



## Research Seminar

- The research proposal

**Purpose:**

*to document the need to conduct the study and provide a template to follow when conducting the study*

**gets you to;**

- *critically review past research*
- *formulate research hypotheses*
- *postulate outcomes for each hypothesis*
- *develop sound methodology*
- *develop a realistic budget*
- *develop a time frame*



*Good research is more dependent on background and preliminary issues than the quality of your equipment and facilities.*

- Important considerations before starting
  - Knowledge
  - Experience
  - Competencies
  - Budget
  - Professional Growth and Development
  - Future Employment “Dreams”
  - Pilot Testing
  - Expectations of Student and Supervisor



## Expectations of Student and Supervisor

### Student of Supervisor:


- Identifying and assisting with rules and procedures
- Assist in research design, pilot testing and data collection
- Meet on a regular and frequent basis
- Edit drafts of proposal and final thesis
- Help the student meet the academic, literary and research standards of the University
- Make arrangements for the examination of the student's thesis
- Ensuring that the student makes satisfactory progress, and writing reports of this progress
- Assist the student in the selection of a target journal and the writing of the manuscript(s) for publication



## Expectations of Student and Supervisor, cont'd.

### Supervisor of Student:

- ← Become thoroughly familiar with the policies, rules, and procedures
- ← Define and state the research questions
- ← Make sure meetings with supervisor are scheduled, and have an agenda to discuss
- ← Prepare the budget, with assistance from the supervisor, identifying a) *personal costs*, and b) *University costs*
- ← Prepare the timetable for the entire project, with assistance from the supervisor
- ← Inform the supervisor of any factor which will affect the timetable, or quality of the research project
- ← Do not miss meetings, and stringently adhere to all methods




### Selecting a Research Topic

- sustain your interest
- be within your range
- manageable in size
- have potential to make an original contribution
- be based on obtainable data
- permit you to demonstrate your independent mastery of research techniques and topical knowledge

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- *do-able* - relative to expectations and competencies
- *realistic* - relative to expectations and competencies



The research question should define the research hypotheses, design, statistical analyses and title

**Research Question(s)**

↕

**Research Hypotheses**

↕

**Research Design**

↕

**Statistical Analyses** → **Title**



## The Research Proposal

Prepare the research proposal after;


- *Finalising the research question(s)*
- *Conducting a limited literature review*
- *Selecting a suitable research design*

Emphasis should be placed on;

- *adequately defining the problem*
- *defining the research questions or hypotheses*
- *identifying the most appropriate research methodologies*
- *summarising the relevant literature for the research questions and needed methodologies*
- *consideration of issues of reliability and validity*

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- *subject inclusion and exclusion criteria*
- *study limitations*



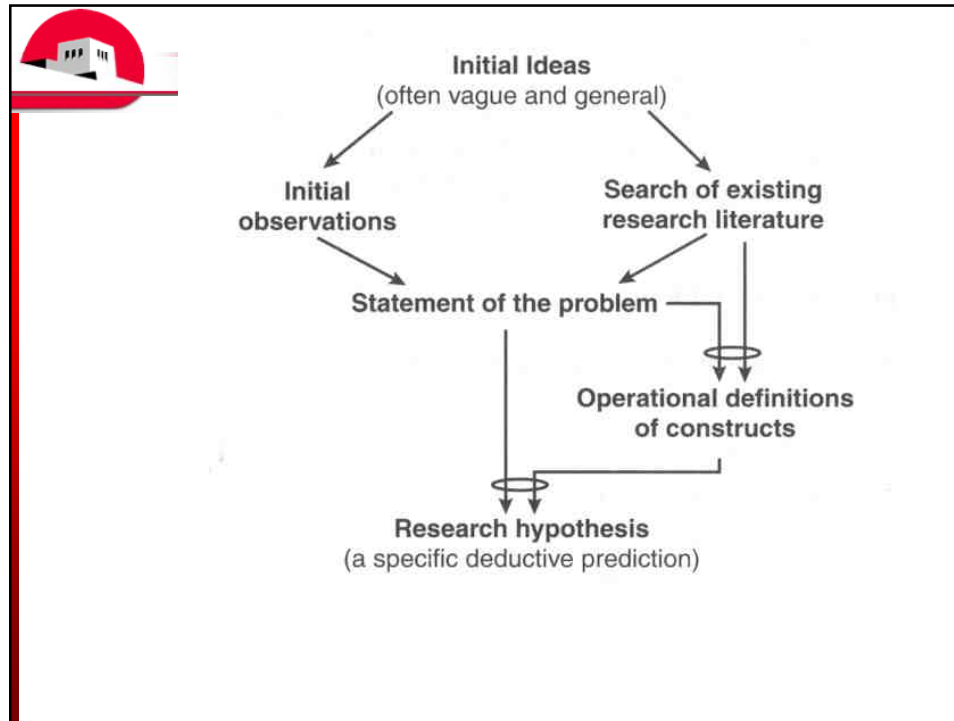
## Research Hypotheses, Purposes, Questions

### Research Hypothesis vs. Null Hypothesis

<p>States a difference and may provide a direction</p>	<p>States no difference</p>
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*Despite the order of presentation in the text, the progression to formulating a hypothesis is very different!*

- General Idea
- Background Reading and Knowledge
- Purpose Statement and Questions
- Hypotheses
- Statistics




## Operational Definitions of Variables

Already many of you have experienced the frustration of stating problems/purpose statements, and even hypotheses, using words that do not adequately define independent or dependent variables.

**Conceptual Definition** = a grammatically clear, but quantitatively vague word or term used to represent a variable.

**Operational Definition** = that which clearly reveals/explains how the variable is to be quantified

A photograph showing a group of children on a beach playing tug-of-war. They are holding onto a rope and pulling with effort, illustrating the concept of operational definitions in a practical context.



## Research Hypotheses, Purposes, Questions

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**Operational Definitions:**

You should define each of the independent and dependent variables


**2 types of definitions:**

- × **Conceptual** - explicitly correct, but not always measurable
- × **Operational** - use of construct(s) to explain how other measures are used to quantify the variable

**The Research Hypothesis:**

Once the problem statement (research question) has been developed, and definitions are complete, the hypothesis can be stated.

*Note:* the wording of the problem statement has embedded within it features of the hypothesis and research design - **all are/should be interconnected!!!**



## Operational Definitions of Variables

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Conceptual	Operational
Physical Activity	Score on a particular pre-validation survey instrument
Strength	Average of the 1 RMs for the leg press and bench press
Marketing success	?
Positive Life-Long impact of PE	?
Student Learning	Standardized tests?????
Diet	Diet recall? Diet diary?