**MODULE III**

**DIFFERENCES AMONG LEARNERS**

No two individuals are alike. There are probably no two individuals who are exactly alike either in their development processes or in their resulting adjustments. Differences among humans as well as similarity are a universal truth.

The individuals may differ in their mental or physical abilities. The ‘normal’ man or the ‘normal child’ is a figment of imagination. There are differences in their personality traits. In the same way no two children are alike in their endowments and intellectual attainments. They differ in their mental makeup. These individual differences may be in their intelligence, aptitude, or certain other traits of personality. These differences between individuals that distinguish or separate them from one another and make one as a unique individual in oneself are named as individual differences in psychological terminology.

**3.1. Areas of Individual Differences**

In general individuals tend to differ from one another in physical structure and constitution, mental capacity, emotional responses and social adjustment. Some of the areas of individual differences are:

1. Physical Differences: Individuals differ in height, weight colour of skin, colour of eyes and hair, size of hands and heads, arms, feet, mouth and nose, structure and functioning of internal organs, facial expression, mannerisms of speech and walk, hair styles and other such native or acquired physical characteristics.

2. Mental Differences: People differ in intellectual abilities and capacities like reasoning and thinking powers, power of imagination, creative expression, concentration etc. In the field of general intelligence also we find tremendous difference between individuals. On the basis of these differences they are usually classified as idiot, imbecile, moron, borderline, normal, bright, very superior and genius.

3. Differences in Motor ability: There exist wide differences in motor capacities such as reaction time, speed of action, steadiness, rate of muscular movement, manual dexterity and resistance to fatigue etc.

4. Differences in Achievement: Differences exist in achievement and in knowledge even among individuals who had almost same amount of intelligence and had been subjected to equal amount of schooling and experiences.

5. Emotional Differences: In some individuals, positive emotions like love, affection and amusement etc. are mere prevalent whereas in others negative emotions are more powerful. Individuals also differ in the manner they express their emotions. Some are emotionally stable and mature while others are emotionally unstable and immature. In this way there exist wide emotional differences among individuals.

6. Differences in Interests and Aptitudes: There exist great variations among the individual in relation to the specific tastes and interests. Some take interest in meeting people, attending social functions and are very fond of picnics and group excursions; others feel happy in solitude, avoid social gatherings and are interested in music, mediation or enjoy company of books. In a similar way, people are found to have different aptitudes. Some have mechanical aptitude, while the others have scholastic, musical or artistic aptitudes.

7. Differences in attitudes, beliefs and opinions: Individuals are found to possess varying attitudes towards different people, groups, objects and ideas. Their attitudes may be positive, negative or of somewhat indifferent nature.

8. Learning Differences: Individual differences are found in the field of learning also. Some learn more easily and are able to make use of their learning more comfortably then others. For some one method or mode of learning or memorization is more comfortable with some other methods.

9. Differences in Social and Moral development: Individuals differ in respect of their social and moral development. Some are found to be adjusted properly in the social situations and lead a happy social life while others are socially handicapped, unsocial or antisocial. Similarly people are found to differ in respect of ethical and moral sense.

**3.2. Factors Causing Individual Differences-Hereditary and Environment**

Whatever differences in the individuals seem to exist can be clearly attributed to the variations in hereditary endowment or environmental stimulation or both.

Firstly, it can be observed that people belong to different hereditary stock are found to differ in native endowments and characteristics. These native endowments, abilities and capacities provided by the heredity decide the path of the progress and development of an individual.

Secondly, if we try to consider environmental influences and stimulation experienced by the individuals right from their conceptions in the wombs of their mothers, we can come to the conclusion that no two individuals in the universe get exactly the same environment. Definitely, there happens to be a difference in respect of the stimulation received by the individuals from their respective internal as well as external environments.

