UNIT 4 : METHODS OF STUDYING DEVELOPMENT-II

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Some Other Methods of Studying Development

- 4.3.1 Experimental or Method
- 4.3.2 Case-studies Method
- 4.3.3 Observation Method.

4.4 Let Us Sum Up

4.5 Further Reading

4.6 Answer To Check Your Progress

4.7 Possible Questions

4.1 LEARNING OBJECTIVES

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

- understand and apply some other methods of studying development.
- acquaint with the concept of experimental method as a method of studying development
- know about case-studies and observation method for studying development.

4.2 INTRODUCTION

In the preceding unit, discussion has been made on importance of studying development and how it is beneficial for teachers, parents and other person concerned for contributing towards the overall development of the children. The important methods of studying development were discussed in the unit 3. Besides the cross sectional, Longitudinal and correlational method, there are some other methods used by psychologists or the educationists to derive various fact regarding human life and development. The study made through these methods have contributed a lot in deriving many conclusions and principles of human life-span. These

are beneficial not only for the history of developmental psychology but also guide the parents, teachers and others to contribute in the balanced adjustment of the child with their life through different changing ages and phases. These methods are popularly used in psychology in studying behavior. As a learner of education, knowledge about these methods will not only enrich your knowledge on behavior but also help you to study human behavior and explore new facts regarding you and the surrounding people. Let's get acquainted with these popular method of studying development-

4.3 SOME OTHER METHODS OF STUDYING DEVELOPMENT

In studying the behavior of children or development no one method of measuring technique is suitable for all age level or for all forms of behavior. The aim of scientific study is to make observations that lead to accurate predictions. But such prediction cannot be always reliable and valid. Again entirely different methods must be used for studying children or development who cannot verbalize their thoughts and for those for children who cannot read and write and for those who can do. Again studying children in a laboratory also has some obstacles. Laboratory setting itself make children apprehensive of revealing much of their behavioral characteristics. To eliminate this obstacles, some psychologists began making study in the child's natural habitat of the home, school, playground or the place where child spend most of their time. To increase the accuracy of the data, sometimes the psychologists make use of cameras and electronic devices to record the behavior. Training in observation and reporting is also provided to the parents so as to get accurate data regarding their children's behavior. Moreover, contribution of day-care centers, nursery schools, health clinic, child guidance clinics are inseparable in studying the behavior of children. There are many methods of studying the behavioral changes in individual. Some of them are already discussed in the preceding unit. The some other methods of great significance are-experimental method, Case-studies and observation method.

4.3.1 Experimental Method

This is the most scientific and objective method of studying development. Among all the methods of investigation, this method is considered as highly developed, formalized and most accurate method of studying development. In this method, emphasis is given on experimentation. Here, experimentation consists of objective observation of actions of people under pre-arranged or rigidly controlled conditions. Out of these observation, certain conclusions are drawn and principles or theories are formed. The word-"experiment" comes from a Latin word-"experimentum" which means a trial or test. Hence, in experimentation, psychologists try or put to the test the material or phenomenon whose behaviour or consequences they wish to ascertain. The basic idea behind the experimental method is to control the phenomena under study and the variable of which are being observed. This method attempts to rely solely on an application of the scientific method to understand the behaviour or developmental changes in men. Experiments are conducted to test a particular hypotheses or evaluate functional relationship. In the experimental method, hypotheses are formulated about the effect of one thing on another, the independent variable is the one expected to produce changes in the dependent variable.

Significant feature of Experimental Method:

There are some necessary feature that signifies the experimental method. These are-

- **Psychological Laboratory:**
  There must be a well-equipped laboratory to conduct the experiments.
- **Experimenter and the Subject:**
  Experiment performed in this method essentially requires two person-one the experimenter and the subject whose development is to be observed or studied.

