of Cultural Pluralism

School is an institution, where children belonging to different religions, castes, creeds and social hierarchy read together and mix freely with each other in a friendly atmosphere. They also develop sympathy, co-operation, tolerance and respect for the views of others in a natural way. Thus, the school acts as an important agency to develop cultural pluralism among the students.

(d) All-round Development of the Individual

The school is meant for the all round development of the personality of the child, his physical, intellectual, social, moral, spiritual, aesthetic development, etc. The school develops these qualities of the child with the help of curricular and co-curricular activities like games, sports, social service programmes, craft work, etc.

(e) The School takes the Responsibility of Social Reconstruction

Instruction in the school develops spiritual feeling in the individuals. The atmosphere of an average home may not be suitable for developing spiritual feeling in the individual. But schools cannot afford to ignore the spiritual development of the students. By creating a suitable atmosphere, it can develop spiritual feelings.

(f) School takes the Responsibility of Social Reconstruction

Society reviews and develops itself through the active cooperation of schools. All social problems and needs of society are flashed in one way or the other in school which provides the desired solution for all these problems. Proper education enables the students to criticize evils. As a result of which certain modifications take place in the social order.

(g) Development of the Quality of Leadership

Schools train the leaders of tomorrow. They train the students to understand their role in society and State and to make proper use of their rights and duties. In course of their learning, the students get an opportunity to think critically in order to become conscious citizens of the democratic State. By accepting leadership, in different co-curricular activities, they get training in leadership, which helps them to become future leaders of the country.

(h) Promotion of Social Efficiency

The most important function of the modern school is to provide social efficiency. Students should get the training for democratic living which emphasizes on social efficiency.

Thus, the school has become a significant and basic institution of the society. Therefore, the state should come forward to support the school in a big way.

Functions of the modern school

In the past, functions of the school were confined to reading, writing and arithmetic and to a few other academic subjects only. With the dawn of modern age all these have been put in the reverse gear. The importance of universal education has been accepted by all. The needs and the nature of modern production also make it obligatory for the State to make education free and compulsory for all.

(a) School as a Gateway to Lucrative Jobs

Modern schools are the place where formal training is provided in certain technical skills like reading, writing, drawing, etc. Certain prescribed subjects like history, geography, political science, psychology, education, economics, sociology and science are also taught to provide the students with lucrative jobs and professions of prestige. Schools have become the instruments for killing the spirit of joy, initiative and love of work in children in order to provide them with a white collar job in their unforeseen future. Thus, schools now function as an agency of formal education in order to provide lucrative jobs and professions of prestige to the students.

(b) Introduction of Productive Work

Since the modern technological society is dominated by the machine, productive work has been introduced as an integral part of schooling. Students are allowed to find out the types of productive activities suited to their age groups and to various levels of academic growth. An authority like Paul Nash feels that in our technological society, work has lost its real meaning. It fails to provide satisfaction and happiness. It does not work as a means of self-realization. 'In order to restore its real meaning, work should again be made a reflective activity. That is, work should make one conscious of relationships between workers and worked, between worker and management, between a man's work and society's need, between the intention and the execution, between the present activity, past benefits, and further promise.' Hence the function of modern school should be 'to make work a reflective activity through the development of purpose and commitment in the student and at the same time, help to lose playfully in the work-task of the movement.'

Functions of the school as a substitute to the family

The modern school takes over certain functions that are usually performed by the family. For example, in the curriculum of the modern school subjects like home science, domestic art, health education, etc., have been introduced. There is also a provision to help the children to profitably use the leisure hours during the school day and also recreational facilities after. The school has also undergone changes. It is no more based on authority. Therefore, the responsibility of the school at present is to develop self-discipline. Through self-discipline, children can enjoy freedom.

(a) School Should Satisfy the Child's Need

Opportunities should be provided in school to enable the child to satisfy his need, and interests. Here the school should be careful to see that the child does not interfere with the activities of others while satisfying his needs and interests. This will be possible, if the school can provide facilities for self-expression and free activity. Thus the school can discover the needs and interests of the child and guide it properly for satisfying them.

(b) School Should Create a Sense of Security in the Child

For the normal growth of the child a sense of security is very much needed. Therefore, the school should provide opportunity for 'feeling of being loved and cherished, a feeling of belonging, a feeling of being at home in a situation, a feeling of courage and self confidence'. If the school becomes home-like, then the child can develop a sense of security. Besides this, the system of 'pass' and 'fail' in the examination, should be modified to develop a sense of security in the child.

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(c) School Should Develop a Sense of Cooperation

To get rid of the individualistic tendencies, the school should organize such a programme which will enable the children to think and work cooperatively in order to achieve a common objective. They should learn how to adjust to the social environment and also to each other in the process of living.

(d) School as a Society in Miniature

To make the society worth living, the school and the society should be close to 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. The school, therefore, is a society in miniature, where students and teachers function together, bound by a code of conduct that directs their behaviour. Organizations of activities like prize distribution ceremonies, athletic events, school assemblies, clubs, etc., are integral part of the school culture. These are some important features of social life. To supervise the rights and duties of the members of the schools there are some authorities also. The relationships between the administrators and teachers, teachers and teachers, and students and teachers determine the efficiency of the school system. Thus school is a social organization.

According to Nunn, a school may be named either as a natural society or as an artificial society. A school becomes a natural society when there is no possibility of break of the conditions of life both inside the school and the society outside it. Nothing can be forced upon the children to learn. Regarding the school as an artificial society Nunn says: 'A nation's schools, we might say, are 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 the school is an idealized epitome of society, which extends its boundaries to the 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, seminars, etc. To cultivate community feeling, teaching of subjects like history, music, art, literature, etc., should be recognized. Student's self-government should be organized to provide training for leadership and community living. Thus we can relate the school to life and society.

(e) School as a Centre of Community Life

A group of people living together bound 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' 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, attitudes, etc. 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 a school 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 school system. In such a situation, it is very difficult to practice the principle of 'equality of educational opportunity'. During the British Raj, the people of India could not realize the importance of the school. Therefore, the school was considered as an institution like other government offices. In the words of K.G. Saiyidain, 'for all practical purposes, it

(the school) is just as much an official concern, a government institution, as the law court or the railway or the prison’.

The various sections of the community dominated the school to safeguard their own interests. But now the question arises as to how far the school enters the community. This is a crucial problem for everybody 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 this goal, it is essential that the work inside the school and the experiences 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 the school can participate in the life of the community and take active part to solve the problems confronted by the community. When the school 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 opines: ‘A ‘people’s school, 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. Such education can be obtained in schools only. Therefore, each community maintains schools in order to fulfil its economic, political, cultural and social needs and the schools, on the other hand maintain the community through its many different activities and diverse programmes.

The relation between the school and the community is a two-way traffic. The community conveys its problems to the school for solution and guidance and the researched, 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 school as guidance and required solutions. Thus the school and community depend upon each other for their progress.

Some are of the opinion that the school 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 schools, 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 the dignity of labour and develops their personality.

(f) School Can Solve the Social and Cultural Problems of the Community

The school 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 desirable solutions should be found. A school may organize activities like literary classes, discussions, plays, Parent-Teacher Association, Adult Education Association, etc., to solve the social and cultural problems of the community. Thus the school can influence the community life and become a community school in the true sense of the term.

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Home as an Agency of Education

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An eminent educationist and a saint like Vinoba Bhave once remarked, 'In a sound system of education, home should become school and school home'. He made this statement because he realized that the school cannot perform all the functions alone which have been entrusted to it. Therefore, assistance of the family is very much essential. The child spends the major part of its day in the family. As a result of this, the influence of the family in the development of habits, attitudes and behaviour, is much more. Hence the mutual co-operation between the home and the school is very important.

The home as an informal agency of education is the oldest institution. From time immemorial, the parents have been the chief teachers. It is at home that the child learns to walk and talk, to distinguish the simplest properties of the things that he sees and uses, to imbibe certain moral values, to differentiate between right and wrong, good and evil and to experience some of the deepest of human affections. When he becomes old, he does not stop his educational function. As a father or mother, he or she gives the best education to the children. Thus, the home works as an abiding educational agency; throughout life.

Educational Function of Home

The home is the primary group, where 'face-to-face' relationships are made. This is very useful in providing education to children because in such situations children learn quite a lot. As an agency of education, the family should perform the following functions:

(a) Provisions for Physical Development

The first function of the family is to develop the child physically. Parents and the elder members of the family should be careful about the physical development of the children. To achieve this end, useful physical exercise and other activities should be provided to the children. They should also be provided with wholesome food containing all the ingredients of a balanced diet.

(b) Development of Mental ability

The second important function of home is the development of the mental ability of the child. If home can provide a suitable atmosphere, children will be able to learn a lot informally. They can develop their mental powers like thinking, reasoning, feeling, discrimination, judgment, memory, etc. Parents should also create a suitable atmosphere for the same.

(c) Emotional Development

The real education of the child begins not intellectually but emotionally. Good fellow feeling and amity among the members of the family affect the emotional make up of the child. As a result of which, it can develop positive emotions like sympathy, tolerance, love, justice, etc. The home also gives a sense of security to the child which enables it to receive fruitful education.

(d) Home as the Socializing Agency

The home is the first socializing agency in the child's life. It is a society in miniature. Here the child learns all socially desirable values like companionship, love, security, interpersonal relationship, tolerance, cooperation, etc. Thus, it serves as the first and the most effective social system for the child.

(e) Home Provides Vocational Education

The first lesson for future vocation of the child begins at home. Children, who are engaged in the family vocation become apprentices and in future may adopt the same training as a profession.

(f) Home Imparts Religious Instructions

Under the unbearable stresses and strains of modern society, religious education is the only source which can provide peace and happiness to an individual. It is, therefore, desirable that the home should impart religious education to the child. As a result of which the child can develop qualities like charity, kindness, service to others, devotion to duty, goodness, etc.

(g) Transmission of Culture

Apart from the broad umbrella of society, a family may belong to a sub-culture group which is different from the national culture. In such cases, the home hands out its specific and peculiar culture to the child. Different social classes have conflicting expectations from their members. Their ways of training also differs a good deal. The home transmits its individual culture and also the culture of its society to the child.

(h) Home Provides a Learning Situation

The home is the first school of the child, where he experiences a learning situation. He spends his infancy and pre-school stage almost entirely under the care and supervision of elders in the family. During this period, he is immature and highly impressionable. As such, he is easily influenced and moulded by the home. He is not only dependent for his physical needs on the elder members of the family, but also for his intellectual and social needs. As yet, he has neither any experience of his own nor any independent standard to judge things for himself. It is, therefore, the most malleable period of his life. Again, the child in his early years of life is highly charged with emotions. Emotions in the family greatly affect the learning process. Therefore, it is the responsibility of the home to provide a real learning situation to the child.

(i) There should be High Co-operation between the Home and School

The home should be ready to co-operate with the school. Parents should participate on the occasions like parent's day, school-exhibition, educational conferences, parent-teacher association meetings, etc. Besides this, the home should also be ready to share with the school the responsibility of developing the personality of the child.

(j) Training for Citizenship

In a democratic state, the home provides a lot of training for citizenship. Through their participation in the household activities, they develop a good background for citizenship.

(k) Family Should Enable Children to Develop Healthy Attitude towards Sex

One of the most powerful drives for men and women is sex. The index of a well-adjusted life is proper sex adjustment. In the present-day society, boys and girls tend to learn about sex through their friends. It often proves to be very harmful. Therefore, the family should take the lead to provide sex education to the child, so that he/she is able to develop a healthy attitude towards sex.

Peer Group

Children like to play and move about in groups of their peers. This group life is very important for them and has a considerable influence on the development of their self-

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concepts. Being in a group gives them confidence and a sense of security. Particularly those who are popular, learn to think positively of themselves. In playing together children learn to cooperate. They learn to adjust their needs and desires to the behaviour of peers. In a very real sense, the child begins to develop a sense of self as distinct from the family. As the child develops a social self, he/she also learns to participate in the cultural norms and practices of childhood. He or she learns many things from slightly older members of the child peer group. For example, the specific rules of many childhood street games are learned, not from adults who still might remember them, but from older children. The same can be said for many rhymes, myths, tales, etc. Thus, peer influences begin before school intrudes and continues with varying degrees of importance for the rest of life. The norms, values and expectation of the peer groups of late childhood and adolescence tend to compete or even conflict with those of the family. Behaviours that are deemed proper within the family are at times incompatible with those expected by the peer group of adolescents like shops lifting or experimenting with drugs.

4.4.5 Mass Media

In modern society, the means of mass communication such as television, radio, cinema, newspaper, books and audio-video cassettes have become an integral part of life. They play a very important role in the socialization process of their viewers, readers and listeners. These mass media, especially the television and radio, simultaneously convey the same message to a nation-wide audience. Therefore, its impact on the process of socialization assumes greater significance. The most important thing about mass media is the message that is conveyed or images that are projected. For example, in the context of gender and socialization, one can examine the image of a female portrayed by the mass media or in the context of the rural population one can examine the relevance of the programmes for the villagers, which is made for the consumption of urban middle class. Another important aspect of mass media, especially television and radio, is that they generally express official values or message.

Television has some effect on another agency of socialization, i.e., home because it is generally viewed at home together with parents and siblings. It can propagate values in contradiction to those championed by a particular family or community.

Parents respond to this in several ways such as strict control of viewing and not allowing the watching of certain programmes. However, the child's peers in the neighbourhood or in the school influence him by discussing specific serials or programmes. Though there is no rigorous scientific study available on how much the average child learns from television, its impact is considered important. Bringing the whole world into the home for several hours everyday, has created a childhood environment of sight and sounds never before experienced in the history of mankind.

Important Functions of Media

Of the different agencies of education, media in today's context perhaps plays the most vital role in socialization, acculturation or information dissemination. The media have found their rightful place in formal, information and non-formal education of children and adults. For development of worthwhile knowledge, skills, and attitudes in people of all ages, the media seems to possess great potential. In the last quarter of the 20th century, there was a rapid advancement in information technology with the help of which a tremendous amount of knowledge can be gathered, processed and disseminated in a most desired and effective manner. Mass communication systems opened up new directions to the horizon of the human world; they brought a revolution in man's behaviour

to gaining of knowledge. Cameras mounted on space shuttles give us close-up televised photographs of the moon and other inter-galactic bodies.

Television programmes are being transmitted from one side of the world to another. In India, SITE (Satellite Information Television Experiment) has been very successful by which information of weather and other types of information from all over the globe is readily available. Similarly, educational broadcasting computer network, e-mail, technology, computer discs, etc., have almost revolutionized man's approach to gaining and processing of knowledge. ETV (Educational Television) has become a persuasive and effective means of both formal and non-formal education.

The rapid progress of information technology may offer new prospects for development by opening up a large number of isolated regions and enabling people to communicate with the whole world in the vital field of specific research. It will help easy access to an international database and permit the establishment of virtual laboratories that would enable researchers from developing countries to work in their own countries and thus reduce the 'brain drain'.

Educational Functions of Media

For a learning society like India, which has a huge population of more than one billion, the media systems based on modern technology constitutes a very potent tool for education and development. It has varied and numerous applications bearing on almost all aspects of individual and social life. In one sense, all these uses of information technology basically have their impact in educating people, giving them knowledge, skills, improving understanding and changing their attitudes. The media in today's world performs specific educational functions in both formal and non-formal systems. In education, media can be and is being used both at individual and mass levels of learning. Use of information and communication technologies especially in non-formal education (Distance Learning Mode) is becoming one of the most important delivery systems of learning society. Its use for distance education appears to be an avenue of promise for every country in the world.

In India, IGNOU and CIET (Central Institute of Educational Technology) are launching distance education programmes throughout the country. In general, distance education employs a variety of delivery systems such as correspondence courses, radio, television, audio-visual materials, telephone lessons and teleconferencing. The new technologies will have an important role to play in adult education in tune with learning throughout life. In the formal school situations though nothing can entirely replace the face-to-face learning, yet we can use the media to our best advantage. The Delors Commission also observes that the new technology has created a host of new tools for use in the classroom as under:

- Computers and Internet
- Cable and satellite TV education
- Multimedia equipment
- Inter-active information exchange system including e-mail and online access to libraries and public data base.

Using these and other tools, both students and teachers are equipped to become researchers. Teachers can coach their students to evaluate and to use effectively the information they have gathered for themselves. In this way, a new partnership can

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develop in the classroom. However, it should be remembered that these tools should be used in conjunction with conventional modes of education and not to be considered as a self-sufficient substitute for them. If used with the conventional mode, it can enrich the formal system by filling instructional gaps, updating knowledge, and giving new learning experiences.

The use of computers and multimedia systems make it possible to design individual learning paths along with which each pupil can move at his/her own pace. The compact disc technology (CD) has a special role to play, for it can handle large amount of information complete with sound pictures and text. Interactive media allows pupils to ask questions and look up information themselves. It is observed that pupils who are under-achievers or experience difficulties in conventional mode of education reveal their talents better and show more motivation and curiosity in an informal mode.

In the end, it is important to stress that the aim of the development of these technologies is not to replace the textbook and the teacher. In a child's education they have their own role to play. Textbooks, although they no longer are the only instrument of teaching and learning, nevertheless, retain the central place therein. They remain the cheapest of media and easiest to handle, illustrating the teacher's lessons, allowing the pupils to revise lessons and to gain independence. Similarly, the development of these technologies does not diminish the role of teachers, it however offers them an opportunity that they must grab. It is true that in today's world teachers cannot be regarded as the only repository of knowledge that they have to pass on to the younger generation. They become partners in a collective fund of knowledge. With the development of these technologies, there has definitely been a shift in the emphasis in the teacher's role. Their role now is not only that they have to teach pupils to learn but also of teaching how to seek, look up and appraise facts and information. The competency of the teacher is 'a new form of literacy for him.

4.5 MODERNIZATION AND ROLE OF EDUCATION

The report of the Education Commission (1964-66) opines, 'We have already stated that the most distinctive feature of a modern society, in contrast with a traditional one, is in its adoption of a science-based technology. It is this which has helped such societies to increase their production so spectacularly. It may be pointed out, however, that science-based technology has other important implications for social and cultural life and it involves fundamental social and cultural change which is broadly described as 'Modernization.' Thus, modernization is a process of change from traditional and quasi-traditional order to certain desired types of technology. These changes take place in values, social structure, and achievements of the students. In the words of William E. Moore, 'modernization is a revolutionary change leading to transformation of a traditional or pre-modern society into the type of technology and associated social organization that characterizes the advanced, economically prosperous and relatively politically stable nations of the western world.'

Nearly one-third of the countries of the world have been branded as developed countries and two-thirds as the developing countries. These developing countries have a traditional type of society. Their tradition is based on some unscientific attitudes which obstruct advancement. Their cultural life is based on superstition, ignorance and orthodoxy. Now there is a need to transform these countries into a society which is technology-

Check Your Progress

9. What are the basic agencies of socialization?
10. Define dharma.
11. Enlist the four different stages of socialization.
12. Why does TV has some effect on another agency of socialization, i.e., home?

oriented and scientifically attuned. This process of transformation is known as modernization.

Modernization refers to the changes in material elements and also the belief of the people, their values and way of life as a whole. The process of modernization aims at bringing about desirable changes in the social structure, values and the social norms.

Mere imitation of the way of life of the advanced countries is not modernization. Every developing country has a right to learn a lot from the advanced countries. But it should not be a carbon copy of some other country. A society can become modernized, if it does not lose its identity and makes full use of the discoveries and innovations in the field of science and technology. Such a society should use the natural resources profitably for improving the living conditions of the people. Instead of ignoring the cultural heritage, it adds some new cultural elements. It accepts scientific and technological advancement.

A modernized society is one which adopts a new way of life according to the changing circumstances and does not remain at a level of 10th century society. If it remains at the level, it will be just like persons who use a watch, travel by train and bus, watch television, but follow the traditional way of life. Modernization is a process of changing the outlook of man. In this respect, education plays a very important role.

Modernization versus Westernization

Some people consider Western way of life as an indicator of modernization. In order to be modernized, they blindly follow Western way of life, language, pattern of dress etc. Thus they become a carbon copy of the West. If we scientifically analyse the problem we will find that modernization is in no way connected with Westernization. There are certain arguments, in favour of this view. First, it is not wise to say that the western civilization can work as a model for all the countries of the world. Secondly, we cannot accept the Western way of living and thinking. For example, the world experienced two global wars because of the difference in economic and political ideologies. Thirdly, some of the values of the west may not be accepted by different countries. Fourthly, if we analyse the way of life of the Japanese, we will find that this country can contribute a lot to the process of modernization, even if it is a non-western country. Fifthly, it is not at all desirable on the part of a nation to lose its identity in the name of modernization. It will be a destructive policy and will make a clean sweep of the entire cultural heritage. Thus, westernization should not be considered as modernization.

Industrialization is not modernization

Some people think if we can industrialize our country, we can be modernized. But by starting industries, modernization cannot take place. Industrialization can only help in modernization. It speeds up and directs the process of modernization. It cannot be considered as modernization itself. If we open an industry, we can change our economic life and understand the value of technological advancement. But it cannot be considered as modernization. For example, the economies of some Middle Eastern countries have developed a lot because of the use of scientific methods of extracting oil. But the nations cannot be considered modernized, because they do not change their traditional outlook.

We experience modernization in many different forms. The most spectacular of it is industrial and technological forms. Besides these, modernization also takes place in the field of education, culture, social order, methods of agriculture, bureaucracy etc. When changes take place in these areas, we call it modernization.

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Development of modernization

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History of modernization states that it was first initiated by West European countries and the U.S.A. The rapid industrialization and their monopoly in the markets of their colonies changed their economy. As a result of this, there took place a change of attitude. They also influenced their colonies towards their way of life. Thus started the process of modernization.

With the outbreak of October Revolution in Russia in 1917, another type of modernization began. It started with non-capitalist economy. Emphasis was laid on public ownership of the means of production and distribution. Many developing countries of the world followed their pattern. Thus, modernization began with two patterns-the capitalist and the non-capitalist.

4.5.1 Role of Education in Modernization

From these discussions, it appears that the two patterns of modernization have many implications for education. The capitalist pattern of education aims at developing affluent society and enables every individual to further his interests. The non-capitalist pattern of education aims at eradicating poverty and removing disparities in every field. They aim at social upliftment but not the upliftment of an individual in his own personal capacity. People purchase education in a capitalist country. But education is meant for all in a non-capitalist country.

Education in the present day context is the most important and dynamic force in the life of individual, influencing his social development. It functions more as an agent of social change and mobility in social structure. It leads to economic development by providing ways and means to improve the standard of life. The positive attitude towards education leads to socioeconomic mobility among the individuals and groups. That means, a person who is born in an agricultural family can, by means of education, become an administrator or any other government employee. Secondly, education leads to the changes in the lifestyles of people. It modifies the attitudes, habits, manners and their mode of social living. Thirdly, the education is responsible for inter-generational mobility among the individuals and groups. Through inter-generational mobility, the social groups are able to maintain their status and the status of their family. Therefore, it can be said that education plays an important contributory role in the mobility of individuals and groups regarding their social position, occupational structure, styles of life, habits and manners.

Education in a modern society is no longer concerned mainly with the imparting of knowledge and the preparation of a finished product, but with the awakening of curiosity, the development of proper interest, attitudes and values and the building up of such essential skills as independent study and capacity to think and judge for ourselves, without which it is not possible to become a responsible member of a democratic society. Therefore, the process of modernization will be directly related to the process of educational advancement. A sure way of modernizing a society quickly is to spread education, to produce educand and skilled citizens and to train an adequate and competent intelligence, coming from all strata of society and whose loyalties and aspiration are deeply rooted in the sacred soil of India. The Education Commission has made the following recommendations regarding the impact of modernization of programme educational reconstruction.

