Research Methodology for PhDs

GBSB GLOBAL
BUSINESS SCHOOL

Session 15-1 Topics

- Types of journals
- -How to select an appropriate journal for research and publication
- -Tips for a successful publication

Types of Scientific Publications

- Journal articles.
- Books.
- Encyclopedias.
- Handbooks.
- Dissertations theses.
- Research reports.
- Conference proceedings.
- Official publications.

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Overview

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Types of Journals

Hybrid journals

- are traditionally subscription-based journals that provide authors with a choice to publish articles as open access on payment of a specified fee. Once paid, the article is made available to the public at no cost to them; however, other articles in this type of journal stay behind paywalls and are accessible only to those with subscriptions.

ii) Mega journals

- are usually more inclusive in their publishing strategy. These types of journals in research accept submissions across academic disciplines from life sciences to social sciences and arts among others. All submissions to mega journals undergo peer reviews, where the technical and scientific soundness of the work being presented is thoroughly checked. However, lower article processing charges and faster turnaround times than traditional journals[1] make these types of journals a great option for researchers to quickly publish their work and reach a wider audience.

(iii) Overlay journals

- are slightly different from the above two types of journals as its submissions are curated from various open access repositories. They are not bonafide published journals per se but provide links to the work of researchers on specified open access repositories by providing volume and issue details of the concerned journal. The advantage that these types of journals offer is that they are quality controlled, affordable, and a resourceful source of information. By curating significant research in top publications, these types of journals enable students and researchers worldwide to easily access the most relevant articles across disciplines.

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Publishing Agencies
(ratings are usually based on surveys and/or bibliographic index)

1. Springer Nature
2. Elsevier
3. Taylor & Francis
4. Wiley
5. Oxford University Press (OUP)
6. Cambridge University Press
7. SAGE Publishing
8. Macmillan Education
9. Pearson
10. Bloomsbury Academic
11. Emerald
12. Brill

How to Select a Journal/Book for Publication

Choose the Journal as early as possible	Journal subject & scope	Impact factor and full text views	Costs: Article Publication Charges	Submission and publishing experience:
•Your message (what should someone reading your paper take away from the experience? What's the key take-home message?) •Your audience (who will be reading your article? Experts in the field or a more general audience?) •Your structure (what key sections should my paper include? This can be gathered from looking at previously published papers in your target journal.)	•The overview of the journal's aims and scope •The specific research areas and topics the journal focuses on •Information about the article types published in the journal			•Journal acceptance rate, •Editorial and publication times, formatting and support •Policies and open research practices: Data sharing, ORCID, pre-prints •TL;DR (Too long – do not read) policies

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Search Engines

- JournalFinder
- Springer Nature: Journal suggester
- Enago’s Open Access Journal Finder
- Journal/Author Name Estimator

Research vs Review Articles

A **research article**

- is considered a 'primary' source of information or the 'original' study. In other words, it is the first place where the results of a scientific study were reported, along with all the details of the methods used to arrive at those results. (Nowadays a pre-print server also provides advance information, yet, without peer-review, they are not considered as 'valid', until the publication is accepted).

A **review article**

- is a 'secondary' source of information, collating research articles related to a particular area of research. This article does not report any new original results obtained by the authors of the review. Instead, the authors' surveys previously published reports/articles in the field and summarize them to draw broad conclusions or point out new perspectives in the field of study. Analyzing a large amount of known information in the field can help the authors to point out new potential studies to be done in the future that can advance our knowledge, taking the field ahead.

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Research vs Review Articles

Section of the Paper	Purpose	Research Article	Review Article
Abstract	Summarizes the whole text and gives readers a glance at the paper before actually reading it.	✔	✔
Introduction	Conveys the background of that particular research area, what is already known in the field from earlier research, what is unknown and why this study could be relevant to the field.	✔ The introduction aims to highlight the research question that the authors of that paper wanted to ask and the relevance in the light of the prior research in the area.	✔ The introduction aims to highlight why reviewing this research topic can be of relevance.
Materials and Methods	State all the different materials (chemicals, organisms, physical instruments) and the methods (protocols) they used in their study. It helps other researchers in repeating the exact experiments.	✔	✘ Mostly do not have materials and methods, but authors can state the methods used to do literature search and selected articles to review.