- **Variables:**

  Another significant feature of experimental method is conditions or variables. Through the variables, psychologists or experimenters are able to observe the casual relationship between two phenomena, keeping all other conditions almost constant. The variable which effect are being studied is called the independent variable and the variable which is being effected is called dependent variable. Thus the independent variable stands for the cause, and the dependent variable is the effect of that cause. There may have other conditions other than these two variables are called intervening variables. If we take an example of effect of creativity on achievement, here, creativity will be the independent variable and achievement will be the dependent variable. Other conditions like-parental support, teaching method, memory of the children etc. which exercise a good impact upon one's achievement besides creativity can be termed as intervening variable. In experimental method, all such intervening variables are controlled, hence they are made constant or equalized and the effect of only one independent variable on dependent variable is studied. For this, psychologist try to change and vary the independent variable. This brings about concomitant objectively observed and measured on the basis of which certain conclusions are made.

- **Experiment on living organism:**

  Another essential feature of experimentation is that the experiments are always conducted on living organism. Generally, in physical science experiments are conducted on inorganic or dead subjects. But, experimental method used in developmental psychology make use of living being only.



LET US KNOW

In experimental method, the experiments are conducted to test a particular hypotheses. The key concept to describe an experiment is similar people in different circumstances. The similarity of the people is achieved by random assignment. The different circumstances are created by manipulation of some situational variables.

Experimental method is not restricted to the laboratory. In a natural setting too, a manipulation of the situation can be made to see the effect on one's behaviour. However, for such study, there is need of some specific experimental designs for controlling the variables and measuring their effects. Such designs help the psychologists to control the variables. Some of such designs are discussed here that can be used to study development-

A. The Control Test or single -group design:

In this design, experiment is conducted on a single group or individual. Here, the psychologists try to differentiate by observing the performance under different conditions. First, the behaviour is observed under normal conditions and then again with different set of changed condition. Conclusions are then drawn by comparing the differences. In this design, it is not necessary to have two different individual or group of subject for experiment. Only the measures can be taken several times under different conditions.

B. Control Group Design:

In the control group design, two separate groups one-experimental group and another the control group participate in the experiment. These two groups are made to function under the same condition except in the difference in independent variable. For example, to study the intellectual development or behaviour, under this design, both the groups

are equated on various personality characteristics like age, sex, intelligence. One to one correspondence in the two groups are made. The control group is given some sugar capsules and they are tested on some intelligence test. At the same time, experimental group is given drug capsules and tested on same intelligence test. After that, the difference in the intelligence scores are calculated, which reveals some significant difference as a result of the effect of drugs.

C. Multiple-group Design:

In this design, experiment is conducted with more than two group for arriving at the appropriate conclusions.

D. Rotation Design:

This experimental design involves presenting two or more stimulating situations to the experimental subjects in as many sequence as necessary to control the serial effect of one variable on the other.

Critical Analysis of Experimental Method:

Experimental method is the most significant method of psychological studies. It makes application of scientific method to understand human behaviour and development in men. As a method of studying development, it can provide various scientific information on scientific and systematic experimentation. Experimental method includes controlled experiments which are identical to the experimental sample. If we try to analyse this method critically, we have to analyse it from both the positive and negative aspects. The positive aspects of this method can be categorized as-

- It is the most scientific method of studying human behaviour as it relies on application of scientific method.
- This method allow the psychologists to establish causal relationship between different aspects of behaviour and environment leading to make clear findings on development and its influencing factors.
- Experiment under this method always has a testable

hypotheses in terms of observable events or phenomenon.

- It is the most objective method of obtaining knowledge of different aspect of human behaviour.
- Through conduction of different enlightening experiments, facts about human development, developmental hazards faced by the children can be revealed.

Though in many ways, the experimental method is one of the best methods for gathering scientific information, yet, it has its own limitations-

- In experimental method, the experiments are conducted under controlled condition, such artificial situation is different from natural environment. As such, it fails to study the behavioural changes in natural conditions.
- Experimental method is a lengthy and time consuming method as it requires creation of artificial conditions to conduct the experiments.
- Success of the experimental method lies in controlling of conditions and variables. It is very difficult to know and control all of the variables.
- As experiments in psychology are often conducted on animals or birds, so studying human development through experiment may not be possible or the result done on animals may not be applicable to human.
- Under this method, it is very difficult to control internal mental conditions of the people.
- The scope of experimental method is limited, all problems of human behaviour cannot be studied by this method. Because, experiments are not possible to conduct for all the problems that may come up in the diverse subject of developmental psychology.
- Conduction of experiments requires specialized knowledge and skills.
- Study about development in the early years of life is not possible

through experimental method as receiving co-operation from the children and their parents is not possible.

