



The Nature of Research

Chapter One

Key Ideas

- ◆ Reasons research is important
- ◆ Problems with research today
- ◆ Research defined
- ◆ The Research Process
- ◆ Ethical Considerations in Research
- ◆ Skills needed for research



Definition of Research

- ◆ A systematic process of collecting and analyzing data to find an answer to a question or a solution to a problem, to validate or test an existing theory (David, 2000).
- ◆ The investigation is guided by previously collected information and aims to add to the body of knowledge on the subject.

Abstract

- ◆ Research whether art or science based is motivated by two things: understanding and applications.
- ◆ "People cannot foresee the future well enough to predict what's going to develop from basic research. If we *only* did applied research, we would still be making better spears". - Dr. George Smoot.

Introduction

- ◆ The word *research* is derived from the old French word "**cerchier**" meaning to *seek* or *search*.
- ◆ A researcher seeks exhaustively for three reasons: for more explanations, for verifiable truth and to make discoveries.

What is Research?

- ◆ The researcher asks a question
- ◆ The researcher collects data
- ◆ The researcher indicates how the data answered the question

(In other words, research is a process for providing answers to questions... a way of knowing,... an approach to creating new and useful knowledge. (Grosf and Sardy, 2001), or it is an approach by which we attempt to find out, systematically, with the support of demonstrable facts and standards, how the world and its component works (Babbie, 2002).



Importance of Research

◆ Reason 1: Research Adds Knowledge

- Addresses gaps in knowledge
- Expands knowledge
- Adds voices of individuals to knowledge
- (Minority groups may get their issues heard due to research. For example, Child labour: with research, the matter of child labour was brought to national and International attention).