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Research vs Review Articles

Results	Details the results or outcome obtained after doing all the experiments. Some aspects of this are expected to be 'novel', providing new information, new techniques or a new understanding compared to all research articles that are already published in the field previously	✔	✘ While review articles don't have original results, they are expected to provide a 'novel' perspective in the research field through their review of existing published articles.
Discussion	Authors discuss their results in the context of the research field, to highlight the novelty of their study, how it supports or opposes what is known in the field and why it is essential. The authors also try to provide some future steps of their work, discuss any limitations in their study and how those can be addressed.	✔	✔
References	List of the articles, books and other resources the authors used to design their study and support the introduction and discussion they have written in their article.	✔	✔

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Scientific Article Structure

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EXPLAIN WHY YOUR STUDY IS NOVEL
HYPOTHESIS

MATERIALS AND METHODS

INTRODUCE STUDY SYSTEM
EXPLAIN METHODS SUCH THAT A READER COULD RECREATE YOUR STUDY

RESULTS

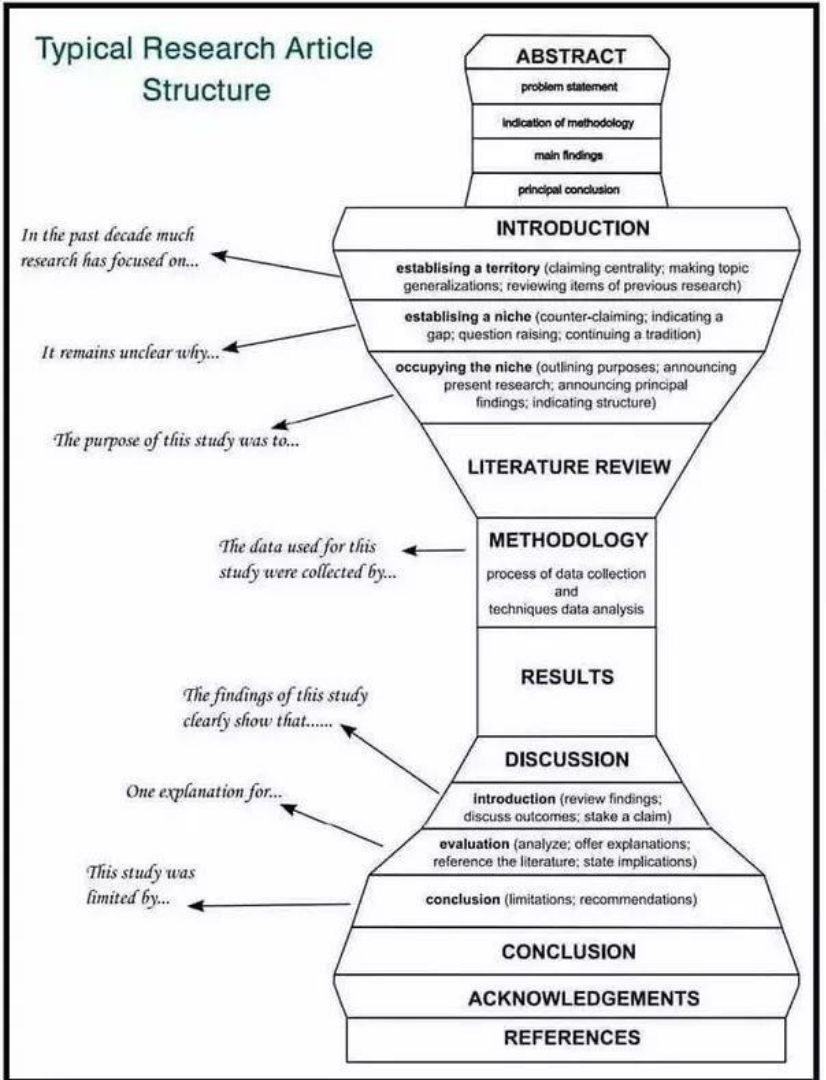
OBJECTIVELY STATE FINDINGS
FOCUS ON BIOLOGICAL RESULTS
USING STATISTICS FOR SUPPORT

DISCUSSION

INTERPRET YOUR RESULTS
TIE YOUR RESULTS BACK TO THE LITERATURE
BY ANSWERING THE KNOWLEDGE GAP

CONCLUSIONS AND IMPLICATIONS

Scientific Article Structure



Define the Purpose

Examples of well-stated purposes by submission type.

Type of Submission	Example purpose
Original Research	Therefore, the purpose of this study was to describe the volume of pitching for pitchers from multiple college teams at the Division I level.
Systematic Review of the Literature	Therefore, the purpose of this systematic review was to investigate the association between training characteristics and running related injuries.
Clinical Commentary/Current Concepts Report	The purpose of this clinical commentary is to examine the risk factors contributing to the high recurrence rate of hamstring injuries, and propose a unique rehabilitation strategy addressing these factors in order to decrease the rate of reinjury.
Case Report	The purpose of this case report is to describe the non-surgical management of a professional athlete with the characteristic signs and symptoms of a sports hernia.
Clinical Suggestion	The purpose of this clinical commentary is to review types of integumentary wounds that may occur in sport, and their acute management.

Session 15-2 Topics

- Module Review
- Wrap up

Research Methods. Definitions

Research methods are specific procedures for collecting and analyzing data. Developing your research methods is an integral part of your research design.

