



**PATNA UNIVERSITY**  
**M.A (PSYCHOLOGY) SEMESTER-1**  
**EXPERIMENTS IN PSYCHOLOGY (CC4)**  
**TOPIC: INTRODUCTION TO EXPERIMENT**

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- Psychology uses scientific techniques to establish relationships between events and behaviors. The use of experimentation in psychology allows us to check our speculations. Experimentation is called the gold standard methodology and is placed at the top of a hierarchy of possible research and evaluation methods. Experimental studies are considered the most desirable way to ascertain the impacts of programs and to determine cause and effect in such studies.
  - Experimental Psychology has a rich heritage that started when Wilhelm Wundt created the first Psychology laboratory in 1879 at the University of Leipzig.
  - The experimental method is defined by the manipulation of independent variables and the measurement of dependent variables. Extraneous variables are either controlled or removed. Any change in the dependent variables can be viewed as caused by the manipulation of the independent variables. The use of experiments is widespread, including, for example, research in Biological, Social, Developmental, Educational, Clinical, and Industrial Psychology.
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- Experiments involve identifying and controlling for potential sources of unwanted variability, as the latter can compromise one's ability to identify a cause-effect relationship between the variables of interest.
- The experimental method requires at minimum two groups: the experimental group and the control group. Subjects or participants in the experimental group receive the treatment, and subjects or participants in the control group do not. All other variables are held constant or eliminated. When conducted correctly and carefully, the experimental method can determine cause-and-effect relationships. It is the only method that can do this.



## CHARACTERISTICS OF EXPERIMENTS

- **CAUSE EFFECT RELATIONSHIP-** To infer cause and effect, it is necessary to conduct a controlled experiment involving an experimenter-manipulated independent variable in which subjects are randomly assigned to experimental conditions.
- **OBJECTIVITY-** A good experiment consists of objectivity which means it is free from the attitudes, prejudice of the experimenter as well as the subjects.
- **VARIATION-** The independent variable is manipulated by the experimenter, whereas the dependent variable is observed and recorded. Here, the variation in the dependent variable due to independent variable is the main focus of study in an experiment.
- **REPETITION-** According to the Principle of Replication, the experiment should be repeated more than once. Thus, each treatment is applied in many experimental units instead of one. By doing so the statistical accuracy of the experiments is increased.

- **ISOLATION-** In an experiment, all the extra factors that are not necessary to be studied are eliminated. A true experiment attempts to isolate cause and effect, and to eliminate alternative explanations of observed relationships between variables.
- **VERIFICATION-** The experiment has a criteria of verification. The results of an experiment can be verified by other experimenter.
- **RELIABILITY-** The experiment must be reliable. It means if the same experiment is done several times, then the results must not vary with each other.
- **RANDOMIZATION-** The Principle of Randomization provides protection, when we conduct an experiment, against the effect of extraneous factors by randomization.
- **CONTROL-** All the segments of the experiment remain the same during the experiment. It can control many extraneous influences so that validity is high and alternative explanations of events are eliminated or weakened.

