



WRITING RESEARCH PROPOSAL

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Research method (Bio 417)

7

Week 0

26-30/11/2023



Outline

- What is research proposal
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- Importance of research proposal
- Essential ingredient of research proposal
- Components of research proposal
- Gantt chart

*AT THE END OF THE LESSON THE STUDENTS WILL
BE ABLE TO KNOW*

- What is a research proposal
- Content of research proposal
- To differentiate different content of research proposal
- How to design a research proposal

What is a research proposal?

A research proposal is your PLAN

– It describes in detail your study



Importance of a research proposal?

Contract between you and your committee

1. Serves to protect the student

- Demanding additional requirements

2. Protects the committee from the student

- From delivering a degree of poor quality

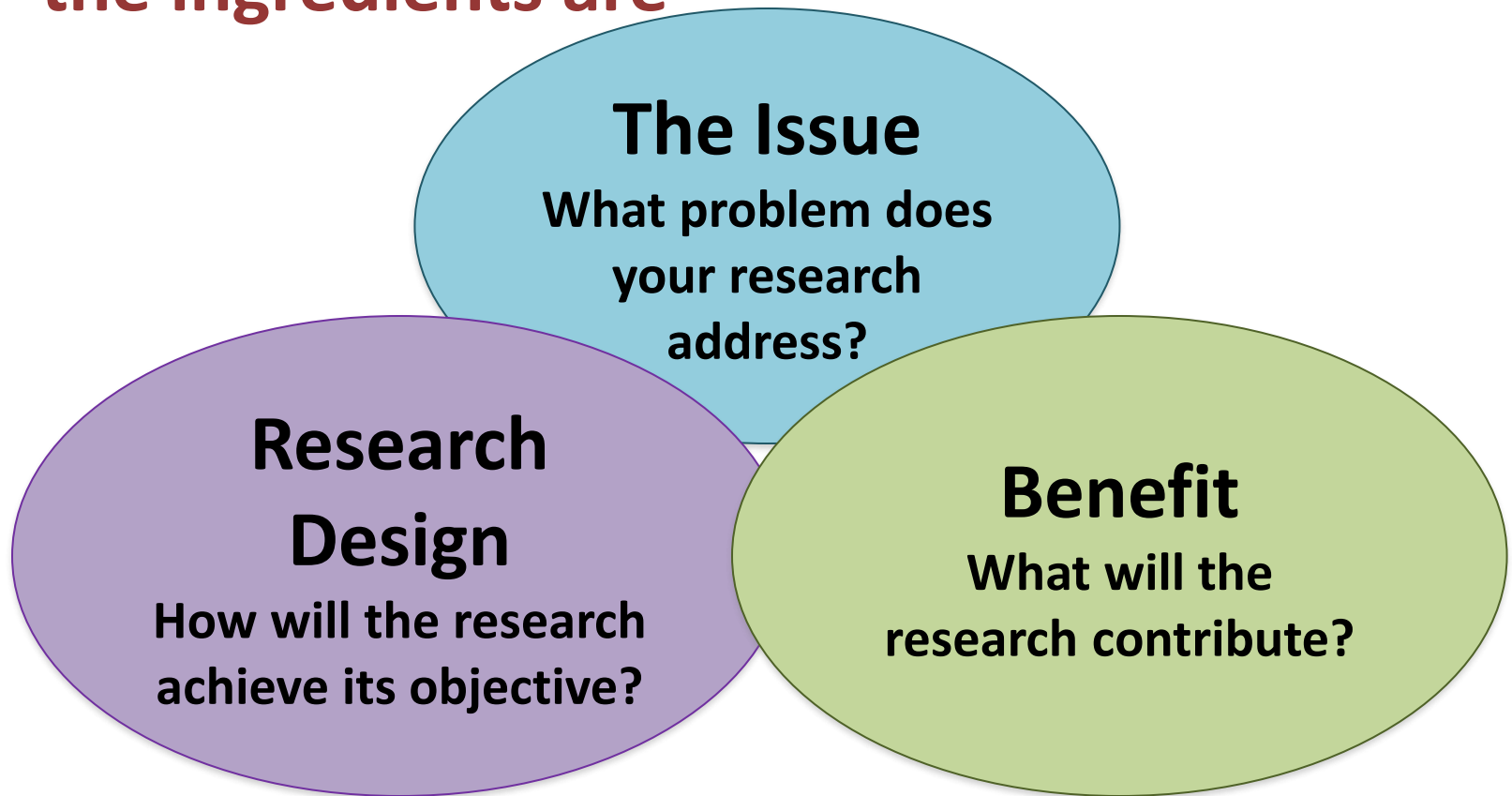
3. Persuading evaluators to support your research project