(c) Scribbr

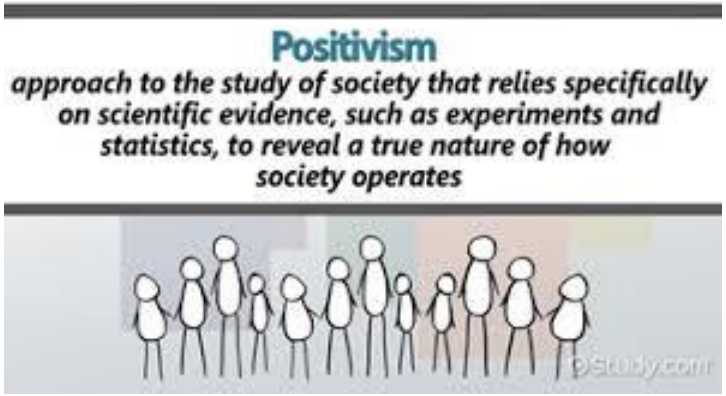
Research Methods refer to the techniques, procedures, and processes used by researchers to collect, analyze, and interpret data in order to answer research questions or test hypotheses. The methods used in research can vary depending on the research questions, the type of data that is being collected, and the research design.

(c) https://researchmethod.net/researchmethods/

What a Positivism IS?

Positivism is a philosophical school that holds that all genuine knowledge is either true by definition or positive—meaning a posteriori facts derived by reason and logic from sensory experience.

- Other ways of knowing, such as intuition, introspection, or religious faith, are rejected or considered meaningless.



What is Phenomenology

Phenomenology is the philosophical study that attempts to understand the subjective, lived experiences and perspectives of people.

The Stanford Encyclopedia of Philosophy defines it as the “study of structures of consciousness as experienced from the first-person point of view.”

It studies the way we experience things. In fact, it is based on the principle that a single experience can be interpreted in multiple ways and that reality consists of each person’s interpretation of the said experience.

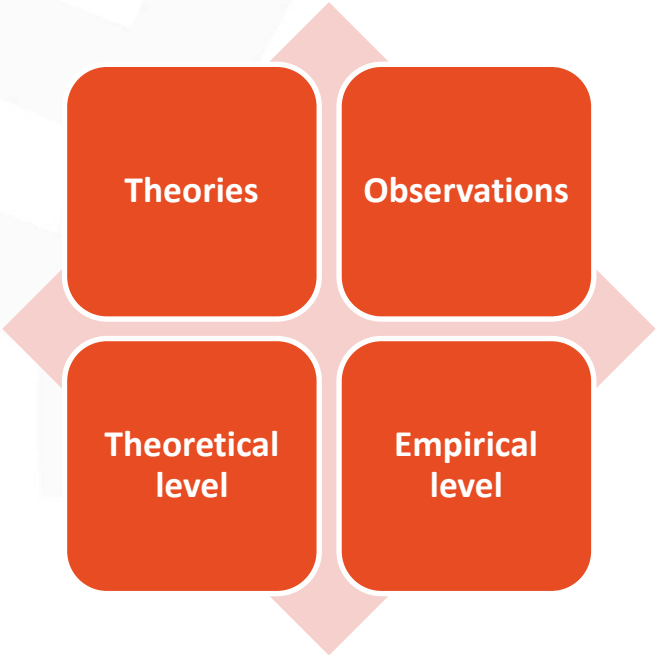
Phenomenology provides information about unique individual experiences, ultimately offering a detailed and complete description of human experiences and meanings.

The aim of social research

The aim of social research, like research in natural sciences, is to discover new facts or verify and test old social facts.

It tries to understand human behaviour and its interaction with the environment and social institutions.

The “Pillars” of Social Research



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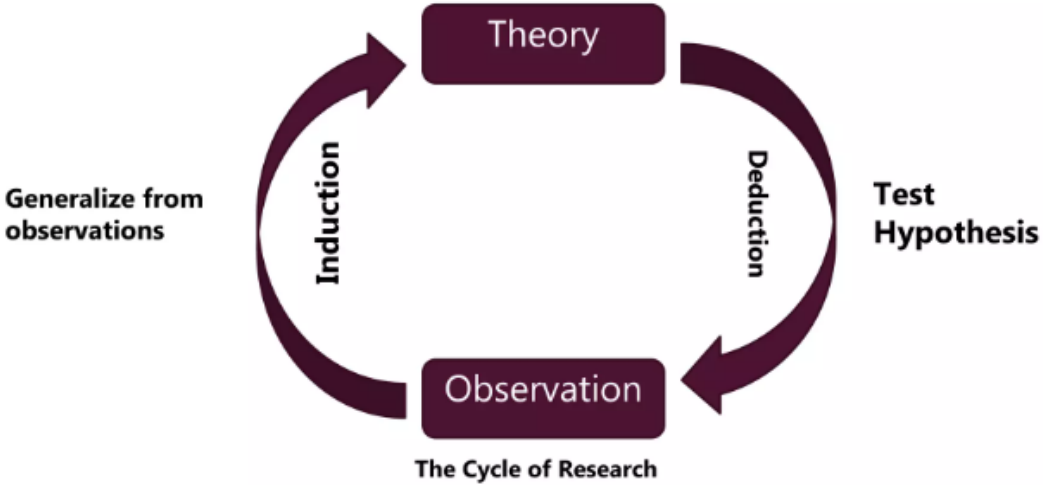
Forms of Research