• Explosion of knowledge

There has been an unprecedented explosion of knowledge during the last few decades. In a traditional society, the quantum of knowledge is very limited and gradually increases so that the main aim of education, i.e., preservation, promotion and maintenance of existing culture is achieved. But in the present society, the quantum of knowledge is very vast. Hence one of the important tasks of education in the present day society is to keep pace with this progress of knowledge. Knowledge these days should not be received passively. Rather, it should be discovered actively. For example, when the traditional society lays emphasis on 'to know' only, the modern society lays stress on 'to know by heart'. Thus, it encourages creative and critical knowledge. In the words of the commission, 'In India, as in other countries where similar conditions prevail, this would require, among other things, a new approach to the objective and methods of education, and changes in the training of the teachers. Unless they are trained in new ways of teaching and learning the students in schools and colleges will not be able to receive the type of education needed for the new society.'

• Rapid social change

Another important feature of the present day society is the quick and breath-taking rate of social change. Due to the rapid change, the centres of learning should be alert in order to keep abreast of significant changes that are taking place in the society. There is a need for adopting a dynamic policy in the field of education. The system of education which does not take into account this aspect, becomes out-of-date and out-of-tune and stands in the way of development, both in quality and quantity. The commission, therefore, recommends 'The very aim of education has to be viewed differently it is not longer taken as concerned primarily with imparting of knowledge or the preparation of finished product, but with the awakening of curiosity, the development of proper interest, attitudes and values and the building up of such essential skills as independent study and the capacity to think and judge for oneself without which it is not possible to become a responsible member of a democratic society.'

• Need for rapid advance

Once the process of modernization is launched, it is not possible to go back or to stop the process half-way. At the initial stage, there is a possibility of disturbance of the traditional equilibrium reached and maintained over centuries. Besides this, there is the possibility of a lot of unexpected social, economic, cultural and political problems. If we do not accept these changes or if our convictions become half hearted, the new situation will become worse than the traditional one. Hence, it is wise to move rapidly forward and create a new equilibrium, based on the process of modernization.

Modernization and educational progress

On modernization and education progress, the Education Commission states, 'The progress of modernization, will therefore, be directly related to the pace of educational advance and the one sure way to modernize quickly is to spread education, produce educated and skilled citizens and train an adequate and competent intelligentsia.' The Indian society today is heir to a great culture. Unfortunately, however, it is not an adequately educated society, and unless it becomes one, it will not be able to modernize itself and to respond appropriately to the new challenges of national reconstruction or take its rightful place in

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the community of nations. The proportion of persons who have so far been able to receive secondary and higher education is very small, at present less than two per cent of the entire population. This will have to be increased to at least ten per cent to make any significant impact. The composition of the intelligent must also be changed. It should consist of able persons, both men and women drawn from all strata of society. There must also be changes in the skills and field of specialization to be cultivated. At present, the intelligentsia consists pre-dominantly of the while-collar professions and students of the humanities while the proportion of scientists and technical workers in its ranks is quite small. To change this, greater emphasis must be placed on vocational subjects, science education and research. The average level of competence is not at all satisfactory due to inadequate standards maintained in the universities. This is inadequate standards maintained in the universities. This is damaging to Indian academic life and its regulation. In order to change this situation radically, it will be necessary to establish a few 'major' universities in the country which attain standards comparable to best in any part of the world, and which will gradually spread their influence to others. In the changing contemporary world, function and organization of education at different stages need rapid evolution to meet the demand of modernization.'

Modernization is a process of bringing change. But this change does not necessarily mean a complete isolation from our own tradition. In order to modernize society, attempt must be made on the foundation of the past, reflecting the needs of the present and vision of the future society. Modernization of Indian society should be based on moral and spiritual values and self-discipline. The Kothari Commission therefore opines that 'modernization aims, amongst other things, at creating an economy of plenty which will offer to every individual a larger way of life and wider variety of choices. Freedom of choice has some advantages no doubt, but it also depends on the value system and motivation.'

Knowledge and power of the people age expanded because of modernization it is, therefore, necessary to strengthen and deepen the sense of social responsibility and power of appreciation of the spiritual and moral values.

Modernization should not be madly followed at the cost of human values. Therefore, attempts must be made to inculcate value-oriented deduction at all stages of education children should learn to maintain a balance between spiritual and material values of life while modernizing them.

Check Your Progress

13. What is the aim of modernization?
14. State the two patterns with which the process of modernization started.
15. What is the aim of education in a traditional society?
16. Mention the way in which the proportion of scientists and technical workers can be increased in the intelligentsia.

4.6 SUMMARY

- All societies assign roles to their members in terms of superiority, inferiority and equality. This vertical scale of evaluation of people's ability and their placement in strata or levels is called 'stratification'.
- Social differentiation serves as a sorting process according to which people are graded on the basis of roles and status. Through social stratification people are fixed in the structure of the society. In other words, social stratification tends to perpetuate the differences in people's status.
- Since the second half of the 19th century, four broad sociological theories have been used to explain and interpret the phenomenon of social stratification. They are: (i) Natural superiority theory, (ii) Functionalist theory, (iii) Marxian class conflict theory, and (iv) Weberian multiple hierarchies theory.

- If the society offers a large number of opportunities and encourages members to achieve higher positions, then the society can be called an ‘open stratification society’. On the other hand, if the society has a limited number of opportunities for upward mobility and its normative values prohibit its members from achieving higher positions, that society is called a ‘closed stratification society’.
- There are three types of social stratification: slavery, social class and caste.
- ‘Social mobility’ may be understood as the movement of people or groups from one social status or position to another status or position. Social mobility is of three types, namely (a) Vertical social mobility, and (b) Horizontal social mobility, and (c) Spatial social mobility.
- Socialization is a process, whereby people learn the attitudes, values and actions appropriate to individuals as members of a particular social group.
- Education, as John Dewey says, ‘is the process of living through a continuous reconstruction of experiences. It is the development of all those capacities in the individual which will enable him to control his environment and fulfil his possibilities’. This function of education is primarily a function for socializing the individuals living in society.
- There are four different stages of socialization from infancy to adulthood. These are: (i) The oral stage, (ii) The anal stage, (iii) The oedipal stage and (iv) Adolescence.
- All types of socialization may be classified into two broad groups, viz., primary socialization and secondary socialization. This division is based on the primary and secondary needs of individuals.
- Agencies of education may be classified under two heads: the formal agencies and the informal agencies. The formal agencies are those institutions and organizations which are organized systematically. Processes of education in these institutions are deliberately planned.
- Agencies of education may also be divided into active and passive agencies. Active agencies are those which try to control the social process and direct it to a definite goal. The passive agencies, on the other hand, act in one way only. There is no such interaction between educator and the educand.
- There are different functions of the school, modern school and as a substitute to the family. There are also distinct education functions of home.
- In modern society, the means of mass communication such as television, radio, cinema, newspaper, books and audio-video cassettes have become an integral part of life. They play a very important role in the socialization process of their viewers, readers and listeners.
- Modernization is a process of change from traditional and quasi-traditional order to certain desired types of technology. These changes take place in values, social structure, and achievements of the students.
- If we scientifically analyze the problem, we will find that modernization is in no way connected with westernization.
- The two patterns of modernization have many implications for education. The capitalist pattern of education aims at developing affluent society and enables every individual to further his interests. The non-capitalist pattern of education aims at eradicating poverty and removing disparities in every field. They aim at social upliftment but not the upliftment of an individual in his own personal capacity.

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4.7 KEY TERMS

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- **Stratification:** It is the vertical scale of evaluation of people's ability and their placement in strata or levels.
- **Class solidarity:** It refers to the degree to which workers collaborate to achieve their political and economic targets.
- **Endogamy:** It refers to the marriage practice in which the members of a group marry within the group.
- **Social mobility:** It is the movement of people or groups from one social status or position to another status or position.
- **Socialization:** It is a process, whereby people learn the attitudes, values and actions appropriate to individuals as members of a particular social group.
- **Modernization:** It refers to the changes in material elements and also the belief of the people, their values and way of life as a whole.

4.8 ANSWERS TO 'CHECK YOUR PROGRESS'

1. Social differentiation may be considered as the first stage preceding stratification of society.
2. The four broad stratification theories are natural superiority theory, functionalist theory, Marxian class conflict theory and Weberian multiple hierarchies theory.
3. Class consciousness, class solidarity and class conflict are the three terms which are important in understanding the dynamics of class conflict in the Marxist approach to the study of stratification.
4. Birth is the factor that determines status in the caste system.
5. Social mobility in modern societies is based on intelligence, merit, competence and achievement of individuals.
6. Jajmani system is the economic relations between the various castes, each service caste performed a particular function for the landlords. They used to receive payment in kind and commonly on an annual basis.
7. Spatial mobility is the inter-generational mobility, which is an outcome of migration or shifting of places.
8. Sanskritization is a process through which the lower castes imitate the traditions and cultural practices of the upper castes and sometimes even the nomenclature to push their case for a higher status in the society.
9. The basic agencies of socialization in contemporary societies are the family, peer group and the school.
10. Dharma, according to the Indians is that which holds society together and it denotes justice, duty, right, moral obligations and several virtues.
11. The four different stages of socialization are the oral stage, the anal stage, the oedipal stage and adolescence.
12. Television has some effect on another agency of socialization, i.e. home because it is generally viewed at home together with parents and siblings.

13. The process of modernization aims at bringing about desirable changes in the social structure, values and the social norms.
14. Modernization began with two patterns-the capitalist and the non-capitalist.
15. The aim of education in a traditional society is the preservation, promotion and maintenance of the existing culture.
16. The way in which the proportion of scientists and technical workers can be increased in the intelligentsia is through greater emphasis on vocational subjects, science education and research.

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4.9 QUESTIONS AND EXERCISES

Short-Answer Questions

1. Explain the characteristics of social stratification.
2. Discuss the four broad sociological theories.
3. What are the functions of social stratification?
4. Discuss the role of education in the emerging Indian society in the process of socialization.

Long-Answer Questions

1. Explain Mead's theory of socialization.
2. What are the functions of the school as a substitute family?
3. Write an essay on the concept of modernization and the role of education.
4. Describe the factors affecting social mobility.

4.10 FURTHER READING

- Sharma, K.L. 1994. *Social Stratification and Mobility*. Jaipur, New Delhi: Rawat Publications.
- Haralamboss, Michael. 1989. *Sociology, Themes and Perspectives*. New Delhi: Oxford University Press.
- Stem, Robert. 1998. *Changing India*. New Delhi: Cambridge University Press.
- Mathur, S.S. 1997. *A Sociological Approach to Indian Education*. Agra: Vinod Pustak Mandir.

UNIT 5 EDUCATION AND SOCIAL CHANGE

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Structure

- 5.0 Introduction
- 5.1 Unit Objectives
- 5.2 Concept and Characteristics of Social Change
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5.0 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.

5.1 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

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5.2 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, Macdonald 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.

5.2.1 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.

5.2.2 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.

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- 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. Fifth, 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

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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.

5.2.3 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.

5.2.4 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

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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.

Check Your Progress

1. What are the two essential basis of social change?
2. Give examples of social change which are unplanned and happen accidentally.
3. Between social change and evolution, which concept is value-loaded?
4. Which factor is a prerequisite for development, better governance system and healthy functioning of democracy?

5.3 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.

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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, stabilize 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

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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 'have-nots'. 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.

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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.

5.4 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.

Check Your Progress

5. When does education become a natural society?
6. Mention the various forms and varieties of education which have been brought about by the needs of modern Indian society.
7. How is the relation of education and community a two-way traffic?

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 Apatanis 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 independent 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

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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 (Kaphachors). 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.

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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 Wanggae and Wanggaas. 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.

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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-Lisu. However, the Lisus who were believed to have migrated from the Patkai Hills are generally Christians and are called Ha-Lisu.
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.

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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.

5.5 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.

Check Your Progress

8. Name the two tribes of Arunachal Pradesh who have a written script of their own.
9. Which tribe is famous for their paddy-cum-pisciculture?
10. What is the local name for the richly decorated temples of the Monpas and Sherdukpens of Tawang and West Kameng districts?

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- 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.

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5.6 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.

5.7 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 accidentally.
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.

5.8 QUESTIONS AND EXERCISES

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.

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5.9 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 6 GROWTH AND DEVELOPMENT

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Structure

- 6.0 Introduction
- 6.1 Unit Objectives
- 6.2 Concept of Growth and Development and their Implications in Education
 - 6.2.1 General Principles of Growth and Development
- 6.3 Aspects of Development through Different Stages
 - 6.3.1 Dimensions of Development at Early Childhood Stage
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- 6.5 Key Terms
- 6.6 Answers to 'Check Your Progress'
- 6.7 Questions and Exercises
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6.0 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 devise 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.

6.1 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

6.2 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

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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 has 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.

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Early development is critically important more than later development

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- 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).

6.2.1 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

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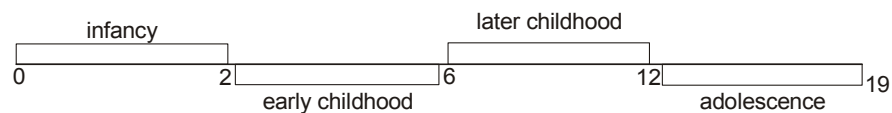
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world at the time of birth is a big buzzing, blooming confusion for the child. Out of mass and undifferentiated behaviour emerges more differentiated, refined behaviour and goal-directed response. We can take any development and find that this principle 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.

6.3 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.

6.3.1 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.

Check Your Progress

1. What are the four basic elements in development as per Piaget?
2. Why is development called an experiential change?
3. Name the theory which refers to the view that humans acquire all or almost all their behavioral traits from 'nurture'.
4. Mention the three main directional trends in the development.

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.

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- **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

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- 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.

6.3.2 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 preference 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.

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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.

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- 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.

6.3.3 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.

Dorothy 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.

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Fallacies about adolescence

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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. **Hollingsworth's Theory:** Hollingsworth 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.

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- **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.

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- **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

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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.

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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

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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.

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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.

- **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.

6.4 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.

6.5 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.

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6.6 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.

6.7 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.

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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.

6.8 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 7 CONCEPT OF LEARNING

Structure

- 7.0 Introduction
- 7.1 Unit Objectives
- 7.2 Meaning and Laws of Learning
 - 7.2.1 Characteristics of Learning
 - 7.2.2 Types of Learning
 - 7.2.3 Principles of Learning
 - 7.2.4 Theories of Learning
- 7.3 Concept and Types of Transfer of Learning
- 7.4 Concept of Motivation
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- 7.7 Answers to 'Check Your Progress'
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7.0 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.

7.1 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

7.2 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.

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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.’

Garrett: ‘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.

7.2.1 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.

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- **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.

7.2.2 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.

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- **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.

7.2.3 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.

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- **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.

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7.2.4 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 Gestaltian 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 solely 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*.

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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.

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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 and 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

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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.

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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

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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 parentheses 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 perceptibility:** 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.

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Principles of Concept Formation

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

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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.'

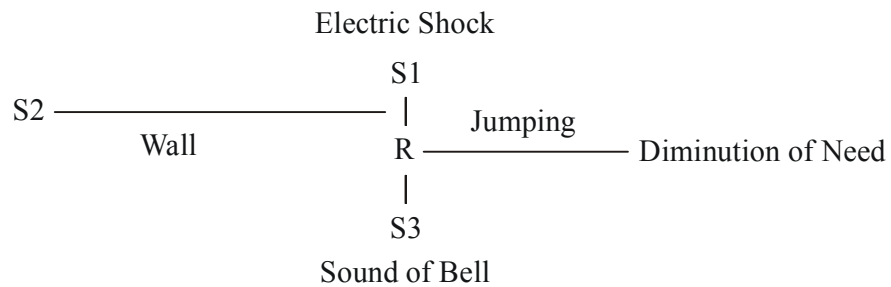
Hull conducted experiments to frame his theory of learning. In a puzzle box, he placed a rat in one apartment. In the box, there was another apartment which was divided by a wall. The way to the department was through a hole at the top of the dividing wall. An electric current was switched on in the 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.

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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.



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.

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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)

7.3 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, is 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 education. 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.

Check Your Progress

1. Name the three components of behaviour.
2. What are the categories in which learning can be divided as per the types of development?
3. State the law of proximity.
4. What were the four strategies as identified by Bruner in concept attainment?
5. Mention the name of the phase III of Gagne’s hierarchy of learning.

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

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Types of Transfer of Learning

Important types of transfer of learning are as follows:

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- **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.

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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.

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7.4 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.

Check Your Progress

6. What does the transfer of learning imply?
7. Define sequential transfer.
8. State the theory of identical elements or components.

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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. *CF Skinner (1947)*— ‘Motivation in school learning involves arousing, persisting, sustaining and directing desirable behaviour.’
2. *GM 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. *JP Guilford (1950)*— ‘A motive is any particular internal factor of condition that tends to initiate and sustain activity.’
4. *AH 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. *WA 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. *LD 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. *HW Bernard (1965)*— ‘Motivation is the stimulation of actions towards a particular objective where previously there was little or no attraction to that goal.’
9. *TW Atkinson (1966)*— ‘The term motivation refers to the arousal of tendency to act to produce one or more effects.’
10. *FG McDonald (1972)*— ‘Motivation is an energy change within the person characterized by affective arousal and anticipatory goal relations.’
11. *CW Good (1973)*— ‘Motivation is the process of arousing, sustaining and regulating activity.’
12. *DO 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.

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- (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-fulfilment, 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.

7.4.1 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.

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.

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- (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.

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- (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

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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.

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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 supporters 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 pain' 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 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.

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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

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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.

PC 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.

7.5 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.

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Check Your Progress

9. Why is motivation indispensable to learning?
10. Define incentive.
11. State the stimulation theory.
12. What is the reason behind the naturalists dubbing all rewards as bribery?

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- 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.

7.6 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.

7.7 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 for the sake of prize.

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7.8 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.

7.9 FURTHER READING

NOTES

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 8 INDIVIDUAL DIFFERENCE

Structure

- 8.0 Introduction
- 8.1 Unit Objectives
- 8.2 Meaning, Types and Determinants of Individual Difference
 - 8.2.1 Meaning of Individual Difference
 - 8.2.2 Types of Individual Differences
 - 8.2.3 Causes of Individual Differences
- 8.3 Concept and Types of Intelligences
 - 8.3.1 Fourfold Classification of Definitions of Intelligence
 - 8.3.2 Historical Review and Evaluation of Definition of Intelligence
 - 8.3.3 Chief Characteristics and Generalizations on Intelligence
 - 8.3.4 Types of Intelligence
- 8.4 Meaning and Nature of Personality
 - 8.4.1 Development of Personality
 - 8.4.2 Genetic and Cultural Factors of Personality
 - 8.4.3 Theories of Personality
- 8.5 Concept and Process of Adjustment
 - 8.5.1 Adjustment Mechanisms
 - 8.5.2 Neurotic Adjustment Mechanisms
 - 8.5.3 Psychotic Adjustment Mechanisms
- 8.6 Summary
- 8.7 Key Terms
- 8.8 Answers to ‘Check Your Progress’
- 8.9 Questions and Exercises
- 8.10 Further Reading

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8.0 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.

8.1 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

8.2 MEANING, TYPES AND DETERMINANTS OF INDIVIDUAL DIFFERENCE

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

8.2.1 Meaning of Individual Difference

Scottish psychologist, Dreyer 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.

8.2.2 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.

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10. Differences in interests

There 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 to, 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.

Trotter 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, feeble-minded, 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.

8.2.3 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 in fact 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 belief 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 prominent distinctions between people from different communities like the Americans and Negroes, 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.

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NOTES**8.6. 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.

8.3 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.'

8.3.1 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.

Check Your Progress

1. What are the factors due to which there are individual differences in achievement?
2. Name the six part personality classes of Spranger.
3. Enlist the causes of individual difference.

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 versatility 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.’

8.3.2 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

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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.

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8.3.3 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 forty 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’.

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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).

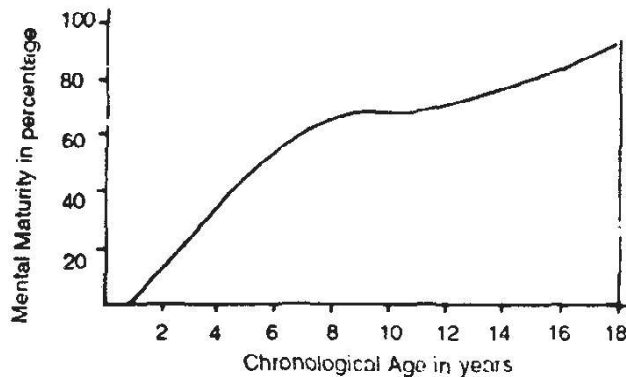


Fig. 8.1 Intelligence Curve

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.

8.3.4 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

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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 may share 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.

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8.4 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.

Check Your Progress

4. What are the four categories in which the definition of the term intelligence can be classified?
5. How was intelligence measured in ancient India?
6. Which type of intelligence is the ability to calculate, quantify, consider propositions and hypotheses and carry out complete mathematical operations?
7. Define bodily-kinesthetic intelligence.

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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.

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8.4.1 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 conform 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.

8.4.2 Genetic and Cultural Factors of Personality

Let us analyse the genetic and cultural factors of personality.

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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 forty-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

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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.

8.4.3 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

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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 tall)	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.

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• **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	Friendliness	1. Helpful
2. Meeting with strangers		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.

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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:

- Cardinal traits:** Traits that appear the most in the behaviour of an organism are called cardinal. It may be illustrated with the example of achievement in life. Some people are so devoted to achievement that this trait pervades their entire life.
- Central traits:** Central traits are less pervasive than cardinal traits but are generalized dispositions.
- Secondary dispositions:** Secondary dispositions are specific and narrow traits. They are also known as attitudes.

According to Allport, traits differ in intensity and magnitude in 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:

- 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.
- Unique traits:** These traits are possessed by particular persons like temperamental traits, emotional reactions, etc.
- Surface traits:** Traits that can be easily recognized by overt manifestation of behaviour are called surface traits, such as, curiosity, integrity, honesty, tactfulness and dependability.
- Source traits:** Source traits are the underlying structure of sources that determine behaviour. Dominance and emotionality are source traits. Cattell, through the 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

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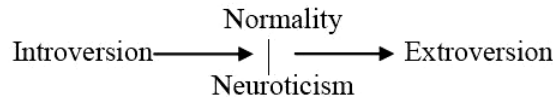
H.J. Eysenck, a British psychologist, devoted much of his research studies to explore the trait dimensions. He conducted extensive research on trait dimensions by applying quantitative techniques of factor analysis. He conducted research on ten thousand soldiers and by statistical analysis isolated two 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

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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.

8.5 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.

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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.

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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 may 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.

8.5.1 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

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- (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 triumphs. 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 impulses 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.

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8.5.2 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.

8.5.3 Psychotic Adjustment Mechanisms

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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 disorders 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.

Check Your Progress

12. Define adjustment mechanism.
13. Which type of adjustment mechanism operates outside and beyond conscious awareness through which an individual in varying degree, makes himself/herself like someone else?
14. Mention the technical terms for various kinds of compulsions.
15. What are the factors through which the behaviour of a psychotic is characterized?

8.6 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 copier, propiate 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.

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- 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.

8.7 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 or 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.

8.8 ANSWERS TO ‘CHECK YOUR PROGRESS’

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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 impairment of intellectual functions, sensori-motor disturbances such as aphasia, paralysis, deterioration of conduct etc.

8.9 QUESTIONS AND EXERCISES

NOTES

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.

8.10 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.

UNIT 9 EDUCATIONAL STATISTICS

Structure

- 9.0 Introduction
- 9.1 Unit Objectives
- 9.2 Frequency Distribution and Representation of Data
- 9.3 Measures of Central Tendency and their Uses
 - 9.3.1 Arithmetic Mean
 - 9.3.2 Median
 - 9.3.3 Mode
- 9.4 Measures of Variability and their Uses
- 9.5 Correlation, Rank Difference and Product Movement
 - 9.5.1 Methods of Studying Simple Correlation
 - 9.5.2 Methods of Coefficient of Correlation in Educational Statistics
 - 9.5.3 Biserial Correlation
 - 9.5.4 Regression Analysis
- 9.6 Summary
- 9.7 Key Terms
- 9.8 Answers to ‘Check Your Progress’
- 9.9 Questions and Exercises
- 9.10 Further Reading

NOTES

9.0 INTRODUCTION

Statistics helps in analysing a set of data whether grouped or ungrouped so that a context and a perspective can be reached at. This helps in making varied types of decisions. Statistics in education too helps the stakeholders involved in being able to judge the performance and identify the areas of improvement. It can be used not only to assess the scores but also make different records of the demographics in the academic area including gender proportion, number of students in a class or stream, etc. Statistics in education basically assists in summarizing the raw set of data.