4. Convince audience that project is worth doing

5. Convince audience that you are capable of carrying it out

What are the essential ingredients?

➤ the ingredients are



Research proposals make you:

OUTLINE steps in your proposed research

Provide yourself with intellectual **CONTEXT**

JUSTIFY your
research

Be **CREATIVE**

THINK through your experiments

CHAPTER ONE

INTRODUCTION

1.1 Introduction

1.2 Aim

1.3 Objectives

1.4 Problem statement

1.5 Significance of the study

PROBLEM STATEMENT

The purpose of a problem statement is to clearly and concisely describe a specific problem or issue that needs to be addressed.

Its importance, providing the necessary information to understand why the problem is worth solving.

A well-crafted problem statement also helps to define the scope of the problem, which in turn helps to guide the research or problem-solving process.

Characteristics of Problem Statement

Clear: A problem statement should be written in clear and concise language, free of technical jargon, and easily understandable to the intended audience.

Specific: The statement should clearly define the problem and its scope. It should identify the who, what, where, when, and why of the problem

Relevant: The problem statement should be relevant to the context in which it is presented. It should relate to the needs and concerns of stakeholders and the broader community.

Flow of Ideas in the Problem Statement



Sample of Problem Statement

Background: Syzygium is regularly misidentified in ecological inventories which causes serious problems for biodiversity management (Musa et al. 2020).

Research problem: Brambach et al. (2017) reported many herbarium specimens of Syzygium were unidentified in Southeast Asia. Similarly, De Oliveira et al. (2018) reported most of the herbaria species of the phylum Myrtaceae were unidentified all over the world.

Justification for Research Problem: Evolutionary relationships within the Syzygium is unclear and there are currently no reliable criteria to divide the genus into manageable entities for systematic study (Mazine et al., 2014).

Justification for Research Problem: The species is widely misunderstood as serai kayu, serai kayu hutan, daun salam and many more other names due to extreme morphological variability or substituted with several other species and adulterated or mistaken due to their similarity in aroma and flavor (Zhang et al., 2016).

Relating the Discussion to Audiences: Studies revealed adverse effect from food supplement originated from misidentification of plants species with the same common name (Zhang et al., 2016; Zhang et al., 2018).

Aim of the study

*An **aim** can define as general affirmations or sentences that identify the objective of a program.*

The main target you want to achieve.

Example

- **To determine the anatomical structure of *Syzygium polyanthum***
- **To know the number of students in TIU**
- **To document the number medicinal plants used in Kurdistan**

OBJECTIVES OF THE STUDY

*An **objective** is a more determined target set to achieve the goal on a larger front*

- **Description of how to achieve your aim**

Aims and Objectives

The purpose of this research is to.....

- **Aims**
 - short but **general statement of intent**
- **Objectives**
 - very **specific statements** that define the practical steps you will take to achieve your aim(s)

DIFFERENCE B/W AIM AND OBJECT

- **Aim** is what you hope to attain, and the **objective** is the action you will take to attain the aim.
- **Aims** are concerned with motive whereas **objectives** are concerned with achievement.

