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CHAPTER 1: INTRODUCTION TO RESEARCH

WHAT IS RESEARCH?

Research is not only a planned process of collecting information or data in an attempt to discover a solution to a problem but research can also be seen as a systematic way or a scientific way of acquiring knowledge about a particular subject through collection of raw information from either a primary or secondary sources. Collecting information from primary sources means getting raw data from the horse's mouth and can be done through the use of the interviews or questioners, while collecting information from secondary source focuses on literature search/review.

According to Bless et al, (2000: p.530) research can be seen as a systematic inquiry that uses logical scientific methods to answer question or solve problem. One can also say that research is a systematic investigation to establish facts, to search knowledge about something. Broom and Dozier (1990:p.4) define research as the controlled, objective and systematic gathering of information for the purpose of describing and understanding. Research is a scientific approach of answering questions.

People conduct research so as to extend their knowledge, to gain in-depth knowledge, to gain more insight into, and/or to broaden their sphere of knowledge about a concept or phenomenon. Research is important in the field of mass communication and/or in general including in Public Relations, Marketing and Advertising because of:-The rapidly changing social, economic and political environment in which people live, the increased cost of public relations programmes and mounting demands for measurable results of Public relations programmes and departments,-Broom and Dozier (1990:p.12) believe the use of research positions in most disciplines including Public Relations as purposive, goal directed and problem solving management functions.
TYPES OF RESEARCH

Research can be divided into Formal and Informal researches.

❖ Informal Research

According to Broody and Stone (1989: p.6) informal research are all those processes which do not employ statistical methods thus implying that the results are not necessarily reliable. This view is however to acknowledged many research techniques which do not use statistic as equally reliable. Informal research can therefore be regarded as research which has not been verified through accepted research techniques.

Before formal research can be taken it is important to decide what is that needs to be researched. Research questions usually arise from issues which are detected through environmental monitoring. In Public Relations, environmental monitoring can be done through SCANNING - the process by which the environment is continuously monitored to pick up information which might indicate the beginning of trends or issues which might influence the organization in future; and TRACKING - once the trend or issue has been identified it is important to keep track of its development until the issue is resolved.

❖ Formal Research

Formal research implies that acknowledged scientific techniques have been used in the research process. These techniques can either be quantitative or qualitative research methodology. Result can be measured and tested. Formal research is also often based on a relevant social theory, be it in public relations, communication, psychology or any other applied field of science.

Research can be applied- meaning it has immediate effects on the community under study. Most applied research is pre-determined by the sponsor. A sponsor is, in research terms, a person or organization that provides the researcher with money to carry out a research. This person or organization may or may not have a say in what to investigate. In most applied researches they have direct or indirect input in what one has to investigate.
GENERAL KINDS OF RESEARCH

In this section we discuss five general kinds of research: basic research, applied research, evaluation research, action research, and orientational research.

BASIC AND APPLIED RESEARCH

Basic research is research aimed at generating fundamental knowledge and theoretical understanding about basic human and other natural processes. Applied research is focused on answering practical questions to provide relatively immediate solutions.

Basic and applied research can be viewed as two endpoints on a research continuum; with the center representing the idea that research can be applied research and can contribute to basic research and vice versa. Here is the continuum:

Basic..................................Mixed..................................Applied

Research examining the process of cognitive "priming" is an example of relatively basic research; a comparison of the effectiveness of two approaches to counseling is an example of relatively applied research. Basic and applied research is generally conducted by researchers at universities.

EVALUATION RESEARCH

Evaluation involves determining the worth, merit, or quality of an evaluation objects. Evaluation is traditionally classified according to its purpose: Formative evaluation is used for the purpose of program improvement. Summative evaluation is used for the purpose of making summary judgments about a program and decisions to continue or discontinue the program.
FIVE TYPES EVALUATION

• **Needs assessment**, which ask this question: Is there a need for this type of program?
• **Theory assessment**, which asks this question: Is this program conceptualized in a way that it should work?
• **Implementation assessment**, which asks: Was this program implemented properly and according to the program plan?
• **Impact assessment**, which asks: Did this program have an impact on its intended targets?
• **Efficiency assessment**, which asks: Is this program cost effective?

NB. Evaluation is generally done by program evaluators and is focused on specific programs or products.

ACTION RESEARCH

Action research focuses on solving practitioner’s local problems. It is generally conducted by the practitioners after they have learned about the methods of research and research concepts. It is important to understand that action research is also a state of mind; for example, teachers who are action researchers are constantly observing their students for patterns and thinking about ways to improve instruction, classroom management, and so forth.

ORIENTATIONAL RESEARCH

Orientational research is done for the purpose of advancing an ideological position. It is traditionally called critical theory. Orientational research is focused on some form of inequality, discrimination, or stratification in society. Some areas in which inequality manifests itself are large differences in income, wealth, access to high quality education, power, and occupation.

MAJOR AREAS OF INTEREST TO ORIENTATIONAL RESEARCHERS

• **Class stratification** (i.e., inequality resulting from one’s economic class in society).
• **Gender stratification** (i.e., inequality resulting from one’s gender).
• **Ethnic and racial stratification** (i.e., inequality resulting from one’s ethnic or racial grouping).
• **Sexual orientation stratification** (i.e., inequality and discrimination based on one’s sexual preferences)

**SOURCES OF KNOWLEDGE**

The major ways we learn can be classified into experience, expert opinion, and reasoning.

**Experience**
The idea here is that knowledge comes from experience. Historically, this view was called empiricism (i.e., original knowledge comes from experience). The term empirical means "based on observation, experiment, or experience."

**Expert Opinion**
Because we don’t want to and don’t have time to conduct research on everything, people frequently rely on expert opinion as they learn about the world. Note, however, that if you rely on an expert’s opinion it is important to make sure that the expert is an expert in the specific area under discussion and you should check to see if the expert has a vested interest in the issue.

**Reasoning.**
Historically, this idea was called rationalism (i.e., original knowledge comes from thought and reasoning).

There are two main forms of reasoning:

- **Deductive reasoning** (i.e., the process of drawing a specific conclusion from a set of premises).
  Deductive reasoning is the classical approach used by the great rationalists in the history of western civilization. Note that, in formal logic and mathematics, a conclusion from deductive reasoning will necessarily be true if the argument form is valid and if the premises are true.

