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African Dissertation Workshop on Population and Health

Introduction and Session 1

Developing a Research Proposal

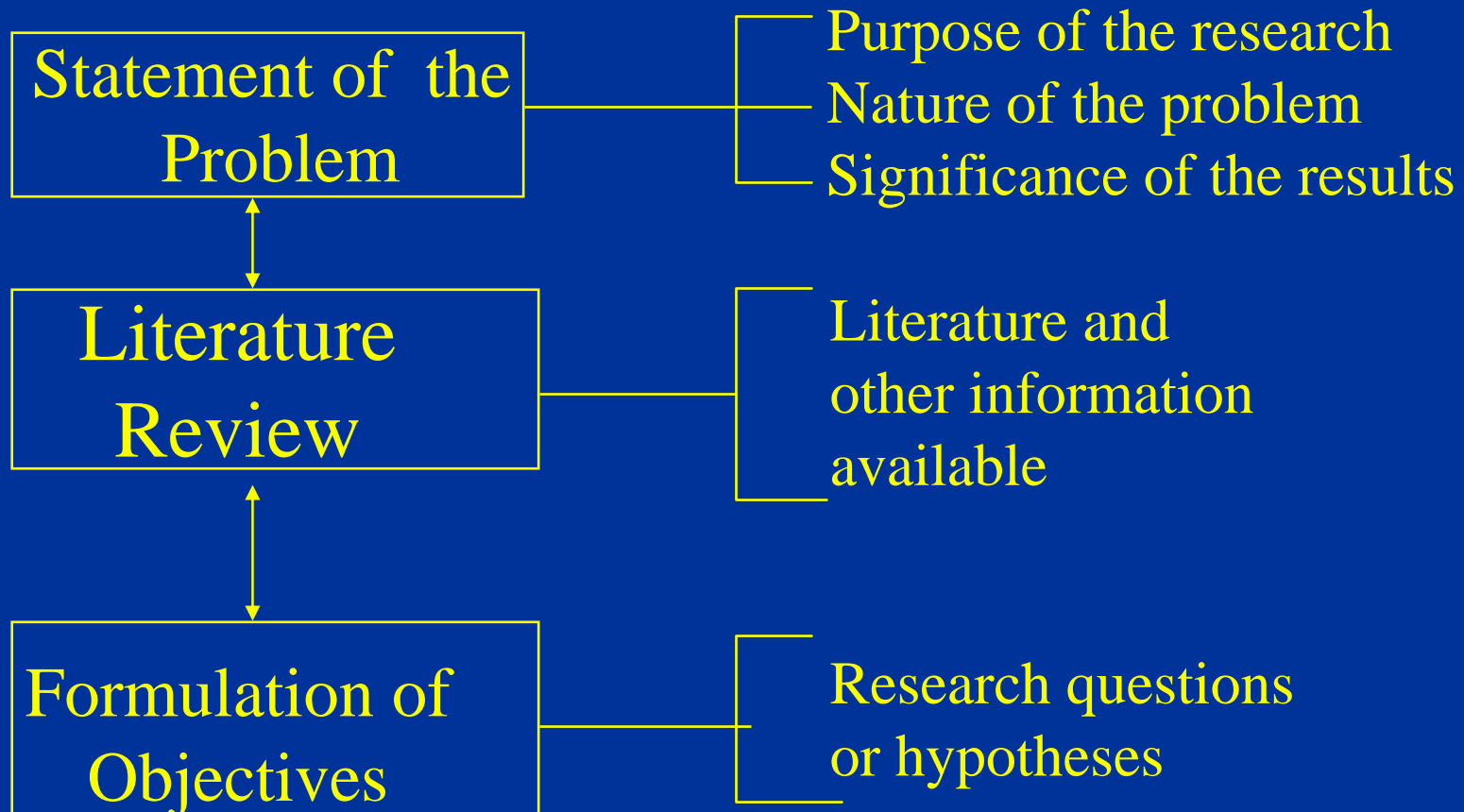
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Steps in Proposal Development*

Steps to take

Important Elements



Steps in Proposal Development*

(Continued....)

Steps to take

Research
Methodology

Plan for Utilization and
Dissemination of Results

Important Elements

- Variables
- Type of study
- Data collection techniques
- Sampling
- Plan for data collection
- Plan for data analysis
and interpretation
- Ethical considerations
- Pre-test or pilot study

