UNIT 3: METHODS OF STUDYING DEVELOPMENT-I

UNIT STRUCTURE

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3.1 LEARNING OBJECTIVES

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

- understand the importance of studying development
- explain and use different methods of studying development.

3.2 INTRODUCTION

In the First unit, we have discussed about concept and meaning of developmental psychology and allied concept of this branch. Growth and development being the two integral part of developmental psychology, helps us to understand its inherent meaning and how important are they for a full-fledged life. Development as discussed before is a comprehensive term. It is not subject to direct observation and measurable as growth. Studying development is one of the complex as well as systematic task. It requires systematic planning and execution. There are different methods of studying development. This unit deals with those methods of studying development.

3.3 IMPORTANCE OF STUDYING DEVELOPMENT

Before going through the methods of studying development, it is essential for you to comprehend why is it necessary to study development? Developmental psychology is a branch of psychology that studies about all those changes brought by growth and development throughout the life of an individual. Developmental psychology deals with the behaviors that characteristically occur at various ages and stages of development. The behavior of the child varies according to their ages and developmental characteristics which have a great impact on their life. Children do not just grow. They need guidance. Everyone in close contact with children can contribute to their development. The study of development help parents and teachers to plan activities and experiences for their children and to take proper care of them. The significance of studying development can be elaborated under the following headings-

1. **Knowledge of Developmental Pattern:**

   Scientific study about development is significant in letting the parents, teachers and others concerned to know the developmental pattern in an individual. To understand the pattern of development from conception to death, one must have a clear picture of this on the basis of scientific study, not on traditional beliefs and stereotyped ideas.

2. **How and why of Change:**

   Development describes the growth of human being throughout one's life. Scientific and systematic study of human development seeks to understand and describes how and why individual people change throughout their life. The study of development provides the answer to question how and why changes take place in men.

3. **Changes across broad range:**

   The study of development helps to examine changes across a broad range of areas including physical growth and development, cognitive development, psycho-social development, language development, moral and emotional development and so on.

4. Initiate contribution from all:

Intensive study and knowledge of development not only help the teachers, but also the parents, doctors, psychologists, counsellors and all other surrounded by the child to understand the various aspects of growth and development and helps them to contribute towards all round and balanced development of the children.

5. Prevention to hazards:

Adequate knowledge and study of development not only provides adequate information of the all aspects related to growth and development, but also about the different hazards that may arise in the path of development in different children. Knowledge about developmental hazards and its possible causes helps the teachers, parents and other members to take preventive measures to help the children to better adjusted with the developmental changes.

6. Understanding variety in development:

We know that growth and development take place in individual person naturally and following the principles of direction. Still, we witness differences or variety in the process of development letting one individual differ from other in terms of different aspect of development. Study of development helps the parents, teachers and others concerned to understand the individual difference and why it happens.

7. Identifying uniqueness in man:

Study of development not only provides the idea about individual differences, but also develops the ability to recognize individuality in men. This refers to one's ability to recognize and comprehend the uniqueness of each children's traits and his personality as a whole including his/her strength and weaknesses.

8. Knowledge about the factors influencing development:

Development is a continuous and dynamic process starting from the time of conception till the time of death. It brings lots of psycho-physical changes as well as behavioral changes in man throughout his/her life. Various hereditary, environmental factors are involved in the process of development. Study of development helps to understand

how and to what extent these factors are influential in the process of development.

9. **Utilization of best resources:**

Study of development helps as well as encourages the parents and teachers to make best use of the best resources for their overall and healthy adjustment to the changes brought by the process. Knowledge of development helps the teachers to make best use of best teaching methods, positive rapport, and academic resources in the educational fields according to the rate of students' development. Likewise, parents and family members can take best care in terms of nutrition, emotional support, value orientation and creation of a sound and healthy family and societal environment.

10. **Planning for child's future:**

Study about the development helps the teachers and parents to better acquaint with their children's every aspect of growth and development. This helps them to predict the future of their child and make best plan for their future.