- **Inductive reasoning** (i.e., reasoning from the particular to the general). The conclusion from inductive reasoning is probabilistic (i.e., you make a statement about what will probably happen). The so called “problem of induction” is that the future might not resemble the present.

**THE SCIENTIFIC APPROACH TO KNOWLEDGE GENERATION**
Science is also an approach for the generation of knowledge. It relies on a mixture of empiricism (i.e., the collection of data) and rationalism (i.e., the use of reasoning and theory construction and testing).
Dynamics of Science.

Science has many distinguishing characteristics:

• Science is progressive. In other words, "We stand on the shoulders of giants" (Newton).
• Science is rational.
• Science is creative.
• Science is dynamic.
• Science is open.
• Science is "Critical."
• Science is never-ending.

Basic Assumptions

In order to do science, we usually make several assumptions. Here they are as summarized in Table 1.3.

<table>
<thead>
<tr>
<th>TABLE 1.3</th>
<th>Summary of Common Assumptions Made by Educational Researchers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>There is a world out there that can be studied. This can include studying the inner worlds of individuals.</td>
</tr>
<tr>
<td>2.</td>
<td>Some of the world is unique; some of it is regular or patterned or predictable; and much of it is dynamic and complex. (Note: These categories can sometimes overlap.)</td>
</tr>
<tr>
<td>3.</td>
<td>The unique, the regular, and the complex in the world all can be examined and studied by researchers.</td>
</tr>
<tr>
<td>4.</td>
<td>Researchers should try to follow certain agreed-on norms and practices.</td>
</tr>
<tr>
<td>5.</td>
<td>It is possible to distinguish between more and less plausible claims and between good and poor research.</td>
</tr>
<tr>
<td>6.</td>
<td>Science cannot provide answers to all questions.</td>
</tr>
</tbody>
</table>

Scientific Methods

There are many scientific methods. The two major methods are the inductive method and the deductive method.

• The deductive method involves the following three steps:
  1. State the hypothesis (based on theory or research literature).
  2. Collect data to test the hypothesis.
  3. Make decision to accept or reject the hypothesis.

• The inductive method. This approach also involves three steps:
1. Observe the world.
2. Search for a pattern in what is observed.
3. Make a generalization about what is occurring.

Virtually any application of science includes the use of both the deductive and the inductive approaches to the scientific method either in a single study or over time. This idea is demonstrated in Figure 1.1. The inductive method is as “bottom up” method that is especially useful for generating theories and hypotheses; the deductive method is a “top down” method that is especially useful for testing theories and hypotheses.

**THEORY**

The word "theory" most simply means "explanation." Theories explain "How" and "Why" something operates as it does. Some theories are highly developed and encompass a large terrain (i.e., "big" theories or "grand" theories); others theories are "smaller" theories or briefer explanations.

**TABLE 1.4** How to Evaluate the Quality of a Theory or Explanation

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Is it (i.e., the theory or explanation) logical and coherent?</td>
</tr>
<tr>
<td>2.</td>
<td>Is it clear and parsimonious?</td>
</tr>
<tr>
<td>3.</td>
<td>Does it fit the available data?</td>
</tr>
<tr>
<td>4.</td>
<td>Does it provide testable claims?</td>
</tr>
<tr>
<td>5.</td>
<td>Have theory-based predictions been tested and supported?</td>
</tr>
<tr>
<td>6.</td>
<td>Has it survived numerous attempts by researchers to identify problems with it or to falsify it?</td>
</tr>
<tr>
<td>7.</td>
<td>Does it work better than competing or rival theories or explanations?</td>
</tr>
<tr>
<td>8.</td>
<td>Is it general enough to apply to more than one place, situation, or person?</td>
</tr>
<tr>
<td>9.</td>
<td>Can practitioners use it to control or influence things in the world (e.g., a good theory of teaching helps teachers to positively influence student learning; a good theory of counseling helps counselors to positively influence their clients’ mental health)?</td>
</tr>
</tbody>
</table>
THE PRINCIPLE OF EVIDENCE

According to the principle of evidence, what is gained in empirical research is evidence, NOT proof. This means that knowledge based on communication research is ultimately tentative. Therefore, please eliminate the word "proof" from your vocabulary when you talk about research results. Empirical research provides evidence; it does not provide proof. Also note that, evidence increases when a finding has been replicated. Hence, you should take NOT draw firm conclusions from a single research study.

OBJECTIVES OF RESEARCH

There are five major objectives of research.

1. **Exploration.** This is done when you are trying to generate ideas about something.
2. **Description.** This is done when you want to describe the characteristics of something or some phenomenon.
3. **Explanation.** This is done when you want to show how and why a phenomenon operates as it does. If you are interested in causality, you are usually interested in explanation.
4. **Prediction.** This is your objective when your primary interest is in making accurate predictions. Note that the advanced sciences make much more accurate predictions than the newer social and behavioral sciences.
5. **Influence.** This objective is a little different. It involves the application of research results to impact the world. A demonstration program is an example of this. One convenient and useful way to classify research is into exploratory research, descriptive research, explanatory research, predictive research, and demonstration research.
CHAPTER 2: QUANTITATIVE, QUALITATIVE, AND MIXED RESEARCH

There are currently three major research paradigms in social and behavioral sciences. They are quantitative research, qualitative research, and mixed research. Here are the definitions of each:

QUANTITATIVE RESEARCH METHODS

Quantitative research – research that relies primarily on the collection of quantitative data. (Note that pure quantitative research will follow all of the paradigm characteristics of quantitative research shown in the left column of Table 2.1.)