In this unit, you will learn about the representation of data and frequency distribution; measures of central tendency and their uses; measures of variability and their uses and correlation, rank difference and product movement.

9.1 UNIT OBJECTIVES

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

- Discuss the concept of frequency distribution and representation of data
- Describe the measures of central tendency and their uses
- Explain the measures of variability and their uses
- Assess the concepts of correlation, rank difference and product movement

9.2 FREQUENCY DISTRIBUTION AND REPRESENTATION OF DATA

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A better way of organizing and summarizing data is to reduce them into a convenient number of groupings, called *classes*, such that the observations falling in different classes are identified, counted, and their number indicated against each class. A presentation so made is known as grouped frequency distribution (frequency distribution, or distribution, for short). Thus, a distribution is the out-come of a process of classification of individual observations of a set of data into an appropriate number of classes. It is also frequently referred to as *grouped data*.

Importantly, classes to be set up must be mutually exclusive and non-overlapping. The implication being that no single observation falls in more than one class. The width of the class(es) is known as *class interval*. Usually denoted as $L_1 - L_2$, L_1 representing the lower limit and L_2 the upper limit of the class interval. Corresponding to each class is given a frequency, denoted as f , in another column, known as the frequency column. Thus, the frequency recorded against any given class interval represents the total number of observations belonging to that class.

When the raw data in the sample table are classified accordingly, as in Table 9.1, the various classes provided under Col. (1) with the corresponding class frequencies under Col. (3) constitute the needed frequency distribution. Herein, the first class interval (1050–1059) has $f_1 = 6$ as the corresponding class frequency. It means there are six observations which lie in the (1050–1059) class interval, with 1050 and 1059 as the lower (L_1) and upper (L_2) class limits, respectively. And so on, for each class. It may be noted that the sum of all class frequencies is equal to the total number of observations so recorded, which is 80 in the present case.

Sample Table

1052	1088	1077	1078	1089	1089	1082	1084	1088	1090
1099	1101	1102	1055	1063	1073	1078	1113	1086	1089
1080	1095	1092	1103	1118	1098	1097	1081	1061	1080
1083	1070	1111	1064	1056	1068	1055	1073	1075	1083
1085	1086	1083	1090	1105	1090	1069	1058	1072	1073
1086	1071	1070	1065	1059	1080	1084	1085	1075	1064
1087	1091	1108	1094	1097	1093	1107	1094	1082	1116
1085	1070	1076	1069	1061	1114	1089	1074	1105	1082

Constructing a Frequency Distribution

There are two methods of constructing a frequency distribution: i) *tally method*, and ii) *entry form method*. Neither of these methods requires arrangement of raw data in the form of an *ordered array*. The basic procedure of recording each individual observation in the class to which it belongs also remains the same in the case of both the methods.

Tally Method

The tally method consists of taking the following steps in the order listed below:

1. Obtain the range of the distribution as the difference between the lowest and the highest observation(s). For the data listed in Table 9.1, 1052 is the lowest and 1118 is the highest observation, with $(1118 - 1052 = 66)$ as the range of the distribution.
2. The range is then divided into an appropriate number C , which represents the width of the class interval. This also determines the number of class intervals k among which individual observations are distributed. If $C = 10$, the range 66 divided by 10 yields 6.6. On rounding to the next higher digit, it gives $k = 7$ class intervals.
3. After completing step 2), all individual observations in the original data are picked up one by one and a *tally bar* is marked opposite the class in which a particular observation falls. For example, in Table 9.1, an observation 1052 lies in the class (1050–1059) so that a tally bar is marked against this class. This has to go on till all the observations have been recorded by marking tallies.
4. Finally, tallies marked against each class are counted and their total number recorded under a separate column heading f_i , as is Col. (3). For convenience in counting the number of tallies entered in each class, every fifth tally mark crosses the earlier four tallies diagonally from top to the bottom. Adding all class frequencies yields a number (80) equal to the total number of observations so recorded.

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Table 9.1 Frequency Distribution of Earnings of 80 Female Workers Engaged in Weaving Trade at Ahmedabad (Tally Method)

$L_1 - L_2$	Tally Marks	Frequencies (f_i)	Per cent Class Frequencies $[(f_i/N) \times 100]$
(1)	(2)	(3)	(4)
1050–1059		6	7.50
1060–1069		9	11.25
1070–1079		15	18.75
1080–1089		25	31.25
1090–1099		13	16.25
1100–1109		7	8.75
1110–1119		5	6.25
Total		80	100.00

Entry Form Method

This method uses entry form of the kind displayed in Table 9.2. Having obtained range and decided class width C , the resultant class intervals are set up horizontally at the top in an ascending order from left to right, as is done in Table 9.2. Each individual observation is then entered under the class in which it falls, and this goes on till the entire list is exhausted. Observations falling in each class are then counted and recorded as class frequencies at the bottom of the respective classes.

Table 9.2 Frequency Distribution of Earnings of 80 Female Workers Engaged in Weaving Trade at Ahmedabad (Entry Form Method)

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1050-59	1060-69	1070-79	1080-89	1090-99	1100-09	1110-19
1052	1064	1070	1080	1084	1099	1101
1055	1065	1071	1083	1081	1095	1102
1056	1069	1070	1085	1085	1091	1108
1059	1063	1077	1086	1088	1092	1103
1055	1061	1070	1087	1086	1090	1105
1058	1068	1076	1085	1082	1094	1107
	1069	1078	1088	1089	1097	1105
	1061	1073	1086	1080	1098	
	1064	1078	1083	1083	1090	
		1073	1089	1082	1093	
		1074	1089		1097	
		1075	1080		1094	
		1072	1082		1090	
		1075	1084			
		1073	1089			
6	9	15	25	13	7	5

The entry form method is relatively easier to work, but more time consuming than the tally method. In using a printed form, this method provides an edge over the tally method as to the following:

- a) It facilitates reclassification of observations in case class intervals once established are not found satisfactory.
- b) It clearly shows how individual observations are distributed in the various classes.
- c) It helps ready scanning of class entries and quick detection of wrong entries made in any class.

Types of Frequency Distributions

A frequency distribution with class frequencies given in absolute numbers is called an absolute frequency distribution. Alternatively, the one with class frequencies expressed in per cent is known as a per cent frequency distribution. The class intervals given under Col. (1) in Table 9.1, together with corresponding absolute frequencies in Col. (3), make an absolute frequency distribution. With corresponding per cent frequencies given against the various class intervals as in Col. (4), it constitutes a per cent frequency distribution.

Any two distributions with class frequencies expressed in absolute terms, can be directly compared if the total frequencies are the same for both. Where the total frequencies are different, comparison between two distributions is possible and feasible only by expressing the class frequencies as per cent to their respective total frequencies.

More on Distributions

Referring back to Table 9.1, it may be seen that a frequency distribution involves grouping of individual observations into a convenient number of classes. In the process, the raw data get summarized with resultant benefits as under:

- a) As groupings make a given set of data more compact, one gets a better idea of the basic data characteristics at the very first glance.
- b) The summarized data help quickly reveal the pattern of distribution of observations over the various classes.

- c) Classification, according to size or magnitude of observations, makes data amenable to the use of complex statistical techniques, which facilitates the process of the hidden data characteristics coming to the fore.

However, a frequency distribution suffers from at least two important disadvantages. *First*, as individual observations lose their identity in grouping, it becomes difficult to know how the observations contained in each class are distributed. This particularly holds when the *tally method* is employed in constructing a frequency distribution. *Second*, where the number of classes is too small, grouping leads to excessive clustering of observations in a few classes. This may not allow all the essential information get fully exposed.

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Concerns in Constructing a Frequency Distribution

It follows that summarizing data in the form of a frequency distribution should not result in excessive loss of essential details. Also, it should not allow the data to remain unwieldy in an urge to retain too much of details. The aim should be to strike an appropriate compromise between having too much of details or too little of them. To be able to achieve this compromise, it is necessary to highlight a number of points that matter in constructing a frequency distribution. This refers to concerns for the following:

Number of Classes

Since there are no hard and fast rules to follow in the matter, one enjoys a considerable flexibility in deciding the number of classes. However, one needs to make sure that grouping of data adequately reveals the pattern of distribution of observations over the successive classes. Too many classes may let a given set of data remain scattered over an unduly large number of classes. Too few of them, on the other hand, may lead to crowding of a majority of observations in a few classes, thus allowing quite a bit of valuable information to remain concealed.

What follows is that the number of class intervals k should neither be very large, nor very small. Practical experience suggests that it should be in the range of 5 to 15. The exact number should be decided keeping in view a) the nature of data in hand, b) the kind of interpretations one intends to make, and c) the purpose for which the data are collected and analysed.

For those having no precise idea about these factors, or being otherwise not able to decide the appropriate number of classes, it will be wise to make use of *Sturges' rule* as a guide. According to this rule, the number of classes k may be obtained as

$$k = 1 + 3.322 (\log n)$$

in which n represents the total number of observations. *For example*, if the a set of data has $n = 150$ observations, then $(\log_{10} 150) = 2.1761$ so that

$$k = 1 + 3.322 (2.1761) = 8 \text{ approx.}$$

The decision to have an appropriate number of classes is further simplified if the following two other considerations are kept in mind:

- (i) The number of classes should be so chosen that the resultant class frequencies tend gradually to increase to a peak and then slowly decline. That is, the frequency distribution obtained should be *uni-modal* (one peak). In case the resultant distribution is *bi-modal* (two peak), it should mean one of the two things: a) either the number of classes k is too small, class interval C

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being unduly large, or b) the original data are heterogeneous having come from two separate populations.

- (ii) The number of classes should be such that the class frequencies tend to cluster around their respective mid-points. It is only then that a given class mid-point, as an average of the lower and upper class limits, is more representative of the observations contained in that class.

Width of the Class Interval(s)

The choice of the width of class interval(s) C cannot be decided independently of the number of classes k . The two being inversely related, an increase in class interval width C means a reduction in k . It is so because the width of the class interval(s) C can be obtained by dividing the range of the distribution into the desired number of classes k , or vice-versa.

Importantly, however, the width of class intervals should remain equal across all the classes. In the event of this uniformity being not maintained, the distribution becomes rowdy and the variations in data get concealed. *For example*, it may not be easy to assert whether the difference between the frequencies of any two classes is due to the difference in the concentration of items, or on account of the interval width being different for different classes.

Not only that the interval width should remain the same for all the classes, it should also preferably be a convenient number such as 5, 10, or 15. A width given by the integers 7, 13, or 19 may better be avoided. This is necessary to facilitate computation of measures of central tendency and dispersion, as are being discussed in the ensuing chapters.

Establishing the Initial Class

Once the width of class interval is finally decided, the next step is to establish the starting point of the first interval. This requires setting up the lower limit of the initial class, since the remaining classes are automatically determined when C remains equal throughout. Referring to the distribution in Table 3.3 where the interval width $C = 10$ for all the classes, the initial class (1050–1059) could be established in several ways.

The lowest observation in the given set of data being 1052, in an extreme case, the initial class may be (1043–1052) wherein 1052 is the upper limit. Alternatively, it may be (1052–1061) in which 1052 is the lower limit. If the initial class is neither of these two extremes, it may be one of the remaining eight (8) other classes in which 1052 may lie anywhere between 1044 and 1060. Thus, the problem involves selecting one out of these several options.

What a frequency distribution with a given class width C looks like, depends largely on how the initial class is established. The initial class should be so chosen that the number of frequencies against successive classes tends to increase first and then decline. A process of trial and error alone can help arrive at such a class. Having decided on the initial class, the subsequent class(es) should preferably be non-overlapping such as (1050–1059), (1060–1069), or (105–1054), (1055–1059). The reason being that such classes help establish class mid-points more conveniently, and thus facilitate subsequent computations.

A mid-point is obtained by dividing the sum of the upper and lower class limits by two. A clear definition of class limits is, therefore, immensely significant. More so because

class mid-points serve as representatives of all the observations contained in the respective classes and thus enter into defining measures of various data characteristics. Confusion arises in computing mid-points when the class limits are not clearly defined. To make sure that there is no ambiguity in defining the class limits, it is necessary to make a precise distinction between the *stated limits* and *real limits*.

Other Issues

Two other issues relevant to constructing a frequency distribution are important. These are: when to have unequal width of class intervals, and when to keep the class intervals *open-ended*.

Unequal Class Intervals

A frequency distribution makes an important departure from the usual when the width of the class interval is not kept equal across all the classes. This generally happens where there are large gaps in the data, or when the data are unevenly distributed over a large range. Such data call for different class widths for different ranges of variations in the data. While equal interval width across all the classes is always useful, different interval sizes for different data segments at times better explain the variations in the data.

Open-ended Class Intervals

Situations do arise when a class interval has to be kept *open-ended*. The first class interval is open-ended when stated as “*under 50*”, and the upper class interval is so when stated as “*110 and above*”. The necessity of keeping an open-ended class interval arises when a few observations in a given set of data are either too small or too large, or both.

This generally obtains in the case of population data on age and sex distribution, or those on the distribution of households according to the size of income. *For example*, when the data on annual household incomes (given as ₹11,000, ₹16,000, ₹2,000, ₹18,000, ₹15,000, ₹52,000, etc.) are to be tallied to construct a frequency distribution, it will be advisable to have the first and last class intervals open-ended. The first may be as “*under ₹3,000*” and the last as “*₹18,000 and above*”. Distributions with open-ended classes are called open-ended distributions.

Graphic Presentation of a Frequency Distribution

Graphic presentation of a frequency distribution is a powerful tool of data presentation and interpretation. For, the shape of the graph provides easy answers to several important questions. Normally, the frequency distribution as a tabular presentation is not able to highlight the essential characteristics of the data so apparently as its graphic presentation may do.

The shape of the graph offers an exact idea of the variations in the distribution. Accordingly, frequency distribution graphs serve as effective tools of a quick and effective comparison between two or more distributions. The pattern of variations and the points of contrast become quite obvious when the graph of one frequency distribution is superimposed on the other.

It may be appreciated that graphic presentation has a different context and reference now than it had in the previous chapter. Here, it uses a given set of data observations classified into a frequency distribution according to their size and/ or

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magnitude. Compared to this, graphic presentation discussed in the previous chapter was based on data observations tabulated into forming statistical tables according to time, place, region of space, or an attribute of interest. Thus, whereas the size and magnitude of data enter into graphic presentation by affecting the shape of the resultant frequency distribution, these were of no relevance in framing tables and then converting them into graphs.

Histogram

A histogram is the simplest form of graphic presentation. Since a frequency distribution may have equal or unequal class intervals, the procedure for drawing a histogram is described separately for both the situations as under.

For Equal Class Intervals

Figure 9.1 presents the histogram of the frequency distribution given in Table 9.1. The procedure is quite evident and self-explanatory. The horizontal x -axis is divided by marking dots into equal parts numbering two or three more than the number of class intervals comprising the distribution. Starting from left not necessarily with zero, each dot is labelled by the lower class limit of the successive classes, leaving a space equal to the size of one class interval on the either extreme side. At times, the horizontal scale is also used to show the mid-points of the successive class intervals.

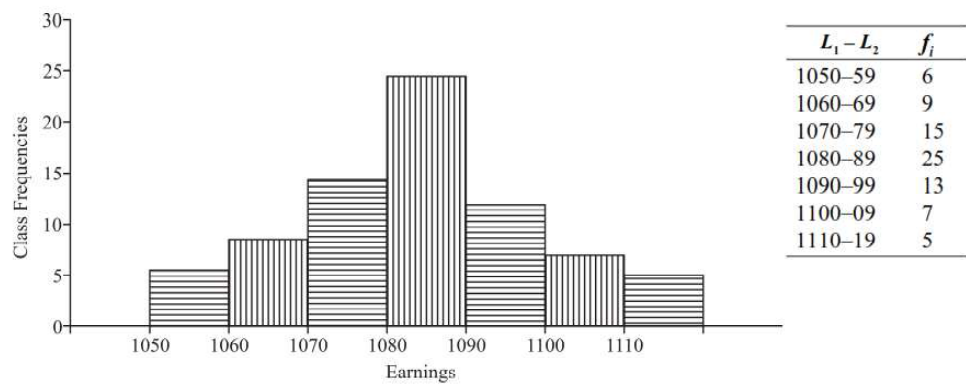


Fig. 9.1 Histogram

Along the vertical y -axis, which always begins with zero at the point of origin, are measured the class frequencies. Rectangular bars are then raised for successive class intervals with their base equal in width on the x -axis. The height of each bar measured on the y -axis is kept equal to the corresponding class frequency. The area of the bar corresponding to each class interval is given by its class frequency f multiplied by the width of class interval C .

For Unequal Class Intervals

The procedure for drawing a histogram for a frequency distribution with unequal class intervals is not materially different. It requires only minor adjustments in the spacing of dots marked on the x -axis. *For example*, if one class interval has a width of 15 points and the rest of 5 points, the space on the x -axis for the class interval of 15 points should be three times the interval of 5 points.

The vertical axis for such class intervals measures the frequency density, and not the corresponding class frequency. The frequency density for an interval of width more

than that of others, is given by the actual frequency of this class divided by the number of times the interval width exceeds that of the others. *For example*, if the frequency corresponding to the class interval of 15 points is 69, the frequency density of this class is 69 divided by 3, that is, 23.

A histogram for an open-ended distribution is drawn essentially the same way, except that the open-ended classes are not considered.

Frequency Polygon

Frequency polygon represents yet another way of depicting a frequency distribution in the form of graph. Given the histogram in Figure 9.1, a frequency polygon is drawn by marking dots at the mid-points of the top of each bar and joining the dots by means of straight lines. The polygon so obtained in Figure 9.2 is closed at the end by joining the top base mid-points of the first and the last rectangles with the mid-point of the next outlying interval on either side. The mid-points of these two outlying intervals fall on their bottom base, meaning zero class frequencies.

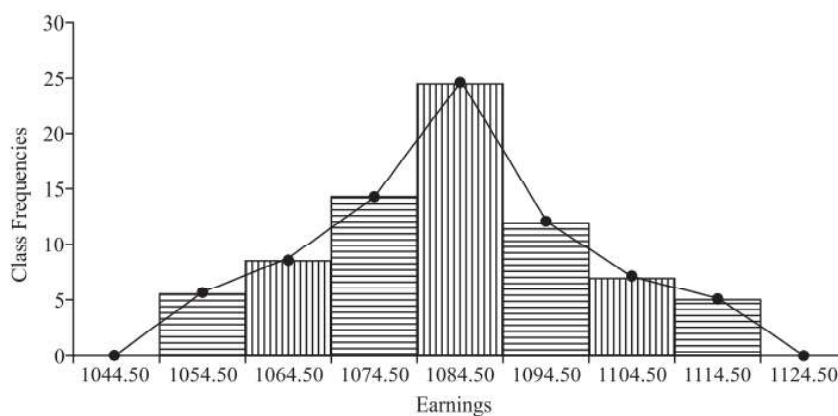


Fig. 9.2(a) Frequency Polygon

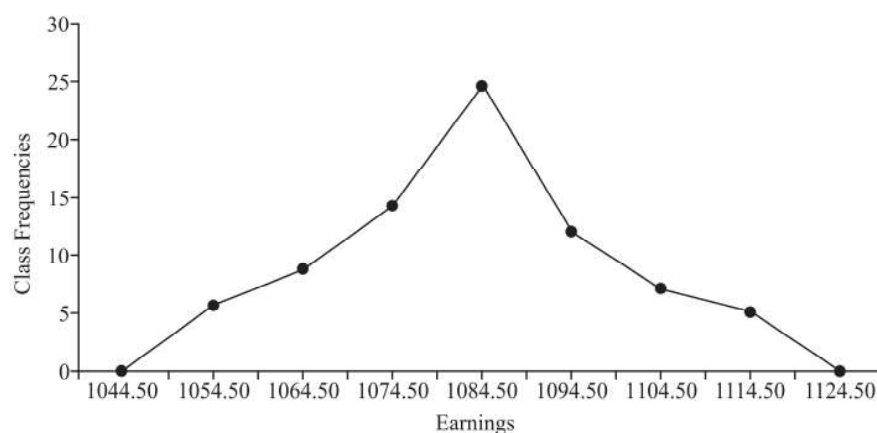


Fig. 9.2(b) Frequency Polygon

In fact, constructing a frequency polygon does not necessarily require a histogram being drawn first. It can be obtained directly by plotting dots above each interval mid-point at heights equal to the corresponding class frequency, and joining them by means of straight lines. The polygon is closed on either side in exactly the same way as explained above. However, the x -axis now measures the successive class mid-points, and not the lower class limits.

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Comparing Frequency Distributions

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Two absolute frequency distributions can be readily compared by super-imposing the frequency polygon of one on that of the other. The width of the class intervals and the total number of frequencies should, however, be the same for both the distributions. Such a comparison is not easy to make through histograms because one cannot be so conveniently super-imposed on the other.

Even where the two distributions differ in terms of total frequencies, a comparison is still possible by drawing per cent frequency polygons of the two distributions on a common graph. In a per cent frequency polygon, the vertical axis measures the per cent class frequencies in place of absolute frequencies.

Smoothing a Frequency Polygon

Smoothing a frequency polygon means drawing a free-hand smooth curve through the various points that yield a frequency polygon on joining. A free-hand curve so drawn is shown by the dotted line in Figure 9.3. Smoothing removes irregularities in the polygon occurring due to joining the various mid-points by means of straight lines. A serious limitation of a smooth curve drawn in free-hand is that no two persons will ever smooth the polygon in exactly the same way. Slight differences are bound to occur howsoever thoroughly and minutely they may have grasped the pattern of variations in the distribution.

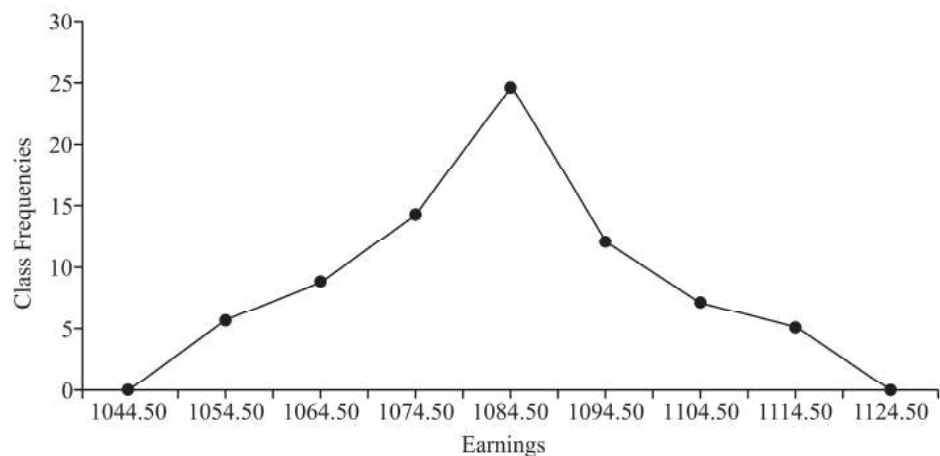


Fig. 9.3 Smoothed Frequency Polygon

Despite the risks involved, the need for smoothing a polygon cannot be overemphasized. A frequency polygon does not get uneven so much owing to the inherent irregularities in the data. Instead, it tends to become more erratic on account of selection of class width which makes the class frequencies change abruptly. The real advantage of smoothing thus lies in eliminating the abrupt behaviour of the polygon and making it more representative of the true variations in the data.