Aims are as broad common statements;
Objectives are usually more specific statements

- The **aim** is your overall objective for the project; the **objectives** are the specific steps you will take to get there.
- The **aim** is what you want to know, and the **objectives** are the specific steps you will take to achieve your aim.

Significance of the study

The study will provide a background information in Kurdistan on how to handle malarial diseases

CHAPTER TWO

LITERATURE REVIEW

LITERATURE REVIEW

Makes you understand why your research matters

Why is your study important?

Describe the significance of the research question or problem

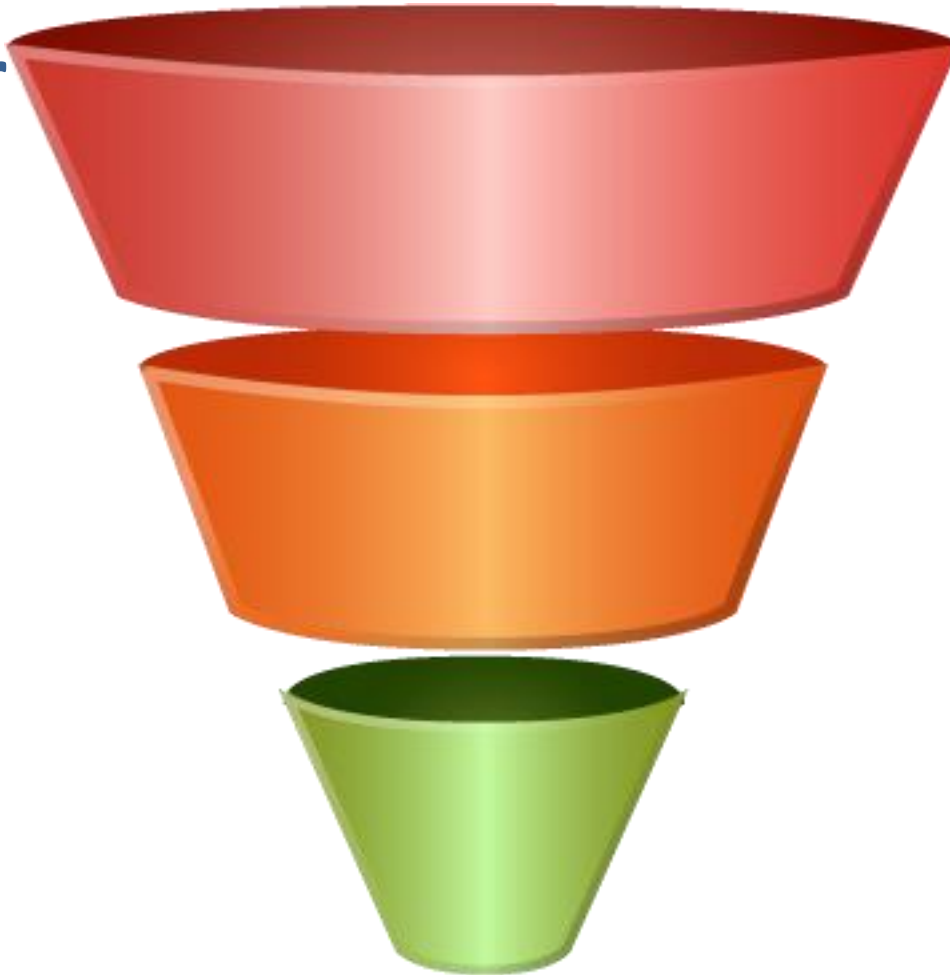
The narrative of a good literature review