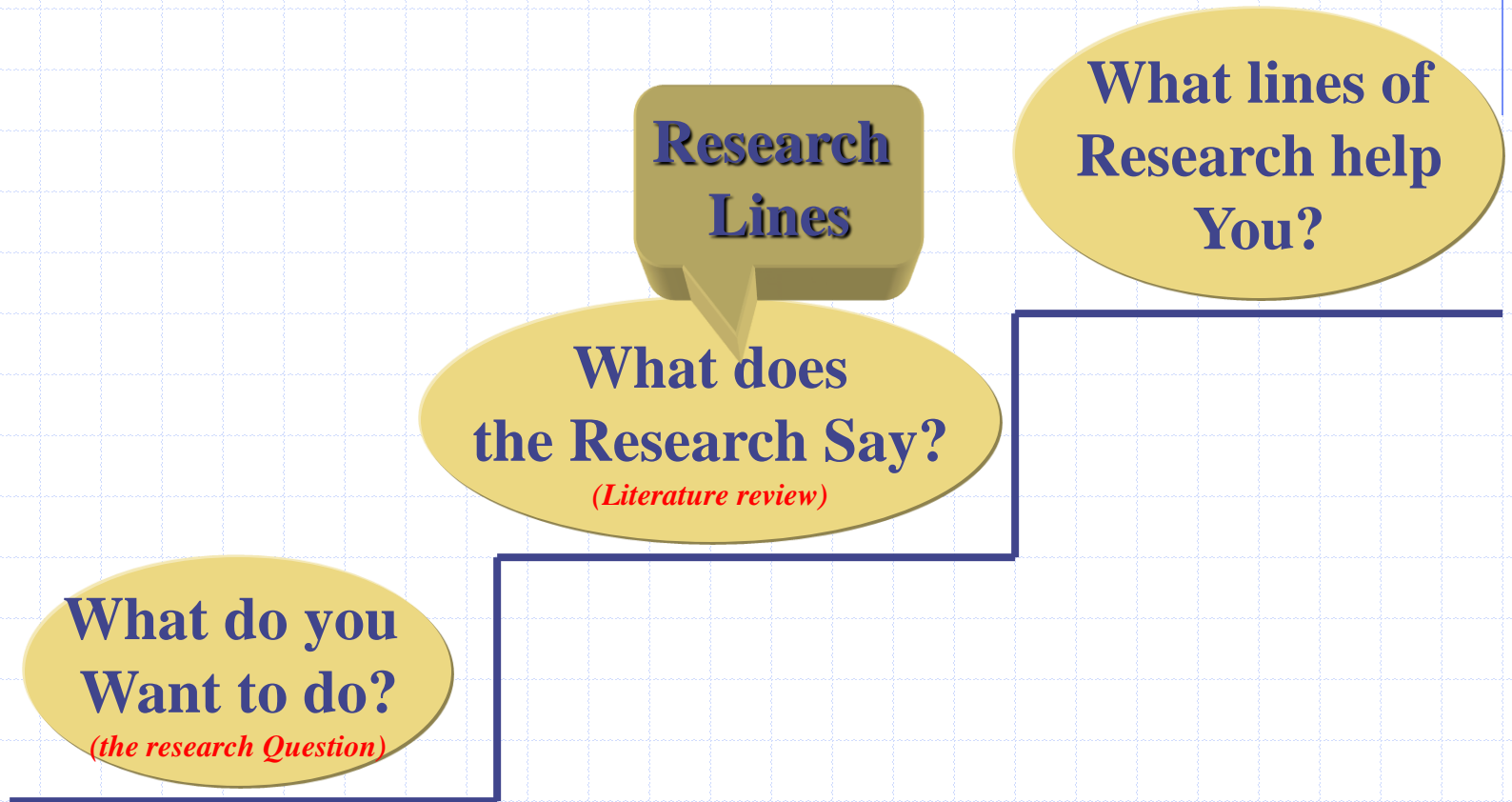


Importance of Research

- ◆ Reason 2: Research Helps Improve Practice
 - Educators gain new ideas
 - Educators gain new insight into methods
 - Educators gain new insight into students



Lines of Research



Importance of Research

◆ Reason 3: Research Informs Policy Debates

(eg. How to establish budgets for ...)

- Research helps people weigh different perspectives on issues
- Research helps people make informed decisions regarding policy



Importance of Research


◆ Reason 4: Research Builds Research Skills,
such as :

- Organizational skills
- Analytical skills
- Writing skills
- Presentation skills



Types of Research according to goals:

- a) **Basic or pure research:** it is done for the development of theories or principles. However, it has no immediate or planned application; it may later result in further research of an applied nature.
- b) **Applied research:** This is the testing of theories and principles. Its purpose is to improve a product or process – testing theoretical concepts in actual problem situations.



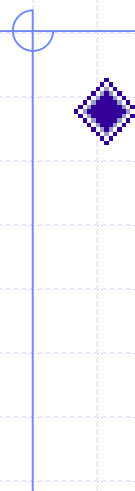
c) Action research: it is focused on immediate application, not on the development of theory or on general application.

Functions of Research:

- ◆ It helps us answer questions, solve problems and make decisions.
- ◆ It enables us to see and understand how and why a situation or a problem exists.
- ◆ It helps us discover new things and ideas.
- ◆ It allows us to validate existing theories or generate new ones.
- ◆ It helps us identify and understand the causes and effects of a situation or a phenomenon

Comparison Between Basic and Applied Research

- ◆ The terms basic and applied imply a clear distinction between two classes of research.
- ◆ In basic research, general theories, ideas, and questions are explored and tested. It may even be argued that this type of research should not have priority, because it does not always result in an immediate benefit to humans, but without basic research, many applied research programs would be hard-pressed to get the start they need.

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◆ Doing basic research ensures that applied researchers do not need to reinvent the wheel every time they start on a new project, because the groundwork has been done.

Comparisons:

Basic Research

- ◆ Domain- driven - intended to lead theoretical dvpt
- ◆ Justified in terms of gaining knowledge for its sake – they focus on making things better and creating a more humane society
- ◆ The main motivation is to expand man's knowledge

Applied Research

- ◆ Demand-driven – intended to lead to soln of specific problems
- ◆ Designed to solve practical problems of the modern world
- ◆ Can take the research basic research further based on the results, where applicable

Comparisons...

Basic Research

- ◆ Done for the intellectual pleasure of learning.
- ◆ Mainly concerned with generalizations and with the formulation of a theory.

Applied Research

- ◆ Done to test theories in the field to achieve better validity.
- ◆ Aims at finding a solution for an immediate problem facing a society.

Comparisons...

Basic

- ◆ Directed towards finding information that has broad base of applications.
- ◆ No commercial value attached to the discoveries that result from basic research.