LET US KNOW

Development of children is a subject which interest parents, grandparents, friends, teachers, doctors, social workers and many others. These people are often baffled by children's behavior. If they better understand growth and development, they could contribute more to the welfare of children and their overall adjustment.

3.4 DIFFERENT METHODS OF STUDYING DEVELOPMENT

Study of development is not a recent phenomenon. Long before, there were attempt to make scientific studies of development. Earlier, attempt were made to study how children developed? One of the first person to study children as individual was John Amos Comenius. Besides him, there were Locke, Rousseau, Pestalozzi, Herbert Spencer, and Froebel who

indirectly contributed towards the study of children. The observation of Pestalozzi on his three and a half year old son was published as the first scientific record of development. Followed by Pestalozzi, many educationists made attempt to study development of their children. It is important to note here that interest in scientific studies of children was given great impetus by the work of **G. Stanley Hall**. He is often considered as ***"Father of the Child Study Movement".*** One of the another great contribution towards the study of children was made by Charles Darwin through his article – ***Biographical sketch of an infant*** published in 1877, which was a detailed elaboration and careful observation of the behavior and development of an infant. Thus, the study of child development marked long before.

Scientific study of child development is not an easy process. There are many obstacles that psychologists or educationists have to face in studying development. Moreover, the scientific study of development includes different dimensions like emotion, interest and many behavioral traits of children. Many time, data reported by parents and teachers are inaccurate, lack of consent of parents of new born to let their child be studied are some of the common obstacles in studying development. In spite of these obstacles, study of development occupies an important place in developmental psychology and it contributes to the development of many theories and principles of development. There are different methods used in studying development. In this unit, some of the methods are discussed.



CHECK YOUR PROGRESS

Q 1: Who is considered as Father of the Child Study Movement?

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Q 2: The article entitled-"Biographical sketch of an infant" was written by

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Q 3: State two common obstacles in studying child behavior.

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3.4.1 Cross Sectional Method

One of the significant methods used by the developmental psychologists in the study of development is Cross-sectional method. In this method, the psychologists observes differences between individuals of different ages at the same time. Here, different sample of behaviour are studied and comparisons are made. Ruble and Naka Mura in the year 1973 studied dependency among children by using this method. They compared kindergarten first, second and third grade children on a measure of dependency. They found large group differences with dependency most pronounced in the youngest children and least pronounced in the oldest. Such kind of cross sectional method is an effective way of spotting age group difference as such. Thus, this method involves looking at different groups of people of different ages. Cross-sectional studies are based on observations that take place in different groups at one time.

Cross-sectional method is a method often used in developmental psychology, but it is also used in many other areas including social science, education and other branches of science. This is known as descriptive research not causal or relational as it is not used to determine the cause of something. Researchers/ psychologists record the information that is present in a population/ group, but they do not manipulate variables. Hence, this type of research can be used to describe characteristics that exist in a group, but not to determine cause-and-effect relationships between different variables. This method is often used to make inferences about possible relationships or to gather preliminary data to support further research and experimentation.

Here, this type of study utilizes different groups of people who differ in the variable of interest, but share other characteristics

such as-socio-economic status, educational background and ethnicity. In developmental psychology, cross sectional method is used to study select group of people who are remarkably similar in most area, but differ only in age. By doing so, any differences between groups can presumably be attributed to age differences rather than to other variables. While, the design of such group seems to be relatively easy, finding participants who are very similar except in one specific variable can be very difficult. Additionally, groups can be affected by cohort differences that arise from the particular experiences of a unique group of people. Individuals born in the same time period may share important historical experiences, while people born in specific geographic region may share experiences limited solely to their physical location.

Merits of Cross sectional Method:

The merits of cross sectional method can be pointed out as –

- It includes different age groups of people at a time. Hence, it can be done relatively quickly.
- It is economical in time and cost as data is all gathered at the same point in time.
- It requires no experimental procedure, so no variables are manipulated by the psychologists.
- It is easy and simple to use as instead of performing an experiment, the psychologists need to simply record the information that he observe in the groups.
- The information gathered through cross-sectional method may be used to develop other methods to investigate relationship among groups.
- It is an affordable study method. Cross-sectional studies are much cheaper to study different groups at a same time.
- The studies made through this method are observational in nature.
- It allows psychologists to look at numerous characteristics simultaneously. Instead of focusing on particular traits, this

method looks at each participant as an entire individual.

