LESSON 2

HOW PSYCHOLOGISTS STUDY?

SUMMARY

Psychology is the scientific study of brain, mind and behaviour, and psychologists conduct their studies using scientific methods.

Goals of Psychological Studies and Research

As a science, psychologists try to understand the nature and functioning of behaviour and experience. It is important for scientific studies to be objective and follow a standard procedure which leads to the same outcome by each and everyone who follows the given method. The four main goals of psychological research are –

Description: It involves observing any behaviour and noting everything about it. It determines the range and boundary of the phenomena.

Explanation: It means a statement of the factors which determine the phenomenon under study.

Prediction: Determining what will happen in the future is a prediction.

Control: The ability to predict provides the knowledge necessary to bring the change that is desirable.

Basic and Applied Research

To get in-depth study of research, Psychology has considered mainly basic and applied research.

Basic research deals with developing understanding, theory building and testing of a theory and applied research deals with solving real life problems.

In practice, **applied research** involves development of technology to solve specific problems that are faced in personal, familial, health, organizational and environmental areas.

Experimental Method

An experiment can be defined as the setting where the researchers have control over manipulation of certain variables. It is preferred over other methods, as it gives a chance to study cause-and-effect relationships. Following are certain steps involved in experimental method;

I. **Forming a hypothesis**
II. **Identifying independent and dependent variables**
III. **Sampling of participants**
IV. **Controlling extraneous variables**
V. **Planning/designing the experiment**
VI. **Verifying hypothesis**

The **limitations** of this method are - findings obtained from this may

not apply to natural settings, sometimes an experiment might prove unethical or dangerous and in some situations, experiment may interfere with behaviour that is measured.

Non-Experimental Methods

Some aspects of behaviour are difficult to study in a laboratory and much more accurate observations can be made in natural settings, for e.g. behaviour on a crowded street. For such situations, following methods are more feasible;

Observation - In psychological studies we use **naturalistic** as well as **controlled observation**. Also, there is another kind of observation which is called **participant observation** in which the observer observes by being a part of the group.

Introspection: it means to look within. The attention is directed inwards to find out what is happening at the experiential level.

Survey: Psychologists go into the field with a prepared list of questions and interview schedules to a group of people. . A carefully conducted survey provides information about the trend in a particular area of concern.

Case history: it is a detailed compilation of data about a single individual. A psychologist may gather complete history, from infancy to present period in order to understand a person's behaviour.

Correlation research: It is used to find out the relationships between two sets of factors/variables. The strength of relationship can be represented by a correlation coefficient, which ranges from – 1.00 to + 1.00.

Psychological Tools

Psychologists use a variety of tools to collect data such as- EEG, ECG, MRI, memory drum, etc. Apart from these, Paper-pencil tests are also used to measure various attributes. Some of the basic tools are:

Questionnaires and Interview Schedules: questionnaires are mailed or interview schedules are presented by the researcher in person. The questions may be open-ended or close-ended.

Psychometric Tests: A psychometric test is a standardized measure of a sample of behaviours and attributes. These tests are used to determine the status of the person being assessed on an attribute, relative to the community of people on which the test has been standardized.

Projective Tests/Techniques: these tests provide indirect assessment of the psychological property and the investigator interprets the obvious behavioural expression or performance.

Ethical Consideration in Psychological studies

Psychological studies are done with human beings and therefore it becomes necessary to follow certain ethical standards, such as;

Informed consent
Confidentiality
Debriefing
Right to withdraw
Responsibility

Today it is a common practice to have Ethics Committees which examine ethical aspects of research before it is undertaken by the researcher.

Need of Statistics in Psychology

Statistics deals with collection, classification, description and interpretation of quantitative data. In psychology it used to – **describe and predict behaviour.**

Types of Statistics –

1. **Descriptive** – used for describing behaviour. E.g. mean, median, mode, variance, correlation.
2. **Inferential** – used for explaining behaviour. E.g. t-test, ANOVA.

Some of the basic functions of statistics are as follows:

- Data and information can be presented briefly and precisely
- Results obtained are more accurate and objective.
- General conclusions can be arrived at.
- Comparative studies are made possible.
- Relationships between two or more variables can be investigated.
- Predictions about behaviours can be made.

Some basic statistical concepts

Frequency distribution: When a large set of data is collected, it is usually presented in a frequency distribution table which is more comprehendible. For e.g. Raman made chapattis for seven days and following data was recorded – 2,3,3,2,4,3,3.

No. of chapattis made	Tally
2	II
3	IIII
4	I

Central tendency: Methods which are used to summarize the characteristics of the data are called measures of central tendency. E.g. Mean, Median, Mode.

a) Mean ($\bar{X}$) - The mean is the weighted average of all the raw scores.

$$\textbf{Mean } (\bar{X}) = \sum X/N$$

$\sum X$ = sum of all observations

N = no. of total observations

b) Median: The median is the value that divides a group of

scores into two equal parts, one part consisting of all values greater and the other consisting of values less than the median. E.g. – 2, 2,3,4,6**, median is 3.**

c) **Mode**: The mode is that score which occurs the maximum number of times in a given series of scores. E.g. – 2,**3,3**,2,4,**3,3, mode is 3.**

d) **Correlation:** it is a method, showing how closely related are any two sets of variables numerically. The score through which the relationship between two variables is expressed is called the **coefficient of correlation**. Magnitude of correlation ranges between **– 1.00 to + 1.00.**

Mean is responsive to the exact position of each score in the distribution and is therefore more sensitive to extreme scores than median and mode.

Do you know?

206 BC – Psychological testing was used by the Han dynasty in China to select their officials.

1888 – Sir Francis Galton invented the correlation**.** He is called *"the father of mental testing".*

1921 – Rorschach Inkblot Test was developed by Herman Rorschach.

1935 – Thematic Apperception Test (TAT) –first published by Henry Murray.

Evaluate yourself

1. Explain the characteristic difference between experimental and non-experimental methods.
2. Describe the ethical considerations of psychological studies.