The differences in environmental stimulation and influences in the womb of the mother, varying conditions at the time of the birth and nutrition as well as care received by the infants at the earlier age, differences in the amount and nature of schooling, socio-economic status of the family, race, caste and nationality, education of the parents, peer group relationships and so many other physical, emotional, mental or social environmental stimulation bring a lot of differences in the personality characteristics and behaviour patterns of individuals.

In this way heredity and environment both seem to be contributing towards the individual differences.

**Heredity and Environment (Nature and Nurture)**

Heredity is the sum total of physical and mental traits which the individual inherits from his parents and ancestors. By environment, we mean physical environment which includes air, food, shelter etc. the cultural environment which includes education, customs, traditions affecting our behaviour; mental environment is our thoughts and ideas, and social environment which means our relationship with other people. In short, environment is everything except the self.

Heredity and environment are the main factors influencing the child’s developments. These two factors combine and interact in so intricate a manner that it is often impossible to distinguish and isolate the effects of one on the other.

**Biological and Social heredity:**

We attribute to heredity much which is due to environment. When we find children born in well-educated or aristocratic families are more intelligent and well behaved than those coming from un-educated families or from the lower class of society, we at once think that this difference is due to heredity. When however the facts are critically analyzed and judged, we find that much that are unthinkingly attributed to heredity is really due to environment. The child possesses a number of traits of the father not necessarily because he inherits them from the father but because he is brought up with him. If the child had passed his early life in a different atmosphere he would not perhaps have looked as bright. Hence one should separate facts of strict biological heredity from those of social heredity (environment) before any judgment is pronounced as to the importance of heredity in the development of the child.

Biological heredity is the sum total of tendencies, capacities present in the fertilized ovum. Every human being has its beginning in the union of the male germ cell (Sperm) with the female germ cell (Ovum). The nucleus of each cell contains 23 pairs of certain structures known as “chromosomes.” Each chromosome contains an unknown number of genes which are centers of some biochemical activity. These genes are the ultimate carriers of heredity. They are responsible for the transmission of the various inherited physical and psychological traits from generation to generation. The fertilized ovum has 46 chromosomes, 50% from the male and 50% from the female. Possible combinations of these are innumerable. Hence two children of the same parents will not be alike except in the case of identical twins. At the time of conception genes of the father pair with the genes of the mother and thus determine the qualities of the children. The result of the union of these genes, we call heredity.



The child inherits the traits and characteristics of his parents through genes at the time of conception. So what he possesses at the time of conception is all due to heredity. After conception how he develops, is the outcome of the interaction between his hereditary characteristics and environment. The environmental forces can be categorized into two major heads - Internal environment and External environment. The environment received by the individual from his conception till his birth in the womb of the mother is called internal environments. In this environment the embryo receives the nutrition through the blood stream of his mother. The physical and mental health of the mother, her habits, attitudes and interests etc. influence the development. After birth the child is exposed to the external environment. The food, water, climate, physical atmosphere of the home, school, village or city, the physical facilities available are included under physical forces, while parents, members of the family, friends, classmates, neighbours, teachers, community, religious places, clubs, libraries etc. are included under social forces.

Hereditarians claim that heredity is all in all. No amount of education can change the individual from what he is. The environmentalists are of the opinion that heredity does not in any way affect the growth and development of an individual. Man is the product of his environment. Studies were done by eminent psychologists and sociologists on both heredity and environment.

The following experimental studies provide sufficient evidence in favour of heredity, as a determinant of one’s personality.

1. Kallikak family:

 H.H. Goddard studied Kallikak family. Kallikak was a soldier who married two women. First was a feeble minded girl and the other was a normal one. The family line established by the feeble minded woman contained 480 direct descendants, among which only 46 normal individuals were found, the others were criminals, drunkards, feeble minded patients, sexually perverted and illegitimate etc. Whereas among 496 direct descendants of the line established by the normal women, all were normal with the exception of five.

2. Juke family study:

 This study was conducted by Dugdale. Juke was a corrupt fisherman. His wife was also corrupt. About 1200 descendance the family line established by them were studied. It was found that most of these descendants were paupers and prostitutes. Only a few of them were found normal.