Frequency Distribution Models

It may be noticed that a frequency distribution based on a larger number of sample data observations will have a smoother frequency polygon. It will closely approximate a polygon based on the entire population as the number of observations comprising the sample increases.

Whereas a frequency curve may assume a variety of shapes, more frequently encountered among them are either symmetrical or skewed in shape. Some others not so common are J-shaped, reverse J-shaped, U-shaped, bi-modal, etc.

All these possibilities are illustrated by means of smoothed frequency polygons drawn in Figure 9.4 with a brief about each as under:

1. **Perfectly Symmetrical Curves:** Generally looking bell-shaped, such curves occupy an important place in statistical theory where these are widely used. Symmetrical curves represent *normal distributions*, which have rigidly defined properties. A simple characteristic of any such curve is that on being folded vertically from the middle, the two sides exactly coincide. A symmetrical curve may take any of the three shapes as given in Figure 9.4(a).
2. **Skewed Curves:** These are asymmetrical curves, having a longer tail either to the left or to the right, as shown in Figure 9.4(b). If a curve has a longer tail to the right (b_1), its distribution is called a *positively skewed*. If it has longer tail to the left (b_2), the distribution is known as *negatively skewed*. It may be remembered that most of the distributions on economic and business data normally tend to be positively skewed.
3. **U-shaped Curves:** U-shaped curves of the type, as in Figure 9.4(c), rarely occur. They represent distributions in which the middle class interval has the lowest frequency, and the first and the last ones have the highest frequency. The basic data for such distributions contain predominantly high and low values.

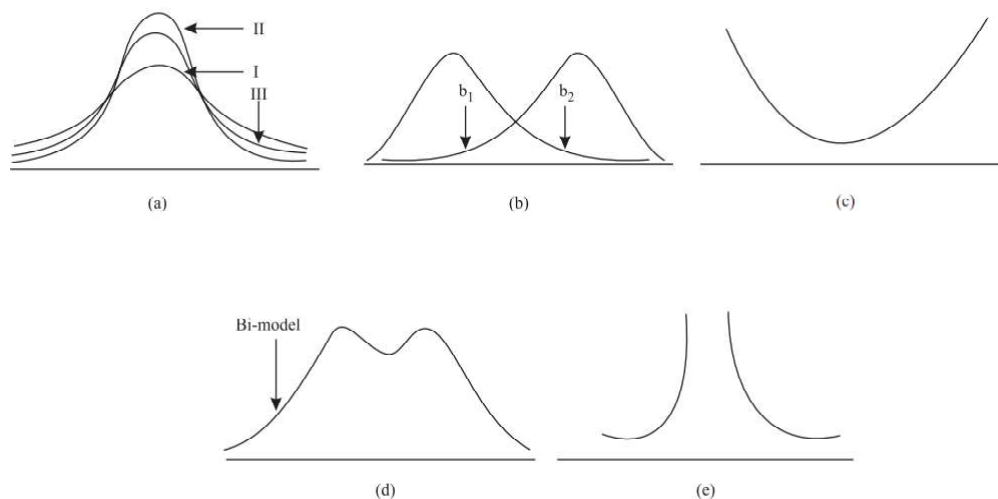


Fig. 9.4 Different Frequency Models

For example, the distribution of all world economies according to the stage of their development bears U-shape. This is because most of the countries are either highly developed or highly under-developed, only a small number of them being in the developing stage.

4. **Bi-modal Curves:** These curves have two peaks, as shown in Figure 9.4(d). Their distributions are known as *bi-modal* distributions. Any such distribution refers to a heterogeneous population, and the basic data are considered to have come from two separate populations.

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5. **J-shaped Curves:** J-shaped and reverse J-shaped curves are as depicted in Figure 9.4(e). They represent distributions in which the number of observations occurring in successive class intervals either consistently increases or consistently decreases, thus forming J-shaped or reverse J-shaped curves.

A Cumulative Frequency Curve (or an Ogive)

A cumulative frequency curve, popularly known as *ogive*, is another form of graphic presentation of a frequency distribution. As an illustration, consider the frequency distribution presented in Table 9.1. Again, the first step in drawing a cumulative frequency curve is to obtain cumulative frequencies, denoted as f_c , and record them under a separate column to be so designated.

Cumulative frequencies can be of ‘less than’ or ‘more than’ type, as is shown in Table 9.3. Those of ‘less than’ type are given under Col. (3) and of ‘or more’ type under Col. (6). Cumulative frequencies of ‘less than’ type are obtained by adding successive class frequencies from top to bottom. Those of ‘or more’ type involve adding successive class frequencies from bottom to top.

The remaining procedure for drawing a cumulative frequency curve, or an ogive, is as usual. The only difference being that the *y-axis* is to be so scaled that it accommodates the total frequencies. The *x-axis* is labelled with the upper class limits in the case of ‘less than’ ogive, and the lower class limits in the case of ‘or more’ ogive.

Points are plotted against each successive upper class limit and the corresponding ‘less than’ cumulative frequencies. These points are then joined by means of straight lines. The resultant curve is closed at the bottom by extending it to meet the horizontal axis at the real lower limit of the first class interval. The curve so obtained is an *ogive* of ‘less than’ type.

If the ogive is of ‘more than’ type, points are plotted above each successive lower class limits against the corresponding ‘or more’ cumulative frequencies. In this case, closing is done at the bottom by extending the curve to meet the horizontal axis at the real upper limit of the last class interval.

These two types of ogives are drawn in Figure 9.5. Interestingly, ogives have abundant interpretative value. Some of the distinct advantages offered are as follows:

1. Importantly, these curves are amenable to quick interpretations. *For example*, a ‘less than’ cumulative frequency curve can be easily used to find the number of female workers whose weekly earnings are below a certain limit. Referring to this curve in Figure 9.5, it can be easily seen that the number of female workers with weekly earnings below ₹1093 is 59.

This is obtained by identifying a point representing ₹1093 on the *X-axis*, and vertically locating on the ogive the corresponding cumulative frequency on the *Y-axis*, which represents the required number of female work. Conversely, by starting from any point on the *Y-axis*, it is easy to find that a given number of female workers will have weekly earnings below the earnings indicated by that point on the *X-axis*. Similar readings can be made with reference to the ‘or more’ curve as well.

2. Sometimes, it is more informative and worthwhile to divide the *Y-axis* into 10 or 100 equal parts, as has been done on the right hand vertical scale in Figure 9.5. It is evident from the curve that the weekly earnings of all

female workers (100 per cent) are less than ₹1119, and that none of them (0 per cent) earn below ₹1050 per week. The intervening percentages indicate the values on the X -axis, which lie below any given percentage.

Table 9.3 Cumulative Frequencies of 'Less Than' and 'Or More' Types

'less than' Type			'more than' Type		
Upper Limits	f_1	f_c	Lower Limits	f_1	f_c
(1)	(2)	(3)	(4)	(5)	(6)
'less than' 1059	6	6	1050 'more than'	6	80
'less than' 1069	9	15	1060 'more than'	9	74
'less than' 1079	15	30	1070 'more than'	15	65
'less than' 1089	25	55	1080 'more than'	25	50
'less than' 1099	13	68	1090 'more than'	13	25
'less than' 1109	7	75	1100 'more than'	7	12
'less than' 1119	5	80	1110 'more than'	5	5

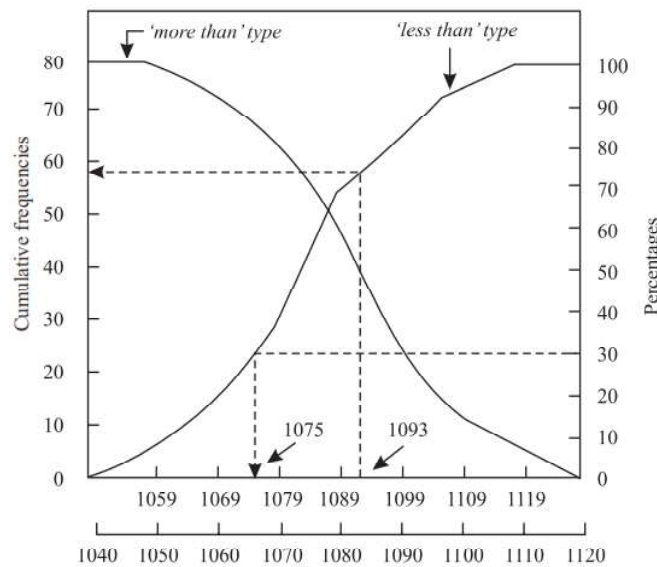


Fig. 9.5 Ogives or Cumulative Frequency Curves

For example, when a line is drawn from 30 per cent to move horizontally across the 'less than' ogive, the corresponding weekly earnings come to ₹1075. This means that 30 per cent of the female workers have weekly earnings below ₹1075. Similarly, starting from a particular point on the X -axis, we can find the percentage of female workers with weekly earnings less than that represented by the corresponding point on the X -axis.

3. Interestingly, a line drawn parallel to the vertical axis through the point of intersection of the two types of ogives will meet the X -axis at its middle point. The value corresponding to this point will be the median of the distribution. Similarly, a perpendicular drawn from the point of intersection of the two curves on the vertical axis will divide the total frequencies into two equal parts.
4. Two ogives, whether 'less than' or 'or more' type, can be readily compared by drawing them on the same graph paper. The presence of unequal class intervals causes no problem in such comparison, unlike in the case of comparison of two frequency polygons. If the total frequencies are not the same in the two distributions, they can be converted into per cent frequency

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distributions first, and then ogives drawn on a single graph paper to facilitate comparison.

It may be noted that an ogive can also be smoothed in exactly the same way as a frequency polygon.

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9.3 MEASURES OF CENTRAL TENDENCY AND THEIR USES

There are several commonly used measures of central tendency, such as arithmetic mean, mode and median. These values are very useful not only in presenting the overall picture of the entire data but also for the purpose of making comparisons among two or more sets of data.

As an example, questions like ‘How hot is the month of June in Delhi?’ can be answered, generally by a single figure of the average for that month. Similarly, suppose we want to find out if boys and girls at age ten years differ in height for the purpose of making comparisons. Then, by taking the average height of boys of that age and average height of girls of the same age, we can compare and record the differences.

While arithmetic mean is the most commonly used measure of central location, mode and median are more suitable measures under certain set of conditions and for certain types of data. However, each measure of central tendency should meet the following requisites:

1. It should be easy to calculate and understand.
2. It should be rigidly defined. It should have only one interpretation so that the personal prejudice or bias of the investigator does not affect its usefulness.
3. It should be representative of the data. If it is calculated from a sample, then the sample should be random enough to be accurately representing the population.
4. It should have sampling stability. It should not be affected by sampling fluctuations. This means that if we pick 10 different groups of college students at random and compute the average of each group, then we should expect to get approximately the same value from each of these groups.
5. It should not be affected much by extreme values. If few very small or very large items are present in the data, they will unduly influence the value of the average by shifting it to one side or other, so that the average would not be really typical of the entire series. Hence, the average chosen should be such that it is not unduly affected by such extreme values.

Check Your Progress

1. State the four broad ways in which data is classified.
2. What is less than cumulative frequency distribution?
3. Which type of presentation of data distribution helps to condense data but still retain the individuality of the data?
4. Name the different types of graphic representation.

Meaning of the Measures of Central Tendency

If the progress scores of the students of a class are taken and they are arranged in a frequency distribution, we may sometime find that there are very few students who either score very high or very low. The marks of most of the student will lie somewhere between the highest and the lowest scores of the whole class. This tendency of a group about distribution is named as central tendency and typical score that lies in between the extremes and shared by most of the students is referred to as a measure of central

tendency. Tate (1955) defines the measures of central tendency as, 'A sort of average or typical value of the items in the series and its function is to summarize the series in terms of this average value'.

The most common measures of central tendency are:

1. Arithmetic Mean or Mean
2. Median
3. Mode

Let us consider the three measures of central tendency.

9.3.1 Arithmetic Mean

This is also commonly known as simply the mean. Even though average, in general, means any measure of central location, when we use the word average in our daily routine, we always mean the arithmetic average. The term is widely used by almost every one in daily communication. We speak of an individual being an average student or of average intelligence. We always talk about average family size or average family income or Grade Point Average (GPA) for students, and so on.

Calculating Arithmetic Mean (M): The simplest but most useful measure of central tendency is the arithmetic mean. It can be defined as the sum of all the values of the items in a series divided by the number of items. It is represented by the letter M .

Calculation of Mean in the Case of Ungrouped Data

Let $X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9$ and X_{10} be the scores obtained by 10 students on an achievement test. Then, the arithmetic mean or mean score of the group of these ten students can be calculated as:

$$M = X_1 + X_2 + X_3 + X_4 + X_5 + \dots + X_{10} / 10$$

The formula for calculating the mean of an ungrouped data is as follows:

$$M = \sum X / N$$

Where, $\sum X$ stands for the sum of scores or values of the items and N for the total number in a series or group.

Calculation of Mean in the Case of Grouped Data (Data in the form of Frequency Distribution)

General Method: In a frequency distribution where all the frequencies are greater than one, the mean is calculated by the formula:

$$M = \sum fX / N$$

Where, X represents the mid-point of the class interval, f its respective frequency and N the total of all frequencies.

Short-Cut Method: Mean for the grouped data can be computed easily with the help of following formula:

$$M = A + \sum fx' / N \times i$$

Where,

A = Assumed mean.

i = Class interval.

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f = Respective frequency of the mid-values of the class intervals.

N = Total Frequency.

$x' = X - A / i$

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Combined Mean: If the arithmetic averages and the number of items in two or more related groups are known, the combined (or composite) mean of the entire group can be obtained by the following formula:

$$\bar{X} = \left[\frac{n_1\bar{x}_1 + n_2\bar{x}_2}{n_1 + n_2} \right]$$

The advantage of combined arithmetic mean is that, one can determine the over, all mean of the combined data without having to going back to the original data.

For example:

We can find the combined mean for the data given below:

$$n_1 = 10, x_1 = 2, n_2 = 15, x_2 = 3$$

To obtain the mean:

$$\begin{aligned} \bar{X} &= \left[\frac{n_1\bar{x}_1 + n_2\bar{x}_2}{n_1 + n_2} \right] \\ &= \left[\frac{10 \times 2 + 15 \times 3}{10 + 15} \right] \\ &= \frac{20 + 45}{25} \\ &= 2.6 \end{aligned}$$

For discussion purposes, let us assume a variable X which stands for some scores, such as the ages of students. Let the ages of 5 students be 19, 20, 22, 22 and 17 years. Then variable X would represent these ages as follows:

$$X: 19, 20, 22, 22, 17$$

Placing the Greek symbol σ (Sigma) before X would indicate a command that all values of X are to be added together. Thus:

$$\sigma X = 19 + 20 + 22 + 22 + 17$$

The mean is computed by adding all the data values and dividing it by the number of such values. The symbol used for sample average is \bar{X} so that:

$$\bar{X} = \frac{19 + 20 + 22 + 22 + 17}{5}$$

In general, if there are n values in the sample, then

$$\bar{X} = \frac{X_1 + X_2 + \dots + X_n}{n}$$

In other words,

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n}, \quad i = 1, 2, \dots, \times 2 n.$$

The above formula states, add up all the values of X_i where the value of i starts at 1 and ends at n with unit increments so that $i = 1, 2, 3, \dots, n$.

If instead of taking a sample, we take the entire population in our calculations of the mean, then the symbol for the mean of the population is μ (mu) and the size of the population is N , so that:

$$\mu = \frac{\sum_{i=1}^N X_i}{N}, \quad i = 1, 2, \dots, N.$$

If we have the data in grouped discrete form with frequencies, then the sample mean is given by:

$$\bar{X} = \frac{\Sigma f(X)}{\Sigma f}$$

Where, Σf = Summation of all frequencies' n .
 $\Sigma f(X)$ = Summation of each value of X multiplied by its corresponding frequency (f).

Example 9.1: Let us take the ages of 10 students as follows:

19, 20, 22, 22, 17, 22, 20, 23, 17, 18

Solution: This data can be arranged in a frequency distribution as follows:

(X)	(f)	f(X)
17	2	34
18	1	18
19	1	19
20	2	40
22	3	66
23	1	23
Total = 10		200

In the above case we have $\Sigma f = 10$ and $\Sigma f(X) = 200$, so that:

$$\begin{aligned} \bar{X} &= \frac{\Sigma f(X)}{\Sigma f} \\ &= 200/10 = 20 \end{aligned}$$

Characteristics of the Mean

The arithmetic mean has three interesting properties. These are:

1. The sum of the deviations of individual values of X from the mean will always add up to zero. This means that if we subtract all the individual values from their mean, then some values will be negative and some will be positive, but if all these differences are added together then the total sum will be zero. In other words, the positive deviations must balance the negative deviations. Or symbolically:

$$\sum_{i=1}^n (X_i - \bar{X}) = 0, \quad i = 1, 2, \dots, n.$$

2. The second important characteristic of the mean is that it is very sensitive to extreme values. Since the computation of the mean is based upon inclusion

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of all values in the data, an extreme value in the data would shift the mean towards it, thus making the mean unrepresentative of the data.

3. The third property of the mean is that the sum of squares of the deviations about the mean is minimum. This means that if we take differences between individual values and the mean and square these differences individually and then add these squared differences, then the final figure will be less than the sum of the squared deviations around any other number other than the mean. Symbolically, it means that:

$$\sum_{i=1}^n (X_i - \bar{X})^2 = \text{Minimum}, i = 1, 2, \dots, n.$$

Advantages of Mean

The following are the various advantages of mean:

1. Its concept is familiar to most people and is intuitively clear.
2. Every data set has a mean, which is unique and describes the entire data to some degree. For instance, when we say that the average salary of a professor is ₹ 25,000 per month, it gives us a reasonable idea about the salaries of professors.
3. It is a measure that can be easily calculated.
4. It includes all values of the data set in its calculation.
5. Its value varies very little from sample to sample taken from the same population.
6. It is useful for performing statistical procedures, such as computing and comparing the means of several data sets.

Disadvantages of Mean

The following are the various disadvantages of mean:

1. It is affected by extreme values, and hence, not very reliable when the data set has extreme values especially when these extreme values are on one side of the ordered data. Thus, a mean of such data is not truly a representative of such data. For instance, the average age of three persons of ages 4, 6 and 80 years gives us an average of 30.
2. It is tedious to compute for a large data set as every point in the data set is to be used in computations.
3. We are unable to compute the mean for a data set that has open-ended classes either at the high or at the low end of the scale.
4. The mean cannot be calculated for qualitative characteristics, such as beauty or intelligence, unless these can be converted into quantitative figures, such as intelligence into IQs.

Weighted Arithmetic Mean

In the computation of arithmetic mean we had given equal importance to each observation in the series. This equal importance may be misleading, if the individual values constituting the series have different importance as in the following example:

The Raja Toy shop sells	
Toy Cars at	₹ 3 each
Toy Locomotives at	₹ 5 each
Toy Aeroplanes at	₹ 7 each
Toy Double Decker at	₹ 9 each

What shall be the average price of the toys sold, if the shop sells 4 toys, one of each kind?

$$\text{Mean Price, i.e., } \bar{x} = \frac{\sum x}{4} = \text{Rs } \frac{24}{4} = \text{₹ } 6$$

In this case, the importance of each observation (Price quotation) is equal in as much as one toy of each variety has been sold. In the above computation of the arithmetic mean, this fact has been taken care of by including 'once only' the price of each toy.

But if the shop sells 100 toys: 50 cars, 25 locomotives, 15 aeroplanes and 10 double deckers, the importance of the four price quotations to the dealer is not equal as a source of earning revenue. In fact their respective importance is equal to the number of units of each toy sold, i.e.,

The importance of Toy Car	50
The importance of Locomotive	25
The importance of Aeroplane	15
The importance of Double Decker	10

It may be noted that 50, 25, 15, 10 are the quantities of the various classes of toys sold. It is for these quantities that the term 'weights' is used in statistical language. Weight is represented by symbol 'w', and $\sum w$ represents the sum of weights.

While determining the 'average price of toy sold', these weights are of great importance and are taken into account in the manner illustrated below:

$$\bar{x} = \frac{w_1x_1 + w_2x_2 + w_3x_3 + w_4x_4}{w_1 + w_2 + w_3 + w_4} = \frac{\sum wx}{\sum w}$$

When w_1, w_2, w_3, w_4 are the respective weights of x_1, x_2, x_3, x_4 which in turn represent the price of four varieties of toys, viz., car, locomotive, aeroplane and double decker, respectively.

$$\begin{aligned} \bar{x} &= \frac{(50 \times 3) + (25 \times 5) + (15 \times 7) + (10 \times 9)}{50 + 25 + 15 + 10} \\ &= \frac{(150) + (125) + (105) + (90)}{100} = \frac{470}{100} = \text{₹ } 4.70 \end{aligned}$$

The next table summarizes the steps taken in the computation of the weighted arithmetic mean.

$$\begin{aligned} \sum w &= 100; \quad \sum wx = 470 \\ \bar{x} &= \frac{\sum wx}{\sum w} = \frac{470}{100} = 4.70 \end{aligned}$$

The weighted arithmetic mean is particularly useful where we have to compute the *mean of means*. If we are given two arithmetic means, one for each of two different series, in respect of the *same variable*, and are required to find the arithmetic mean of the combined series, the weighted arithmetic mean is the only suitable method of its determination.

Table 9.4 Weighted Arithmetic Mean of Toys Sold by the Raja Toy Shop

Toys	Price Per Toy ₹x	Number Sold w	Price × Weight xw
Car	3	50	150
Locomotive	5	25	125
Aeroplane	7	15	105
Double Decker	9	10	90
		$\sum w = 100$	$\sum xw = 470$

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Example 9.2: The arithmetic mean of daily wages of two manufacturing concerns A Ltd. and B Ltd. is ₹ 5 and ₹ 7, respectively. Determine the average daily wages of both concerns if the number of workers employed were 2,000 and 4,000, respectively.

Solution: (a) Multiply each average (viz., 5 and 7) by the number of workers in the concern it represents.

(b) Add up the two products obtained in (a) above.

(c) Divide the total obtained in (b) by the total number of workers.

Weighted Mean of Mean Wages of A Ltd. and B Ltd.

Manufacturing Concern	Mean Wages x	Workers Employed w	Mean Wages \times Workers Employed wx
A Ltd.	5	2,000	10,000
B Ltd.	7	4,000	28,000
		$\Sigma w = 6,000$	$\Sigma wx = 38,000$

$$\begin{aligned}\bar{x} &= \frac{\Sigma wx}{\Sigma w} \\ &= \frac{38,000}{6,000} \\ &= ₹ 6.33\end{aligned}$$

The above mentioned examples explain that ‘Arithmetic Means and Percentage’ are not original data. They are derived figures and their importance is relative to the original data from which they are obtained. This relative importance must be taken into account by weighting while averaging them (means and percentage).

Harmonic Mean

If a, b, c are in HP, then b is called a *Harmonic Mean* between a and c , written as HM.

Harmonical Progression

Non zero quantities whose reciprocals are in AP, or Arithmetic Progression are said to be in *Harmonical Progression*, written as HP.

Consider the following examples:

(a) $1, \frac{1}{3}, \frac{1}{5}, \frac{1}{7}, \dots$

(b) $\frac{1}{2}, \frac{1}{5}, \frac{1}{8}, \frac{1}{11}, \dots$

(c) $2, \frac{5}{2}, \frac{10}{3}, \dots$

(d) $\frac{1}{a}, \frac{1}{a+b}, \frac{1}{a+2b}, \dots, a, b > 0$

(e) $5, \frac{55}{9}, \frac{55}{7}, 11, \dots$

It can be easily checked that in each case, the series obtained by taking reciprocal of each of the term is an AP.

