

Study of Relative role of heredity and environment in development.

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Introduction : The relative importance of heredity and environment or of nature and nurture in determining the personality is an old and much debated question. Some thinkers hold the view that heredity alone determines the personality of an individual. Where as some others are of the opinion that environment plays a significant role in the development of an individual. However we need not take either extreme of this time worn controversy. The individual is influenced by both the factors and hence he is a product of both the influences.

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Meaning of Heredity: Each individual has a different pattern of behaviors and personality. This difference is seen due to the influence of heredity and environment. Truly speaking heredity and environment play an important role in the development of the personality and other qualities in the individual.

No person can be born without heredity and genes cannot develop without proper environment. An individual's heredity is present since the moment of conception, and some environmental conditions also start influencing him from this very stage.

Each trait and response of an individual depends on his heredity and environment. Therefore, in order to know about the individual, it is necessary to understand his heredity and environment.

Every human being is born as a result of conception which takes place due to certain biological Factors and process. When two germ cells meet together an organism's life starts. In the ovary of the female an ovum or an egg cell is present. Ovum is a kind of female's egg cell. In the ovum 23 pairs of chromosomes are present in different shapes and sizes. In the male's sperm there are also present numerous germ cells.

In a germ cell there are 23 pairs of chromosomes as is the case with female's ovum. When a chromosome of female meets the chromosomes of male. Fertilization takes place and the life begins to take place. It is this cell or chromosomes which in the process of heredity an individual gets from his parents.

The child carries with himself several physiological and psychological peculiarities that are present in the parents. In fact it is the heredity that determines structure, complexion, structure of hair, height. Facial features nasal index etc. of the child. Thus different types of the genes help in the formation of a body.

According to geneticists, sex is also inherited. They say that there are two big chromosomes. They have named these chromosomes as 'X' and 'Y'. In the germ cells of the male there is one big 'X' chromosome-and a small 'Y' chromosome.

Mechanism of Heredity:

(i) Mating:

Mating is the 1st step for reproduction. The union of male sperm with female ovum the results is zygote.

(ii) Growth:

It involves repeated division of the fertilized cell or zygote.

(iii) Chromosomes:

Every woman and man receives 23 chromosomes from each parent or 46 in all.

(iv) Genes:

Each chromosomes consists of small particles numbering 40 to 100 which are called genes.

(v) Chance factor:

Both ovum and sperm before fertilization contains 23 pairs of chromosomes each. At the time of conception, the genes in the chromosomes of the sperm, pair the genes of ovum and determines the potential characteristics and qualities of the off spring.

The result of the union of the genes is called heredity.

Meaning of Environment:

Environment is nothing but the sum total of the surroundings in which an individual has to live. Psychologically an individual's environment is related to all those stimuli which he faces from the moment of fertilization till death. Environment is generally divided into two categories- natural and social. Natural environment refers to all those things and forces on and around the earth that influence a person.

Social environment we mean the environment which the person sees around himself on acquiring consciousness in the society, i.e., language, religion, custom, tradition, means of communication, means of luxury, family, school, social groups etc.

By human society we mean those institutions or organizations which human beings have established for their own protection and security. Psychologists like Freud, Havelock, Eills have accepted the fact that social environment is very much responsible for changing in human behaviour and its personality.

Educational Implications of Heredity and Environment:

The knowledge of heredity and environment has a great influence on human development. Human development is the product of both heredity and environment. The development pattern of the children is determined by both heredity and environment.

As per the developmental pattern of the children the educational pattern, methods and learning environment should be made by the teacher in the teaching-learning situation. So the knowledge of heredity and environment helps the teacher in various ways which are discussed hereunder.

- i. Knowledge of heredity and environment helps the teacher to know the varying needs and abilities of the children.
- ii. It helps to provide proper guidance to his children in the field of educational, vocational and personal.
- iii. It helps the teacher to classify the students as gifted, normal or slow learner and arrange different types of education for them.
- iv. It helps the teacher to provide better learning environment in the school.
- v. It helps the teacher to know the principle of individual differences and arrange the educational experience accordingly.
- vi. It helps the teacher to study the behaviour of the children under different situations.
- vii. It helps the teacher to organize various curricular and co- curricular programmes for the best benefit of the children.

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