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Research

Lecture # 1

By:

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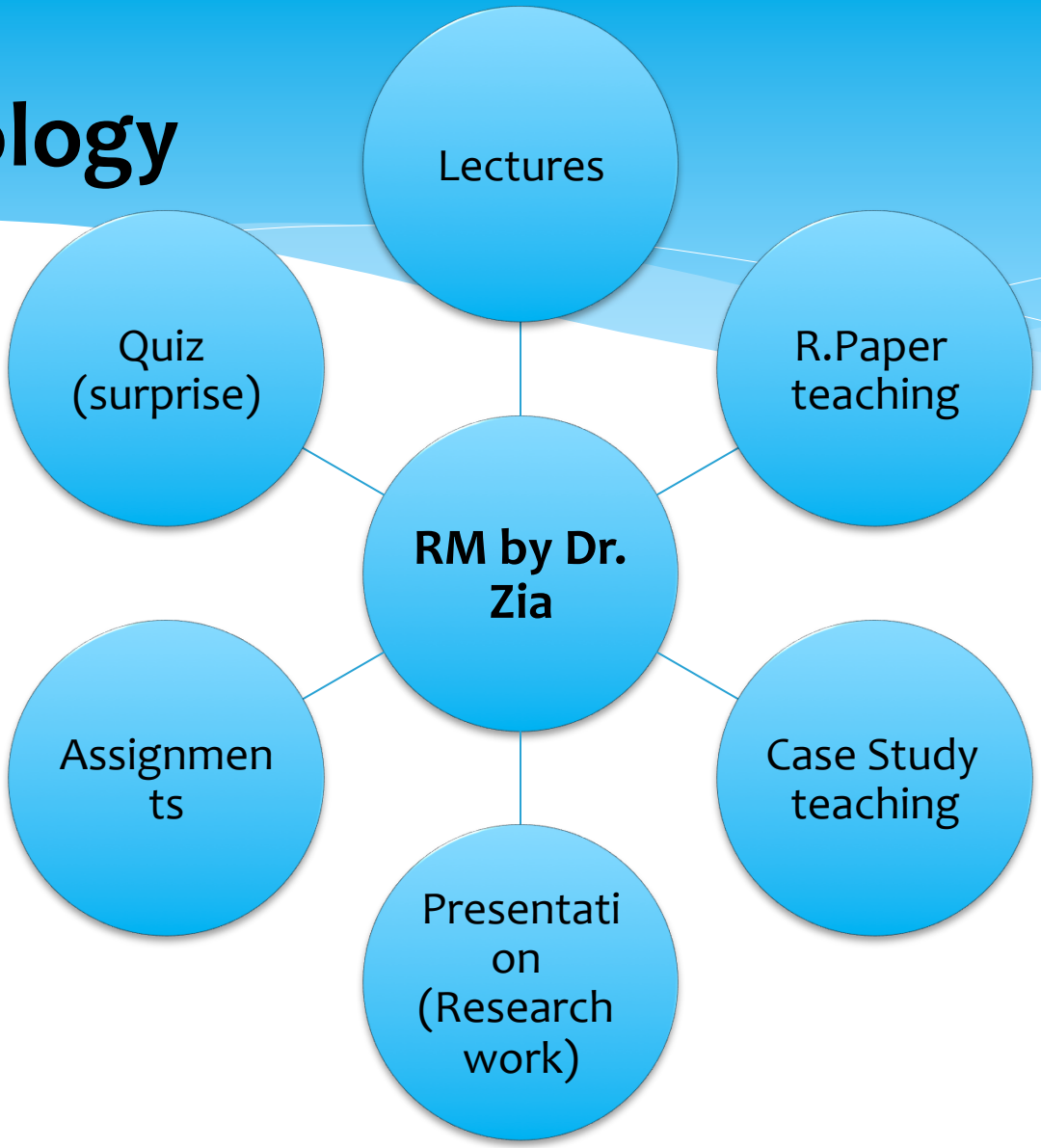
Teaching methodology