The Cycle of Research

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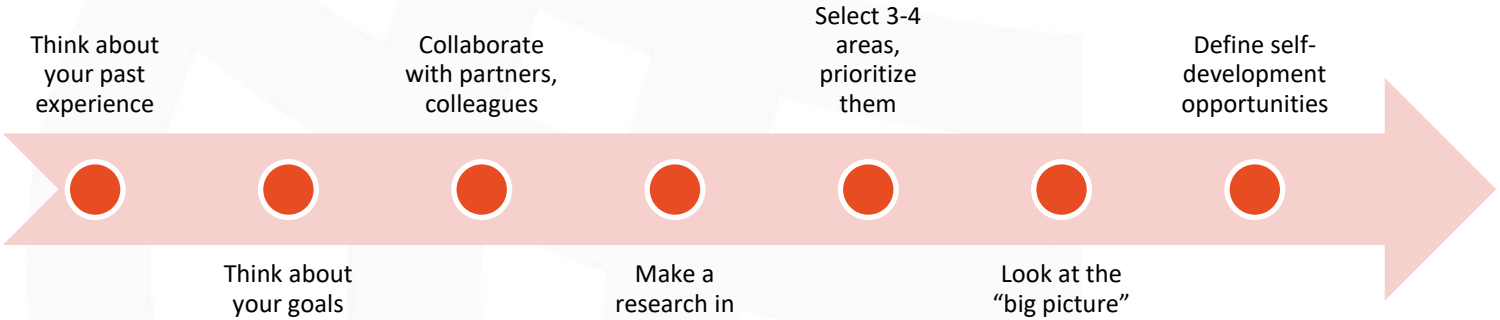
MAKE A RESEARCH TO DEFINE THE AREA