Experimental and Non-experimental Research

The basic building blocks of quantitative research are variables. Variables (something that takes on different values or categories) are the opposite of constants (something that cannot vary, such as a single value or category of a variable). Many of the important types of variables used in quantitative research are shown, with examples, in Table 2.2. Here is that table for your review:
<table>
<thead>
<tr>
<th>Variable Type</th>
<th>Key Characteristic</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Measurement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Categorical variable</td>
<td>A variable that is made up of different types or categories of a phenomenon</td>
<td>The variable <em>gender</em> is made up of the categories of male and female.</td>
</tr>
<tr>
<td>Quantitative variable</td>
<td>A variable that varies in degree or amount of a phenomenon</td>
<td>The variable <em>annual income</em> varies from zero income to a very high income level.</td>
</tr>
<tr>
<td><strong>Role Taken by the Variable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent variable</td>
<td>A variable that is presumed to cause changes to occur in another variable, a causal variable</td>
<td>Amount of studying (IV) affects test grades (DV).</td>
</tr>
<tr>
<td>(symbolized as IV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependent variable</td>
<td>A variable that changes because of another variable, the effect or outcome variable</td>
<td>Amount of studying (IV) affects test grades (DV).</td>
</tr>
<tr>
<td>(symbolized as DV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mediating variable</td>
<td>A variable that comes in between other variables, helps to delineate the process through which variables affect one another</td>
<td>Amount of studying (IV) leads to input and organization of knowledge in long-term memory (mediating variable), which affects test grades (DV).</td>
</tr>
<tr>
<td>(It is also called an intervening variable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderator variable</td>
<td>A variable that delineates how a relationship of interest changes under different conditions or circumstances</td>
<td>Perhaps the relationship between studying (IV) and test grades (DV) changes according to the different levels of use of a drug such as Ritalin (moderator).</td>
</tr>
</tbody>
</table>
In looking at the table note that when we speak of measurement, the most simple classification is between categorical and quantitative variables. As you can see, quantitative variables vary in degree or amount (e.g., annual income) and categorical variables vary in type or kind (e.g., gender). The other set of variables in the table (under the heading role taken by the variable) are the kinds of variables we talk about when explaining how the world operates and when we design a quantitative research study. As you can see, independent variables (symbolized by "IV") are the presumed cause of another variable. Dependent variables (symbolized by "DV") are the presumed effect or outcome. Dependent variables are influenced by one or more independent variables. What is the IV and DV in the relationship between smoking and lung cancer? (Smoking is the IV and lung cancer is the DV.)

Sometimes we want to understand the process or variables through which one variable affects another variable. This brings us to the idea of intervening variables (also called mediator or mediating variables). Intervening variables are variables that occur between two other variables. For example, tissue damage is an intervening variable in the smoking and lung cancer relationship. We can use arrows (which mean causes or affects) and draw the relationship that includes an intervening variable like this:

**Smoking---->Tissue Damage---->Lung Cancer.**

Sometimes a relationship does not generalize to everyone; therefore, researchers often use moderator variables to show how the relationship changes across the levels of an additional variable. For example, perhaps behavioral therapy works better for males and cognitive therapy works better for females. In this case, gender is the moderator variable. The relationship be type of therapy (behavioral versus cognitive) and psychological relief is moderated by gender.

**QUALITATIVE RESEARCH METHODS**

**Qualitative research** – research that relies on the collection of qualitative data. (Note that pure qualitative research will follow all of the paradigm characteristics of qualitative research shown in the right column of Table 2.1.) Qualitative research relies primarily on the collection of qualitative data (i.e., nonnumeric data such as words and pictures). Next, to further understand what qualitative research is all about, please carefully examine Patton's excellent summary of the **twelve major characteristics of qualitative research**, which is shown in Table 12.1 (page 12) and below:
### TABLE 12.1 Twelve Major Characteristics of Qualitative Research

**Design Strategies**

1. **Naturalistic inquiry**—Studying real-world situations as they unfold naturally; nonmanipulative and noncontrolling; openness to whatever emerges (lack of predetermined constraints on findings).

2. **Emergent design flexibility**—Openness to adapting inquiry as understanding deepens and/or situations to change; the researcher avoids getting locked into rigid designs that eliminate responsiveness and pursues new paths of discovery as they emerge.

3. **Purposeful sampling**—Cases for study (e.g., people, organizations, communities, cultures, events, critical incidences) are selected because they are “information rich” and illuminative, that is, they offer useful manifestations of the phenomenon of interest; sampling, then, is aimed at insight about the phenomenon, not empirical generalization from a sample to a population.

**Data-Collection and Fieldwork Strategies**

4. **Qualitative data**—Observations that yield detailed, thick description; inquiry in depth; interviews that capture direct quotations about people’s personal perspectives and experiences; case studies; careful document review.

5. **Personal experience and engagement**—The researcher has direct contact with and gets close to the people, situation, and phenomenon under study; the researcher’s personal experiences and insights are an important part of the inquiry and critical to understanding the phenomenon.

6. **Empathic neutrality and mindfulness**—An empathic stance in interviewing seeks vicarious understanding without judgment (neutrality) by showing openness, sensitivity, respect, awareness, and responsiveness; in observation it means being fully present (mindfulness).

7. **Dynamic systems**—Attention to process; assumes change as ongoing whether focus is on an individual, an organization, a community, or an entire culture; therefore, mindful of and attentive to system and situation dynamics.

**Analysis Strategies**

8. **Unique case orientation**—Assumes that each case is special and unique; the first level of analysis is being true to, respecting, and capturing the details of the individual cases being studied; cross-case analysis follows from and depends on the quality of individual case studies.

9. **Inductive analysis and creative synthesis**—Immersion in the details and specifics of the data to discover important patterns, themes, and interrelationships; begins by exploring, then confirming, guided by analytical principles rather than rules, ends with a creative synthesis.

10. **Holistic perspective**—The whole phenomenon under study is understood as a complex system that is more than the sum of its parts; focus on complex interdependencies and system dynamics that cannot meaningfully be reduced to a few discrete variables and linear, cause-effect relationships.

11. **Context sensitivity**—Places findings in a social, historical, and temporal context; careful about, even dubious of, the possibility or meaningfulness of generalizations across time and space; emphasizes instead careful comparative case analyses and extrapolating patterns for possible transferability and adaptation in new settings.

12. **Voice, perspective, and reflectivity**—The qualitative analyst owns and is reflective about her or his own voice and perspective; a credible voice conveys authenticity and trustworthiness; complete objectivity being impossible and pure subjectivity undermining credibility, the researcher’s focus becomes balance—understanding and depicting the world authentically in all its complexity while being self-analytical, politically aware, and reflexive in consciousness.