To Insert n Harmonic Means between a and b

Let $H_1, H_2, H_3, \dots, H_n$ be the required Harmonic Means. Then, $a, H_1, H_2, \dots, H_n, b$ are in HP

i.e., $\frac{1}{a}, \frac{1}{H_1}, \frac{1}{H_2}, \dots, \frac{1}{H_n}, \frac{1}{b}$ are in AP

Then, $\frac{1}{b} = (n+2)$ th term of an AP

$$= \frac{1}{a} + (n+1)d$$

Where d is the common difference of AP.

This gives, $d = \frac{a-b}{(n+1)ab}$

Now, $\frac{1}{H_1} = \frac{1}{a} + d = \frac{1}{a} + \frac{a-b}{(n+1)ab}$
 $= \frac{nb+b+a-b}{(n+1)ab} = \frac{a+nb}{(n+1)ab}$

So, $\frac{1}{H_1} = \frac{a+nb}{(n+1)ab}$

$\Rightarrow H_1 = \frac{(n+1)ab}{a+nb}$

Again, $\frac{1}{H_2} = \frac{1}{a} + 2d = \frac{1}{a} + \frac{2(a-b)}{(n+1)ab}$
 $= \frac{nb+b+2a-2b}{(n+1)ab} = \frac{2a-b+nb}{(n+1)ab}$

$\Rightarrow H_2 = \frac{(n+1)ab}{2a-b+nb}$

Similarly, $\frac{1}{H_3} = \frac{1}{a} + 3d = \frac{3a-2b+nb}{(n+1)ab}$

$\Rightarrow H_3 = \frac{(n+1)ab}{3a-2b+nb}$ and so on,

$$\frac{1}{H_n} = \frac{1}{a} + nd = \frac{1}{a} + \frac{n(a-b)}{(n+1)ab}$$

$$= \frac{nb+b+na-nb}{(n+1)ab}$$

$$= \frac{na+b}{(n+1)ab} \Rightarrow H_n = \frac{(n+1)ab}{na+b}$$

Example 9.3: Find the 5th term of $2, 2\frac{1}{2}, 3\frac{1}{3}, \dots$

Solution: Let 5th term be x . Then, $\frac{1}{x}$ is 5th term of corresponding AP $\frac{1}{2}, \frac{2}{5}, \frac{3}{10}, \dots$

Then, $\frac{1}{x} = \frac{1}{2} + 4\left(\frac{2}{5} - \frac{1}{2}\right) = \frac{1}{2} + 4\left(\frac{-1}{10}\right)$

$\Rightarrow \frac{1}{x} = \frac{1}{2} - \frac{2}{5} = \frac{1}{10} \Rightarrow x = 10$

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Example 9.4: Insert two harmonic means between $\frac{1}{2}$ and $\frac{4}{17}$.

Solution: Let H_1, H_2 be two harmonic means between $\frac{1}{2}$ and $\frac{4}{17}$.

Thus, $2, \frac{1}{H_1}, \frac{1}{H_2}, \frac{17}{4}$ are in AP. Let d be their common difference.

$$\text{Then,} \quad \frac{17}{4} = 2 + 3d$$

$$\Rightarrow \quad 3d = \frac{9}{4} \Rightarrow d = \frac{3}{4}$$

$$\text{Thus,} \quad \frac{1}{H_1} = 2 + \frac{3}{4} = \frac{11}{4} \Rightarrow H_1 = \frac{4}{11}$$

$$\frac{1}{H_2} = 2 + 2 \times \frac{3}{4} = \frac{7}{2} \Rightarrow H_2 = \frac{2}{7}$$

Required harmonic means are $\frac{4}{11}, \frac{2}{7}$.

9.3.2 Median

The median is a measure of central tendency and it appears in the centre of an ordered data. It divides the list of ordered values in the data into two equal parts so that half of the data will have values less than the median and half will have values greater than the median.

If the total number of values is odd, then we simply take the middle value as the median. For instance, if there are 5 numbers arranged in order, such as 2, 3, 3, 5, 7, then 3 is the middle number and this will be the median. However, if the total number of values in the data is even, then we take the average of the middle two values. For instance, let there be 6 numbers in the ordered data, such as 2, 3, 3, 5, 7, 8, then the average of middle two numbers which are 3 and 5 would be the median, which is

$$\text{Median} = \frac{(3+5)}{2} = 4$$

In general, the median is $\frac{n+1}{2}$ th observation in the ordered data.

The median is a useful measure in the sense that it is not unduly affected by extreme values and is specially useful in open ended frequencies.

Calculating Median (M_d): If the items of a series are arranged in ascending or descending order of magnitude, the measure or value of the central item in the series is termed as median. The median of a distribution can thus be said as the point on the score scale below which half (or 50 per cent) of the scores fall. Thus, median is the score or the value of that central item which divides the series into two equal parts. Therefore, it should be understood that the central item itself is not the median. It is only the measure or value of the central item that is known as the median. For example, if we arrange in ascending or descending order the marks of 5 students, then the marks obtained by the third student from either side will be termed as median of the scores of the group of students under consideration.

Computation of Median for Ungrouped Data

The following two situations could arise:

1. **When N (No. of Items in a Series) is Odd:** In this case where N is odd (not divisible by 2), the median can be computed by the following formula:

$$M_d = \text{The measure or value of the } (N + 1)/2 \text{ th item.}$$

2. **When N (No. of Items in a Series) is Even:** In this case where N is even (divisible by 2), the median can be determined by the following formula:

$$M_d = \text{The value of the } (N/2) \text{ th item} + \text{The value of } [(N/2) + 1] \text{ th item} / 2$$

Calculation of Median for Grouped Data (In the Form of Frequency Distribution)

If the data is available in the form of a frequency distribution like below, then the calculation of median first requires the location of median class.

<i>Scores</i>	<i>f</i>
65-69	1
60-64	3
55-59	4
50-54	7
45-49	9
40-44	11
35-39	8
30-34	4
25-29	2
20-24	1
<hr/> $N = 50$ <hr/>	

Actually, median is the measure or score of the central item. Therefore, it is needed to locate the central item. It may be done through the formulae given earlier in case of ungrouped data for the odd and even values of N (total frequencies). Here, in the present distribution, $N (= 50)$ is even. Therefore, median will fall somewhere between the score of 25th and 26th items in the given distribution. In the given frequency distribution table, if we add frequencies either above or below we may see that the class interval designated as 40-44 is to be labeled as the class where the score representing median will fall.

After estimating the median class, the median of the distribution may be interpolated with the help of following formula:

$$M_d = L + [(N/2) - F / f] \times i$$

Where,

L = Exact lower limit of the median class.

F = Total of all frequencies before in the median class.

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f = Frequency of the median class.

i = Class interval.

N = Total of all the frequency.

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By applying the above formula, we can compute the median of the given distribution in the following way:

$$\begin{aligned} M_d &= 39.5 + (50/2) - 15 / 11 \times 5 = 39.5 + 10/11 \times 5 \\ &= 39.5 + 50/11 = 39.5 + 4.55 = 44.05 \end{aligned}$$

Advantages of Median

The following are the advantages of median:

1. Median is a positional average and hence the extreme values in the data set do not affect it as much as they do to the mean.
2. Median is easy to understand and can be calculated from any kind of data, even for grouped data with open-ended classes.
3. We can find the median even when our data set is qualitative and can be arranged in the ascending or the descending order, such as average beauty or average intelligence.
4. Similar to mean, median is also unique meaning that there is only one median in a given set of data.
5. Median can be located visually, when the data is in the form of ordered data.
6. The sum of absolute differences of all values in the data set from the median value is minimum meaning that it is less than any other value of central tendency in the data set, which makes it more central in certain situations.

Disadvantages of Median

The following are the disadvantages of median:

1. The data must be arranged in order to find the median. This can be very time consuming for a large number of elements in the data set.
2. The value of the median is affected more by sampling variations. Different samples from the same population may give significantly different values of the median.
3. The calculation of median in the case of grouped data is based on the assumption that the values of observations are evenly spaced over the entire class interval and this is usually not so.
4. Median is comparatively less stable than the mean, particularly for small samples, due to fluctuations in sampling.
5. Median is not suitable for further mathematical treatment. For instance, we cannot compute the median of the combined group from the median values of different groups.

9.3.3 Mode

The mode is another form of average and can be defined as the most frequently occurring value in the data. The mode is not affected by extreme values in the data and can easily be obtained from an ordered set of data. It can be useful and more representative of the data under certain conditions and is the only measure of central tendency that can be used for qualitative data. For instance, when a researcher quotes the opinion of an

average person, he is probably referring to the most frequently expressed opinion which is the modal opinion. In our example of ages of 10 students as:

19, 20, 22, 22, 17, 22, 20, 23, 17 and 18

The mode is 22, since it occurs more often than any other value in this data.

Calculating Mode (M_0): Mode is defined as the size of a variable which occurs most frequently. It is the point on the score scale that corresponds to the maximum frequency of the distribution. In any series, it is the value of the item which is most characteristics or common and is usually repeated the maximum number of times.

Computation of Mode for Ungrouped Data

Mode can easily be computed merely by looking at the data. All that one has to do is to find out the score which is repeated maximum number of times.

For example, suppose we have to find out the value of mode from the following scores of students:

25, 29, 24, 25, 27, 25, 28, 25, 29

Here, the score 25 is repeated maximum number of times and thus, value of the mode in this case is 25.

Computation of Mode for Grouped Data

When data is available in the form of frequency distribution, the mode is computed from the following formula:

$$\text{Mode } (M_0) = 3 M_d - 2M$$

Where, M_d is the median and M is the mean of the given distribution. The mean as well as the median of the distribution are first computed and then, with the help of the above formula, mode is computed.

Another Method for Grouped Data

Mode can be computed directly from the frequency distribution table without calculating mean and median. For this purpose, we can use the following formula:

$$M_0 = L + f_1 / (f_1 + f_{-1}) \times i$$

Where,

L = Lower limit of the modal class (the class in which mode maybe supposed to lie).

i = Class interval.

f_1 = Frequency of the class adjacent to the modal class for which lower limit is greater than that for the modal class.

f_{-1} = Frequency of the class adjacent to the modal class for which the lower limit is less than that for the modal class.

Advantages of Mode

The following are the advantages of mode:

1. Similar to median, the mode is not affected by extreme values in the data.
2. Its value can be obtained in open-ended distributions without ascertaining the class limits.

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3. It can be easily used to describe qualitative phenomenon. For instance, if most people prefer a certain brand of tea then this will become the modal point.
4. Mode is easy to calculate and understand. In some cases, it can be located simply by observation or inspection.

Disadvantages of Mode

The following are the disadvantages of mode:

1. Quite often, there is no modal value.
2. It can be bi-modal or multi-modal or it can have all modal values making its significance more difficult to measure.
3. If there is more than one modal value, the data is difficult to interpret.
4. A mode is not suitable for algebraic manipulations.
5. Since the mode is the value of maximum frequency in the data set, it cannot be rigidly defined if such frequency occurs at the beginning or at the end of the distribution.
6. It does not include all observations in the data set, and hence, less reliable in most of the situations.

9.4 MEASURES OF VARIABILITY AND THEIR USES

In simple terms, dispersion refers to the variability among individual observations comprising a set of data. It describes the spread characteristic of the data, which also needs to be measured. Measurement necessarily requires a reference point in relation to which the extent of variability or spread of individual observations may be quantified. Any such reference point is obviously the central value, which, as a single value, is used to represent the entire set of data.

In fact, dispersion is a characteristic that takes into account different sets of data with individual observations exhibiting different degrees of spread around their respective central values. This necessitates that we have appropriate measures of this characteristic as well, called *measures of dispersion*. A measure of dispersion lies in quantifying the variability among individual observations and their scatter around the central value.

Among various measures such as mean, median, and mode, mean represents the central value the best. This is owing to the fact that mean alone satisfies several well-defined algebraic properties. A reference to these properties would show that they do render mean the most appropriate to developing a true measure of dispersion.

Measures of Dispersion

It may have been noted that none of the measures of central tendency discussed in the preceding chapter indicates how closely or distantly individual observations are spread around the central value. This can be known only by measuring dispersion, without which the measures of central tendency are of limited utility. For, a comparison between two or more sets of data without reference to the degree of dispersion may lead to erroneous and deceptive results.

To be specific, it is often difficult to assert which set of data is better represented by its mean value unless we refer to dispersion. This points to the possibility when any

Check Your Progress

5. Why is mean sensitive to extreme values?
6. If the total number of values is odd, then how is median calculated?
7. Which is the only measure of central tendency which can be used for qualitative data?
8. When is weighted arithmetic mean useful?

two or more sets of sample data having the same mean, may differ considerably in terms of the degree of dispersion. In such situations, mean better represents that set of sample data which exhibits a smaller degree of dispersion around its mean value.

There are five measures of dispersion, viz., (i) range, (ii) quartile deviation, (iii) mean absolute deviation, (iv) variance, and (v) standard deviation. When these measures express the magnitude of dispersion in the same unit of measurement in which the data are recorded, they are known as measures of absolute dispersion. When dispersion is expressed in relative terms, in percentages or ratios, these measures are called measures of relative dispersion.

It will be noticed that except range and quartile deviation, the remaining three measures have arithmetic mean as the reference point in quantifying the degree of variability. Whereas zero indicates no dispersion, the degree of dispersion increases with the increase in the magnitude of any of these measures.

Quartile Deviation, and Computation

Quartile deviation, denoted as Q_D is defined as

$$Q_D = \frac{(Q_3 - Q_1)}{2} \quad (9.1)$$

Q_1 and Q_3 being the first and the third quartiles, quartile deviation is also known as *semi-quartile range*. The method of computation of Q_D in Eq. (9.1) is the same both for sample and population data. Substituting these values in Eq. (9.1),

$$Q_D = \frac{(Q_3 - Q_1)}{2} = \frac{1093.85 - 1073.33}{2} = 10.26$$

Do yourself: Compute Q_1 and Q_3 for the distribution given in Table 9.5 and also obtain quartile deviation.

Table 9.5 Computation of Q_1 , Q_3 and Q_D

Class Intervals $L_1 - L_2$	Frequencies f_i	Cumulative Frequencies f_c	
(1)	(2)	(3)	
161-162.9	3	3	
163-164.9	7	10	
165-166.9	14	24	(Q_1 class, as $(\Sigma f_i) \times (1/4) = 12.5$)
167-168.9	12	36	
169-170.9	10	46	(Q_3 class, as $(\Sigma f_i) \times (3/4) = 37.5$)
171-172.9	4	50	
$\Sigma f_i = 50$			

Since the i th quartile Q_i is computed as

$$Q_i = L_1 + \left(\frac{(\Sigma f_i) \times (i/4) - C_f}{f_i} \right) C_i,$$

$$Q_1 = L_1 + \left(\frac{(\Sigma f_i) \times (1/4) - C_f}{f_1} \right) C_1$$

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$$= 165 + \left(\frac{12.5 - 10}{10} \right) \times 2 = 165.375$$

Similarly,

$$Q_3 = L_1 + \left(\frac{(\sum f_1) \times (3/4) - C_f}{f_3} \right) C_3$$

$$= 169 + \left(\frac{37.50 - 36}{10} \right) 2 = 169.300.$$

Substituting the values in Eq. (9.1),

$$Q_D = \frac{(Q_3 - Q_1)}{2} = \frac{169.300 - 165.375}{2} = 1.971.$$

In a symmetrical distribution, Q_1 and Q_3 are equidistantly placed from Q_2 the median. That is, the distance between Q_3 and Q_2 (or $Q_3 - Q_2$) is the same as the distance between Q_2 and Q_1 (or $Q_2 - Q_1$). It follows that $(M_d + Q_D)$ is the same as Q_3 , and $(M_d - Q_D)$ is the same as Q_1 .

These relationships do not, however, hold good in the case of skewed distributions which are typical of most business and economic time series data. But so long as a distribution is moderately skewed, $(M_d + Q_D)$ will yield a value quite close to Q_3 , and $(M_d - Q_D)$ quite close to Q_1 .

On the same logic as quartile deviation Q_D , it is possible to define what may be termed as *percentile deviation*. Denoted as P_D , it may be obtained as in which P_{90} and P_{10} are the 90th and 10th percentiles computed.

$$P_D = \frac{(P_{90} - P_{10})}{2}$$

Mean Absolute Deviation, and Computation

The mean absolute deviation (*MAD*) measures the average deviation of a set of observations about their mean, ignoring the *plus/minus* sign of the deviations. It is computed by subtracting the mean from each individual observation, summing all the deviations ignoring the *sign*, and dividing the sum by the total number of observations. The sign of the deviations is ignored because otherwise the sum of the deviations from the mean [that is, $\sum(x_i - \bar{x})$] will be zero.

Thus, mean absolute deviation for a set of sample data consisting of n observations is computed as

$$MAD = \frac{\sum |x_i - \bar{x}|}{n} \quad (9.2)$$

in the case of ungrouped data. It is obtained as

$$MAD = \frac{\sum f_i |x_i - \bar{x}|}{\sum f_i} \quad (9.3)$$

in the case of grouped data, where x_i 's are the mid-points and $\sum f_i = n$.

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Illustration: The various computations for mean absolute deviation are as shown in Table 9.6.

Table 9.6 Computation of MAD ($\bar{x} = 1083.375$)

Class Intervals $L_1 - L_2$	Frequencies f_i	Mid-Points x_i	$f_i x_i$ (2×3)	$ x - \bar{x} $	$f_i x - \bar{x} $ (2×5)
(1)	(2)	(3)	(4)	(5)	(6)
1050-59	6	1054.5	6327.0	28.875	173.250
1060-69	9	1064.5	9580.5	18.875	169.870
1070-79	15	1074.5	16117.5	8.875	133.125
1080-89	25	1084.5	27112.5	0.125	28.125
1090-99	13	1094.5	14228.5	11.125	144.625
1100-09	7	1104.5	7731.5	21.125	147.875
1110-19	5	1114.5	5572.5	31.125	155.625
$n = \Sigma f_i = 80$			$\Sigma f_i x_i = 86670.0$ $\bar{x} = 1083.375$	$\Sigma f_i x - \bar{x} = 952.50$	

Substituting the values in Eq. (9.3),

$$MAD = \frac{\sum f_i |x_i - \bar{x}|}{\sum f_i} = \frac{952.50}{80} = 11.91.$$

Thus, the various steps for obtaining mean absolute deviation by using Eq. (9.3) are as follows:

- Establish class mid-points x_i , as $(L_1 + L_2)/2$.
- Obtain the product $f_i x_i$ and sum up to get $\Sigma f_i x_i$ and the mean \bar{x} .
- Find the absolute deviations as $|x_i - \bar{x}|$, get the product $f_i |x_i - \bar{x}|$ for all the classes, and sum up to obtain $\Sigma f_i |x_i - \bar{x}|$.
- Substitute the values in Eq. (9.3) to solve for MAD .

For a population consisting of N observations with mean m , the mean absolute deviation is obtained as

$$MAD = \frac{\sum |X_i - \mu|}{N} \quad (9.4)$$

in the case of ungrouped data. It is computed as

$$MAD = \frac{\sum f_i |x_i - \mu|}{\sum f_i} \quad (9.5)$$

in the case of grouped data, where x_i 's are the class mid-points and $\Sigma f_i = N$.

Do Yourself: For the frequency distribution given in Table 9.5, compute mean absolute deviation by systematically making the necessary computations as in Table 9.6. Cross check that $\sum f_i x_i = 8359.50$, $\sum f_i |x_i - \bar{x}| = 111.52$, and $MAD = 2.230$.

Mean absolute deviation is relatively easy to compute and simple to understand. It is, however, not frequently used because of variance and standard deviation being the more precise and exact measures of dispersion. MAD has some definite utility in the area of inventory control.

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Variance, and Computation

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Like other measures, variance quantifies the extent of variability of individual observations around the mean value. Accordingly, it is computed the same way as mean absolute deviation. On obtaining the deviations $(x_i - \bar{x})$ of individual observations from their mean, these are squared, summed, and divided by the total number of observations.

Thus, the variance of a set of n sample observations, denoted as s^2 , is

$$s^2 = \frac{\sum (x_i - \bar{x})^2}{n} \quad (9.6)$$

in the case of ungrouped data. It is

$$s^2 = \frac{\sum f_i (x_i - \bar{x})^2}{\sum f_i} \quad (9.7)$$

in the case of grouped data, with x_i 's as the class mid-points and $\sum f_i = n$

For the population data consisting of N observations with mean μ , the variance, denoted as σ^2 , is computed as

$$\sigma^2 = \frac{\sum (x_i - \mu)^2}{N} \quad (9.8)$$

in the case of ungrouped data. It is obtained as

$$\sigma^2 = \frac{\sum f_i (x_i - \mu)^2}{\sum f_i} \quad (9.9)$$

in the case of grouped data, with x_i 's as the class mid-points and $\sum f_i = N$.

Applications of Standard Deviation

Variance and standard deviation as the two principal measures of dispersion indicate the magnitude of deviations of a set of observations in terms of their distance from the mean. Standard deviation is expressed in the same unit of measurement as mean. Variance is, however, stated in square units (that is, Rs^2 , or Qtls^2).

A relatively small variance means a high degree of uniformity in the data, with smaller overall divergence of individual observations from their mean. A high variance, on the other hand, indicates a greater degree of divergence of individual observations from the mean. This helps decide which of the two sets of data with the same mean value, is represented more adequately by their respective means. That is, a set of data with smaller variance is represented more adequately by its mean than the one with relatively larger variance.

Another important area where standard deviation has been extensively used relates to drawing statistical inferences. Generally, population characteristics (parameters) such as mean m and standard deviation σ are unknown. The populations being infinite, or time and cost factors prohibiting census operations, these parameters are estimated on the basis of information obtained through a sample.

Since it is necessary to know the reliability of sample based estimates of different population parameters, a perfectly symmetrical (normal) distribution is of immense help

in determining the reliability of the estimates. This is made possible by the fact that the normal distribution covers varying percentage of observations that lie within 1σ , 2σ , and 3σ on either side of its mean μ .

Approximately 68.27 per cent of the total observations are covered between $\mu + \sigma$ and $\mu - \sigma$ (that is, one standard deviation on either side of the mean μ). Similarly, 95.45 per cent and 99.73 per cent of the observations are covered between $\mu \pm 2\sigma$ (two standard deviations on either side of the mean) and $\mu \pm 3\sigma$ (three standard deviations on either side of the mean), respectively. These per cent area relationships are shown in Figure 9.6.

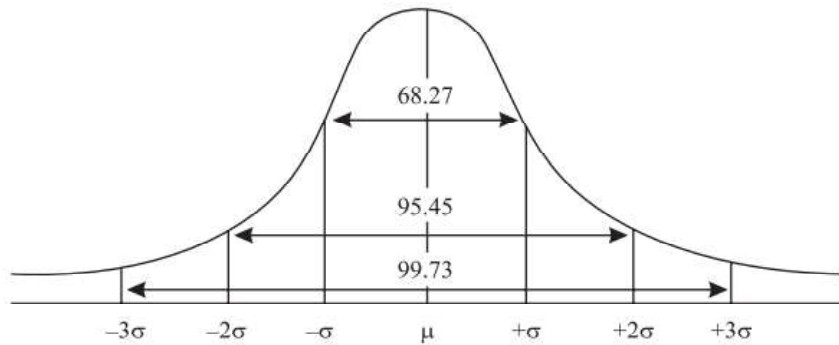


Fig. 9.6 Per Cent Area Relationships

Chebyshev's Theorem

The above area relationships are an extension of Chebyshev theorem, which gives an idea of the extent of dispersion of a set of data in terms of their mean \bar{x} and standard deviation s , regardless of the units in which the data are expressed. The theorem states that a given set of n observations on any variable X , the proportion of observations lying between k standard deviation from mean \bar{x} (that is, between $\bar{x} - ks$ and $\bar{x} + ks$) is at least $1 - (1/k^2)$, where k represents any positive value greater than 1.

Sheppard's Correction

Variance and standard deviation computed from grouped data always contain some error because of grouping of individual observations into different classes, called grouping. *Sheppard's correction* is a factor used for correcting variance for grouping errors. It is $1/12$ of the square of the width of class interval C , which is deducted from the computed variance.