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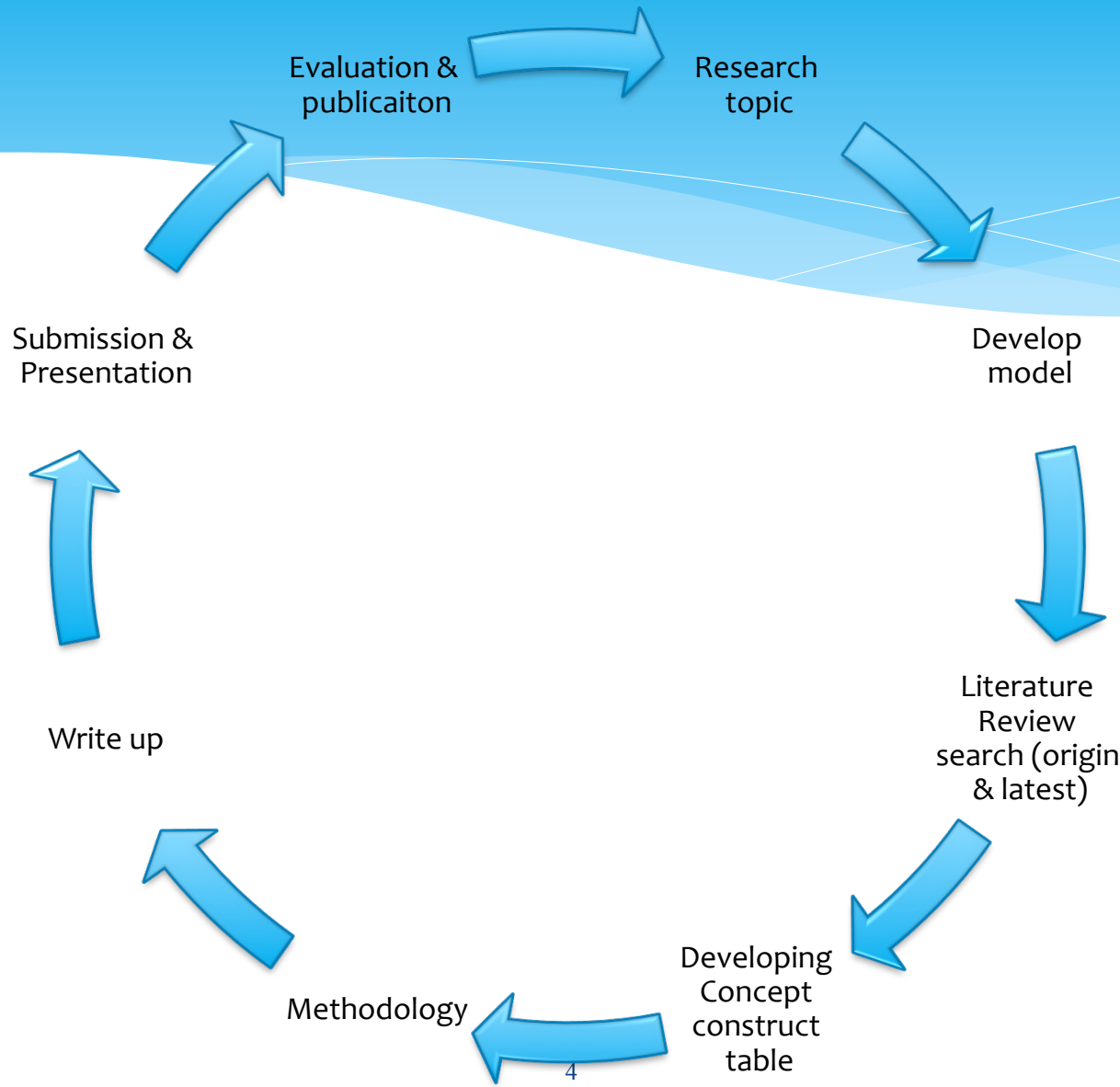
Hands on learning about RM



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Over 90% of the relevant literature in many technical fields, such as biotechnology, astronomy, computers and software, and environmental sciences, has been produced since 1985.