Now you should understand what qualitative research is. In the rest of the chapter, we discuss the four major types of qualitative research: phenomenology, ethnography, grounded theory and case study. To get things started, note the key characteristics (i.e., purpose, origin, data-collection methods, data analysis, and report focus) of these four approaches as shown in Table 12.2 on page 14 and below:

| Dimension                  | Qualitative Research Approach |  |
|----------------------------|-------------------------------|  |
| **Research purpose**       | Phenomenology                  | Ethnography                  | Case Study                  | Grounded Theory                      |
| Primary data-collction method | In-depth interviews with up to 10–15 people. | Participant observation over an extended period of time (e.g., one month to a year). Interviews with informants. | Multiple methods are used (e.g., interviews, observations, documents). | Interviews with 20–30 people. Observations are also frequently used. |
| Data analysis approach     | List significant statements, determine meaning of statements, and identify the essence of the phenomenon. | Holistic description and search for cultural themes in data. | Holistic description and search for themes shedding light on the case. May also include cross-case analysis. | Begin with open coding, then axial coding, and end with selective coding. |
| Narrative report focus     | Rich description of the essential or invariant structures (i.e., the common characteristics, or essences) of the experience. | Rich description of context and cultural themes. | Rich description of the context and operation of the case or cases. Discussion of themes, issues, and implications. | Description of topic and people being studied. End with a presentation of the grounded theory. May also list propositions. |
PHENOMENOLOGY

The first major approach to qualitative research is phenomenology (i.e., the descriptive study of how individuals experience a phenomenon). Here is the foundational question in phenomenology: What is the meaning, structure, and essence of the lived experience of this phenomenon by an individual or by many individuals? The researcher tries to gain access to individuals' life-worlds, which is their world of experience; it is where consciousness exists. Conducting in-depth interviews is a common method for gaining access to individuals' life-worlds.

The researcher, next, searches for the invariant structures of individuals' experiences (also called the essences of their experience). Phenomenological researchers often search for commonalities across individuals (rather than only focusing on what is unique to a single individual).

For example, what are the essences of peoples' experience of the death of a loved one? Here is another example: What are the essences of peoples' experiences of an uncaring nurse?

After analyzing your phenomenological research data, you should write a report that provides rich description and a "vicarious experience" of being there for the reader of the report. Shown next are two good examples. See if you get the feeling the patients had when they described caring and non-caring nurses. Here is a description of a caring nurse (from Exhibit 12.2) based on a phenomenological research study:

In a caring interaction, the nurse’s existential presence is perceived by the client as more than just a physical presence. There is the aspect of the nurse giving of oneself to the client. This giving of oneself may be in response to the client’s request, but it is more often a voluntary effort and is unsolicited by the client. The nurse’s willingness to give of oneself is primarily perceived by the client as an attitude and behavior of sitting down and really listening and responding to the unique concerns of the individual as a person of value. The relaxation, comfort, and security that the client expresses both physically and mentally are an immediate and direct result of the client’s stated and unstated needs being heard and responded to by the nurse (From Creswell, 1998, p.289).
From the same study of nurses, a description also was provided of a non-caring nurse. Here it is: The nurse’s presence with the client is perceived by the client as a minimal presence of the nurse being physically present only. The nurse is viewed as being there only because it is a job and not to assist the client or answer his or her needs. Any response by the nurse is done with a minimal amount of energy expenditure and bound by the rules. The client perceives the nurse who does not respond to this request for assistance as being non-caring.

Therefore, an interaction that never happened is labeled as a non-caring interaction. The nurse is too busy and hurried to spend time with the client and therefore does not sit down and really listen to the client’s individual concerns. The client is further devalued as a unique person because he or she is scolded, treated as a child, or treated as a nonhuman being or an object. Because of the devaluing and lack of concern, the client’s needs are not met and the client has negative feelings, that is, frustrated, scared, depressed, angry, afraid, and upset (From Creswell, 1998, p.289).

**ETHNOGRAPHY**

The second major approach to qualitative research is ethnography (i.e., the discovery and description of the culture of a group of people). Here is the foundational question in ethnography: What are the cultural characteristics of this group of people or of this cultural scene? Because ethnography originates in the discipline of Anthropology, the concept of culture is of central importance.

Culture is the system of shared beliefs, values, practices, language, norms, rituals, and material things that group members use to understand their world. One can study micro cultures (e.g., such as the culture in a classroom) as well as macro cultures (e.g., such as the South African culture). There are two additional or specialized types of ethnography.

1. **ETHNOLOGY** (the comparative study of cultural groups).
2. **ETHNOHISTORY** (the study of the cultural past of a group of people). An ethnohistory is often done in the early stages of a standard ethnography in order to get a sense of the group’s cultural history.
Here are some more concepts that are commonly used by ethnographers:

- **Ethnocentrism** (i.e., judging others based on your cultural standards). You must avoid this problem if you are to be a successful ethnographer!
- **Emic perspective** (i.e., the insider's perspective) and **emic terms** (i.e., specialized words used by people in a group).
- **Etic perspective** (i.e., the external, social scientific view) and **etic terms** (i.e., outsider's words or specialized words used by social scientists).
- **Going native** (i.e., identifying so completely with the group being studied that you are unable to be objective).
- **Holism** (i.e., the idea that the whole is greater than the sum of its parts; it involves describing the group as a whole unit, in addition to its parts and their interrelationships). The final ethnography (i.e., the report) should provide a rich and holistic description of the culture of the group under study.

**CASE STUDY RESEARCH**

The third major approach to qualitative research is **case study research** (i.e., the detailed account and analysis of one or more cases). Here is the foundational question in case study research: What are the characteristics of this single case or of these comparison cases? A case is a bounded system (e.g., a person, a group, an activity, a process). Because the roots of case study are interdisciplinary, many different concepts and theories can be used to describe and explain the case. Robert Stake classifies case study research into three types:

1. **Intrinsic case study** (where the interest only in understands the particulars of the case).
2. **Instrumental case study** (where the interest is in understanding something more general than the case).
3. **Collective case study** (where interest is in studying and comparing multiple cases in a single research study). Multiple methods of data collection are often used in case study research (e.g., interviews, observation, documents, questionnaires). The case study final report should provide a rich (i.e., vivid and detailed) and holistic (i.e., describes the whole and its parts) description of the case and its context.
The fourth major approach to qualitative research is grounded theory (i.e., the development of inductive, "bottom-up," theory that is "grounded" directly in the empirical data). Here is the foundational question in grounded theory: What theory or explanation emerges from an analysis of the data collected about this phenomenon? It is usually used to generate theory (remember from earlier chapters that theories tell you "How" and "Why" something operates as it does; theories provide explanations).