Thus, the above limitation reveals that in studying the developmental changes in the child, the experimental method is restricted in its application.



CHECK YOUR PROGRESS

Q 1: What is the derivative meaning of experiment?

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Q 2: What are the two groups used in experimental design?

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Q 3: What is an intervening variable?

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4.3.2 Case-Study Method

Case-studies are another significant methods most popularly used by the developmental psychologists to study about the developmental phenomenon in men. Case study in psychology refers to the use of a descriptive approach to obtain an in-depth analysis or study of a person, group or phenomenon. This method is a very popular form of qualitative analysis and involves a careful and complete observation of a social unit in terms of a person or group. Thus, case study is essentially an intensive investigation of a particular unit under consideration. The case-study method is widely used systematic field research technique in child development. Initially, case study was limited to mal-adjusted children, but at present, case study method has a wider application since it facilitates intensive study of child behaviour and reveals facts about human development.

The case study research method originated in clinical medicine which is called as the case history, i.e. the patient's personal history. In psychology, case studies are often confined to the study of a particular individual. The information is mainly biographical and relates to events in the individual's past i.e. retrospective, as well as to significant events which are currently occurring in his or her everyday life. In this method, the psychologists try to go deep into the past history of the subject in order to find out some of the important events or forces which are responsible for making him what he is. A case study is nothing but a collection of facts about an individual. The data regarding an individual previous history is collected from him and his associates and on the basis of such data conclusions are made.

Case study is used to get the analysis of a particular subject or individual. Much of Psychologist Freud's work and theories were developed through individual case studies. In a case study, nearly every aspects of the subject's life and history is analysed to seek pattern and causes for behaviour. The learning or findings from studying one case can be generalized to many others. Of course, subjective case studies are difficult to generalize to a larger population.

Techniques used for Case Study:

A variety of techniques may be employed including personal interview, direct observation, psychometric test as well as archival record. The procedure used in a case study means that the researcher provides a description of the behavior. This comes from interviews and other sources, such as observation.

The subject whose case is being studied reports detail of events from his or her point of view. The investigator then writes up the information from both sources above as the case study, and interprets the information. The study may also continue for an extended period of time, so processes and developments can be studied as they happen. Amongst the sources of data the

psychologist is likely to turn to when carrying out a case study are observation of a person's daily routine, unstructured interviews with the participant herself and with people who know the subject, diaries, personal notes like- letters, photographs, notes or official document like-case notes, clinical notes, appraisal reports.

The case study method often involves simply observing what happens to, or reconstructing 'the case history' of a single participant or group of individuals such as a school class or a specific social group. The interview is also an extremely effective procedure for obtaining information about an individual, and it may be used to collect comments from the person's friends, parents, employer, workmates and others who have a good knowledge of the person, as well as to obtain facts from the person him or herself.

It is important to note that most of this information is likely to be qualitative i.e. verbal description rather than measurement but the psychologist might collect numerical data as well. All the approaches mentioned here use preconceived categories in the analysis and they are ideographic in their approach, i.e. they focus on the individual case without reference to a comparison group.

A good case study should always make clear which information is the factual description and which is an inference or the opinion of the investigator.

Advantages of Case-study Method:

As a method of studying human behavior or developmental changes, case study has some positive aspects-

- The case-study is an in depth study about a phenomenon, as such it provides first hand picture about the case.
- The case study method offers a continuous analysis of a case. That means there aren't interruptions in the process of studying which is very essential to reveal about developmental process.
- Case studies allow an investigators to investigate a case of development in child or men in far more detail which leads to exploration of more facts about the developmental process.

- It is very significant method to study normal development of a person.
- Because of their in-depth, multi-sided approach case studies often shed light on different aspects of human thinking and behavior.
- Case studies are often can help us generate new ideas. They are an important way of illustrating theories and can help show how different aspects of a person's life are related to each other.
- It is one of the best method for diagnostic studies, as such it helps to diagnosis various hazards that may arise in the process of child development, as it helps a lot in diagnosing the cases which suffers from personal, social and other developmental abnormalities.
- Case study in psychology is the potential for the development of novel hypotheses for later testing.