Traditional programmatic approaches to education simply cannot keep up……...

J B Quinn (2001)

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Research Defined

The systematic and objective process of generating information for aid in making decisions.

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What is research?

* **Research** is one of the ways to find answers to your questions
* **Research** is defined as human activity based on intellectual application in the investigation of matter.
* The primary purpose for research is discovering, interpreting, and the development of methods and systems for the advancement of human knowledge on a wide variety of scientific matters of our world and the universe.

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What is research?

* Research is defined as a systematic, self critical enquiry.
* Enquiry is aimed at understanding a thing or phenomenon or solving a problem

Research is an art of scientific investigation.

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Why Study Research?

* Research provides you with the knowledge and skills needed for the fast-paced decision-making environment

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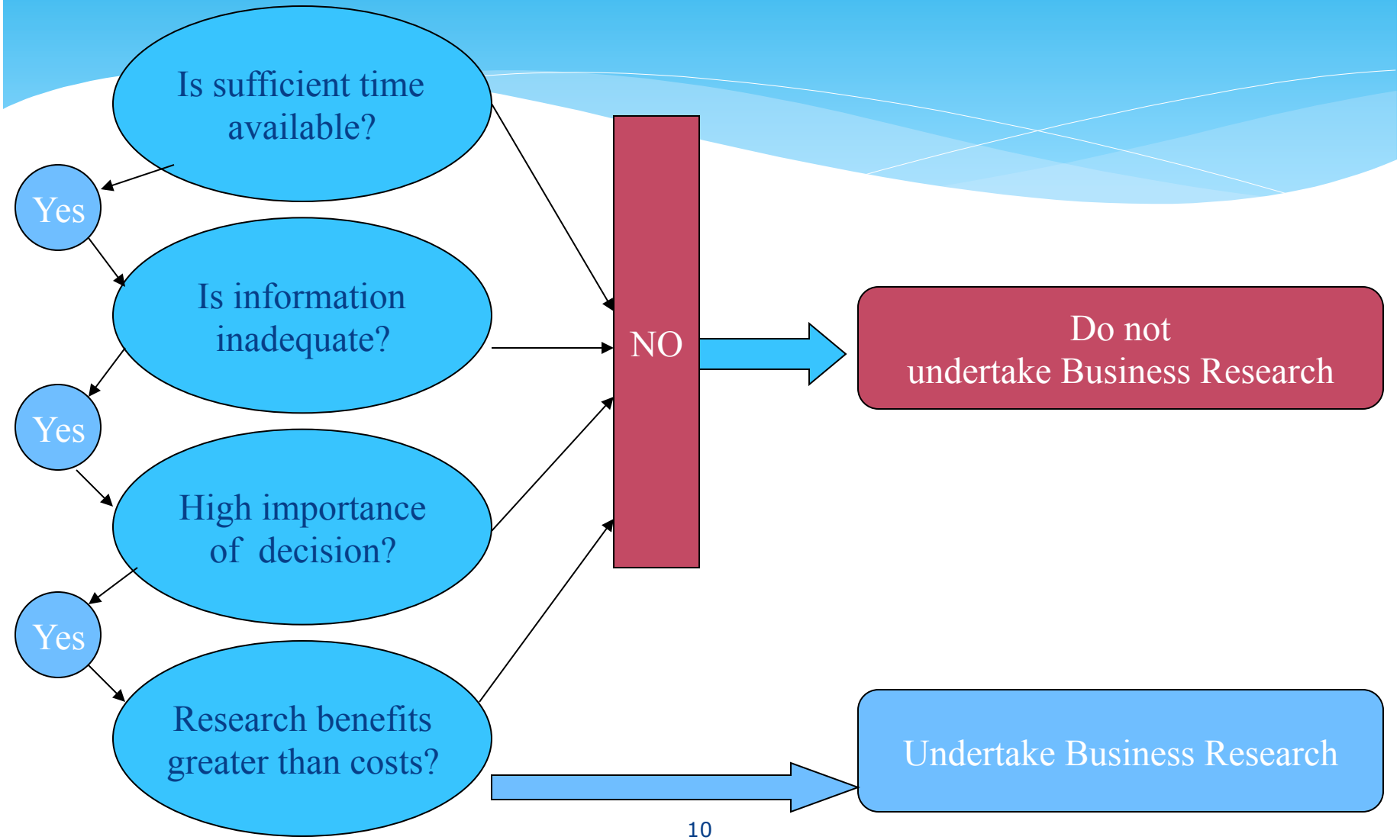
When Should Research be Undertaken?