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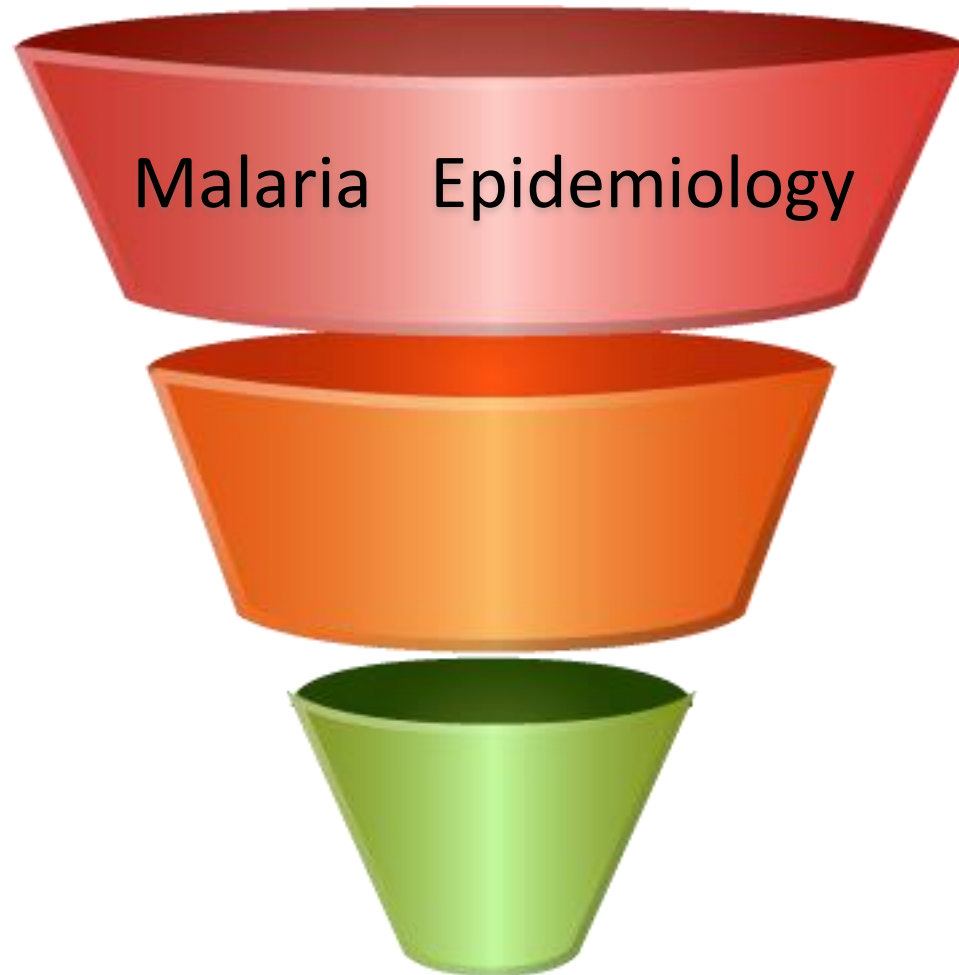