Disadvantages of Case-study Method:

Though case study is a best method to obtain in depth analysis of an individual, this method is criticized many time as-

- It is difficult to maintain record of every events of a case under case study method.
- The information gathered regarding the case may be influenced by subjective observation which makes it less reliable.
- The method requires highly trained and skilled persons to make in depth study of a case specially in providing diagnosis the case.
- In depth study about a case requires more time and efforts which makes the method lengthy.
- It is not always possible to get reliable data regarding the past of the case which may mislead the study.
- Case study method provides a great deal of information about a specific person, the result are often difficult to generalize to a larger population.

- In psychology, case studies are most often used in clinical study to describe rare events and conditions which contradicts well established principles in the field of psychology.
- Case studies are unable to draw cause and effect relationships or test hypotheses.



CHECK YOUR PROGRESS

Q 4: State two merits and demerits of Case study method.

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4.3.3 Observation Method

Observation method is the most commonly used method especially in studies relating to behavioural sciences. Child study started with observation of the behaviour of the child as he grows up by the parents who maintained a diary and noted all the particulars. It is the oldest method of studying behaviour. Development can precisely studied by observing the changes that occur in men or child.

The word-"observation" has been derived from the ***Latin word-"observare"*** which means -to keep open. As such, observation seems to be easy and simple, we simply keep our eyes open and we see certain things. But it is not that simple. Observation is much more than seeing something. It involves a mental process. Observation becomes a scientific tool and a method of data collection for the investigator when it serves a formulated study purpose as well as systematically planned and recorded and is subjected to check and control on validity and reliability. Observation as a method of studying development is particularly suitable in studies which deal with children, their activities and behavioural changes since it is a

more natural way of collecting data. Different great psychologists of the world made use of this method for studying children. Even The great Biologist Charles Darwin maintained a diary noting down the behaviour and development of his son. Using this method, an attempt was made to understand the problems confronted the child. As such observation as a method can be helpful in finding out different developmental facts and hazards.

Mrs. P. V. Young, in her book 'Scientific Social Surveys and Research' has defined observation as, *"Observation is a systematic and deliberate study through the eye of spontaneous occurrences at the time they occur"*. As such, observation is carried out with the eye, and the purpose and aim of observation is to discover significant mutual relations between spontaneously occurring events. Observation as a method can be refereed as the approach of studying behaviour consists of the perception of an individual's behaviour under natural conditions by other individuals and the interpretation and analysis of the perceived behaviour by them. Through this method, mental process of others can be inferred through observation of their external behaviour. It can also be interpreted as indirect method of studying mental process of children or men. In all observations there are two elements, one-the sense-perceptual and the mental. We make observations with the help of senses like-seeing, hearing etc. but along with that mind also work. Observation involves interpretation of the sense experiences by minds.

In every act of observation, there are two components-one the object or what is observed and the subject or the observer. Sometimes, one may have to observe one' own immediate experience. That would be subjective observation or introspection, you have already come across this concept in your previous semester. Many of psychological interest are gathered by the method of subjective observation. On the other hand, in many investigation, the observer is an entirely apart from the thing observed. Observation

of this kind is objective observation or extrospection. In recording social data, objective observation is more appropriate as composed with subjective. The data obtained from observation are as viable and meaningful and more varied than those obtained by experimental and case study method.

Advantages of Observation method:

The reason behind considering observation as most easiest and popular method are-

- Findings of observation are always systematic, reliable and planned as well as specific.
- It provides a solid ground for experimentation.
- It is one of the natural and flexible method of studying developmental change in behaviour.
- It does not require any laboratory setting or long duration, as such it is economical in terms of time, money and efforts.
- Through this method, it is easy to gather data about human action and reaction.
- Observation is based on actual and firsthand experience, the data obtained through this are more realistic than other method.
- The result obtained through this method are reliable and can be verified.

Disadvantages of Observation Method:

Besides being as popular method of studying behaviour or development, it is not free from criticism. Such as-

- Observation method is useful only for collecting data on the observable behaviour of an individual. It does not provide data of the inner mind as such reasoning can only be established through external behaviour.
- While using this method, sometimes a person may hide his feeling and emotions and can disguise the evil nature under the cover of artificial sobriety. In such case of hypocrisy, this method fails to judge a person in actual sense.
- The observation made by the observer may be affected by

subjective judgement which may affect the result.

