

## **Purpose of Research**

Research may be broadly classified into two areas; basic and applied research. The primary purpose of basic research (as opposed to applied research) is to discover, interpret and develop methods and systems that can advance human knowledge on a wide variety of scientific matters. Applied research on the other hand, is concerned with the transformation of outputs of basic research into visible technological tools that can be used to advance the conveniences of man.

Generally, research is understood to follow a certain structural process. Though step order may vary depending on the subject matter and researcher, the following steps are usually part of most formal research, both basic and applied:

1. Observations and Formation of the topic
2. Formation of Hypothesis
3. Articulation of conceptual definitions
4. Operational definitions
5. Gathering of data
6. Analysis of data
7. Test, revising of hypothesis
8. Conclusion, iteration if necessary

A common misunderstanding is that by this method a hypothesis could be proven or tested.

Generally a hypothesis is used to make predictions that can be tested by observing the outcome of an experiment. If the outcome is inconsistent with the hypothesis, then the hypothesis is rejected. However, if the outcome is consistent with the hypothesis, the experiment is said to support the hypothesis. This careful language is used because researchers recognize that alternative hypotheses may also be consistent with the observations. In this sense, a hypothesis can never be proven, but rather only supported by

surviving rounds of scientific testing and, eventually, becoming widely thought of as true. A useful hypothesis allows prediction and within the accuracy of observation of the time, the prediction will be verified. As the accuracy of observation improves with time, the hypothesis may no longer provide an accurate prediction. In this case a new hypothesis will arise to challenge the old, and to the extent that the new hypothesis makes more accurate predictions than the old, the new will supplant it.

#### Characteristics of Scientific research

1. Objectivity: Inferences and conclusion drawn from the study should be free from personal or perceived biases
2. Reliability:
3. Reproducibility
4. Verifiability
5. Empirical

Research involves an eclectic blending of an enormous range of skills and activities To be a good researcher, you have to be able to work well with a wide variety of people, understand the specific methods used to conduct research, understand the subject that you are studying.

Research in Vocational and technological disciplines are usually Applied in nature. Applied research is a blend of both theoretical and empirical concepts. It is theoretical because it is concerned with developing, exploring or testing the theories or ideas that researchers have about how the world operates. But it is also empirical, meaning that it is based on

observations and measurements of reality. Applied research is also concerned with the general case (nomothetic) rather than the individual. We often study individuals, but usually

we are interested in generalizing to more than just the individual. The inferences that we make in applied research have probabilities associated with them (probabilistic). They are

seldom meant to be considered as covering laws that pertain to all cases. This is a reason for the prominence given to statistics in applied research because it allows us to estimate

probabilities for the situations we study. Most research in the field are interested in looking at how our causes (e.g., programs, treatments) affect the outcomes of interest cause-effect relationships. This does not implied that most studies actually study cause-effect relationships. There are some studies that simply observe, for instance, survey research seeks to describe the number of people holding a particular opinion. Explorative research studies relationships. Probably the vast majority of applied social research consists of these descriptive and correlational studies. it is important that we go beyond just looking at the world or looking at relationships. We would like to be able to change the world, to improve it and eliminate some of its major problems. If we want to change the world (especially if we want to do this in an organized, scientific way), we are automatically interested in causal relationships. There are three basic types of questions that research projects can address; Descriptive study is designed primarily to describe what is going on or what exists( e.g. to know about the population of women that would embrace exclusive breast feeding of infants for the next one year), Relational study is designed to look at the relationships between two or more variables(e.g. gender and perception about breast feeding) while Causal study is designed to determine whether one or more variables (e.g., a program or treatment variable) causes or affects one or more outcome variables( e.g. effect of exposure to nutrition education curriculum at secondary school on perception about breast feeding practices).