Defining a Research Problem/Topic

Inspiring for you personally

Actual

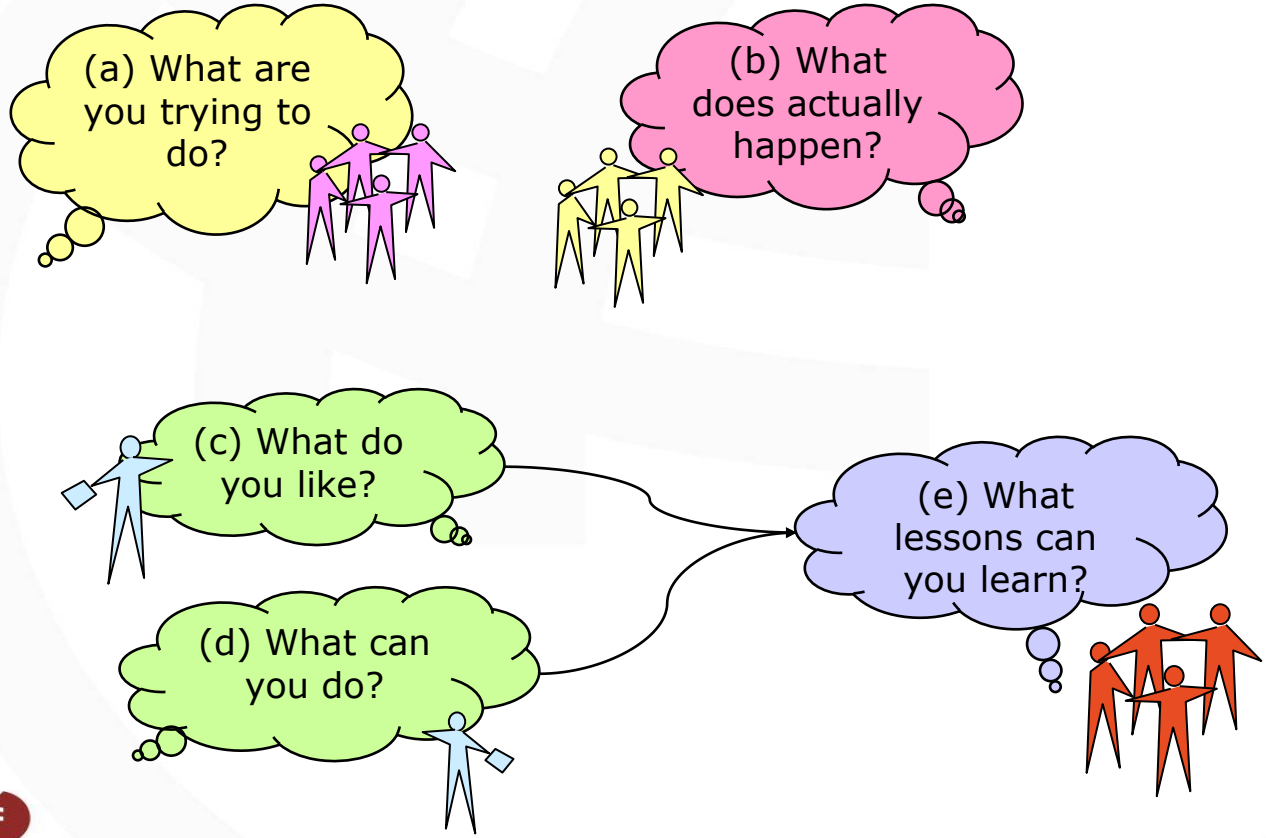
Meeting SMART principles –

- Specific
- Measurable
- Achievable
- Relevant
- Time-bounded

Perspective

Improving your position

The Selection Process



Bateson Pyramid

People can act and think at different levels, as shown in the following figure.

The effect of each level is to organize and direct the information to the next (lower) level.

Research Design

A research design is a strategy for answering your research question using empirical data

Creating a research design means making decisions about:

- Your overall research objectives and approach
- Whether you'll rely on primary research or secondary research
- Your sampling methods or criteria for selecting subjects
- Your data collection methods
- The procedures you'll follow to collect data
- Your data analysis methods