- Under observation method, the observed behaviour is dependent on the time and place and on the individual or group. As such it lacks replicability as each natural situation can occur only once.
- Observation method fails to establish a proper cause and effect relationship.
- Sometimes, lack of experience and skill on the part of the observer may lead to wrong result and interpretation.
- The conclusions based on observation are not reliable, because in observation we have to depend upon human tact and resourcefulness only.

In spite of the criticism, all these methods discussed above are some of the significant and popularly used methods of studying development. Psychologists, researchers or investigators are constantly trying to reveal new facts about how and why of human development through applying these methods to explore behavioural changes in men.



CHECK YOUR PROGRESS

Q 5: What are the two elements involved in observation?

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Q 6: What is extrospection?

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4.4 LET US SUM UP

The unit can be summarized as-

- In studying the behavior of children or development no one method of

measuring technique is suitable for all age level or for all forms of behavior, there are many methods of studying the behavioral changes in individual.

- In experimental method, emphasis is given on experimentation.
- Experimentation consists of objective observation of actions of people under pre-arranged or rigidly controlled conditions.
- The basic idea behind the experimental method is to control the phenomena under study and the variable of which are being observed.
- Significant feature of Experimental Method are- Psychological Laboratory, Experimenter and the Subject, Variables and Experiment on living organism.
- Experimental method is not restricted to the laboratory. In a natural setting too, a manipulation of the situation can be made to see the effect on one's behaviour.
- Case-studies are another significant methods most popularly used by the developmental psychologists to study about the developmental phenomenon in men. Case study in psychology refers to the use of a descriptive approach to obtain an in-depth analysis or study of a person, group or phenomenon.
- A variety of techniques may be employed in case studies including personal interview, direct observation, psychometric test as well as archival record.
- Observation method is the oldest method of studying behaviour. Development can precisely studied by observing the changes that occur in men or child.
- Mrs. P. V. Young, in her book 'Scientific Social Surveys and Research' has defined observation as, *"Observation is a systematic and deliberate study through the eye of spontaneous occurrences at the time they occur"*.



4.5 FURTHER READING

1) Dash B.N (2011): A textbook of Educational Psychology, Dominant publishers and distributors' pvt. Ltd.

2) Goswamee Gayatree (2008): Child Development and Child Care, Arun Prakashan, Guwahati, Assam.

3) Mangal S.K (2006 2nd Edition): Advanced Educational Psychology, Published by Asoke K Ghosh, Prentice Hall of India Private Limited, New Delhi.



4.6 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The word-"experiment" comes from a Latin word-"experimentum" which means a trial or test.

Ans to Q No 2: The two group groups in experimental methods are experimental group and another the control group.

Ans to Q No 3: There may have other conditions other than these two variables -dependant and independent which may affect the subject being studied are called intervening variables.

Ans to Q No 4: Merits of Case-study Method:

- The case-study is an in depth study about a phenomenon, as such it provides first hand picture about the case.
- The case study method offers a continuous analysis of a case. That means there aren't interruptions in the process of studying which is very essential to reveal about developmental process.

Demerits of Case-study Method:

- It is difficult to maintain record of every events of a case under case study method.

- The information gathered regarding the case may be influenced by subjective observation which makes it less reliable.

Ans to Q No 5: In all observations there are two elements involved, one-the sense-perceptual and the mental.

Ans to Q No 6: In many investigation, the observer is an entirely apart from the thing observed. Observation of this kind is objective observation or extrospection.



4.7 POSSIBLE QUESTIONS

A. Short Questions (Answer each questions in about 150 words)

Q 1: What is an experimentation?

Q 2: What are the role of variables in experimentation?

Q 3: State some of the experimental design used to control variable in experimental method.

Q 4: Differentiate between experimental method and case study method.

B. Long Questions (Answer each questions in about 300-500 words)

Q 1: Discuss experimental method as one of the significant method of studying development.

Q 2: What is case study method? How significant is a case study to study human development?

Q 3: Critically discuss observation method as a method of studying human behaviour.

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