3. Galton Francis in 1869, prepared a list of 977 genius and well-to-do persons and investigated about their relatives. They were found to have 535 eminent relatives. For comparison he prepared another list of 977 average men and similarly investigated about their relatives. These 977 average men had but four relatives who were eminent. By this data he concluded that the intelligence and all other likewise personality characteristics are transmitted through blood.

 The following experimental studies provide sufficient evidence in favour of environment, and its role in personality development.

1. Newman, Freeman and Holzinger in 1937, reported a case study of 19 pairs of identical twins. They found that whereas the I.Q. difference of the identical twins reared together was 5.9 points, it was 8.2 for the twins reared apart. In this study he tried to compare the impact of different environments on the pattern of development by making constant the heredity factor with the help of identical twins. He found that environment plays a decisive role in bringing individual differences.

2. The case-history of some children reared in the forest by wolves also throws light, on the role of environment in the personality development

 One of such children was Ramu known as the wolf-boy. When he was quite young, he was picked up by wolf. He remained among the wolves for pretty long time and became wolf in food habits, speech and other traits. He could utter sounds like a wolf.

3. Similar was the case with two sisters. Amala and Kamla, aged 2 and 9 years. They are found in the forest of Bengali in 1920 from the den of a wolf. They used to talk, walk and act like wolves. Amla died in the hospital after some time, but Kamla was subjected to further study. By providing suitable environment and training, she was made to walk on foot and speak like a human child.

A child’s development is conditioned by heredity and environment both of which are correlated factors. Heredity provides whatever potentialities we possess, while environment or nurture determines whether they shall be actualized or not. In other words, children are born with a biological heritage and a social heritage. Both must be good for good results. Very little can be done about the biological heritage. But the teachers can improve the child through determining his social heredity, social heredity is a form of educational environment that affects more than one generation. It includes knowledge, customs and manners, ideals and values and traditions that mankind passes down from generation to generation.

Hence the teacher has the important task of helping the child to choose his environment. Though the teacher has no control over hereditary factors, he has a direct control over the environment. It is true that the school is not in any way the complete environment of the pupil. Several other factors are included in his life. Still a wise and dedicated teacher can control an direct a good part of the environment of the pupils. In fact, the teacher himself is a significant part of the child’s environment. One’s personality is greatly influenced by the environment and this is one of the main aims of education.

**3.3. General Provisions for the Individual Difference in the classroom.**

1. The first step is to know about the abilities, capacities, interests, aptitudes and other personality traits of the individual pupils. For this purpose, help from intelligence tests, cumulative record card, interest inventories, attitude scales, aptitude tests, and measures for assessing personality traits should be taken.

2. Ability grouping: The students in a class can be divided into homogenous groups in order to adjust instruction to varying individual differences.

3. Adjusting the curriculum: The curriculum must be as flexible and differentiated as possible in order to meet the requirement of varying individual differences among the pupils. It should have the provision for a number of diversified courses and co-curricular experiences so that the pupils may get opportunity to study and work in the areas of their own interests and abilities. It should provide adjustment suiting the local requirements and potentialities of students in different groups.

4. Adjusting the methods of teaching: Every teacher should be some-what free to formulate his own plan and strategy and adopt instructional procedure which he finds most suited to the particular types of pupils under him.

5. Adopting special programme or methods for individualizing instruction: Schools may adopt some special programme or methods of teaching like Dalton Plan, Project Plan or use Programmed learning material for enabling the students to learn at their own individual rate.

6. Other measures of individualizing instruction:

 a) The size of the class should be as small as possible.

 b) The teacher should try to pay individual attention to the group.

 c) The teacher should keep in view the individual difference of his students while engaging them in drill or practice work.

 d) Special coaching and guidance programme for both the dull and the gifted children is most helpful.

**3.4.**