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The Research Process – a quick Review

* Define the Problem
* Develop an Approach to the Problem
* Formulate a Research Design
* Fieldwork
* Prepare & Analyze the Data
* Prepare & Present the Report

Research Types

Basic research

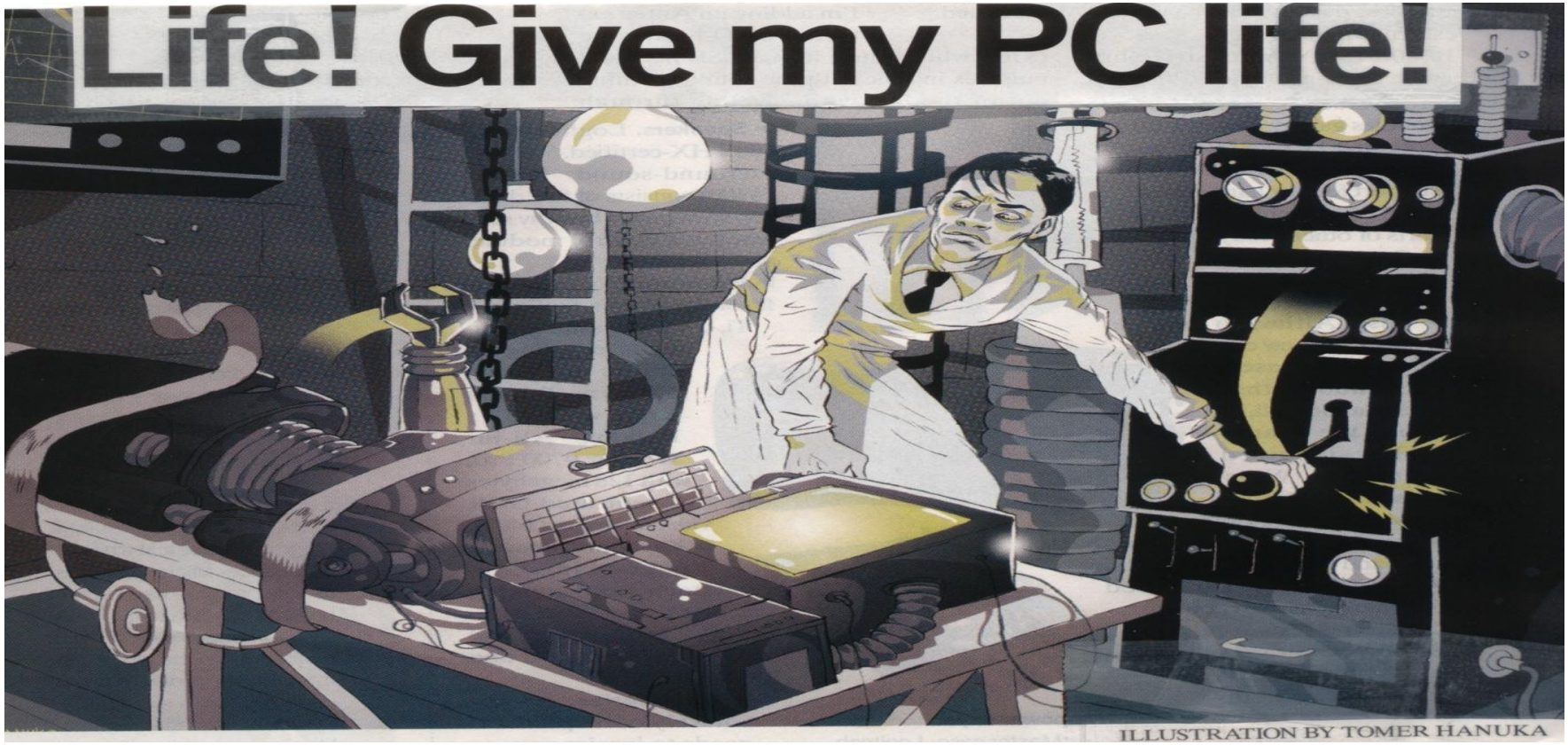
Applied research

Basic Research

* Attempts to expand the limits of knowledge
* Not directly involved in the solution to a pragmatic problem.

