

Experimental Method

Experiments are generally conducted to establish cause-effect-relationship between two sets of events or variables in a controlled setting. It is a carefully regulated procedure in which changes are made in one factor and its effect is studied on another factor while keeping other related factors constant. In the experiment, cause is the event being changed or manipulated. Effect is the behaviour that changes because of the manipulation.

The Concept of Variable:

We have read earlier that in the experimental method, a researcher attempts to establish causal relationship between

two variables. What is a variable?
Any stimulus or event which varies, that is, it takes on different values (or changes) and can be measured is a variable. Any object by itself is not a variable. But its attributes are. For example, the pen that we use for writing is not a variable. But these there are varieties of pens available in different shapes, sizes, and colours. All of these are variables.

Variables are of many types. We will focus on independent and dependent variables. Independent variable is that variable which is manipulated or altered or its strength varied by the researcher in the experiment. It is the effect of this change in the variable which the researcher wants to observe or note in the study. The variables on

which the effect of independent variables is observed is called dependent variable. Dependent-variable represents the phenomenon the researcher desires to explain. It is expected that change in the dependent variable will ensue from changes in the independent variable.

Steps of Experimental Method:

- ① Problem: It is necessary to have a problem before beginning an experiment. According to F.N Kerlinger (1964), "A problem is a interrogative sentence or statement that asks what relation exist between two or more variable."
- ② Literature Study and Formation of Hypotheses: After the selection of the problem the experimenter makes a deep study of related literature that he is consults the books, research papers and psychological

abstract with regards to his problem, by which he tries to know that how much work is done in this direction and what results were obtained, how much reliable were the obtained results. By the knowledge attained by the study of literature and discussion with experts the experimenter constructs the hypothesis related to his problem. Townsend (1953) defined hypothesis is a suggested answer to the problem.

③ Subjects:— The subjects are decided after the construction of hypothesis, by subject we mean those persons on which the experiment is to be administered.

④ Variable and Design of the Experiment:

⑤ Apparatus and Material:

⑥ Controls:

⑦ Instructions and Procedure

⑧ Results:

⑨ Discussion and Generalization:

Importance of Experimental Method

- ① The accurate study of cause and effect relation is possible by this method. This method studies the degree of effect and cause relation also.
- ② This method is more accurate and precise than others because it controls most of the factors affecting the behaviour and studies the cause and effect-relationship.
- ③ The results obtained by this method are valid, reliable, and universal. Because of this method psychology is counted in the category of other natural sciences.

Disadvantages of Experimental Method:

- ① The greatest difficulty while studying the psychological problem by this method is that the factors affecting a specific behaviour are to be kept under control, but due to complex and dynamic nature of behaviour control of these factor is not-impossible then at least very difficult.
- ② The manipulation of variable in some conditions is a difficult job.
- ③ The study of some complex and mental process and social situation is not possible in the controlled laboratory conditions.