Applied

- ◆ The central aim is to discover a solution for some pressing practical problem.
- ◆ There is commercial value, e.g. research to improve agricultural crop production.

Comparisons...

Basic

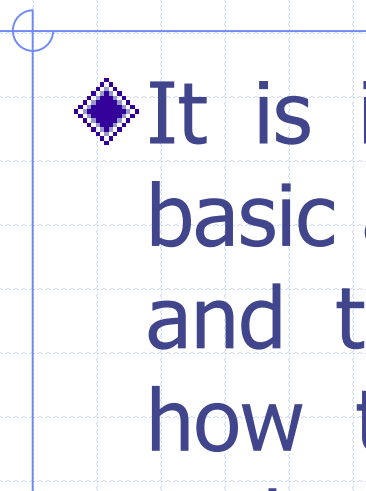
- ◆ Analytic
- ◆ Involves a search for enduring or general truths
- ◆ Exploration curious rather than mundane events

Applied

- ◆ Synthetic
- ◆ Entails a search for pragmatics solutions to particular problems
- ◆ Entirely a pursuit of social concerns

Conclusion

Many scientists feel that there should be a shift in scientific research. They feel that with so many problems facing the world today that more attention needs to be focused on the applied sciences to help solve problems like global overpopulation, pollution, illness and the depletion of the earth's natural resources. Some scientists feel that the time has come for a shift in emphasis away from purely basic research and toward applied science.



◆ It is important to understand that both basic and applied research work together, and that without the initial research of how things work, it can be difficult to make the improvements that applied scientists are looking to make.

CONCEPTUAL FOUNDATIONS OF RESEARCH: FOCUSING YOUR RESEARCH QUESTION

1. Define your core concepts.
2. What is your time frame?
3. What is the geographical location?
4. What aspect of the topic are you interested in?
5. What is your unit of analysis (i.e. the 'thing' that you collect data about and from which you draw conclusions)?

WRITING A RESEARCH PROPOSAL

Include:

1. A clear statement of the overall aims and objectives of the research.
2. A statement outlining the originality and importance of the research.
3. A brief description of existing work in the area.
4. How the research is to be conducted, the research design to be adopted, anticipated methods and indication of the sample group, sample size and recruitment methods.

5. How the data collected are to be analysed.
6. The anticipated time scale for the research.
7. The anticipated outcomes of the research.
8. Any specific requirements in terms of access, financial requirements, etc.
9. Any ethical issues that may be relevant to the study.

WEAKNESSES IN RESEARCH PROPOSALS

1. The research problem

- The problem is of insufficient importance or unlikely to produce any new or useful information.
- The hypothesis upon which the research is based is unsound, or is not based on any existing evidence.
- The problem is more complex than the investigator appears to realise.
- The research is overly complex, with too many elements.

2. *The approach*

- The proposed methods are not suitable to achieve the research objectives.
- The description of the approach lacks specificity and clarity.
- The research design has not been carefully considered.
- The statistical aspects/details of the means by which qualitative data are to be analysed have not received sufficient attention.

3. *Personal characteristics*

- The researcher does not have adequate experience or ability to undertake such a project.
- The researcher seems unfamiliar with recent or important work in the area.

Ethical Considerations in Research

- Respect the rights of the participants
- Honor the requests and restrictions of the research site
- Report the research fully and honestly
- Ensure that the participants are NOT subjected to any harm (whether physical or psychological)



◆ Research objectives may be linked with a hypothesis or used as a statement of purpose in a study that does not have a hypothesis.

◆ Even if the nature of the research has not been clear to the layperson from the hypotheses, s/he should be able to understand the research from the objectives.

◆ A statement of research objectives can serve to guide the activities of research. Consider the following examples.

Objective: To develop a budget for reducing pollution by a particular enterprise.

Objective: To describe the habitat of the giant panda in China.

In the above examples the intent of the research is largely descriptive.

In the case of the first example, the result will be the specification of a pollution reduction budget.

In the second, creating a picture of the habitat of the giant panda in China.

These observations might prompt researchers to formulate hypotheses which could be tested in another piece of research.

So long as the aim of the research is exploratory, i.e. to describe what is, rather than to test an explanation for what is, a research objective will provide an adequate guide to the research.