That is,

$$\text{Corrected variance} = \text{Computed variance} - C^2/12, \quad (9.10)$$

wherein $C^2/12$ is known as Sheppard's correction for variance. It is applicable only in the case of frequency distributions of continuous variables. Statisticians are, however, not in agreement over the utility of using the correction factor.

This owes to the fear that it may lead to over-correction and may thus introduce fresh error. What is generally agreed upon is that the correction factor is not to be used without thorough examination of the problem.

NOTES

Check Your Progress

9. What are the drawbacks of the inter-quartile range?
10. If the mean is greater than the median, then the distribution of data is represented by which shape?

9.5 CORRELATION, RANK DIFFERENCE AND PRODUCT MOVEMENT

NOTES

Correlation analysis is the statistical tool generally used to describe the degree to which one variable is related to another. The relationship, if any, is usually assumed to be a linear one. This analysis is used quite frequently in conjunction with regression analysis to measure how well the regression line explains the variations of the dependent variable. In fact, the word correlation refers to the relationship or interdependence between two variables. There are various phenomena which are related to each other. For instance, when demand of a certain commodity increases, its price goes up and when its demand decreases, its price comes down. Similarly, with age the height of children, with height the weight of children, with money the supply and the general level of prices go up. Such sort of relationships can as well be noticed for several other phenomena. The theory by means of which quantitative connections between two sets of phenomena are determined is called the 'Theory of Correlation'.

On the basis of the theory of correlation, one can study the comparative changes occurring in two related phenomena and their cause-effect relation can be examined. It should, however, be borne in mind that X relationships like 'black cat causes bad luck', 'filled up pitchers result in good fortune' and similar other beliefs of the people cannot be explained by the theory of correlation, since they are all imaginary and are incapable of being justified mathematically. Thus, correlation is concerned with the relationship between two related and quantifiable variables. If two quantities vary in sympathy, so that a movement (an increase or decrease) in one tends to be accompanied by a movement in the same or opposite direction in the other and the greater the change in one, the greater is the change in the other, the quantities are said to be correlated. This type of relationship is known as correlation or what is sometimes called, in statistics, as covariation.

For correlation, it is essential that the two phenomena should have a cause-effect relationship. If such relationship does not exist, then one should not talk of correlation. For example, if the height of the students as well as the height of the trees increases, then one should not call it a case of correlation because the two phenomena, viz., the height of students and the height of trees are not even casually related. However, the relationship between the price of a commodity and its demand, the price of a commodity and its supply, the rate of interest and savings, etc. are examples of correlation, since in all such cases the change in one phenomenon is explained by a change in another phenomenon.

It is appropriate here to mention that correlation in case of the phenomena pertaining to natural sciences can be reduced to absolute mathematical term, e.g., heat always increases with light. However, in phenomena pertaining to social sciences, it is often difficult to establish any absolute relationship between two phenomena. Hence, in social sciences, we must take the fact of correlation being established if in a large number of cases, two variables always tend to move in the same or opposite direction.

Correlation can either be positive or it can be negative. Whether correlation is positive or negative would depend upon the direction in which the variables are moving. If both variables are changing in the same direction, then correlation is said to be positive,

but when the variations in the two variables take place in opposite direction, the correlation is termed as negative. This can be explained as follows:

<i>Changes in Independent Variable</i>	<i>Changes in Dependent Variable</i>	<i>Nature of Correlation</i>
Increase (+)↑	Increase (+)↑	Positive (+)
Decrease (-)↓	Decrease (-)↓	Positive (+)
Increase (+)↑	Decrease (-)↓	Negative (-)
Decrease (-)↓	Increase (+)↑	Negative (-)

NOTES

Statisticians have developed two measures for describing the correlation between two variables, viz., the coefficient of determination and the coefficient of correlation. These two methods are explained in detail in the following sections.

9.5.1 Methods of Studying Simple Correlation

The following methods are used to study simple correlation:

Coefficient of Determination

The coefficient of determination (symbolically indicated as r^2 , though some people would prefer to put it as R^2) is a measure of the degree of linear association or correlation between two variables, say X and Y , one of which happens to be an independent variable and the other being a dependent variable. This coefficient is based on the following two types of variations:

- The variation of the Y values around the fitted regression line, viz., $\sum(Y - \hat{Y})^2$, technically known as the unexplained variation.
- The variation of the Y values around their own mean, viz., $\sum(Y - \bar{Y})^2$, technically known as the total variation.

If we subtract the unexplained variation from the total variation, we obtain what is known as the explained variation, i.e., the variation explained by the line of regression. Thus, Explained Variation = (Total variation) – (Unexplained variation)

$$\begin{aligned}
 &= \sum(Y - \bar{Y})^2 - \sum(Y - \hat{Y})^2 \\
 &= \sum(\hat{Y} - \bar{Y})^2
 \end{aligned}$$

The Total and Explained as well as Unexplained variations can be shown as given in Figure 9.7.

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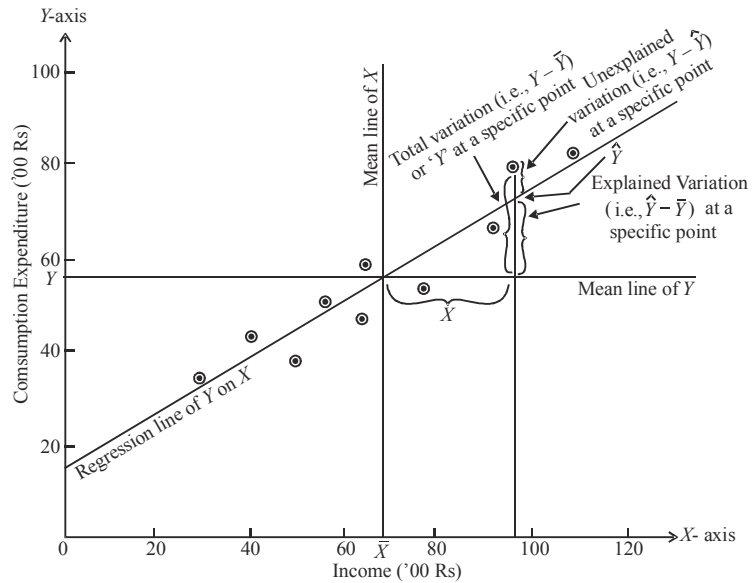


Fig. 9.7 Diagram Showing Total, Explained and Unexplained Variations

Coefficients of determination is that fraction of the total variation of Y which is explained by the regression line. In other words, coefficient of determination is the ratio of explained variation to total variation in the Y variable related to the X variable. Coefficient of determination can be algebraically stated as,

$$r^2 = \frac{\text{Explained variation}}{\text{Total variation}}$$

$$= \frac{\sum(\hat{Y} - \bar{Y})^2}{\sum(Y - \bar{Y})^2}$$

Alternatively, r^2 can also be stated as,

$$r^2 = 1 - \frac{\text{Unexplained variation}}{\text{Total variation}}$$

$$= 1 - \frac{\sum(Y - \hat{Y})^2}{\sum(Y - \bar{Y})^2}$$

Interpreting r^2

The coefficient of determination can have a value ranging from 0 – 1. The value of 1 can occur only if the unexplained variation is 0, which simply means that all the data points in the Scatter diagram fall exactly on the regression line. For a 0 value to occur, $\sum(Y - \bar{Y})^2 = \sum(Y - \hat{Y})^2$, which simply means that X tells us nothing about Y and hence there is no regression relationship between X and Y variables. Values between 0 and 1 indicate the ‘Goodness of fit’ of the regression line to the sample data. The higher the value of r^2 , the better the fit. In other words, the value of r^2 will lie somewhere between 0 and 1. If r^2 has a 0 value then it indicates no correlation, but if it has a value equal to 1 then it indicates that there is perfect correlation and as such the regression line is a perfect estimator. However, in most cases, the value of r^2 will lie somewhere between these two extremes of 1 and 0. One should remember that r^2 close to 1 indicates a strong correlation between X and Y , while an r^2 near 0 means there is little correlation between

these two variables. r^2 value can as well be interpreted by looking at the amount of the variation in Y , the dependant variable, that is explained by the regression line. Supposing, we get a value of $r^2 = 0.925$ then this would mean that the variations in independent variable (say X) would explain 92.5 per cent of the variation in the dependent variable (say Y). If r^2 is close to 1 then it indicates that the regression equation explains most of the variations in the dependent variable (refer Example 9.5).

Example 9.5: Calculate the coefficient of determination (r^2) using the provided data. Calculate and analyse the result.

Observations	1	2	3	4	5	6	7	8	9	10
Income (X) ('00 ₹)	41	65	50	57	96	94	110	30	79	65
Consumption Expenditure (Y) ('00 ₹)	44	60	39	51	80	68	84	34	55	48

Solution:

r^2 can be worked out as follows:

$$\text{Since, } r^2 = 1 - \frac{\text{Unexplained variation}}{\text{Total variation}} = 1 - \frac{\sum(Y - \hat{Y})^2}{\sum(Y - \bar{Y})^2}$$

As, $\sum(Y - \bar{Y})^2 = \sum Y^2 - n\bar{Y}^2$, we can write,

$$r^2 = 1 - \frac{\sum(Y - \hat{Y})^2}{\sum Y^2 - n\bar{Y}^2}$$

Calculating and putting the various values, we have the following equation:

$$r^2 = 1 - \frac{260.54}{34223 - 10(56.3)^2} = 1 - \frac{260.54}{2526.10} = 0.897$$

Analysis of Result: The regression equation used to calculate the value of the coefficient of determination (r^2) from the sample data shows that, about 90 per cent of the variations in consumption expenditure can be explained. In other words, it means that the variations in income explain about 90 per cent of variations in consumption expenditure.

Observation	1	2	3	4	5	6	7	8	9	10
Income (X) ('00 ₹)	41	65	50	57	96	94	110	30	79	65
Consumption Expenditure (Y) ('00 ₹)	44	60	39	51	80	68	84	34	55	48

Properties of Correlation Coefficient

The coefficient of correlation, symbolically denoted by ' r ', is another important measure to describe how well one variable is explained by another. It measures the degree of relationship between the two casually related variables. The value of this coefficient can never be more than +1 or less than -1. Thus, +1 and -1 are the limits of this coefficient. For a unit change in independent variable, if there happens to be a constant change in the dependent variable in the same direction, then the value of the coefficient will be +1 indicative of the perfect positive correlation; but if such a change occurs in the opposite direction, the value of the coefficient will be -1, indicating the perfect negative correlation. In practical life, the possibility of obtaining either a perfect positive or perfect negative

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correlation is very remote particularly in respect of phenomena concerning social sciences. If the coefficient of correlation has a zero value, then it means that there exists no correlation between the variables under study.

There are several methods of finding the coefficient of correlation, but the following ones are considered important:

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- (a) Coefficient of correlation by the method of least squares.
- (b) Coefficient of correlation using simple regression coefficients.
- (c) Coefficient of correlation through product moment method or Karl Pearson's coefficient of correlation.

Whichever of these three methods we adopt, we get the same value of r .

Method of Least Squares

Under this method, first, the estimating equation is obtained using the least square method of simple regression analysis. The equation is worked out as,

$$\hat{Y} = a + bX_i$$

$$\text{Total variation} = \sum (Y - \bar{Y})^2$$

$$\text{Unexplained variation} = \sum (Y - \hat{Y})^2$$

$$\text{Explained variation} = \sum (\hat{Y} - \bar{Y})^2$$

Then, by applying the following formulae, we can find the value of the coefficient of correlation as,

$$\begin{aligned} r &= \sqrt{r^2} = \sqrt{\frac{\text{Explained variation}}{\text{Total variation}}} \\ &= \sqrt{1 - \frac{\text{Unexplained variation}}{\text{Total variation}}} \\ &= \sqrt{1 - \frac{\sum (Y - \hat{Y})^2}{\sum (Y - \bar{Y})^2}} \end{aligned}$$

This clearly shows that the coefficient of correlation happens to be the square root of the coefficient of determination.

Short-cut formula for finding the value of ' r ' by the method of least squares can be repeated and readily written as,

$$r = \sqrt{\frac{a\sum Y + b\sum XY - n\bar{Y}^2}{\sum Y^2 - n\bar{Y}^2}}$$

Where,

a = Y -intercept.

b = Slope of the estimating equation.

X = Values of the independent variable.

Y = Values of dependent variable.

\bar{Y} = Mean of the observed values of Y .

n = Number of items in the sample
(i.e., pairs of observed data).

The plus (+) or the minus (–) sign of the coefficient of correlation worked out by the method of least squares, is related to the sign of ‘ b ’ in the estimating equation, viz., $\hat{Y} = a + bX_i$. If ‘ b ’ has a minus sign, the sign of ‘ r ’ will also be minus, but if ‘ b ’ has a plus sign, then the sign of ‘ r ’ will also be plus. The value of ‘ r ’ indicates the degree along with the direction of the relationship between the two variables X and Y .

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Simple Regression Coefficients

Under this method, the estimating equation of Y and the estimating equation of X is worked out using the method of least squares. From these estimating equations we find the regression coefficient of X on Y , i.e., the slope of the estimating equation of X

(symbolically written as b_{XY}) and this happens to be equal to $r \frac{\sigma_X}{\sigma_Y}$ and similarly, we find

the regression coefficient of Y on X , i.e., the slope of the estimating equation of Y

(symbolically written as b_{YX}) and this happens to be equal to $r \frac{\sigma_Y}{\sigma_X}$. For finding ‘ r ’, the

square root of the product of these two regression coefficients are worked out as¹

$$\begin{aligned} r &= \sqrt{b_{XY} \cdot b_{YX}} \\ &= \sqrt{r \frac{\sigma_X}{\sigma_Y} \cdot r \frac{\sigma_Y}{\sigma_X}} \\ &= \sqrt{r^2} = r \end{aligned}$$

As stated earlier, the sign of ‘ r ’ will depend upon the sign of the regression coefficients. If they have minus sign, then ‘ r ’ will take minus sign but the sign of ‘ r ’ will be plus if regression coefficients have plus sign.

Karl Pearson’s Coefficient

We will look at this method in the next section.

Other Measures

Two other measures are often talked about along with the coefficients of determinations and that of correlation. These are as follows:

- (a) **Coefficient of Non-Determination:** Instead of using coefficient of determination, sometimes coefficient of nondetermination is used. Coefficient of non-determination (denoted by k^2) is the ratio of unexplained variation to total variation in the Y variable related to the X variable. Algebraically,

$$k^2 = \frac{\text{Unexplained variation}}{\text{Total variation}} = \frac{\sum(Y - \hat{Y})^2}{\sum(Y - \bar{Y})^2}$$

Concerning the data of Example 9.5, coefficient of nondetermination will be calculated as follows:

$$k^2 = \frac{260.54}{2526.10} = 0.103$$

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The value of k^2 shows that about 10 per cent of the variation in consumption expenditure remains unexplained by the regression equation we had worked out, viz., $\hat{Y} = 14.000 + 0.616X_i$. In simple terms, this means that variable other than X is responsible for 10 per cent of the variations in the dependent variable Y in the given case.

Coefficient of non-determination can as well be worked out as,

$$k^2 = 1 - r^2$$

Accordingly for Example 9.5, it will be equal to $1 - 0.897 = 0.103$.

Note: Always remember that $r^2 + k^2 = 1$.

(b) Coefficient of Alienation: Based on k^2 , we can work out one more measure, namely the coefficient of alienation, symbolically written as ' k '. Thus, coefficient of alienation, i.e., ' k ' = $\sqrt{k^2}$.

Unlike $r + k^2 = 1$, the sum of ' r ' and ' k ' will not be equal to 1 unless one of the two coefficients is 1 and in this case the remaining coefficients must be zero. In all other cases, ' r ' + ' k ' > 1. Coefficient of alienation is not a popular measure from a practical point of view and is used very rarely.

9.5.2 Methods of Coefficient of Correlation in Educational Statistics

As already discussed, correlation is the relationship between two variables. In the educational set-up, we try to find out the correlation between intelligence and academic achievement, socio-economic status and academic achievement, etc. Intelligence, academic achievement and socio-economic status are known as variables. So correlation refers to the change one variable brings in another variable. The following are some important definitions:

'Variables are attributes or qualities which exhibit differences in magnitude and which vary along some dimension'.
– H. E. Garret.

'Correlation indicates a joint relationship between two variables'.
– R.C. Lathrop.

'A coefficient of correlation is a single number that tells us to what extent two things are related and to what extent variations in the one go with variations in the other'.
– J.P. Guilford.

'Correlation is concerned with describing the degree of relationship between variables'.
– G. H. Ferguson.

If the variables are interdependent, we can say that there is a correlation between the variables. This interdependence between the variables is termed as 'coefficient of correlation'. The four popular methods used for computing coefficient of correlation are Rank difference method, Product moment method, Biserial method and Point biserial method.

Rank Difference Method

Rank difference method was developed by Charles Spearman. The symbol used for this is ' ρ ' (Rho). It is also known as Spearman's coefficient of correlation. In this method, the ranks are given to each and every score according to their value. Then the difference of respective rank (D) is calculated for every individual. Sometimes we get some values or numbers more than once in the scores. This is known as 'tied ranks'. In this case, the

average rank will be given to individuals. Suppose in a math test, A , B , and C (three students) get the highest score, i.e., 80. For them the ranks 1, 2, 3, should not be given, rather the ranks should be added and the result will be divided by the number of students ($1 + 2 + 3 = 6 \div 3 = 2$). Now the rank of the three students, (a , b and c) is 2. All of them have '2' as their rank. The formula used for the calculation of coefficient of correlation is as follows:

$$\rho = 1 - \frac{6\sum D^2}{N(N^2 - 1)}$$

Where, ρ = Coefficient of correlation.

D = Difference in ranks.

N = Total number of cases.

Example 9.6: Compute the coefficient of correlation of the following data between the two tests.

Students	Test I	Test II
A	20	40
B	25	30
C	30	35
D	24	25
E	35	10
F	40	20

Solution: Construct the following table to compute the coefficient of correlation:

Students	Test I	Test II	R1	R2	D = R1 - R2	D ²
A	20	40	6	1	5	25
B	25	30	4	3	1	1
C	30	35	3	2	1	1
D	24	25	5	4	1	1
E	35	10	2	6	-4	16
F	40	20	1	5	-4	16
						$\Sigma D^2 = 60$

$$\begin{aligned} \rho &= 1 - \frac{6\sum D^2}{N(N^2 - 1)} \\ &= 1 - \frac{6 \times 60}{6(35)} \\ &= 1 - \frac{360}{210} \\ &= 1 - 1.71 \\ &= -0.71 \end{aligned}$$

Here, the correlation is high and negative.

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Product Moment Correlation

This method was developed by Karl Pearson. It is symbolized as 'r'. The two methods used for computing the correlation are as follows:

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$$r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Where r = Coefficient of correlation.

x = Deviation of 'x' scores from the mean ($X - M_x$).

y = Deviation of 'y' scores from the mean ($Y - M_y$).

$\sum x^2 = \sum x^2$. $\sum y^2$

$\sum y^2 =$ deviation of 'y' scores from the mean ($Y - M_y$)

The procedure is illustrated in the following example.

Example 9.7: Compute the coefficient of correlation of the following data between test X and test Y.

Students	X	Y
A	10	20
B	20	30
C	30	40
D	40	50
F	50	60

Solution: Construct the following table to compute the coefficient of correlation:

Students	X	Y	(X-M)	(Y-M)	X ²	Y ²	XY
A	10	20	-20	-20	400	400	400
B	20	30	-10	-10	100	100	100
C	30	40	0	0	0	0	0
D	40	50	10	10	100	100	100
E	50	60	20	20	400	400	400
N=5	$\sum x = 150$	$\sum y = 200$			$\sum X^2 = 1000$	$\sum Y^2 = 1000$	$\sum XY = 1000$

$$\text{Mean of 'X'} = \frac{150}{5} = 30$$

$$\text{Mean of 'Y'} = \frac{200}{5} = 40$$

$$\begin{aligned} r &= \frac{\sum XY}{\sqrt{\sum X^2 \cdot \sum Y^2}} \\ &= \frac{1000}{\sqrt{1000 \times 1000}} \\ &= 1 \end{aligned}$$

So, the coefficient of correlation is perfect positive.

Let us calculate the coefficient of correlation by the second method.

$$r = \frac{N \Sigma(XY) - (\Sigma X)(\Sigma Y)}{\sqrt{[N \Sigma X^2 - (\Sigma X)^2][N \Sigma Y^2 - (\Sigma Y)^2]}}$$

Where,

N = The number of pairs observed.

ΣXY = The sum of the products of the scores for X and Y .

ΣX = The sum of score of X .

ΣY = The sum of score of Y .

ΣX^2 = The sum of squared score of X .

ΣY^2 = The sum of squared score of Y .

Example 9.8: Compute the coefficient of correlation of the following data showing test X and test Y .

Students	Test X	Test Y
A	15	30
B	10	10
C	25	20
D	30	15
F	20	25

Solution: Construct the following table to compute the coefficient of correlation:

Students	X	Y	XY	X^2	Y^2
A	15	30	450	225	900
B	10	10	100	100	100
C	25	20	500	625	400
D	30	15	450	900	225
E	20	25	500	400	625
$\Sigma X = 100$		$\Sigma Y = 100$	$\Sigma XY = 2000$	$\Sigma X^2 = 2250$	$\Sigma Y^2 = 2250$

$$r = \frac{N \Sigma(XY) - (\Sigma X)(\Sigma Y)}{\sqrt{[N \Sigma X^2 - (\Sigma X)^2][N \Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = \frac{5 \times 2000 - 100 \times 100}{\sqrt{(5 \times 2250 - 100^2)(5 \times 2250 - 100^2)}}$$

$$r = \frac{10000 - 10000}{\sqrt{(11250 - 10000)(11250 - 10000)}}$$

$$= \frac{0}{\sqrt{(1250)(1250)}}$$

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$$= \frac{0}{\sqrt{1562500}}$$

$$= 0$$

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Thus, the coefficient of correlation between test ‘X’ and test ‘Y’ is zero.

Example 9.9: Calculate the correlation from the following data.

Students	Maths X	Science Y
A	11	11
B	13	10
C	18	17
D	12	13
F	16	14

Solution: Construct the following table to calculate the correlation:

Students	Maths X	Science Y	XY	X ²	Y ²
A	11	11	121	121	121
B	13	10	130	169	100
C	18	17	306	324	289
D	12	13	156	144	169
E	16	14	224	256	196
N=5	ΣX=70	ΣY=65	ΣXY=937	ΣX ² =1014	ΣY ² =875

$$r = \frac{N \sum (XY) - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

$$r = \frac{5 \times 937 - (70) \times (65)}{\sqrt{[5 \times 1014 - (70)^2][5 \times 875 - (65)^2]}}$$

$$= \frac{135}{\sqrt{(170)(150)}} = \frac{135}{\sqrt{25500}}$$

$$= \frac{135}{\sqrt{159.69}} = 0.85$$

Error in Product Moment Coefficient of Correlation

After the calculation of coefficient of correlation, the next thing is to find out the extent to which it is dependable. For this purpose, the Probable Error (PE) of the coefficient of correlation is calculated. At this point, it is enough to write that if the probable error is added to and subtracted from the coefficient of correlation, it would give two such limits within which we can reasonably expect the value of coefficient of correlation to vary. It means that if from the same universe another set of samples was selected on the basis of random sampling, the coefficient of correlation between the two variables in this new sample would not fall outside the limits so established.

The Standard Error (SE) of a Correlation Coefficient

The SE or Standard Error of a correlation coefficient ' r ' is computed by normalizing the fraction of the unexplained variations with respect to ' $n - 2$ ' degrees of freedom i.e.,

$$r = \frac{\sqrt{1-r^2}}{\sqrt{N-2}}$$

Where ' r^2 ' is the coefficient of determination which expresses the fraction of the explained variations (variations in y as the result of variations in x). For example, if r^2 is 0.90, then the independent variable ' y ' is said to explain 90 per cent of the variance in the dependent variable ' x ', but does not explain $1 - r^2$ or 10 per cent of the variance in the dependent variable.