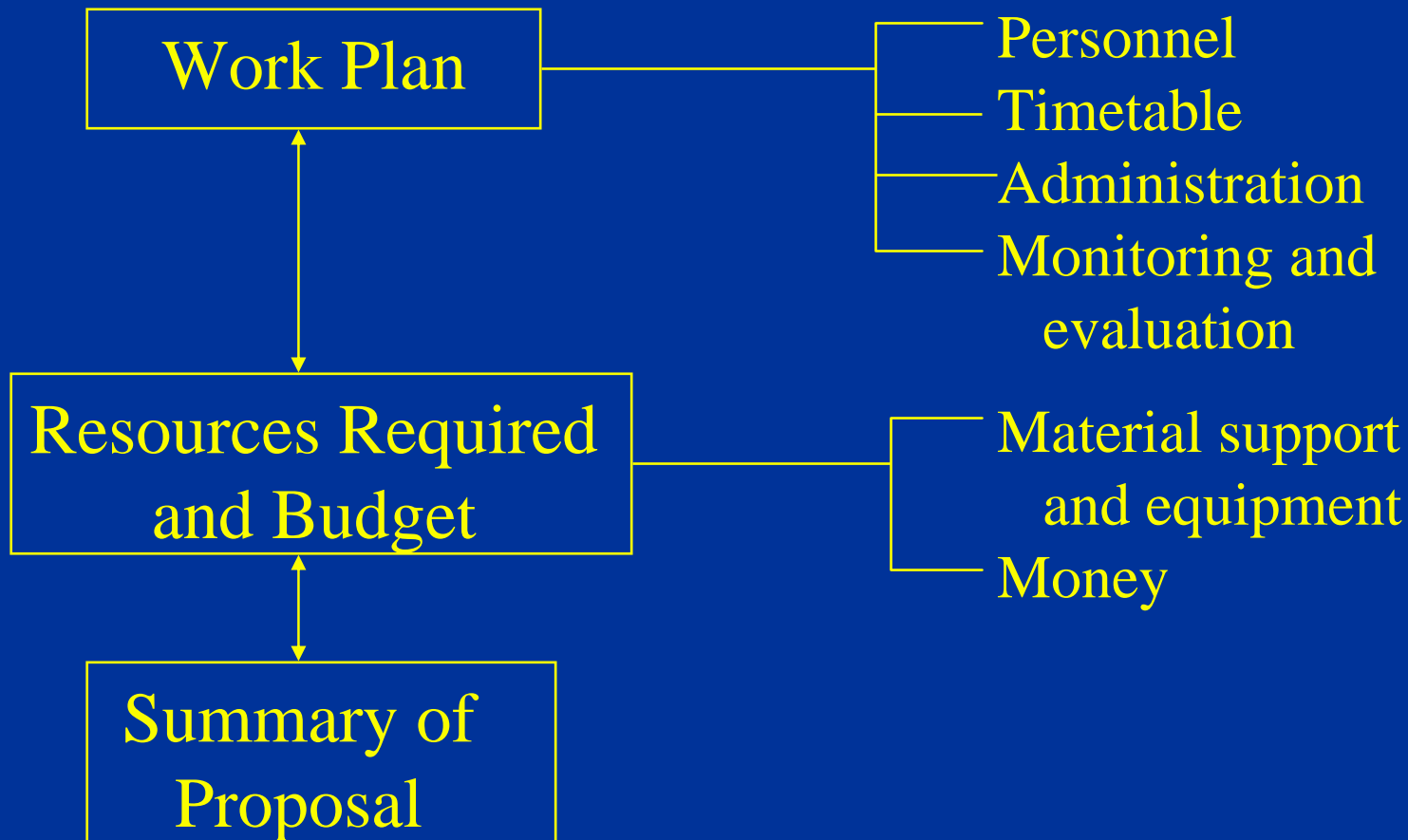
*Source: WHO 1988

Steps in Proposal Development*

(Continued....)

Steps to take

Important elements



*Source: WHO 1988

Basic *versus* Applied Research

Basic research is designed to extend the base of knowledge in a discipline, primarily for the sake of gaining new understanding of fundamental processes.

Applied research concentrates on finding solutions to immediate problems of a practical nature.

Problem Identification*

Illustrative problem areas for health and population research:

Political

Economic

Socio-behavioral

Technological

Management

Ethical

Suggested Criteria for Selecting a Research Topic*

1. Relevance
2. Avoidance of duplication
3. Feasibility
4. Political acceptability
5. Applicability
6. Cost-effectiveness
7. Timeliness
8. Ethical considerations

Statement of the Problem

Elements of a problem statement include:

- Purpose of the research
- Nature of the problem
- Significance of the results

Statement of the Problem

This statement will answer the following:

- What is the problem or issue, and what specifically is to be studied?
- What are the major factors (socio-economic, cultural, programmatic, etc.) that may contribute to the problem?
- What is the relevance of this research scientifically and/or for policy/programs?

Literature Review

What information is already available on:

- Work done by others (*avoid duplication*)
- Important questions remaining (*focus*)
- Conceptual/methodological approaches (*improve design/analysis*)
- Importance of the question or problem (*justification for support*)

Literature Review

Multiple approaches required, including:

- Accessing standard Indexes and abstracting sources;
- Looking up the literature citations in every key article that relates to the topic of interest;
- Obtaining papers/presentations from recent meetings/conferences/symposia;
- Directly contacting leading researchers in the field with specific questions.

The internet now makes it possible to do much of this data gathering directly from a desk-top computer.

Literature Review

*The Problem of Bias**

Bias in the literature, or in the review is a distortion of the available information so that it does not represent the real situation. Types of bias include:

- Use of rhetoric rather than reason
- Playing down controversies and conflicting results
- Limiting references to those supportive of the thesis
- Reporting statistically insignificant differences between groups in a study as if they were significant
- Drawing sweeping conclusions that are not warranted by the limitations of the data.

Formulation of Objectives

- The objective states what is to be accomplished by the research; it should be clearly related to the statement of the problem.
- Break down a broad general objective into smaller, logically connected *specific* objectives.
- *Specific objectives*, when properly formulated:
 - focus the study on the essentials
 - guide the design of the investigation
 - orient the collection, analyses and interpretation of the data.

Formulation of Objectives

Open research questions vs. hypotheses, which alternative to choose?

- A hypothesis requires sufficient knowledge of the problem to be able to predict relationships among factors which then can be explicitly tested.
- Open research questions are formulated when the investigators do not have enough insight into the problem being studied. *Prematurely posing hypotheses can limit the scope of the research so that important relationships are never observed.*

Formulation of Objectives

Open Research Questions

Criteria for open questions include:

- **Focussed**, each covering a single point
- **Ordered** in a logical sequence
- **Realistic** and feasible to answer;
- **Operational**, using *action verbs* such as:
 - determine
 - describe
 - calculate
 - verify
 - compare
 - establish
- **Measurable** outcomes at the end of the research