Grounded theory can also be used to test or elaborate upon previously grounded theories, as long as the approach continues to be one of constantly grounding any changes in the new data. Four important characteristics of a grounded theory are

1. **Fit** (i.e., Does the theory correspond to real-world data?),
2. **Understanding** (i.e., is the theory clear and understandable?),
3. **Generality** (i.e., is the theory abstract enough to move beyond the specifics in the original research study?),
4. **Control** (i.e., can the theory be applied to produce real-world results?).

Data collection and analysis continue throughout the study. When collecting and analyzing the researcher needs theoretical sensitivity (i.e., being sensitive about what data are important in developing the grounded theory). Data analysis often follows three steps:

1. **Open coding** (i.e., reading transcripts line-by-line and identifying and coding the concepts found in the data).
2. **Axial coding** (i.e., organizing the concepts and making them more abstract).
3. **Selective coding** (i.e., focusing on the main ideas, developing the story, and finalizing the grounded theory).

The grounded theory process is "complete" when theoretical saturation occurs (i.e., when no new concepts are emerging from the data and the theory is well validated). The final report should include a detailed and clear description of the grounded theory.
MIXED RESEARCH METHODS

Mixed research—research that involves the mixing of quantitative and qualitative methods or paradigm characteristics. Mixed research is a general type of research (it’s one of the three paradigms) in which quantitative and qualitative methods, techniques, or other paradigm characteristics are mixed in one overall study. Earlier we showed it major characteristics of mixed research in Table 2.1. Now the two major types of mixed research are distinguished:

MIXED METHOD VERSUS MIXED MODEL RESEARCH

• Mixed method research – is research in which the researcher uses the qualitative research paradigm for one phase of a research study and the quantitative research paradigm for another phase of the study. For example, a researcher might conduct an experiment (quantitative) and after the experiment conduct an interview study with the participants (qualitative) to see how they viewed the experiment and to see if they agreed with the results. Mixed method research is like conducting two mini-studies within one overall research study.

• Mixed model research – is research in which the researcher mixes both qualitative and quantitative research approaches within a stage of the study or across two of the stages of the research process. For example, a researcher might conduct a survey and use a questionnaire that is composed of multiple closed-ended or quantitative type items as well as several open-ended or qualitative type items. For another example, a researcher might collect qualitative data but then try to quantify the data.

The Advantages of Mixed Research

Perhaps the major goal for researcher who design and conduct mixed research is to follow the fundamental principle of mixed research. According to this principle, the researcher should mix quantitative and qualitative research methods, procedures, and paradigm characteristics in a way that the resulting mixture or combination has complementary strengths and nonoverlapping weaknesses. The examples just listed for mixed method and mixed model research can be viewed as following this principle. Can you see how?
• Here is a metaphor for thinking about mixed research: Construct one fish net out of several fish nets that have holes in them by laying them on top of one another. The "new" net will not have any holes in it. The use of multiple methods or approaches to research works the same way.

• When different approaches are used to focus on the same phenomenon and they provide the same result, you have "corroboration" which means you have superior evidence for the result. Other important reasons for doing mixed research are to complement one set of results with another, to expand a set of results, or to discover something that would have been missed if only a quantitative or a qualitative approach had been used.

• Some researchers like to conduct mixed research in a single study, and this is what is truly called mixed research. However, it is interesting to note that virtually all research literatures would be mixed at the aggregate level, even if no single researcher uses mixed research. That's because there will usually be some quantitative and some qualitative research studies in a research literature.

Our Research Typology
We have now covered the essentials of the three research paradigms and their subtypes. Let's put it all together in the following picture of our research typology:

![Figure 2.3](image.png)  
*Research typology (Later chapters will add a third level to this typology.)*
CHAPTER 3: PROBLEM IDENTIFICATION AND HYPOTHESIS FORMATION

The purpose of this chapter is to help you to learn how to come up with a research topic, refine it, and develop a research proposal.

SOURCES OF RESEARCH IDEAS

Research ideas and research problems originate from many sources. We discuss four of these sources in the text: everyday life, practical issues, past research, and theory. Regardless of the source of your idea, a key point is that you must develop a questioning and inquisitive approach to life when you are trying to come up with research ideas.

1. **Everyday life** is one common source of research ideas. Based on a questioning and inquisitive approach, you can draw from your experiences and come up with many research topics. For example, think about what educational techniques or practices you believe work well, or do not work well. Would you be interested in doing a research study on one or more of those techniques or practices?

2. **Practical issues** can be a source of research ideas. What are some current problems facing education (e.g., facing administrators, teachers, students, parents). What research topics do you think can address some of these current problems?

3. **Past research** can be an excellent source of research ideas. Past research is probably the most important source of research ideas. That's because a great deal of research has already been conducted on a multitude of topics, and, importantly, research usually generates more questions than it answers. This is also the best way to come up with a specific idea that will fit into and extend the research literature. For students planning on writing a thesis or dissertation, the use of past research is extremely helpful, and remember to not just look at the variables and the results, but also carefully examine how they conducted the study (i.e., examine the methods).

4. **Theory** (i.e., explanations of phenomena) can be a source of research ideas.
   - Can you summarize and integrate a set of past studies into a theory?
   - Are there any theoretical predictions needing empirical testing?
   - Do you have any "theories" that you believe have merit? Test them!
If there is little or no theory in the area of interest to you, then think about collecting data to help you generate a theory using the grounded theory technique.

IDEAS THAT CAN'T BE RESEARCHED EMPIRICALLY

The point in this section is that empirical research (i.e., research that is based on the collection of observable data) cannot provide answers to “ultimate,” “metaphysical,” or “ethical” questions. If a question is asking which value is true or correct, empirical research can't offer the solution. For example, is school prayer good? Should homosexuals be allowed to legally marry? Should the teaching of Christianity (and no other religion) be provided in public schools? These are moral and legal issues which cannot be directly addressed or resolved by empirical research in the social or behavioral sciences. John Dewey made the point that empirical research can provide answers about how to get to valued endpoints, but he took the valued endpoints for granted (e.g., democracy, equality, education for all). So do not expect to conduct an empirical research study that will "show whether school prayer should be adopted."

