

What is Research?

- The word “research” originated from the old french word “recherchier” meaning to search and search again
- Research is a systematic, scientific and careful enquiry or examination to discover new information about something or to establish new relationship between things, or to expand or verify existing knowledge for some specified purpose
- It is a planned investigation which is carried out in an organized and systematic ways.
- It produces information data which we can analyze to understand the things which we don't know.

Research consists of

- Asking a question that nobody has asked before
- Doing the necessary work to find the answer
- Communicating the knowledge you have acquired to a larger audience

Motivation in research

- Desire to get a research degree along with its consequential benefits
- Desire to face the challenge in solving the unsolved problems, i.e., concern over practical problems initiates research
- Desire to get intellectual joy of doing some creative work
- Desire to be of service to society
- Desire to get respectability

How to select a research topic

Choose a topic that you are interested in! The research process is more relevant if you care about your topic.

➤ Narrow your topic to something manageable.

➤ If your topic is too broad, you will find too much information and not be able to focus.

➤ Background reading can help you choose and limit the scope of your topic.

➤ Review the guidelines on topic selection outlined in your assignment. Ask your professor or TA for suggestions.

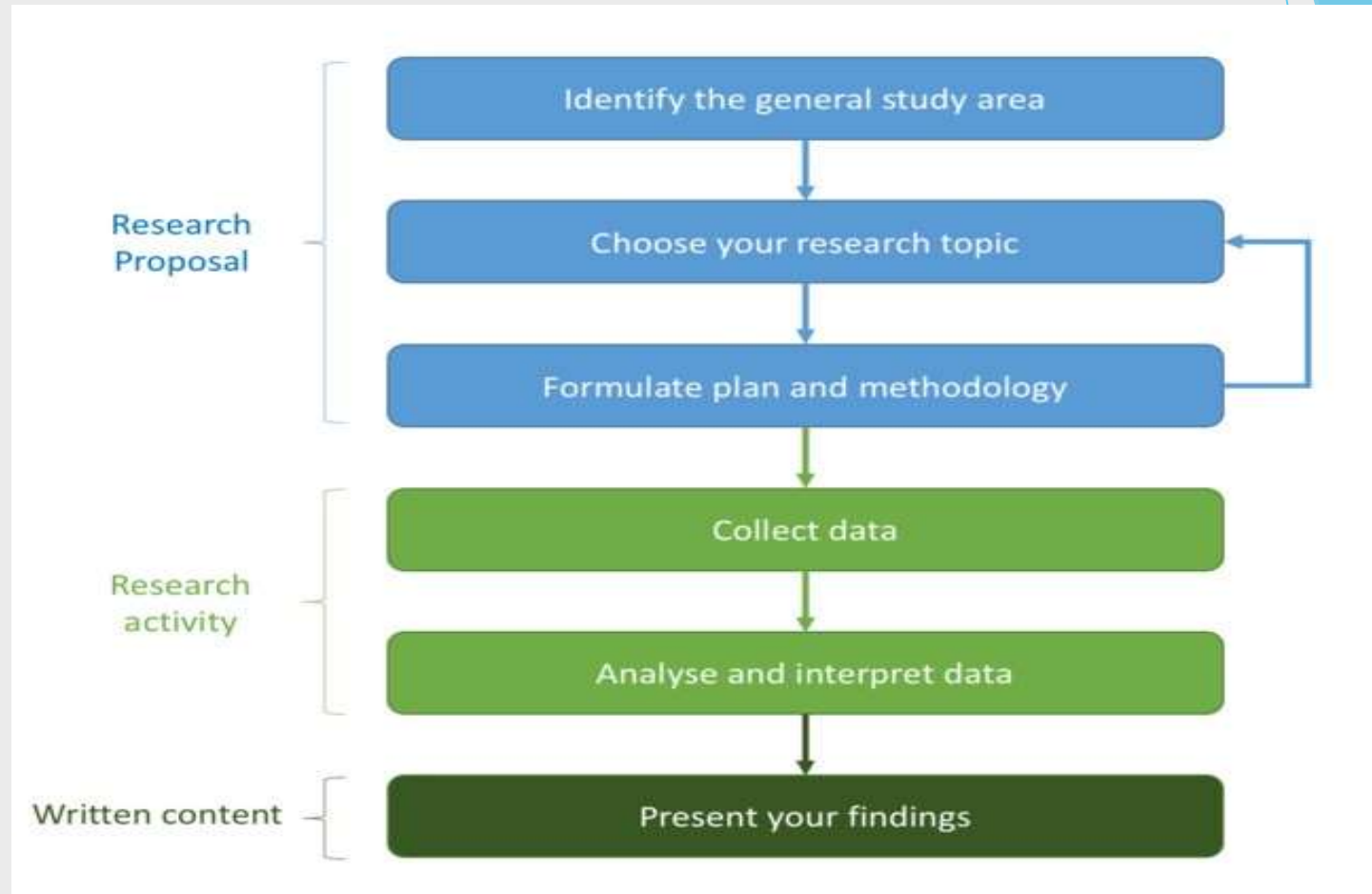
➤ Refer to lecture notes and required texts to refresh your knowledge of the course and assignment.