- Cross-sectional studies provide us with a snapshot of a specific group of people at a particular point in time.
- It can provide information about what is happening in a current population or group.

Demerits of Cross-sectional Method:

The cross-sectional method is sometimes subject to criticism. The following are the cause behind its criticism-

- Cross sectional method cannot tell the psychologists to how stable people's characteristics are as they mature.
- It does not involve repeated measurement of the same individual.
- Cross-sectional method can be used to describe the characteristics that exist in a group, but it cannot be used to determine any relationship that may exist.
- This method is used to gather information only.
- There is no prospective or retrospective follow-up in this method.
- Cross-sectional studies often need to select a sample of subjects from a large and heterogeneous study population. Thus, they are susceptible to sampling bias.
- This method is not good for studying rare behavior.
- This method does not determine the cause-and-effect relationships between different variables.



CHECK YOUR PROGRESS

Q 4: What is cross-sectional method?

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Q 5: State two merits and demerits of Cross-sectional method.

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3.4.2 Longitudinal Method

This is quite opposite method to cross –sectional method used in the field of studying development. A psychologists using longitudinal method observes the same group of individuals over a period of time. The individuals may be children or adult. This method provides a picture of continuous growth. Simply, it refers to the method studying the same group of individuals over an extended period of time. Here, in this method, data is first collected at the outset of the study and then the psychologists may gather data repeatedly throughout the length of study. In some cases, longitudinal studies can last for several decades. This is a best method to study development as it occurs throughout one's life as this method allows the investigator to look at changes over time. Repeated gathering on data over years or period may provide adequate data regarding human development. The longest-running longitudinal study in the world today was started in 1921 by psychologist Lewis Terman. He wanted to investigate how highly intelligent children would develop as they turned into adults.

Longitudinal is a type of method used to discover relationship between variables that are not related to various background variables. This is an observational method. This technique or method involves studying the same group of individuals over an extended period of time. Longitudinal study or method is a developmental research strategy that involves testing an age group repeatedly over many years. It provides the answers to the vital question how people develop? This developmental study follows people over years and the outcome has been an incredible array of findings, especially relating to psychological problems.

It is important to note that a longitudinal study is also a co-relational research study that involves repeated observations of the same items over long period of time. Hence, it is used in developmental psychology to study the developmental trends across

the life-span. Unlike cross-sectional method, it tracks the same people and hence, the differences observed in these people are less likely to be the result of cultural differences across generations. Due to this, the observation on changes on human development made through this method is more accurate.

Longitudinal study or method can be used to find the conclusions that types of development are normative in nature or not. In this type of study, it observes the ways in which development's stages changes between an individual and hypothesizes about the factors of variation in data.

Types of Longitudinal Method

There are three types of longitudinal studies-

A. Panel Study:

This study involves sampling a cross-section of individuals and survey it at regular intervals.

B. Cohort Study:

This study involves selecting a group based on a specific events such as birth, geographic location or historical experiences. This study is a research effort that follows over time group of individuals who are similar in some respects but differ in certain other characteristics and these characteristics are compared with particular outcomes.

C. Retrospective Study:

It involves looking to the past by looking at historical information such as medical records.

Merits of Longitudinal Method:

The merits of longitudinal method can be pointed out as –

- It allows the investigators to look at changes over time.
- It is especially beneficial for studying development and life-span issues as it observes the same group of individuals over a period of time.
- The observation of developmental changes made by this method are more accurate.

- It provides the answer to the vital question of how people develop.
- This method provides a clear picture of continuous growth in men.
- It is helpful in observing the ways in which development varies between individuals.
- It also hypothesizes about the possible causes of variation in development.
- This method can identify unique developmental trends in men.