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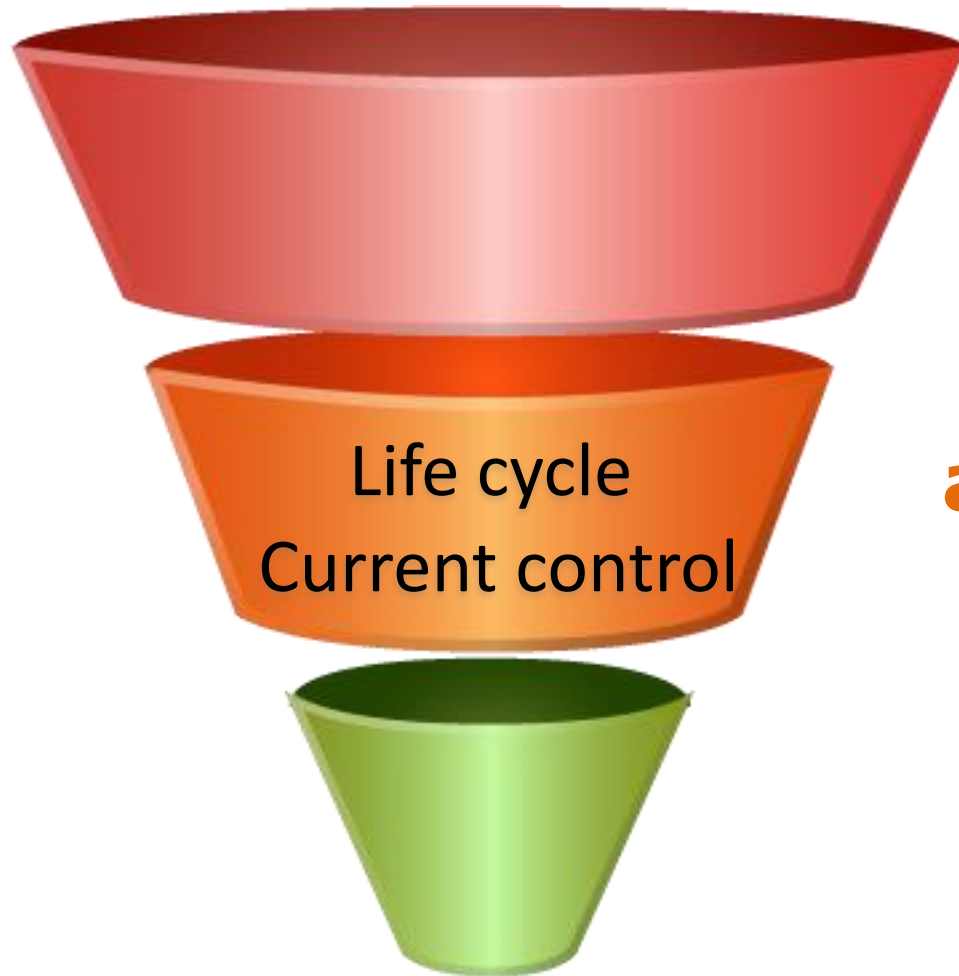
The narrative of a good literature review