SOURCES OF INFORMATION

There are several major sources of information for you to use when conducting a literature review.

- **Books** are a good starting point. It gives you an overview and a summary of relevant research and theory.
- **Journals** are another excellent source. Journals provide more recent information than books and provide full length empirical research articles for you to carefully examine.
- **Computer databases** are excellent sources for locating information.

CONDUCTING THE LITERATURE SEARCH

- In Table 3.6 we explain how to evaluate the quality of Internet resources. It is important for you to understand that the quality of material on the Internet varies widely and it must be evaluated before use.
- Using the Public Internet. The Internet has obviously become extremely important. Below, is a list of some useful subject directories, search engines, and meta-search engines?
Before deciding whether to carry out your research project, you must decide whether it would be feasible to conduct. You should do this as early as possible so you don't waste your time. This means that you must design a research study that can be carried out given your available resources (e.g., time, money, and people).
Statement of the Research Problem

As seen in the above figure, the research problem is the educational issue or problem within your broad topic area. In other words, you start with your topic and then try to identify one or more research problems that you believe need to be solved in that topic area. In quantitative research, research problems tend to emphasize the need to explain, predict, or describe something. In qualitative research, research problems tend to focus on exploring a process, an event, or a phenomenon.
Statement of the Purpose of the Study

As seen in the figure, your research purpose follows from the problem you have selected, and it is your statement of your intent or objective for your research study. It is important to include this in your proposals and final reports because it helps orient your reader to your study. In quantitative research, the purpose identifies the specific type of relationship being investigated using a specific set of variables. In qualitative research, the purpose focuses on exploring or understanding a phenomenon.

Statement of Research Questions

After you have completed your literature review and have digested the literature, you will need to make an exact statement of the specific research questions you want to pursue. This will help ensure that you have a good grasp of what you want to do, it will enable you to communicate your idea to others, and it will help guide the research process (e.g., what variables will be examined, what methods will be needed). A good literature review will logically end with your specific research questions.

In quantitative research, a research question typically asks about a relationship that may exist between or among two or more variables. It should identify the variables being investigated and specify the type of relationship (descriptive, predictive, or causal) to be investigated. For example: What effect does playing football have on students’ overall grade point average during the football season?

In qualitative research, a research question asks about the specific process, issue, or phenomenon to be explored or described. For example: What are the social and cultural characteristics of a highly successful school where students and teachers get along well and students work hard and achieve highly? Here is another research question: How does the social context of a school influence perservice teachers’ beliefs about teaching? Here is another: What is the experience of a teacher being a student like?
**Formulating Hypotheses**

- If you are conducting a quantitative research study, you will typically state your specific hypotheses that you have developed from your literature review. A hypothesis is the researcher’s prediction of the relationship that exists among the variables being investigated. If you wrote a research question, the hypothesis will be your tentative answer to your question. For the quantitative research question stated above (i.e., What effect does playing football have on students’ overall grade point average during the football season?) the related hypothesis might go like this: Students who play football during the football season will experience a decrease in their GPAs as compared to students not playing football. Unlike in quantitative research (where hypotheses are stated before collecting the data), hypotheses in qualitative research are often generated as the data are collected and as the researcher gains insight into what is being studied.

**The Research Proposal**

After you have identified your research idea, reviewed the research literature, determined the feasibility of your study, made a formal statement of the research questions (and hypotheses for a quantitative study), you are ready to develop a research proposal to guide your research study. It is essential that you develop your research proposal before conducting a research study. This will force you to carefully spell out the rationale for your research study, and it will make you think about and specify each step of your study. Here are the major sections for a typical research proposal:

**Title Page**

**Abstract**

**Introduction**

- Include a statement of the research topic.
- Include a statement of the research problem(s)
- Include a summary of the prior literature.
- Include the purpose of the study.
- Include the research question(s)
- Include the hypotheses for quantitative studies
Method
• Research Participants
• Apparatus and/or Instruments
• Procedure

Data Analysis

References
CHAPTER 4: METHODS OF DATA COLLECTION

The term method of data collection simply refers to how the researcher obtains the empirical data to be used to answer his or her research questions. Once data are collected they are analyzed and interpreted and turned into information and results or findings. All empirical research relies on one or more method of data collection. It is important to consider and utilize the fundamental principle of mixed research during the planning of a research study. The principle states that researchers should mix methods (including methods of data collection as well as methods of research) in a way that is likely to provide complementary strengths and non-overlapping weaknesses. The focus in this chapter is on methods of data collection, not methods of research (which are covered in later chapters).

SIX MAJOR METHODS OF DATA COLLECTION

TESTS
Tests (i.e., includes standardized tests that usually include information on reliability, validity, and norms as well as tests constructed by researchers for specific purposes, skills tests, etc). Tests are commonly used in research to measure personality, aptitude, achievement, and performance. Note that tests can also be used to complement other measures (following the fundamental principle of mixed research).

The following table lists the strengths and weaknesses of tests. It, in conjunction with the tables for the other five major methods of data collection, will help you in applying the fundamental principle of mixed research:

STRENGTHS AND WEAKNESSES OF TESTS

<table>
<thead>
<tr>
<th>Strengths of tests (especially standardized tests)</th>
<th>Weaknesses of tests (especially standardized tests)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Can provide measures of many characteristics of people.</td>
<td>• Can be expensive if test must be purchased for each research participant.</td>
</tr>
</tbody>
</table>
• Often standardized (i.e., the same stimulus is provided to all participants).
• Allows comparability of common measures across research populations.
• Strong psychometric properties (high measurement validity).
• Availability of reference group data.
• Many tests can be administered to groups which saves time.
• Can provide “hard,” quantitative data.
• Tests are usually already developed.
• A wide range of tests is available (most content can be tapped).
• Response rate is high for group administered tests.
• Ease of data analysis because of quantitative nature of data.

• Reactive effects such as social desirability can occur.
• Test may not be appropriate for a local or unique population.
• Open-ended questions and probing not available.
• Tests are sometimes biased against certain groups of people.
• Nonresponse to selected items on the test.
• Some tests lack psychometric data.