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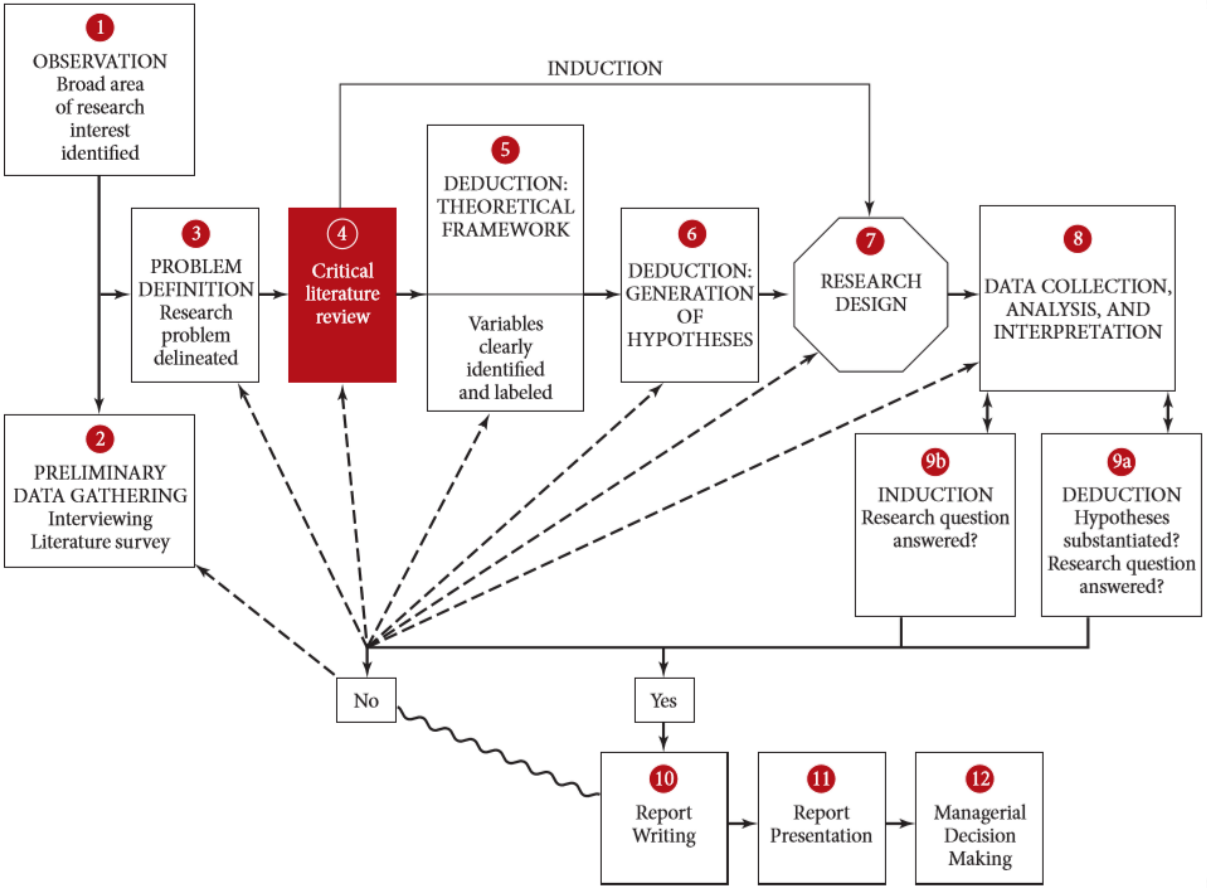
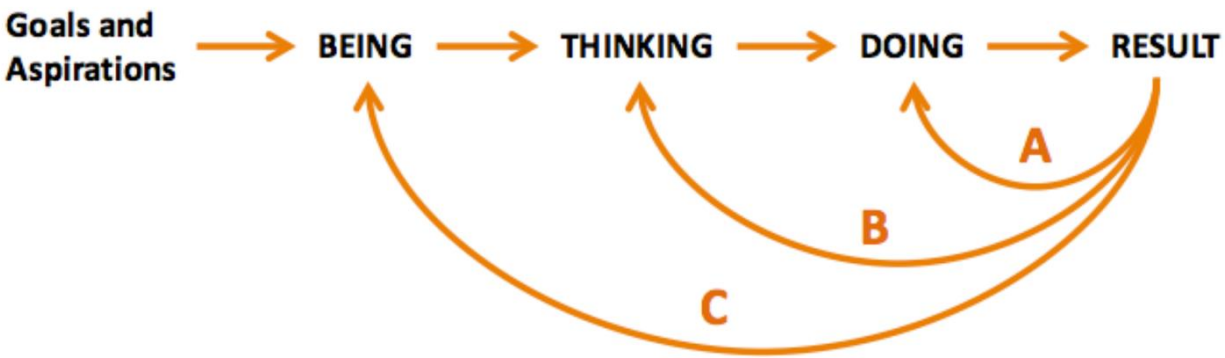
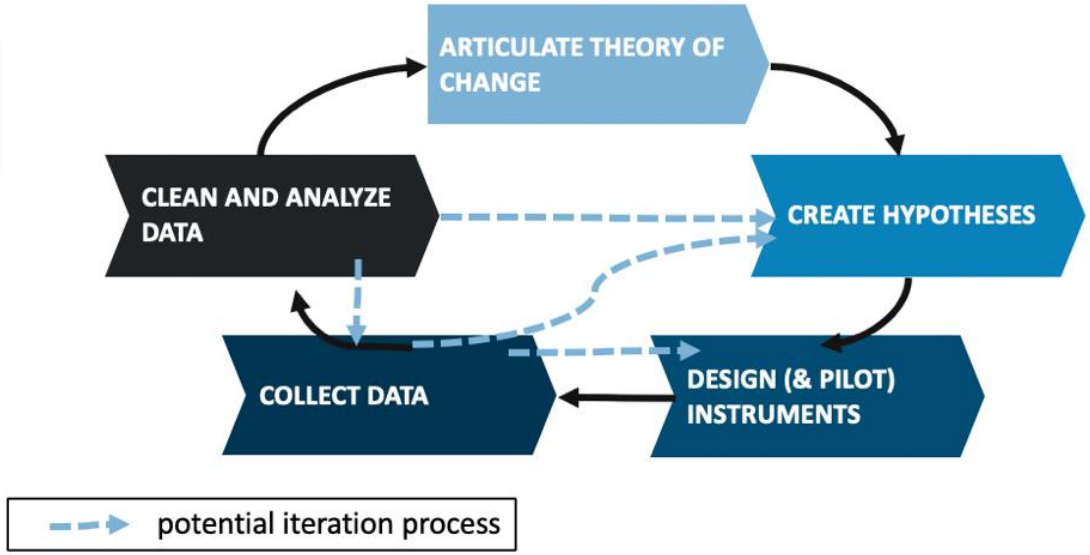
The Research General Structure