➤ Talk about research ideas with a friend. He may be able to help focus your topic by discussing issues that didn't occur to you at first.

What makes a topic good

- The topic must be from your area of interest
- The topic should be creative
- The topic should not be too broad
- Availability of Resources
- Guide should have good knowledge about the topic

Research Process



Various Step in the Research Process

- formulating the research problem
- extensive literature survey
- developing the hypothesis
- preparing the research design
- determining sample design
- collecting the data
- execution of the project
- analysis of data
- hypothesis testing
- generalizations and interpretation
- preparation of the report or presentation of the results, i.e., formal write-up of conclusions reached.

Criteria for good research

- The purpose of the research should be clearly defined and common concepts be used.
- The research procedure used should be described in sufficient detail to permit another researcher to repeat the research for further advancement, keeping the continuity of what has already been attained.
- The procedural design of the research should be carefully planned to yield results that are as objective as possible.
- The researcher should report with complete frankness, flaws in procedural design and estimate their effects upon the findings.

Criteria for good research

- The analysis of data should be sufficiently adequate to reveal its significance and the methods of analysis used should be appropriate. The validity and reliability of the data should be checked carefully.
- Conclusions should be confined to those justified by the data of the research and limited to those for which the data provide an adequate basis.
- Greater confidence in research is warranted if the researcher is experienced, has a good reputation in research and is a person of integrity.

Characteristics of good research

In other words, we can state the qualities of a good research is as under:

- Good research is systematic
- Good research is logical
- Good research is empirical
- Good research is replicable

LITERATURE SURVEY-Introduction

- Research may be done alone - but it is never done in isolation. The production of new knowledge is fundamentally dependent on past knowledge.
- Literature is a collection of all the scholarly writings on a topic
- 'I not only use all the brains that I have, but all that I can borrow.' - **Woodrow Wilson**

What is Literature survey

➤ Literature survey is a systematic method for identifying, evaluating and interpreting the work produced by researchers, scholars and practitioners.

➤ A literature survey is undertaken to decide how to move forward with a research idea- what has been done, and what interesting avenues of future work this opens up to be investigated

Why Literature Survey?

- What approaches have others used?
- What are the gaps?
- What differences you are making?
- Novelty of your work
- Placing the current context
- Avoiding duplication
- Clarification of controversial results
- State of art : extend and build on the work of others

Literature survey in the context of Research based degree

- Research degree should be based on original research
- Unintentional duplication is not acceptable
- To gain knowledge of background work
- To establish context of our work
- To find out the gap

Sources of Literature

- Text book
- Articles
- Thesis and dissertation
- Government publications
- Legal and professional publication
- Conference paper
- Monographs
- Statistics

Types of literature

PRIMARY LITERATURE



- Original research and/or new scientific discoveries

- Immediate results of research activities
- Often includes analysis of data collected in the field or laboratory

EXAMPLES:

- Original research published as articles in peer-reviewed journals.
- Dissertations
- Technical reports
- Conference proceedings

SECONDARY LITERATURE

- Summarizes and synthesizes primary literature
- Usually broader and less current than primary literature



EXAMPLES:

- Literature review articles
- Books

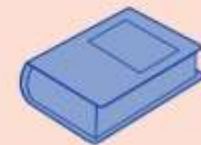
Since most information sources in the secondary literature contain extensive bibliographies, they can be useful for finding more information on a topic

TERTIARY LITERATURE

- Summaries or condensed versions of materials
- Usually with references to primary or secondary sources
- Good place to look up facts or get a general overview of a subject

EXAMPLES:

- Textbooks
- Dictionaries
- Encyclopedias
- Handbooks



Strategy to search

- Keyword Search: Systematic manual Search
- Backward Chronological Search: snowball or back reference method
- Forward Chronological Search: citation based

Process of Literature Review



Write the literature review analysis

- Summarize sources and provide transitional connection between each group of reference
- Highlight past research accomplishment
- Evaluate the weakness and gap of previous research
- Connect the review analysis with your research

Golden rule

- Report the status and accomplishment of the previous researchers
- Evaluate the weakness of previous researchers
- Group articles are together based on a certain criteria
- Provide a critical thinking
- Link the review with what you want to do for your research