**QUESTIONNAIRES**

Questionnaires (i.e., self-report instruments. A questionnaire is a self-report data collection instrument that is filled out by research participants. Questionnaires are usually paper-and-pencil instruments, but they can also be placed on the web for participants to go to and “fill out.” Questionnaires are sometimes called survey instruments, which are fine, but the actual questionnaire should not be called “the survey.”

The word “survey” refers to the process of using a questionnaire or interview protocol to collect data. For example, you might do a survey of teacher attitudes about inclusion; the instrument of data collection should be called the questionnaire or the survey instrument.
A questionnaire is composed of questions and/or statements. Because one way to learn to write questionnaires is to look at other questionnaires, here is an example of a typical questionnaire that has mostly quantitative items.

For an example of a qualitative questionnaire,

When developing a questionnaire make sure that you follow the **15 Principles of Questionnaire Construction**.

**FIFTEEN PRINCIPLES OF QUESTIONNAIRE CONSTRUCTION.**

**Principle 1: Make sure the questionnaire items match your research objectives.**

**Principle 2: Understand your research participants.**

- Your participants (not you!) will be filling out the questionnaire.
- Consider the demographic and cultural characteristics of your potential participants so that you can make it understandable to them.

**Principle 3: Use natural and familiar language.**

- Familiar language is comforting; jargon is not.

**Principle 4: Write items that are clear, precise, and relatively short.**

- If your participants don't understand the items, your data will be invalid (i.e., your research study will have the garbage in, garbage out, GIGO, syndrome).
- Short items are more easily understood and less stressful than long items.

**Principle 5: Do not use "leading" or "loaded" questions.**

- Leading questions lead the participant to where you want him or her to be.
- Loaded questions include loaded words (i.e., words that create an emotional reaction or response by your participants).
- Always remember that you do not want the participant's response to be the result of how you worded the question. Always use neutral wording.

**Principle 6: Avoid double-barreled questions.**

- A double-barreled question combines two or more issues in a single question (e.g., here is a double barreled question: “Do you elicit information from parents and other teachers?” It’s double barreled because if someone answered it, you would not know whether they were referring to parents or teachers or both).
- Does the question include the word "and"? If yes, it might be a double-barreled question.
• Answers to double-barreled questions are ambiguous because two or more ideas are confounded.

Principle 7: Avoid double negatives.

• Does the answer provided by the participant require combining two negatives? (e.g., "I disagree that teachers should not be required to supervise their students during library time"). If yes, rewrite it.

Principle 8: Determine whether an open-ended or a closed-ended question is needed.

• Open-ended questions provide qualitative data in the participants' own words. Here is an open-ended question: How can your principal improve the morale at your school?

• Closed-ended questions provide quantitative data based on the researcher's response categories. Here is an example of a closed-ended question:

5. How difficult do you find learning about research methods to be?

____ Very difficult
____ Somewhat difficult
____ Not very difficult
____ Not at all difficult
____ Don't know

Open-ended questions are common in exploratory research and closed-ended questions are common in confirmatory research.

Principle 9: Use mutually exclusive and exhaustive response categories for closed-ended questions.

• Mutually exclusive categories do not overlap (e.g., ages 0-10, 10-20, 20-30 are NOT mutually exclusive and should be rewritten as less than 10, 10-19, 20-29, 30-39, ...).

• Exhaustive categories include all possible responses (e.g., if you are doing a national survey of adult citizens (i.e., 18 or older) then these categories (18-19, 20-29, 30-39, 40-49, 50-59, 60-69) are NOT exhaustive because there is no where to put someone who is 70 years old or older.

Principle 10: Consider the different types of response categories available for closed-ended questionnaire items.

• Rating scales are the most commonly used, including:
  
  • Numerical rating scales (where the endpoints are anchored; sometimes the center point or area is also labeled).
• Omitting the center point on a rating scale (e.g., using a 4-point rather than a 5-point rating scale) does not appreciably affect the response pattern. Some researchers prefer 5-point rating scales; other researchers prefer 4-point rating scales. Both generally work well.
• You should use somewhere from four to eleven points on your rating scale. Personally, I like the 4 and 5-point scales because all of the points are easily anchored.
• I do not recommend a 1 to 10 scale because too many respondents mistakenly view the 5 as the center point. If you want to use a wide scale like this, use a 0 to 10 scale (where the 5 is the middle point) and label the 5 with the anchor “medium” or some other appropriate anchor.

• Rankings (i.e., where participants put their responses into rank order, such as most important, second most important, and third most important).
• Semantic differential (i.e., where one item stem and multiple scales, that are anchored with polar opposites or antonyms, are included and are rated by the participants).
• Checklists (i.e., where participants "check all of the responses in a list that apply to them").

Principle 11: Use multiple items to measure abstract constructs.
• This is required if you want your measures to have high reliability and validity.
• One approach is to use a summated rating scale(such as the Rosenberg Self-Esteem Scale that is composed of 10 items, with each item measuring self-esteem).
• Another name for a summated rating scale is a Likert Scale because the summated rating scale was pretty much invented by the famous social psychologist named Rensis Likert.
• Here is the Rosenberg Self-Esteem Scale, which is a summated rating scale:
Principle 12: Consider using multiple methods when measuring abstract constructs.

- The idea here is that if you only use one method of measurement, then your measurement may be an artifact of that method of measurement. On the other hand, if you use two or more methods of measurement you will be able to see whether the answers depend on the method (i.e., are the answers corroborated across the methods of measurement or do you get different answers for the different

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### The Rosenberg Self-Esteem Scale

Circle one response for each of the following ten items.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that I am a person of worth, at least on an equal basis with others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I feel that I have a number of good qualities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>*3. All in all, I am inclined to feel that I am a failure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I am able to do things as well as most other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>*5. I feel I do not have much to be proud of.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I take a positive attitude toward myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. On the whole, I am satisfied with myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>*8. I wish I could have more respect for myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>*9. I certainly feel useless at times.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>*10. At times I think I am no good at all.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

*Items marked with an asterisk have reversed wording. The numbers on items with reversed wording should be reversed before summing the responses for the ten items. For example, on item 3, “strongly agree” becomes 4, “agree” becomes 3, “disagree” becomes 2, and “strongly disagree” becomes 1.


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methods?). For example, you might measure student’s self-esteem via the Rosenberg Scale just shown (which is used in a self-report form) as well as using teachers’ ratings of the students’ self-esteem; you might even want to observe the students in situations that should provide indications of high and low self-esteem.

