Chapter 1  The Role and Importance of Research

WHAT RESEARCH IS AND WHAT IT ISN’T

WHAT IS RESEARCH ALL ABOUT, ANYWAY?

Increasing our understanding of how and why we behave the way we do!!

A THEORY

- Organizes information
- Helps explain past events
- Predicts new events

RESEARCH IS BASED ON THE WORK OF OTHERS

- Past research guides new research
- Research is NOT copying the work of others
**Research Can Be Replicated**
- Repeatability is a sign of credible science
- Replication guides future research

**Research is Generalizable**
- Research should apply to situations outside of the study setting

**Research Is Not Done in Intellectual Isolation**
- It is based on some logical rationale
- It is tied to theory

**Research is “Doable”**
- Good research questions can be translated into projects that can be done!

**Research Is Ongoing**
- Research generates new questions
- Research is incremental

**Research is Apolitical**
- Research should have the betterment of society as its ultimate goal
THE SCIENTIFIC METHOD: A MODEL OF SCIENTIFIC INQUIRY

SCIENTIFIC METHOD
- A shared philosophical approach to understanding the world
- A standard sequence of steps in formulating and answering questions

QUESTIONS
- Asking a question
- Identifying a need

IDENTIFYING IMPORTANT FACTORS
- Not fully investigated
- Advance understanding
- Can be investigated
- Are interesting
- Lead to more questions

FORMULATING A HYPOTHESIS
- “If...then” statements
- Objective extension of the original question
- In a testable form

The steps in the research process

COLLECTING RELEVANT INFORMATION

- Hypotheses posit a relationship between different factors
- Data are collected that will confirm or refute the hypothesis
- Hypotheses are testable (not provable)

TESTING THE HYPOTHESIS

- Inferential statistics
  - Separate effects of factors from effects of chance
  - Assign a probability level to obtained data

WORKING WITH THE HYPOTHESIS

- If the hypothesis is confirmed
  - Plan new research
- If the hypothesis is refuted
  - Try to understand what other factors might be important

RECONSIDERING THE THEORY

- Theories can be modified
- Leading to new questions

DIFFERENT TYPES OF RESEARCH

- Nature of question asked
- Method used to answer question
- Degree of precision of method
Describe relationships between variables

Cannot test cause-and-effect relationships

NONEXPERIMENTAL RESEARCH

NONEXPERIMENTAL METHODS

Descriptive
Historical
Correlational
Qualitative

DESCRIPTIVE RESEARCH

Describe characteristics of existing phenomena
Provides a broad picture
Serves as a basis for other types of research

HISTORICAL RESEARCH

Describes past events in the context of other past or current events
Primary and secondary sources of data

CORRELATIONAL RESEARCH

Asks what several events have in common
Asks whether knowing one event can allow prediction of another event
Does not imply causation
**QUALITATIVE RESEARCH**

- Examines behavior in natural social, cultural, and political contexts
- Usually results in non-quantitative data

**EXPERIMENTAL RESEARCH**

- Tries to discover causal relationships
- Two types:
  - True experimental research
  - Quasi-experimental research

**TRUE EXPERIMENTAL RESEARCH**

- Participants assigned to groups
- Treatment variable is controlled by researcher
- Control of potential causes of behavior

**QUASI-EXPERIMENTAL RESEARCH**

- Participants are preassigned to groups
- Useful when researcher cannot manipulate variables

**WHAT METHOD TO USE WHEN**

- Determine the research question
- Decide on the type of data needed
- Choose the appropriate research method
Basic research has no immediate application.
Applied research has immediate applications.

SUMMARY – STUDENTS SHOULD BE ABLE TO:
- Define basic terms related to research and the scientific method.
- List eight (8) characteristics of high-quality research.
- Summarize the eight (8) steps in the scientific method.
- Describe the difference between experimental and nonexperimental research.
- List the three (3) different types of nonexperimental research designs.
- List the two (2) types of experimental research designs.
- Distinguish between basic research and applied research.
- Explain why a strong scientific method of inquiry will lead to valuable information regardless of significant or nonsignificant findings.