Learning & Improvement Cycles. Triple Loop



Multiple Iteration Loops in a Research Project



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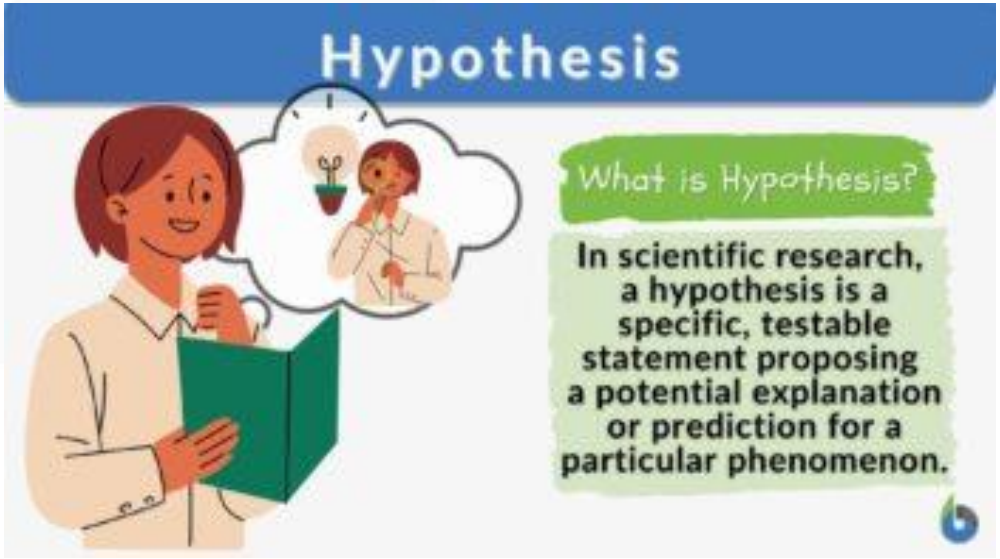
Hypothesis



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Research Ethics

It refers to the moral principles that govern the conduct of certain activities or a person's behavior.

Now, what's research ethics? It includes guidelines provided for the responsible conduct of research. The aim is to ensure research results aren't falsified or altered.

Research ethics seek to educate and monitor scientists to maintain high ethical standards.

Ethical misconduct poses a considerable risk. It can lead to severe harm or death of people.

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Academic Integrity. Five Pillars

Pillar 1: Honesty. Honesty is the foundation of integrity. It means being truthful and transparent in all your dealings, even when it is difficult or uncomfortable. Honesty builds trust and credibility, and it is essential for maintaining strong relationships with others.

Pillar 2: Responsibility. Responsibility means taking ownership of your actions and being accountable for the consequences. It means fulfilling your obligations and commitments, and being reliable and dependable. Responsibility is essential for building trust and respect, and it is critical for success in any field.

Pillar 3: Respect. Respect means treating others with dignity, empathy, and kindness. It means valuing diversity and recognizing the worth of every individual. Respect is essential for building strong relationships and creating a positive work environment.

Pillar 4: Fairness. Fairness means treating others equitably and impartially. It means avoiding favoritism and discrimination, and making decisions based on merit and objective criteria. Fairness is essential for building trust and credibility, and it is critical for creating a just and equitable society.

Pillar 5: Courage. Courage means standing up for what is right, even when it is difficult or unpopular. It means taking risks and speaking up against injustice and wrongdoing. Courage is essential for building integrity and creating positive change in the world.

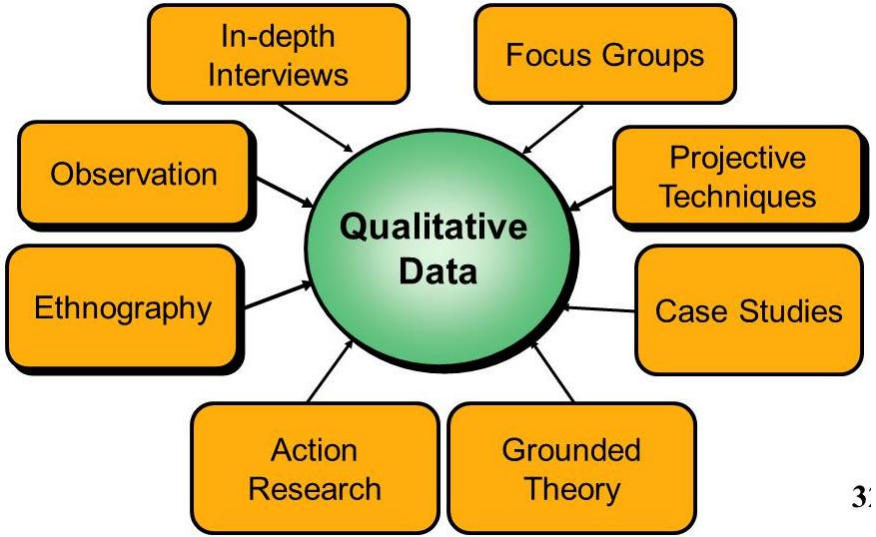
What a Blind Study Is (or Single-blinded)

In a blind or blinded experiment, information which may influence the participants of the experiment is withheld until after the experiment is complete.

Subject Researcher

Qualitative Methods

Qualitative research: A focus on text
Action research
Case study research
Ethnography
Grounded theory
Semiotics
Discourse analysis
Hermeneutics
Narrative and metaphor



©Myers, M. D. (2019). *Qualitative Research in Business and Management.*

Features of Qualitative Data Analysis Software Platforms

Annotations:

- Annotations are a great feature that enables inserting of texts and images for greater flexibility and ease of use. This also helps to connect various pieces of data to offer evidence by creating links to other coded segments, documents, case studies, or websites.

Data Visualization:

- The software also enables visualization of data in form of heat maps, clustering, multidimensional scaling, which allow one to quickly identify trends and patterns.