Demerits of Longitudinal Method:

The causes behind the criticism of longitudinal Methods are-

- This method often requires large amount of time and finding, hence it is expensive.
- It requires significant commitment and resources to be effective.
- The longitudinal study have small group of subject, which makes it difficult to apply the results to a larger population.
- In longitudinal study, participants sometimes drop out of the study in midway, shrinking the sample size and decreasing the amount of data collected and lead to invalid conclusion.
- Since longitudinal studies repeatedly observe subjects over a period of time, any potential insights from the study can take a while to be discovered.
- The data that is collected from longitudinal studies may not be reliable as it behavior changes over time.
- The method require a large sample size.
- Longitudinal studies are often observed to allow flexibility to occur.



CHECK YOUR PROGRESS

Q 6: What are the types of Longitudinal Study?

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Q 7: Who made the longest longitudinal study?

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3.4.3 Co-Relational Method

Another method for studying development is co-relational method. This method shows the relationship between two variables. It is alternative of descriptive studies. A correlation refers to a relationship between two variables. Correlational studies are a non-experimental research method used to understand the linear relationship/association between two variables determined by statistical analysis. Correlational research aims to observe how strongly the variables are associated or related. Correlational studies are a type of research often used in psychology, as well as other fields like medicine. Correlational research is a preliminary way to gather information about a topic. In this type of non-experimental method, psychologists look at relationships between the two variables but do not introduce the variables themselves. Instead, they gather and evaluate the available data and offer a statistical conclusion. The method is also useful if researchers are unable to perform an experiment. Researchers use correlations to see if a relationship between two or more variables exists, but the variables themselves are not under the control of the researchers.

The attributes of correlations include strength and direction. The direction may be positive (both variables increase or decrease together), negative (one variable increase while the other decreases) or unrelated (a random relationship between variables). The strength of a correlation ranges from -1 to +1 with a 0 reflecting no relationship between the variables. A correlational study serves only to describe or predict behavior and not to explain it. This is so because a third variable could be shown to cause the occurrence of one of the variable. Moreover, only experiments can prove causation. The co-efficient of correlation is a measure of correlation strength and can

range from -1.00 to +1.00.

Types of Correlational Study/Method:

There are three sub-types of correlational Method or study-

A. Naturalistic Observation

The naturalistic observation is a sub type of correlational method which involves the process of observing and recording the variables of interest in the natural environment without interference or manipulation by the investigator or the experimenter. It allows the investigator the opportunity to view the variables of interest in a natural setting. It is used to study development when laboratory experiment is not possible. One of the demerits of this method is that study subjects might act differently if they know that they are being watched. The researchers or investigator might not be aware that the behavior that they are observing is not necessarily the subject's natural state i.e., how they would act if they did not know they were being watched.

B. Survey Method

In this method, a random sample of participants completes a survey, test or questionnaire that relates to the variable of interest. If the psychologists need to gather a large amount of data in a short period of time, a survey is likely to be the fastest, easiest, and cheapest option. It is a flexible method as it lets investigators to create data-gathering tools that will help ensure they get the information they need from all the sources they want to use (a random sample of participants taking the survey). One of the advantage of this method is that it is more flexible than other methods. But, it can be affected by an unrepresentative sample or poor survey questions. Participants can affect the result by trying to please the researchers or by lying to make themselves look better.

C. Archival Research

Archival method is performed by analyzing studies conducted

by other researchers/ investigator or by looking at historical record of the particular sample. Many areas of psychological studies benefit from analyzing studies that were conducted long ago by other researchers, as well as reviewing historical records and case studies. The advantage of this method is that here researchers cannot change participant behavior. Using records, databases, and libraries that are publically accessible or accessible through their institution can help researchers who might not have a lot of money to support their research efforts, which makes it less expensive, but in this method sometimes information might be missing.

Merits of Correlational Method:

Correlational Method has some advantages in terms of-

- It is non-experimental study as such it is less costly and effective.
- It does not involve manipulative process.
- It provides the direction and strength of each relationship.
- The results of a correlational method are easy to classify as positive, negative or no relation.
- Through this method development of large number of individuals can be studied.