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9.5.3 Biserial Correlation

In many problems we may wish to compute the correlation between traits and other attributes where the members of the group can be measured in one variable, but can be classified into only two categories in the second or dichotomous variable. The term dichotomous means 'cut into two parts'. A researcher, for example, wishes to know the correlation between general intelligence and social adjustment in a group of primary school children. The children can be measured on the first variable (in terms of scores on a test of intelligence), but they can also be simply classified as socially adjusted or socially maladjusted on the second variable. In such a situation, the researcher may compute a 'biserial correlation' between the set of scores on the intelligence test and two category groupings — socially adjusted and socially maladjusted. Other instances of twofold classification with reference to some attribute are athletic, non-athletic, failed and passed, and so on.

Let us illustrate the use of the formula with the help of following example:

To illustrate the computation biserial ' r ' refer Table. The two sub distributions represent the score achieved on Intelligence test in SSB interview by the candidates with and without prior training in SSB.

Calculation of Biserial

	1	2	3
Scores	Training Group	Non-Training Group	Total
85-89	5	6	11
80-84	2	16	18
75-79	6	19	25
70-74	6	27	33
65-69	1	19	20
60-64	0	21	21
55-59	1	16	17
	$N_1 = 21$	$N_2 = 124$	$N = 145$

Where,

$M_T = 71.35$, mean of all 145 scores.

$\sigma = 8.80$, SD of all scores.

$M_p = 77.00$, mean of trained group.

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$M_q = 70.39$, mean of untrained group.
 $p = 0.145$, proportion in Group No. 1.
 $q = 0.855$, proportion in Group No. 2.
 $u = 0.228$, height of ordinate separating.

$$r_{bis} = \frac{77.00 - 70.39}{8.80} \times \frac{(0.145 \times 0.855)}{0.228} = 0.41$$

$$\frac{\sqrt{0.145 \times 0.855}}{-(0.41)^2}$$

$$\sigma_{rbis} = \frac{0.228}{\sqrt{145}} = 0.11$$

Step 1

Compute M_p , the mean of the group of 21. Also, compute M_q , the mean of the untrained group of 124. In our example, $M_p = 77.00$ and $M_q = 70.39$.

Step 2

Compute σ for the whole distribution of 145 cases.

Step 3

There are 21 or 14.5 per cent of the sample in the trained group and 124 or 85.5 per cent in the untrained group. Assuming a normal distribution in interview training for SSB interview, upon which an arbitrary cut has been imposed at a point 35.5 per cent above the mean, we have the situation pictured below in Figure 9.8.

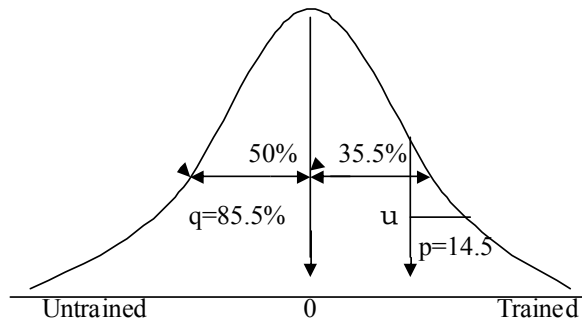


Fig. 9.8 Normal Distribution in an Interview Training Showing Arbitrary Cut at 35.5 Per Cent

The height of the ordinate of the normal curve (u) at the division point, i.e., at 35.5 per cent, may be found from standard tables. This table gives the heights of the ordinates in a normal distribution of unit area, that is, with $N = 1.00$, $M = 0.00$, and $\sigma = 1.00$. Interpolating halfway between 0.35 and 0.36 as per table, we get a u -value of 0.228.

Step 4

Having computed M_p , M_q , σ , p and q we find biserial ' r ' by substituting in the following formula:

$$r_{bis} = \frac{M_p - M_q}{\sigma} \times \frac{pq}{u}$$

The biserial coefficient of correlation or biserial ' r ' in which:

M_p = The mean of the group in the first category – usually the group showing superior or desirable characteristics.

M_q = Mean of the group in the second category or split.

σ = SD of the entire group.

p = Proportion of the entire group in Category 1.

q = Proportion of the entire group in Category 2 ($q = 1 - p$).

u = Height of the normal curve ordinate spreading the portion, p and q .

Figure 9.8 shows how the entire group is divided into two parts on the basis of training. The distance between the means of the two subgroups (M_p and M_q) is a measure of the effect of the split, i.e., of the effect of the dichotomy.

The Standard Error of Biserial 'r'

Provided neither ' p ' nor ' q ' is very small (less than 0.10 to be on the safe side) and that N is large, then the following formula will give a close approximation to the standard error of biserial ' r ':

$$\sigma_{bis} = \frac{\left(\sqrt{\frac{pq}{u}} - r^2_{bis} \right)}{\sqrt{N}}$$

Standard error of biserial ' r ' when neither ' p ' nor ' q ' is less than 0.10 and N is large.

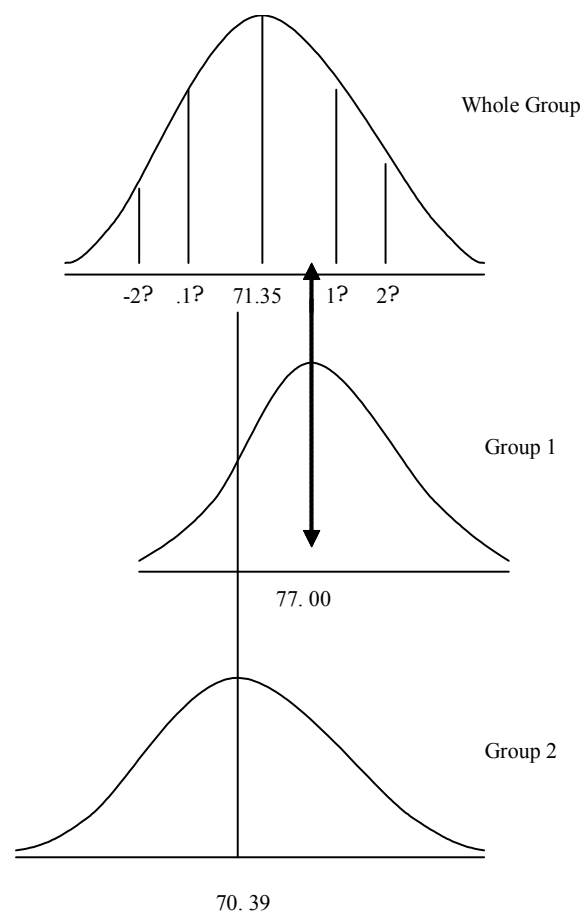


Fig. 9.9 Relationship between Total Group and Two Sub-Groups in Biserial Correlation

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The distance between the means of Groups 1 and 2 is a measure of correlation. When the two means are equal, biserial ' r ' is zero as can be seen in Figure 9.9.

To test the significance of this r_{bis} in terms of its SE, we assume the sampling distribution of r_{bis} to be normal around the population ' r ', and SEr_{bis} to the SD of this sampling distribution. The 0.99 confidence interval for the population r_{bis} is then from 0.13 to 0.69 (i.e., $41 \pm 2.58 \times 0.11$). It appears that we can be quite confident of a positive relationship between training and the intelligence test for SSB interview of at least 0.13 and probably the relations much higher.

Biserial ' r ' gives an estimate of the product moment ' r ' to be expected for the given data when certain assumptions have been met. These are as follows:

- Continuity in the dichotomized trait
- Normality of distribution, underlying the dichotomy
- A large ' N '
- A split that is not too extreme (the closer to 0.50 the better)

Still further limitations to the use of biserial ' r ' should be noted. Biserial ' r ' cannot be used in a regression equation. This coefficient has no standard error of estimate and the score predicted for all of the members of a group is simply the mean of that category. Biserial ' r ' is not limited as is ' r ' to a range of ± 1.00 , rendering comparisons with other coefficients of correlation difficult.

Point Biserial Correlation

Many test questions and various sorts of items are scored to give two responses. For example, problems are marked Pass or Fail, statements True or False, personality inventory items Yes or No, interest items Like or Dislike, and so on. When a two-category split cannot be regarded as representing an underlying normal distribution upon which an arbitrary division has been imposed, but is in fact two discrete groupings, the point biserial ' r ' is the appropriate measure of correlation.

When items are scored simply as 1 if correct and 0 if incorrect, that is, as right or wrong, the assumption of normality in the distribution of right-wrong responses is unwarranted. In such cases, the point biserial ' r ' rather than biserial ' r ' is appropriate. Point biserial ' r ' assumes that the variable which has been classified into two categories can be thought of as concentrated at two distinct points along a graduated scale or continuum. This is shown in Table 9.7. Examples of true dichotomies are male-female, living-dead, loyal-disloyal. Other traits or characteristics which constitute what are virtually genuine dichotomies (when the criteria are exact) are delinquent–non-delinquent, psychotic–normal and colour blind–normal.

The formula for the point biserial ' r ' is as follows:

$$r_{pbis} = \frac{M_p - M_q}{\sigma} \times \sqrt{pq}$$

Point biserial ' r ', a coefficient of correlation in which:

M_p = The M of the group in the first category – usually the group showing superior or desirable characteristics.

M_q = Mean of the group in the second category or split.

M_t = Mean of the entire group.

σ_t = SD of the entire group.

p = Proportion of the entire group in Category 1.

q = Proportion of the entire group in Category 2 ($q = 1 - p$).

Table 9.7 Calculation of Point Biserial 'r'

(A-1 = Item Passed, A-0 = Item Failed)

(1) Students	(2) Test Criterion	(3) Item # 13	(4)	(5)	(6)
	(X)		X^2	Y^2	XY
1	25	1	625	1	25
2	23	1	529	1	23
3	18	0	324	0	—
4	24	0	576	0	—
5	23	1	529	1	23
6	20	0	400	0	—
7	19	0	361	0	—
8	22	1	484	1	22
9	21	1	441	1	21
10	23	1	529	1	23
11	21	0	441	0	—
12	20	0	400	0	—
13	21	1	441	1	21
14	21	1	441	1	21
15	22	1	484	1	22
Total	323	9	7005	9	201

$$N_1 \text{ (Number passing)} = 9$$

$$N_2 \text{ (Number failing)} = 6$$

$$M_p = \frac{201}{9} = 22.33$$

$$p = 0.60$$

$$M_q = \frac{122}{6} = 20.33$$

$$p = 0.40$$

$$M_t = \frac{323}{15} = 21.53$$

$$r_{pbis} = \frac{22.33 - 20.33}{1.82} \sqrt{.60 \times .40}$$

$$\text{i.e., } r_{pbis}$$

$$= 0.54$$

The point biserial 'r' is especially useful in the analysis of the items of a test, i.e., in item-test correlations. Table 9.8 shows the kind of data used in item analysis, except that in a real item analysis the sample would be very much larger and more than one item would be analysed. For convenience in demonstrating the method, there are only 15 subjects in the group. These are listed in Column (1) by number. Column (2) gives the total scores achieved by these subjects on a test (used as the criterion); and in

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Column (3) the response of each student to Item # 13 on the test is shown. A = 1 means that the item was passed and A = 0 that it was failed Columns (4), (5) and (6) are used later in the compilation of the product moment 'r', and are not needed for the computation of the point biserial 'r'.

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The computations at the bottom of the table are utilized in finding r_{pbis} . N_1 the number who got the item right, is 9 and N_2 the number who got the item wrong, is 6. The mean of those passing or M_1 is 201/9 or 22.33 and the mean of those failing or M_2 is 122/6 or 20.33. The mean of the entire sample is 21.53 and the SD of the entire sample is 1.82. The proportion passing (p) is 0.60 and the proportion failing (q) is 0.40. Substituting these values in equation, we have:

$$r_{pbis} = \frac{22.33 - 20.33}{1.82} \sqrt{0.60 \times 0.40}$$

$$= 0.54$$

It seems clear that item number 13 is substantially correlated with the criterion and is passed by high scorers more often than by low scorers. Items like number 13 are good items, whereas items which correlate negatively or zero with the criterion are poor items.

The point biserial 'r' is a product moment 'r'. To show this, we have computed 'r' for the data of Table 9.8 by means of the formula

$$r = \frac{(N \sum XY) - (\sum X \cdot \sum Y)}{\sqrt{[(N \sum Y^2) - (\sum Y)^2] [(N \sum X^2) - (\sum X)^2]}}$$

Substituting the necessary data from Table 9.8 we have:

$$r = \frac{(15 \times 201) - (323 \times 9)}{\sqrt{[(15 \times 9) - (9)^2] [(15 \times 7005) - (323)^2]}} = 0.54$$

Table 9.8 helps in interpretation of the coefficient of correlation.

Table 9.8 Interpreting the Coefficient of Correlation

Value of 'r'	Degree of Correlation
± 0.00 to ± 0.10	Marked by low and negligible correlation
± 0.10 to ± 0.30	Very low ± correlation
± 0.30 to ± 0.50	Low ± correlation
± 0.50 to ± 0.70	Moderate ± correlation
± 0.70 to ± 0.90	High ± correlation
± 0.90 to ± 0.99	Very high ± correlation
± 1	Perfect ± correlation.

9.5.4 Regression Analysis

The term 'regression' was first used in 1877 by Sir Francis Galton who made a study that showed that the height of children born to tall parents will tend to move back or 'regress' toward the mean height of the population. He designated the word regression as the name of the process of predicting one variable from another variable. He coined the term multiple regression to describe the process by which several variables are used to predict another. Thus, when there is a well-established relationship between variables,

it is possible to make use of this relationship in making estimates and to forecast the value of one variable (the unknown or the dependent variable) on the basis of the other variable/s (the known or the independent variable/s). A banker, for example, could predict deposits on the basis of per capita income in the trading area of bank. A marketing manager, may plan his advertising expenditures on the basis of the expected effect on total sales revenue of a change in the level of advertising expenditure. Similarly, a hospital superintendent could project his need for beds on the basis of total population. Such predictions may be made by using regression analysis. An investigator may employ regression analysis to test his theory having the cause and effect relationship. All these explain that regression analysis is an extremely useful tool especially in problems of business and industry involving predictions.

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Assumptions in Regression Analysis

While making use of the regression techniques for making predictions, the following are always assumed:

- (a) There is an actual relationship between the dependent and independent variables.
- (b) The values of the dependent variable are random but the values of the independent variable are fixed quantities without error and are chosen by the experimenter.
- (c) There is a clear indication of direction of the relationship. This means that dependent variable is a function of independent variable. For example, when we say that advertising has an effect on sales, then we are saying that sales has an effect on advertising.
- (d) The conditions (that existed when the relationship between the dependent and independent variable was estimated by the regression) are the same when the regression model is being used. In other words, it simply means that the relationship has not changed since the regression equation was computed.
- (e) The analysis is to be used to predict values within the range (and not for values outside the range) for which it is valid.

Simple Linear Regression Model

In case of simple linear regression analysis, a single variable is used to predict another variable on the assumption of linear relationship (i.e., relationship of the type defined by $Y = a + bX$) between the given variables. The variable to be predicted is called the dependent variable and the variable on which the prediction is based is called the independent variable.

Simple linear regression model (or the Regression Line) is stated as,

$$Y_i = a + bX_i + e_i$$

Where,

Y_i = The dependent variable

X_i = The independent variable

e_i = Unpredictable random element (usually called residual or error term)

- (a) a represents the Y -intercept, i.e., the intercept specifies the value of the dependent variable when the independent variable has a value of zero. (However, this term has practical meaning only if a zero value for the independent variable is possible).
- (b) b is a constant, indicating the slope of the regression line. Slope of the line indicates the amount of change in the value of the dependent variable for a unit change in the independent variable.

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If the two constants (viz., a and b) are known, the accuracy of our prediction of Y (denoted by \hat{Y} and read as Y -hat) depends on the magnitude of the values of e_i . If in the model, all the e_i tend to have very large values then the estimates will not be very good, but if these values are relatively small, then the predicted values (\hat{Y}) will tend to be close to the true values (Y_i).

Estimating the Intercept and Slope of the Regression Model (or Estimating the Regression Equation)

The two constants or the parameters viz., ' a ' and ' b ' in the regression model for the entire population or universe are generally unknown and as such are estimated from sample information. The following are the two methods used for estimation:

- (a) Scatter diagram method
- (b) Least squares method

1. Scatter Diagram Method

This method makes use of the Scatter diagram also known as Dot diagram. *Scatter diagram* is a diagram representing two series with the known variable, i.e., independent variable plotted on the X -axis and the variable to be estimated, i.e., dependent variable to be plotted on the Y -axis on a graph paper (see Figure 9.10) to get the following information illustrated in Table 9.9:

Table 9.9 Table Derived from Scatter Diagram

<i>Income</i> X (Hundreds of Rupees)	<i>Consumption Expenditure</i> Y (Hundreds of Rupees)
41	44
65	60
50	39
57	51
96	80
94	68
110	84
30	34
79	55
65	48

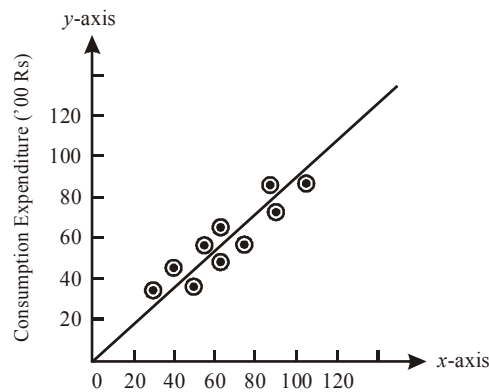


Fig. 9.10 Scatter Diagram

The scatter diagram by itself is not sufficient for predicting values of the dependent variable. Some formal expression of the relationship between the two variables is necessary for predictive purposes. For the purpose, one may simply take a ruler and draw a straight line through the points in the scatter diagram and this way can determine the intercept and the slope of the said line and then the line can be defined as $\hat{Y} = a + bX_i$, with the help of which we can predict Y for a given value of X . However, there are shortcomings in this approach. For example, if five different persons draw such a straight line in the same scatter diagram, it is possible that there may be five different estimates of a and b , especially when the dots are more dispersed in the diagram. Hence, the estimates cannot be worked out only through this approach. A more systematic and statistical method is required to estimate the constants of the predictive equation. The least squares method is used to draw the best fit line.

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2. Least Square Method

The least squares method of fitting a line (the line of best fit or the regression line) through the scatter diagram is a method which minimizes the sum of the squared vertical deviations from the fitted line. In other words, the line to be fitted will pass through the points of the scatter diagram in such a way that the sum of the squares of the vertical deviations of these points from the line will be a minimum.

The meaning of the least squares criterion can be easily understood through Figure 9.11, where the earlier Figure 9.10 in scatter diagram has been reproduced along with a line which represents the least squares line to fit the data.

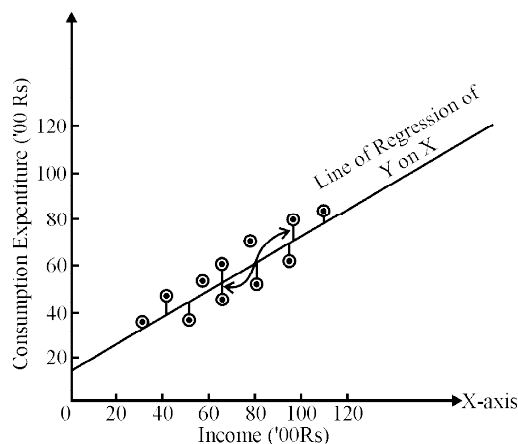


Fig. 9.11 Scatter Diagram, Regression Line and Short Vertical Lines Representing 'e'

In Figure 9.10, the vertical deviations of the individual points from the line are shown as the short vertical lines joining the points to the least squares line. These deviations will be denoted by the symbol 'e'. The value of 'e' varies from one point to another. In some cases it is positive, while in others it is negative. If the line drawn happens to be the least squares line, then the values of $\sum e_i$ is the least possible. It is because of this feature the method is known as Least Squares Method.

Why we insist on minimizing the sum of squared deviations is a question that needs explanation. If we denote the deviations from the actual value Y to the estimated value \hat{Y} as $(Y - \hat{Y})$ or e_i , it is logical that we want the $\sum(Y - \hat{Y})$ or $\sum_{i=1}^n e_i$, to be as small as

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possible. However, mere examining $\Sigma(Y - \hat{Y})$ or $\sum_{i=1}^n e_i$, is inappropriate, since any e_i can be positive or negative. Large positive values and large negative values could cancel one another. However, large values of e_i regardless of their sign, indicate a poor prediction. Even if we ignore the signs while working out $\sum_{i=1}^n |e_i|$, the difficulties may continue. Hence, the standard procedure is to eliminate the effect of signs by squaring each observation. Squaring each term accomplishes two purposes, viz., (i) It magnifies (or penalizes) the larger errors, and (ii) It cancels the effect of the positive and negative values (since a negative error when squared becomes positive). The choice of minimizing the squared sum of errors rather than the sum of the absolute values implies that there are many small errors rather than a few large errors. Hence, in obtaining the regression line, we follow the approach that the sum of the squared deviations be minimum and on this basis work out the values of its constants viz., ‘ a ’ and ‘ b ’ also known as the intercept and the slope of the line. This is done with the help of the following two normal equations:⁵

$$\Sigma Y = na + b\Sigma X$$

$$\Sigma XY = a\Sigma X + b\Sigma X^2$$

In these two equations, ‘ a ’ and ‘ b ’ are unknowns and all other values viz., ΣX , ΣY , ΣX^2 , ΣXY , are the sum of the products and cross products to be calculated from the sample data, and ‘ n ’ means the number of observations in the sample.

Example 9.10 explains the Least squares method.

Example 9.10: Fit a regression line $\hat{Y} = a + bX_i$ by the method of Least squares to the following sample information.

Observations	1	2	3	4	5	6	7	8	9	10
Income (X) ('00 ₹)	41	65	50	57	96	94	110	30	79	65
Consumption Expenditure (Y) ('00 ₹)	44	60	39	51	80	68	84	34	55	48

Solution:

We are to fit a regression line $\hat{Y} = a + bX_i$ to the given data by the method of Least Squares. Accordingly, we work out the ‘ a ’ and ‘ b ’ values with the help of the normal equations as stated above and also for the purpose, work out ΣX , ΣY , ΣXY , ΣX^2 values from the given sample information table on summations for regression equation.

Summations for Regression Equation

Observations	Income X (‘00 ₹)	Consumption Expenditure Y (‘00 ₹)	XY	X^2	Y^2
1	41	44	1804	1681	1936
2	65	60	3900	4225	3600
3	50	39	1950	2500	1521
4	57	51	2907	3249	2601

5	96	80	7680	9216	6400
6	94	68	6392	8836	4624
7	110	84	9240	12100	7056
8	30	34	1020	900	1156
9	79	55	4345	6241	3025
10	65	48	3120	4225	2304
<hr/>					
$n = 10$	$\sum X = 687$	$\sum Y = 563$	$\sum XY = 42358$	$\sum X^2 = 53173$	$\sum Y^2 = 34223$

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Putting the values in the required normal equations we have,

$$563 = 10a + 687b$$

$$42358 = 687a + 53173b$$

Solving these two equations for a and b we obtain,

$$a = 14.000 \quad \text{and} \quad b = 0.616$$

Hence, the equation for the required regression line is,

$$\hat{y} = a + bX_i$$

or,

$$\hat{y} = 14.000 + 0.616X_i$$

This equation is known as the regression equation of Y on X from which Y values can be estimated for given values of X variable.

Checking the Accuracy of Equation

After finding the regression line, one can check its accuracy also. The method to be used for the purpose follows from the mathematical property of a line fitted by the method of least squares, viz., the individual positive and negative errors must sum to zero. In other words, using the estimating equation one must find out whether the term $\sum(Y - \hat{Y})$ is zero and if this is so, then one can reasonably be sure that he has not committed any mistake in determining the estimating equation.