Media Analytics:

- The software can help gather and analyze data from various media outlets to make business decisions.

Mixed methods research:

- The software helps in conducting research by gathering, analyzing and inter grading quantitative research for example surveys, experiments and qualitative research such as focus groups and interviews.

Multi-language:

- The software supports several languages

Qualitative Comparative analysis:

- The software helps describe, compare and test a hypothesis on qualitative data

©https://www.predictiveanalyticstoday.com/top-qualitative-data-analysis-software/

Quantitative Research

Quantitative research is a research strategy that focuses on quantifying the collection and analysis of data. It is formed from a deductive approach where emphasis is placed on the testing of theory, shaped by empiricist and positivist philosophies

Quantitative research methods are used to observe events that affect a particular group of individuals, which is the sample population

Correlation Tools

Correlation coefficient	Type of relationship	Levels of measurement	Data distribution
Pearson's r	Linear	Two quantitative (interval or ratio) variables	Normal distribution
Spearman's rho	Non-linear	Two ordinal, interval or ratio variables	Any distribution
Point-biserial	Linear	One dichotomous (binary) variable and one quantitative (interval or ratio) variable	Normal distribution
Cramér's V (Cramér's φ)	Non-linear	Two nominal variables	Any distribution
Kendall's tau	Non-linear	Two ordinal, interval or ratio variables	Any distribution

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Regression

In statistical modeling, regression analysis is a set of statistical processes for estimating the relationships between a dependent variable and one or more independent variables

Regression models describe the relationship between variables by fitting a line to the observed data.

Linear regression models use a straight line, while logistic and nonlinear regression models use a curved line.

Regression allows you to estimate how a dependent variable changes as the independent variable(s) change.

Qualitative Analysis Software Tools Key Features

Data Import and Management:

- Capability to import data from various sources such as spreadsheets, databases, text files, or online repositories.

Descriptive Statistics:

- Tools for computing basic descriptive statistics such as measures of central tendency (e.g., mean, median, mode) and measures of dispersion (e.g., standard deviation, variance).

Data Visualization:

- Functionality to create visual representations of data through charts, graphs, histograms, scatter plots, or heatmaps.

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Quantitative Analysis Software Tools Key Features

Statistical Analysis:

- Support for conducting a wide range of statistical tests and analyses to explore relationships, test hypotheses, make predictions, or infer population characteristics from sample data.

Advanced Analytics:

- Advanced analytical techniques for more complex data exploration and modeling, such as cluster analysis, principal component analysis (PCA), time series analysis, survival analysis, and structural equation modeling (SEM).

Automation:

- Features for automating analysis workflows, scripting repetitive tasks, and ensuring the reproducibility of results.

Collaboration:

- Tools for generating customizable reports, summaries, or presentations to communicate analysis results effectively to stakeholders.

When to Use Mixed Methods

Generalizability:

- Qualitative research usually has a smaller sample size, and thus is not generalizable. In mixed methods research, this comparative weakness is mitigated by the comparative strength of “large N,” externally valid quantitative research.

Contextualization:

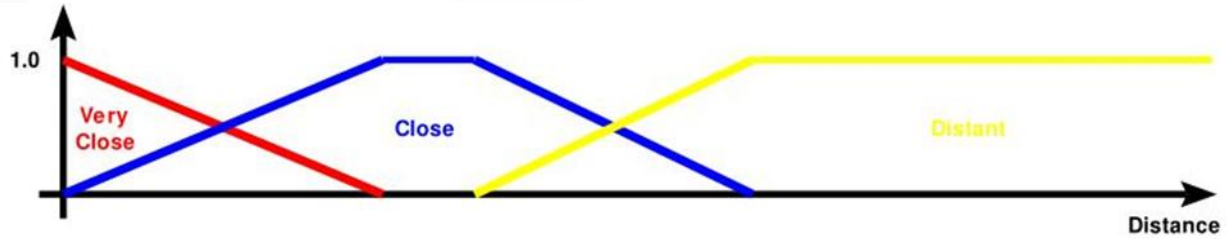
- Mixing methods allows you to put findings in context and add richer detail to your conclusions. Using qualitative data to illustrate quantitative findings can help “put meat on the bones” of your analysis.

Credibility:

- Using different methods to collect data on the same subject can make your results more credible. If the qualitative and quantitative data converge, this strengthens the validity of your conclusions. This process is called triangulation.

Non-Standard and Complex Methods

- Longitudinal analysis
- Participant-led diaries (written, blog, video)
- Ethnography
- Applying AI in research
- Fuzzy Logic
- Factor Analysis
- Heteroscedasticity, auto- and multicorrelation
- Cluster Analysis
- Dummy variables



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Thank You!
Read the Recommended Readings
You're welcome with your discussions and questions in VLE!

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