



# Research Methods

## RMS 311

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# **UNDERSTANDING THE CONCEPT OF RESEARCH**



# What is Research

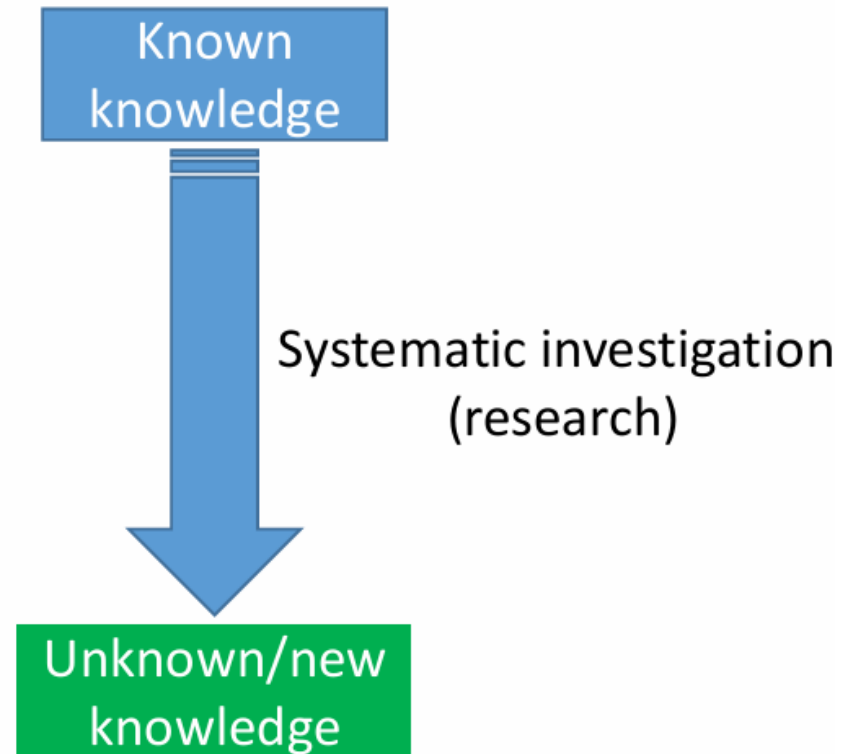
**Research** Systematic investigation to discover new knowledge

**Research** is a process of systematic inquiry that entails

1. Collection of data;
2. Documentation of critical information; and
3. Analysis and interpretation of that data/information, in accordance with suitable methodologies set by specific professional fields and academic disciplines.



# What is Research





# What is Research

## Qualities of new knowledge:

1. **Novelty** – A New idea that improves our current understanding
2. **Generalization** – Universally acceptable and applicable to a wider context (e.g., outside the studied sample population)
3. **Reproduction** – (Especially for experimental research) Repeatable results and conclusions



# Characteristics of research

1. Generates new knowledge
2. To ensure accurate data, researchers must follow a systematic approach. This includes adhering to rules and procedures that define the objective.
3. Researchers need to practice ethics and a code of conduct while making observations or drawing conclusions.



# Characteristics of research

4. The data or knowledge that is derived is in real-time from actual observations in natural settings.
5. Research creates a path for generating new questions. Existing data helps create more research opportunities.



# Types of research

## 1. BASIC RESEARCH

- ❑ It is also known as pure research, and is an original investigation into the reasons behind a process, phenomenon, or particular event.
- ❑ It focuses on generating knowledge around existing basic principles.
- ❑ It is generally considered 'non-commercial research' because it doesn't focus on solving practical problems, and has no immediate benefit or ways of being applied.



# Example of basic research

Example of basic research in **Computing and Engineering fields**

□ A researcher may try to investigate:

- Whether computer processing power is reduced during hot seasons
- Why do many members of the famous JF online platform use abusive language when making contributions to articles or news posted on it?



## ...Types of research

### **2. APPLIED RESEARCH:**

- It investigates well-known theories and principles in order to enhance knowledge around a practical aim.
- Thus, it focuses on solving real-life problems by deriving knowledge which has an immediate application.



# Example of applied research

Example of applied research in **Computing, IS and Engineering fields**

□ A person may undertake applied research to;

- Design an algorithm using an assembly language to increase computer processing power during hot seasons
- Investigate how AI techniques may be applied to filter and delete abusive comments among thousands of contributions to articles posted on the forum.