The Problem of Prediction

When we talk about prediction or estimation, we usually imply that if the relationship $Y_i = a + bX_i + e_i$ exists, then the regression equation, $\hat{Y} = a + bX_i$ provides a base for making estimates of the value of Y which will be associated with particular values of X . In Example 9.10, we worked out the regression equation for the income and consumption data as,

$$\hat{Y} = 14.000 + 0.616X_i$$

On the basis of this equation, we can make a point estimate of Y for any given value of X . Suppose we wish to estimate the consumption expenditure of individuals with income of ₹ 10,000. We substitute $X = 100$ for the same in our equation and get an estimate of consumption expenditure as,

$$\hat{Y} = 14.000 + 0.616(100) = 75.60$$

Thus, the regression relationship indicates that individuals with ₹ 10,000 of income may be expected to spend approximately ₹ 7,560 on consumption. However, this is only an expected or an estimated value and it is possible that actual consumption expenditure of the individual with that income may deviate from this amount and if so, then our

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estimate will be an error, the likelihood of which will be high if the estimate is applied to any one individual. The interval estimate method is considered better and it states an interval in which the expected consumption expenditure may fall. Remember that the wider the interval, the greater the level of confidence we can have, but the width of the interval (or what is technically known as the precision of the estimate) is associated with a specified level of confidence and is dependent on the variability (consumption expenditure in our case) found in the sample. This variability is measured by the standard deviation of the error term, 'e', and is popularly known as the standard error of the estimate.

Standard Error of the Estimate

Standard error of estimate is a measure developed by statisticians for measuring the reliability of the estimating equation. Like the standard deviation, the Standard Error (S.E.) of \hat{Y} measures the variability or scatter of the observed values of Y around the regression line. Standard Error of Estimate (S.E. of \hat{Y}) is worked out as,

$$\text{S.E. of } \hat{Y} \text{ (or } S_e) = \sqrt{\frac{\sum (Y - \hat{Y})^2}{n - 2}} = \sqrt{\frac{\sum e^2}{n - 2}}$$

Where, S.E. of \hat{Y} (or S_e) = Standard error of the estimate.

Y = Observed value of Y .

\hat{Y} = Estimated value of Y .

e = The error term = $(Y - \hat{Y})$.

n = Number of observations in the sample.

Note: In the above formula, $n - 2$ is used instead of n because of the fact that two degrees of freedom are lost in basing the estimate on the variability of the sample observations about the line with two constants viz., 'a' and 'b' whose position is determined by those same sample observations.

The square of the S_e , also known as the variance of the error term, is the basic measure of reliability. The larger the variance, the more significant are the magnitudes of the e 's and the less reliable is the regression analysis in predicting the data.

Interpreting the Standard Error of Estimate and Finding the Confidence Limits for the Estimate in Large and Small Samples

The larger the S.E. of estimate (SE_e), the greater happens to be the dispersion, or scattering, of given observations around the regression line. However, if the S.E. of estimate happens to be zero, then the estimating equation is a 'perfect' estimator (i.e., cent per cent correct estimator) of the dependent variable.

(a) In case of large samples, i.e., where $n > 30$ in a sample, it is assumed that the observed points are normally distributed around the regression line and we may find that,

- 68 per cent of all points lie within $\hat{Y} \pm 1 SE_e$ limits.
- 95.5 per cent of all points lie within $\hat{Y} \pm 2 SE_e$ limits.
- 99.7 per cent of all points lie within $\hat{Y} \pm 3 SE_e$ limits.

This can be stated as,

- The observed values of Y are normally distributed around each estimated value of \hat{Y} and.

- The variance of the distributions around each possible value of \hat{Y} is the same.

(b) In case of small samples, i.e., where $n \leq 30$ in a sample the 't' distribution is used for finding the two limits more appropriately.

This is done as follows:

$$\text{Upper limit} = \hat{Y} + t (SE_e)$$

$$\text{Lower limit} = \hat{Y} - t (SE_e)$$

Where, \hat{Y} = The estimated value of Y for a given value of X .

SE_e = The standard error of estimate.

t = Table value of 't' for given degrees of freedom for a specified confidence level.

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Some other Details Concerning Simple Regression

Sometimes, the estimating equation of Y also known as the regression equation of Y on X , is written as,

$$(\hat{Y} - \bar{Y}) = r \frac{\sigma_Y}{\sigma_X} (X_i - \bar{X})$$

or,
$$\hat{Y} = r \frac{\sigma_Y}{\sigma_X} (X_i - \bar{X}) + \bar{Y}$$

Where, r = Coefficient of simple correlation between X and Y .

σ_Y = Standard deviation of Y .

σ_X = Standard deviation of X .

\bar{X} = Mean of X .

\bar{Y} = Mean of Y .

\hat{Y} = Value of Y to be estimated.

X_i = Any given value of X for which Y is to be estimated.

This is based on the formula we have used, i.e., $\hat{Y} = a + bX_i$. The coefficient of X_i is defined as,

$$\text{Coefficient of } X_i = b = r \frac{\sigma_Y}{\sigma_X}$$

(Also known as regression coefficient of Y on X or slope of the regression line of Y on X) or b_{YX} .

$$\begin{aligned} &= \frac{\sum XY - n\bar{X}\bar{Y} \times \sqrt{\sum Y^2 - n\bar{Y}^2}}{\sqrt{\sum Y^2 - n\bar{Y}^2} \sqrt{\sum X^2 - n\bar{X}^2} \sqrt{\sum X^2 - n\bar{X}^2}} \\ &= \frac{\sum XY - n\bar{X}\bar{Y}}{\sum X^2 - n\bar{X}^2} \end{aligned}$$

and

$$a = -r \frac{\sigma_Y}{\sigma_X} \bar{X} + \bar{Y}$$

$$= \bar{Y} - b\bar{X} \quad \left(\text{since } b = r \frac{\sigma_Y}{\sigma_X} \right)$$

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Similarly, the estimating equation of X , also known as the regression equation of X on Y , can be stated as,

$$(\hat{X} - \bar{X}) = r \frac{\sigma_X}{\sigma_Y} (Y - \bar{Y})$$

or

$$\hat{X} = r \frac{\sigma_X}{\sigma_Y} (Y - \bar{Y}) + \bar{X}$$

and the

$$\text{Regression coefficient of } X \text{ on } Y \text{ (or } b_{XY}) = r \frac{\sigma_X}{\sigma_Y} = \frac{\sum XY - n\bar{X}\bar{Y}}{\sum Y^2 - n\bar{Y}^2}$$

If we are given the two regression equations as stated above, along with the values of ‘ a ’ and ‘ b ’ constants to solve the same for finding the value of X and Y , then the values of X and Y so obtained, are the mean values of X (i.e., \bar{X}) and the mean value of Y (i.e., \bar{Y}).

If we are given the two regression coefficients (viz., b_{XY} and b_{YX}), then we can work out the value of coefficient of correlation by just taking the square root of the product of the regression coefficients as shown,

$$\begin{aligned} r &= \sqrt{b_{YX} \cdot b_{XY}} \\ &= \sqrt{r \frac{\sigma_Y}{\sigma_X} \cdot r \frac{\sigma_X}{\sigma_Y}} \\ &= \sqrt{r \cdot r} = r \end{aligned}$$

The (\pm) sign of r will be determined on the basis of the sign of the given regression coefficients. If regression coefficients have minus sign then r will be taken with minus ($-$) sign and if regression coefficients have plus sign then r will be taken with plus ($+$) sign, (Remember that both regression coefficients will necessarily have the same sign, whether it is minus or plus, for their sign is governed by the sign of coefficient of correlation.) To understand it better, see Examples 9.11 and 9.12.

Example 9.11: Given is the following information:

	\bar{X}	\bar{Y}
Mean	39.5	47.5
Standard Deviation	10.8	17.8

Simple correlation coefficient between X and Y is $= + 0.42$.

Find the estimating equation of Y and X .

Solution:

Estimating equation of Y can be worked out as

$$\therefore (\hat{Y} - \bar{Y}) = r \frac{\sigma_Y}{\sigma_X} (X_i - \bar{X})$$

or

$$\begin{aligned} \hat{Y} &= r \frac{\sigma_Y}{\sigma_X} (X_i - \bar{X}) + \bar{Y} \\ &= 0.42 \frac{17.8}{10.8} (X_i - 39.5) + 47.5 \end{aligned}$$

$$= 0.69X_i - 27.25 + 47.5$$

$$= 0.69X_i + 20.25$$

Similarly, the estimating equation of X can be worked out as

$$\therefore (\hat{X} - \bar{X}) = r \frac{\sigma_X}{\sigma_Y} (Y_i - \bar{Y})$$

$$\text{or } \hat{X} = r \frac{\sigma_X}{\sigma_Y} (Y_i - \bar{Y}) + \bar{X}$$

$$\text{or } = 0.42 \frac{10.8}{17.8} (Y_i - 47.5) + 39.5$$

$$= 0.26Y_i - 12.35 + 39.5$$

$$= 0.26Y_i + 27.15$$

Example 9.12: The following is the given data:

Variance of $X = 9$

Regression equations:

$$4X - 5Y + 33 = 0$$

$$20X - 9Y - 107 = 0$$

- Find: (a) Mean values of X and Y
 (b) Coefficient of Correlation between X and Y
 (c) Standard deviation of Y .

Solution:

(a) For finding the mean values of X and Y , we solve the two given regression equations for the values of X and Y as follows:

$$4X - 5Y + 33 = 0 \quad \dots(1)$$

$$20X - 9Y - 107 = 0 \quad \dots(2)$$

If we multiply Equation (1) by 5, we have the following equations:

$$20X - 25Y = -165 \quad \dots(3)$$

$$20X - 9Y = 107 \quad \dots(2)$$

$$\begin{array}{r} - \quad + \quad - \\ \hline -16Y = -272 \end{array}$$

Subtracting Equation (2) from (3)

$$\text{or } Y = 17$$

Putting this value of Y in Equation (1) we have,

$$4X = -33 + 5(17)$$

$$\text{or } X = \frac{-33 + 85}{4} = \frac{52}{4} = 13$$

$$\text{Hence, } \bar{X} = 13 \quad \text{and} \quad \bar{Y} = 17$$

(b) For finding the coefficient of correlation, we first presume one of the two given regression equations as the estimating equation of X . Let equation $4X - 5Y + 33 = 0$ be the estimating equation of X , then we have,

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$$\hat{X} = \frac{5Y_i}{4} - \frac{33}{4}$$

and

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From this we can write $b_{XY} = \frac{5}{4}$.

The other given equation is then taken as the estimating equation of Y and can be written as,

$$\hat{Y} = \frac{20X_i}{9} - \frac{107}{9}$$

and from this we can write $b_{YX} = \frac{20}{9}$.

If the above equations are correct then r must be equal to,

$$r = \sqrt{5/4 \times 20/9} = \sqrt{25/9} = 5/3 = 1.6$$

which is an impossible equation, since r can in no case be greater than 1. Hence, we change our supposition about the estimating equations and by reversing it, we re-write the estimating equations as,

$$\hat{X} = \frac{9Y_i}{20} + \frac{107}{20}$$

and

$$\hat{Y} = \frac{4X_i}{5} + \frac{33}{5}$$

Hence,

$$\begin{aligned} r &= \sqrt{9/20 \times 4/5} \\ &= \sqrt{9/25} \\ &= 3/5 \\ &= 0.6 \end{aligned}$$

Since, regression coefficients have plus signs, we take $r = +0.6$.

(c) Standard deviation of Y can be calculated,

\therefore Variance of $X = 9$ \therefore Standard deviation of $X = 3$

$$\therefore b_{YX} = r \frac{\sigma_Y}{\sigma_X} = \frac{4}{5} = 0.6 \frac{\sigma_Y}{3} = 0.2\sigma_Y$$

$$\text{Hence, } \sigma_Y = 4$$

Alternatively, we can work it out as,

$$\therefore b_{XY} = r \frac{\sigma_X}{\sigma_Y} = \frac{9}{20} = 0.6 \frac{\sigma_X}{\sigma_Y} = \frac{1.8}{\sigma_Y}$$

$$\text{Hence, } \sigma_Y = 4$$

Uses and Advantages of Regression and Prediction

The concept and technique is widely used in the studies of education and psychology. It is mainly used in behavioural sciences.

- There is linearity of distribution between mental abilities and academic performance. It is widely used in educational guidance services.
- The diagnostic tests and counselling services make use of the technique.

- The purpose of the aptitude test is to predict the future course of behaviours with reference to job performance and skills development. Therefore, it has great scope in vocational guidance services.
- The scholastic aptitude and selection of vocational courses require the higher predictive validity in terms of future course of behaviour.
- It has the greater scope for the employees to apply for jobs and predict how their performance will be.

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Example 9.13: Two achievement tests in arithmetic and science are administered to a sample. The following statistics are obtained.

Arithmetic (X)	Science (Y)
$M_x = 60$	$M_y = 48$
$\sigma_x = 15$	$\sigma_y = 12$
$r_{xy} = 0.60$	

- (a) If science scores of a student are 40 can you predict his score in arithmetic?
 (b) If a student scores 70 in arithmetic can you predict his score in science?

Solution:

- (a) X (arithmetic score) is to be predicted on $Y = 40$ (science score X on Y regression equation)

$$X = r \frac{\sigma_x}{\sigma_y} (Y - M_y) + M_x \quad (\text{Raw scores})$$

$$= 0.60 \frac{15}{12} (40 - 48) + 60$$

$$= 54$$

If we predict Y on $X = 54$, the Y on X equation is used as Y on X regression equation.

(X on Y)

$$Y = r \frac{\sigma_y}{\sigma_x} (X - M_x) + M_y \quad (\text{Raw scores})$$

$$= 0.60 \frac{12}{15} (54 - 60) + 48$$

$$= 45.12$$

When $Y = 40$, predicted X is 54. The same value of $X = 54$ is given Y is to be predicted the value comes 45.12 which is nearer to the general mean of X , i.e., ($M_x = 60$).

- (b) Y is to be predicted when $X = 70$ is given Y on X regression equation.

$$Y = r \frac{\sigma_y}{\sigma_x} (X - M_x) + M_y \quad (\text{Raw scores})$$

$$= 0.60 \frac{12}{15} (70 - 60) + 48$$

$$= 52.80$$

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If we predict X on Y when $Y = 52.80$, the X on Y equation is used (X on Y) regression equation.

$$X = r \frac{\sigma_y}{\sigma_x} (Y - M_y) + M_x \quad (\text{Raw scores})$$

$$= 0.60 \frac{15}{12} (52.80 - 48) + 60$$

$$= 63.60$$

When $X = 70$ predicted Y is 52.80. The value of $Y = 52.80$ is to be predicted to return the value of X . It comes 63.60 which is close to general mean of X scores ($M_x = 60$).

Example 9.14: The coefficient of correlation between history and geography achievement scores is 0.72 and other statistics are as follows:

Subjects	History (X)	Geography (Y)
Mean	$M_x = 50$	$M_y = 60$
SD	$\sigma_x = 10$	$\sigma_y = 12$
Correlation Coefficient $r_{xy} = 0.72$		

(a) Student A $X = 60$ $Y = ?$

(b) Students $X = ?$ $Y = 70$

(c) Develop regression equations.

Solution: The regression equations are used for calculating the values of X and Y .

- Y is to be predicted when $X = 60$. In this situation, Y on X regression equation is used.

$$Y = r \frac{\sigma_y}{\sigma_x} (X - M_x) + M_y \quad (\text{Raw Scores})$$

$$= 0.72 \frac{12}{10} (60 - 50) + 60$$

$$= 51.60 + 17 = 68.60$$

The regression equation may be developed for Y .

$$Y = 0.72 \frac{12}{10} (X - 50) + 60$$

$$Y = 0.86X + 17$$

- X is to be predicted when $Y = 70$. In this case X on Y regression equation is used.

$$X = r \frac{\sigma_x}{\sigma_y} (Y - M_y) + M_x \quad (\text{Raw Scores})$$

$$= 0.72 \frac{10}{12} (70 - 60) + 50$$

$$= 42 + 14 = 56$$

The regression equation for predicting X scores would be:

$$X = r \frac{\sigma_x}{\sigma_y} (Y - M_y) + M_x$$

$$= 0.72 \frac{10}{12} (Y - 60) + 50$$

$$X = 60Y + 14$$

Regression coefficients for X is 60 and for Y is 0.86

$$r^2 = b_{xy} \times b_{yx} \quad (\text{Variance})$$

$$= 0.86 \times 0.60 = 0.516$$

$$r^2 = (0.72)^2 = 0.51$$

This is the technique to check the calculation.

Example 9.15: The value of regression equations is given below. Calculate the value of X on Y and Y on X .

Prediction	X	Y
Mean	$M_x = 75.28$	$M_y = 43.45$
	$\sigma_x = 10$	$\sigma_y = 12$
	$X(\text{Score}) = 73$	$Y(\text{Score}) = 45$

Solution:

The students who have a score of 73 in X variable, have score the following on Y variable:

$$Y = r \frac{\sigma_y}{\sigma_x} (X - M_x) + M_y \quad (\text{Raw Scores})$$

$$\begin{aligned} \text{When } X(\text{Score}) &= X - M_x \\ &= 1.63 (73 - 75.28) + 43.45 \\ &= 1.63 \times 2.28 + 43.45 \\ &= 47.13 \\ &= 47 \end{aligned}$$

Students who score 45 on Y variable, will score the following on X variable:

$$\begin{aligned} X &= r \frac{\sigma_x}{\sigma_y} (Y - M_y) + M_x \quad (\text{Raw Scores}) \\ &= 2.52 (45 - 43.45) + 75.28 \\ &= 2.58 \times 1.55 + 75.28 \\ &= 79.19 \\ &= 79 \end{aligned}$$

NOTES

Check Your Progress

- On what basis is the correlation deemed to be negative or positive?
- What are the four popular methods of computing coefficient of correlation in educational statistics?
- When is the biserial correlation used?
- Define a scatter diagram.
- What happens when the S.E. of estimate happens to be zero?

9.6 SUMMARY

NOTES

- Classification means separating items according to similar characteristics and grouping them into various classes.
- The data may be classified into 4 broad categories: geographical, chronological, qualitative and quantitative.
- A frequency distribution can be defined as the list of all the values obtained in the data and the corresponding frequency with which these values occur in the data.
- Cumulative frequency means summing up the consecutive frequencies. There can be two types: less than cumulative frequency distribution or more than cumulative frequency.
- The relative frequency distribution can be formed by dividing the frequency in each class of the frequency distribution by the total number of observations. These are helpful while comparing two or more frequency distribution in which the number of cases under investigation are not equal.
- Diagrams and graphs give visual indications of magnitudes, groupings, trends and patterns in the data. Bar diagram, pie chart and pictogram are examples of diagrammatic representation, whereas histogram, frequency polygon and cumulative frequency curve are examples of graphic representation.
- There are several commonly used measures of central tendency, such as arithmetic mean, mode and median. These values are very useful not only in presenting the overall picture of the entire data but also for the purpose of making comparisons among two or more sets of data.
- Arithmetic mean is the sum of all the values of the items in a series divided by the number of items.
- Median refers to the measure or value of the central item in an arranged series.
- Mode is the size of the variable which occurs most frequently.
- Range; inter-quartile range; variance and standard deviation; and coefficient of variation are the methods of knowing how the data is distributed about the mean.
- The shape of data describes the manner in which the data is distributed. It can be symmetrical, positively skewed or negatively skewed.
- Correlational analysis is a statistical tool generally used to describe the degree to which one variable is related to another. It can be either positive or negative depending upon the direction in which the variables are moving.
- There are different methods of studying simple correlation: coefficient of determination, methods of least squares, simple regression coefficients and product moment method.
- Methods of coefficient of correlation in educational statistics are rank difference method, product moment method, biserial method and point biserial method.
- The term 'regression' was first used in 1877 by Sir Francis Galton who made a study that showed that the height of children born to tall parents will tend to move

back or ‘regress’ toward the mean height of the population. He designated the word regression as the name of the process of predicting one variable from another variable.

- To estimate the intercept and slope of the regression model, we can use two methods: scatter diagram method and least square method.

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9.7 KEY TERMS

- **Classification:** It refers to the separation of items according to similar characteristics and grouping them into various classes.
- **Frequency distribution:** It is the list of all the values obtained in the data and the corresponding frequency with which these values occur in the data.
- **Arithmetic mean:** It is the sum of all the values of the items in a series divided by the number of items.
- **Median:** It refers to the measure or value of the central item in an arranged series.
- **Mode:** It is the size of the variable which occurs most frequently.
- **Correlation analysis:** It is a statistical tool generally used to describe the degree to which one variable is related to another.

9.8 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. The four broad ways in which data is classified are geographical, chronological, qualitative and quantitative.
2. When the interest of the investigator focusses on the number of items below a specified value, then this specified value is the upper limit of the class interval. It is known as less than cumulative frequency distribution.
3. The stem and leaf display is the type of presentation of data distribution helps to condense data but still retain the individuality of the data.
4. Histogram, frequency polygon, and cumulative frequency curve (ogive) are the different types of graphic representation.
5. Since, the computation of the mean is based upon inclusion of all values in the data, an extreme value in the data would shift the mean towards it, this making the mean unrepresentative of the data.
6. If the total number of values is odd, then we simply take the middle values as the median.
7. Mode is the only measure of central tendency which can be used for qualitative data.
8. The weighted arithmetic mean is particularly useful where we have to compute the mean of means. That is, when we are given two arithmetic means, one for each of two different series, in respect of the same variable, and are required to find the arithmetic mean of the combined series.

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9. The inter-quartile range totally ignores the first 25% as well as the last 25% of the ordered data. Additionally, while it measures the middle 50% of the ordered data, it does not describe the nature of the data within this range.
10. If the mean is greater than the median, then the distribution is positively skewed or tailed to the right.
11. Correlation can be either positive or negative based on the direction in which the variables are moving. If both variables are changing in the same direction, then correlation is said to be positive, but when the variations in the two variables take place in opposite direction, the correlation is termed negative.
12. The four popular methods used for computing coefficient of correlation in educational statistics are rank difference method, product moment method, biserial method and point biserial method.
13. Biserial correlation is used in situations where we wish to compute the correlation between traits and other attributes where the members of the group can be measured in one variable, but can be classified into only two categories in the second or dichotomous variable.
14. Scatter diagram is a diagram representing two series with the known variable, i.e., independent variable plotted on the X-axis and the variable to be estimated, i.e., dependent variable to be plotted on the Y-axis.
15. If the S.E. of estimate happens to be zero, then the estimating equation is a 'perfect' estimator of the dependent variable.

9.9 QUESTIONS AND EXERCISES

Short-Answer Questions

1. Explain the four broad classes into which the data is classified.
2. Write a short note on the various measures of dispersion.
3. State the requisites which are a necessary pre-condition for each measure of central tendency.
4. What are the characteristics of mean?
5. Mention the disadvantages of median.
6. What is weighted arithmetic mean?
7. State the assumptions of the regression analysis.

Long-Answer Questions

1. Discuss the diagrammatic and graphic representation.
2. Explain the process of constructing a frequency distribution.
3. State the advantages and disadvantages of mean.
4. Describe the computation of median of both ungrouped and grouped data.
5. Discuss the three different methods of correlation coefficient.
6. Explain the two methods used for estimating the regression equation.

9.10 FURTHER READING

- Gupta, S.C. 2005. *Fundamentals of Statistics*, 17th edition. Mumbai: Himalaya Publishing House.
- Gupta, S.C., V.K. Kapoor. 2007. *Fundamentals of Mathematical Statistics*. New Delhi: Sultan Chand and Sons.
- Mendenhall, William, Robert J. Beaver, Barbara M. Beaver. 2005. *Introduction to Probability and Statistics*, 12th edition. California: Duxbury Press.
- Mood, Alexander M., Franklin A. Graybill, Duane C. Boes. 1974. *Introduction to the Theory of Statistics*. New York: McGraw-Hill.

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