Demerits of Correlational Method:

Correlational method are sometimes criticized as-

- It determines the relationship between two variables but it does not suggest a cause for the effect.
- It can be expensive and time-consuming to achieve an outcome.
- Biased results can be revealed sometimes through this method.

These are the three important methods of studying development. Besides these, there are some other methods that are used by the psychologists used to study children or development of the individual. The succeeding unit will deal with those methods of studying development.



3.5 LET US SUM UP

The unit can be summarized as-

- The behavior of the child varies according to their ages and developmental characteristics which have a great impact on their life.
- Everyone in close contact with children can contribute to their development. The study of development help parents and teachers to plan activities and experiences for their children and to take proper care of them.
- Study of development can be significant in terms of providing Knowledge of Developmental Pattern, getting answers to how and why of Change, aware to take Prevention to hazards and so on.
- One of the first person to study children as individual was John Amos Comenius.
- Besides him, there were Locke, Rousseau, Pestalozzi, Herbert Spencer, and Froebel who indirectly contributed towards the study of children.
- Scientific studies of children was given great impetus by the work of G. Stanley Hall. He is often considered as “Father of the Child Study Movement”.
- There are different methods used in studying development. Among them-Cross-sectional method, Longitudinal Method and Correlational Method are significant.
- In cross-sectional method the psychologists observes differences between individuals of different ages at the same time.
- A psychologists using longitudinal method observes the same group of individuals over a period of time. Longitudinal is a type of method used to discover relationship between variables that are not related to various background variables.
- There are three types of longitudinal studies- Panel Study, Cohort Study and Retrospective Study.

- Correlational method are a non-experimental method used to understand the linear relationship/association between two variables determined by statistical analysis.
- There are three sub-types of correlational Method- Naturalistic Observation, Survey Method and Archival Research.



3.6 FURTHER READING

1) Ahlawat Neetu(2010): Developmental Psychology, RBSA Publisher, Jaipur.
2) Dash B.N (2011): A textbook of Educational Psychology, Dominant publishers and distributors' pvt. Ltd.
3) Goswamee Gayatree (2008): Child Development and Child Care, Arun Prakashan, Guwahati, Assam.



3.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: G. Stanley Hall is often considered as Father of the Child Study Movement.

Ans to Q No 2: Charles Darwin.

Ans to Q No 3: Two common obstacles in studying child behavior are

- Many time data reported by parents and teachers are inaccurate.
- Lack of consent of parents of new born to let their child be studied.

Ans to Q No 4: Cross-sectional method is a method often used in developmental psychology. In this method, the psychologists observes differences between individuals of different ages at the same time. Here, different sample of behaviour are studied and comparisons are made.

Ans to Q No 5: Merits of Cross sectional Method:

- It requires no experimental procedure, so no variables are manipulated by the psychologists.
- It is easy and simple to use as instead of performing an experiment, the psychologists need to simply record the information that he observe in the groups

Demerits of Cross-sectional Method:

- It does not involve repeated measurement of the same individual.
- Cross-sectional method can be used to describe the characteristics that exist in a group, but it cannot be used to determine any relationship that may exist.

Ans to Q No 6: There are three types of longitudinal studies-

1. **Panel Study:** This study involves sampling a cross-section of individuals and survey it at regular intervals.
2. **Cohort Study:** This study involves selecting a group based on a specific events such as birth, geographic location or historical experiences.
3. **Retrospective Study:** It involves looking to the past by looking at historical information such as medical records

Ans to Q No 7: The longest-running longitudinal study in the world today was started in 1921 by psychologist Lewis Terman.



3.8 POSSIBLE QUESTIONS

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

Q 1: What is cross-sectional method?

Q 2: What are the types of longitudinal method?

Q 3: Give your perception on Naturalistic observation.

Q 4: Differentiate between cross-sectional and longitudinal method of studying development.

Q 5: Critically analyse correlational method as a method of studying development.

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

Q 1: How does study of development can help teachers and parents? Discuss.

Q 2: Discuss cross-sectional method as an important method of studying development.

Q 3: Why longitudinal method is considered as best method of studying life-span?

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