**Introduce the
field:**

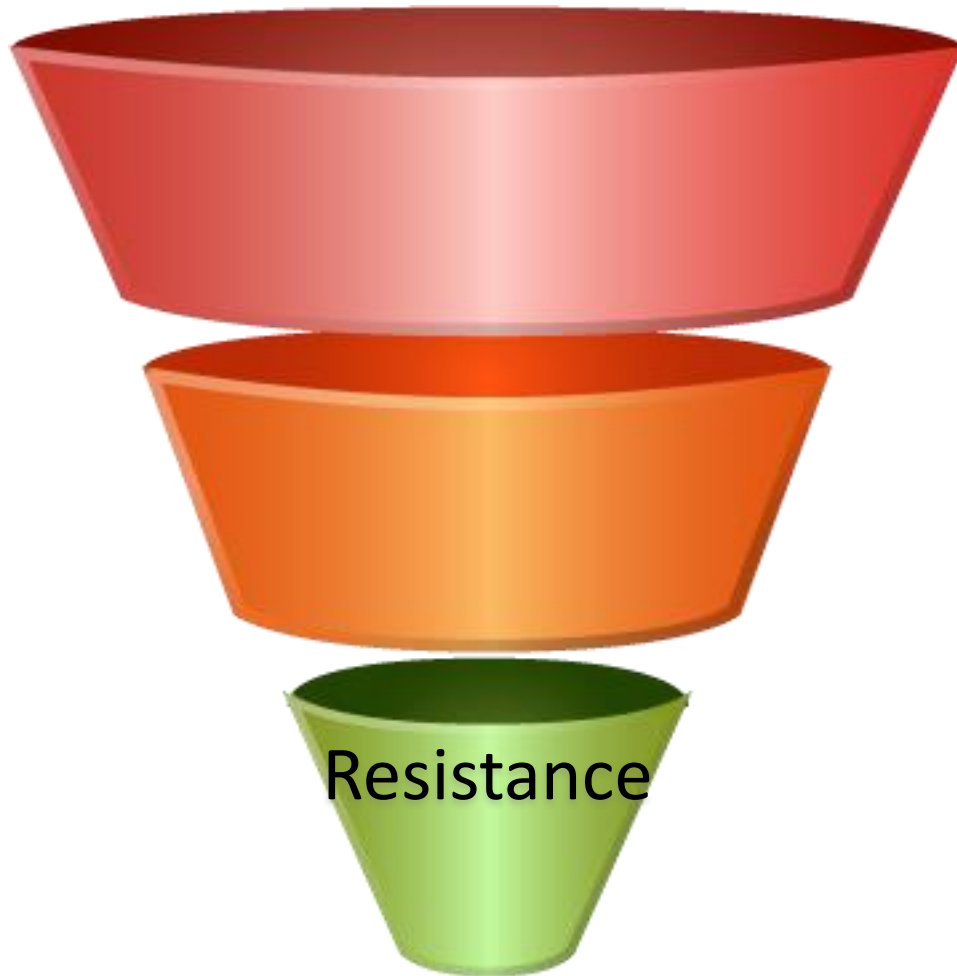
broad focus

The narrative of a good literature review



**Focus on certain
aspects in field of
interest**

The narrative of a good literature review



**End with gap
analysis**

CHAPTER THREE

MATERIALS AND METHODS

Materials and Methods

The Materials and Methods section is a vital component of any formal lab report.

This section of the report gives a detailed account of the procedure that was followed in completing the experiment(s) discussed in the report.

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A well written Materials and Methods section also serves as a set of instructions for anyone desiring to replicate the study in the future.

A good guideline is to include only what is necessary for one recreating the experiment to know.

Sample 1: 200 μl of DPPH methanolic solution (0.004% w/v) will be added to 100 μl of leaves, bark, root and whole plant (ethanolic, methanolic and aqueous) at 1.56, 3.13, 6.25, 12.5, 25, 50 and 100 $\mu\text{g/ml}$ concentration respectively. The solution will be kept at the dark for 30min at room temperature

Sample 2: 200 μl of DPPH methanolic solution (0.004% w/v) was added to 100 μl of leaves, bark, root and whole plant (ethanolic, methanolic and aqueous) at 1.56, 3.13, 6.25, 12.5, 25, 50 and 100 $\mu\text{g/ml}$ concentration respectively. The solution was kept at the dark for 30min at room temperature

Sample 3: Stock solutions of leaves, bark, root, and whole plant (ethanolic, methanolic, and aqueous) extracts will be created in DMSO at a concentration of 10000 g/ml, and concentrations of 1000, 2000, and 4000 g/ml will be prepared proportionately from the stock solutions.

Sample 4: Stock solutions of leaves, bark, root, and whole plant (ethanolic, methanolic, and aqueous) extracts were made in DMSO at a concentration of 10000 g/ml, and concentrations of 1000, 2000, and 4000 g/ml were prepared from the stock solutions, respectively.

REFERENCE

LIST OF REFERENCE

GANTT CHART

A Gantt chart is a type of bar chart that illustrates a project schedule, named after its popularizer, Henry Gantt (1861–1919), who designed such a chart around the years 1910–1915. Modern Gantt charts also show the dependency relationships between activities and the current schedule status.

Months	1 st month	2 nd Month	3 rd Month
Literature review			
Proposal submission and Presentations			
Lab Experiment			
Data Analysis			
Final Defense and submission hard bond copy			
Paper publication			

Any Questions?



REFERENCE

- (1) Pattron, D. 2000. Fundamentals of Scientific Research. New York: Scientific Publishers.
- (2) (2) Creswell, J. W. Research design: Qualitative, quantitative and mixed methods approaches. 5th Ed. Thousand Oaks, CA: Sage, 2018.
- (3) (3) Nicholls, J. (2003). Methods in school textbook research: Citeseer.
- (4) (4) Brink, H., Van der Walt, C., & Van Rensburg, G. (2006). Fundamentals of research methodology for health care professionals: Juta and Company Ltd.
- (5) (5) Kumar, R. (2018). Research methodology: A step-by- step guide for beginners: Sage.