

FUNDAMENTAL RESEARCH AND APPLIED RESEARCH

BY : MD OWAIS
DEPTT. OF EDUCATION
MMHA&PU , PATNA

FUNDAMENTAL RESEARCH

- **Fundamental research**, also known as **basic research** or **pure research** does not usually generate findings that have immediate applications in a practical level.
- **Fundamental research** is “experimental or theoretical works mainly performed to obtain new knowledge on the basics of observable phenomena or facts, without prior consideration that it will result in any practical application or use”.

- Fundamental studies tend to make generalizations about the phenomenon, and the philosophy of this type of studies can be explained as ‘gathering knowledge for the sake of knowledge’.
- Fundamental researches mainly aim to answer the questions of why, what or how and they tend to contribute the pool of fundamental knowledge in the [research area](#).

- Therefore the main objective of fundamental research is to understand natural phenomena and to formulate theories and explanatory models.
- There is no finality of short-term application intended for financial exploitation: it “creates” knowledge, it explains, and it formulates theories.
- Research is driven by a scientist’s curiosity or interest in a scientific question.

Example of fundamental research

- Basic science investigation probe for answer to question such as:-
 - How did the universe begin ?
 - What are protons,neutrons and electrons composed of ?
 - What is the specific genetic code of the fruit fly ?

Benefits of fundamental research

There are three benefits of fundamental research:-

1. Acquisition of new knowledge
2. Social benefits to society
3. Economic gains

APPLIED RESEARCH

Applied research

- **Applied research** is a form of systematic inquiry involving the practical application of science. It accesses and uses some part of the **research communities'** (the academia's) accumulated theories, knowledge, methods, and techniques, for a specific, often state-, business-, or client-driven purpose.



Applied Research

- ❑ **Applied research** is defined as a research which is used to answer a specific question, determine why something failed or succeeded, solve a specific, pragmatic problem related to product development, or to gain better understanding.
- ❑ Examines a specific set of circumstances, and its ultimate goal is relating the results to a particular situation. ie, applied research uses the data directly for real world application.
- ❑ Research which studies the relationship and applicability of theories or principles to the solution of a problem
- ❑ The level and type of involvement of faculty researchers can differ based on the scope of work.

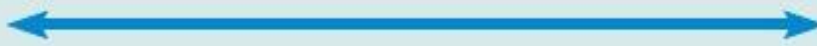
- Applied research is designed to solve practical problems of the modern world, rather than to acquire knowledge for knowledge's sake. One might say that the goal of the applied scientist is to improve the human condition.
- Some scientists feel that the time has come for a shift in emphasis away from purely basic research and toward applied science. This trend, they feel, is necessitated by the problems resulting from global overpopulation, pollution, and the overuse of the earth's natural resources.

Examples of Applied Research

- For example, applied researchers may investigate ways to:
 - improve agricultural crop production
 - treat or cure a specific disease
 - improve the energy efficiency of homes, offices, or modes of transportation.

Difference b/w Fundamental and Applied research

Basic research



Applied research

Purpose:

- Expand knowledge of processes of business and management
- Results in universal principles relating to the process and its relationship to outcomes
- Findings of significance and value to society in general

Context:

- Undertaken by people based in universities
- Choice of topic and objectives determined by the researcher
- Flexible time scales

Purpose:

- Improve understanding of particular business or management problem
- Results in solution to problem
- New knowledge limited to problem
- Findings of practical relevance and value to manager(s) in organisation(s)

Context:

- Undertaken by people based in a variety of settings including organisations and universities
- Objectives negotiated with originator
- Tight time scales