Applied Research

Conducted when a decision must be made about a specific real-life problem



Scientific Method

* The analysis and interpretation of empirical evidence (facts from observation or experimentation) to confirm/approve or disprove prior conceptions

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Pace of Knowledge Creation

* 1700 To 1950: Man's Knowledge Doubled
  = 250 Years
* 1950 To 1965: Man's Knowledge Doubled Again
  = 15 Years
* 1965 To 1975: Man's Knowledge Doubled Again
  = 10 Years
* 1975 To 1980: Man's Knowledge Doubled Again
  = 5 Years

(Do you remember that statement, almost 90% specific knowledge is generated after 1985 ?)

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You may consider questions like:

* Is it worth to research?
* What is purpose of your research?
* What would your research questions?
* From whom you will collect information?
* From how many persons, you will collect information?
* How will you collect the information?
* How will you analyze information?
* How will you report the findings?
* What could be the kinds and sources of biases?
* How will you prove to then boss that the information contained the Guide is relevant and reliable?

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Are you SURE that you are not going to reinvent the wheel?

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What is a Good Research?

A good research is the one that follows the standards of the scientific method. Additionally, it has to have the following features:

* Purpose clearly defined
* Research process detailed
* Research design thoroughly planned
* Limitations frankly revealed
* High ethical standards applied
* Consistent style of citation
* High ethical standards applied
* Adequate analysis for decision-maker's needs
* Findings presented unambiguously
* Conclusions justified
* Researcher's experience reflected
* Bibliography

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Quantitative & Qualitative Approaches

Quantitative	Qualitative
Objective	Subjective
Research questions: How many? When? Where? Strength of association?	Research questions: What? Why? How
"Hard" science	"Soft" science
Literature review must be done early in study	Literature review may be done as study progresses or afterwards
Test theory	Develops theory
One reality: focus is concise and narrow	Multiple realities: focus is complex and broad
Facts are value-free and unbiased	Facts are value-laden and biased
Reduction, control, precision	Discovery, description, understanding, shared interpretation
Measurable	Interpretive

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Mechanistic: parts equal the whole	Organismic: whole is greater than the parts
Report statistical analysis. Basic element of analysis is numbers	Report rich narrative, individual; interpretation. Basic element of analysis is words/ideas.
Researcher is separate	Researcher is part of process
Subjects	Participants
Context free	Context dependent
Hypothesis	Research questions
Reasoning is deductive	Reasoning is inductive
Establishes relationships, causation	Describes meaning, discovery
Uses instruments	Uses communications and observation
Strives for generalization Generalizations leading to prediction, explanation, and understanding	Strives for uniqueness Patterns and theories developed for understanding
Highly controlled setting: experimental setting (outcome oriented)	Flexible approach: natural setting (process oriented)
Sample size: n	Sample size not a concern; seeks “informal rich” sample; carefully selected participants
"Counts the beans"	Provides information as to "which beans are worth counting"
Uses different instruments	Researcher is the instrument

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Activity

QuanTitative	QuaLitative
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

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Modules in a Business Research

- Topic
- Abstract
- Key words
- Introduction
  - Brief about the research area
  - Importance of the Study
  - Problem Statement
  - Research Objectives
- Literature Review
- Methodology
  - Research Design
  - Data collection method
  - Sample size, sampling technique and population
- Data Analysis
  - Statistical tools and techniques
  - Results, interpretation and discussion
- Conclusion and Recommendations
- References
- Annexures

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