Principle 13: Use caution if you reverse the wording in some of the items to prevent response sets. (A response set is the tendency of a participant to respond in a specific direction to items regardless of the item content.)

- Reversing the wording of some items can help ensure that participants don't just "speed through" the instrument, checking "yes" or "strongly agree" for all the items.
- On the other hand, you may want to avoid reverse wording if it creates a double negative.
- Also, recent research suggests that the use of reverse wording reduces the reliability and validity of scales. Therefore, you should generally use reverse wording sparingly, if at all.

Principle 14: Develop a questionnaire that is easy for the participant to use.

- The participant must not get confused or lost anywhere in the questionnaire.
- Make sure that the directions are clear and that any filter questions used are easy to follow.

Principle 15: Always pilot test your questionnaire.

- You will always find some problems that you have overlooked!
- The best pilot tests are with people similar to the ones to be included in your research study.
- After pilot testing your questionnaire, revise it and pilot test it again, until it works correctly.

STRENGTHS AND WEAKNESSES OF QUESTIONNAIRES

<table>
<thead>
<tr>
<th>Strengths of questionnaires</th>
<th>Weakness of questionnaires</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Good for measuring attitudes and eliciting other content from research participants.</td>
<td>• Usually must be kept short.</td>
</tr>
<tr>
<td>• Inexpensive (especially mail questionnaires and group administered questionnaires).</td>
<td>• Reactive effects may occur (e.g., interviewees may try to show only what is socially desirable).</td>
</tr>
<tr>
<td>• Can provide information about participants’ internal meanings and ways of thinking.</td>
<td>• Nonresponse to selective items.</td>
</tr>
<tr>
<td></td>
<td>• People filling out questionnaires may not recall important information and may lack self-awareness.</td>
</tr>
<tr>
<td>Can administer to probability samples.</td>
<td>Response rate may be low for mail and email questionnaires.</td>
</tr>
<tr>
<td>Can be administered to groups.</td>
<td>Open-ended items may reflect differences in verbal ability, obscuring the issues of interest.</td>
</tr>
<tr>
<td>Perceived anonymity by respondent may be high.</td>
<td>Data analysis can be time consuming for open-ended items.</td>
</tr>
<tr>
<td>Moderately high measurement validity (i.e., high reliability and validity) for well constructed and validated questionnaires.</td>
<td>Measures need validation.</td>
</tr>
<tr>
<td>Closed-ended items can provide exact information needed by researcher.</td>
<td></td>
</tr>
<tr>
<td>Open-ended items can provide detailed information in respondents’ own words.</td>
<td></td>
</tr>
<tr>
<td>Ease of data analysis for closed-ended items.</td>
<td></td>
</tr>
<tr>
<td>Useful for exploration as well as confirmation.</td>
<td></td>
</tr>
</tbody>
</table>

**INTERVIEWS**

Interviews i.e., situations where the researcher interviews the participants. In an interview, the interviewer asks the interviewee questions (in-person or over the telephone).

- Trust and rapport are important.
- Probing is available (unlike in paper-and-pencil questionnaires) and is used to reach clarity or gain additional information. Here are some examples of standard probes:
  - Anything else?
  - Any other reason?
  - What do you mean?

Interviews may be quantitative or qualitative.

**Quantitative interviews:**

- Are standardized (i.e., the same information is provided to everyone).
- Use closed-ended questions.
• Exhibit 6.3 has an example of an interview protocol. Note that it looks very much like a questionnaire! The key difference between an interview protocol and a questionnaire is that the interview protocol is read by the interviewer who also records the answers (you have probably participated in telephone surveys before...you were interviewed).

Qualitative interviews
• They are based on open-ended questions.
• There are three types of qualitative interviews.

<table>
<thead>
<tr>
<th>Informal Conversational Interview.</th>
<th>2) Interview Guide Approach.</th>
<th>3) Standardized Open-Ended Interview.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- It is spontaneous.</td>
<td>• It is more structured than the informal conversational interview.</td>
<td>• Open-ended questions are written on an interview protocol, and they are asked in the exact order given on the protocol.</td>
</tr>
<tr>
<td>- It is loosely structured (i.e., no interview protocol us used).</td>
<td>• It includes an interview protocol listing the open-ended questions.</td>
<td>• The wording of the questions cannot be changed.</td>
</tr>
<tr>
<td></td>
<td>• The questions can be asked in any order by the interviewer.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Question wording can be changed by the interviewer if it is deemed appropriate</td>
<td></td>
</tr>
</tbody>
</table>

STRENGTHS AND WEAKNESSES OF INTERVIEWS

<table>
<thead>
<tr>
<th>Strengths of interviews</th>
<th>Weaknesses of interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Good for measuring attitudes and most other content of interest.</td>
<td>• In-person interviews usually are expensive and time consuming.</td>
</tr>
<tr>
<td>• Allows probing and posing of follow-up questions by the interviewer.</td>
<td>• Reactive effects (e.g., interviewees may try to show only what is socially desirable).</td>
</tr>
<tr>
<td>Strengths</td>
<td>Weaknesses</td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>• Can provide in-depth information.</td>
<td>• Investigator effects may occur (e.g., untrained interviewers may distort data because of personal biases and poor interviewing skills).</td>
</tr>
<tr>
<td>• Can provide information about participants’ internal meanings and ways of thinking.</td>
<td>• Interviewees may not recall important information and may lack self-awareness.</td>
</tr>
<tr>
<td>• Closed-ended interviews provide exact information needed by researcher.</td>
<td>• Perceived anonymity by respondents may be low.</td>
</tr>
<tr>
<td>• Telephone and e-mail interviews provide very quick turnaround.</td>
<td>• Data analysis can be time consuming for open-ended items.</td>
</tr>
<tr>
<td>• Moderately high measurement validity (i.e., high reliability and validity) for well constructed and tested interview protocols.</td>
<td>• Measures need validation.</td>
</tr>
<tr>
<td>• Can use with probability samples.</td>
<td>• Relatively high response rates are often attainable.</td>
</tr>
<tr>
<td>• Relatively high response rates are often attainable.</td>
<td>• Useful for exploration as well as confirmation.</td>
</tr>
<tr>
<td>• Usefulness for exploration as well as confirmation.</td>
<td>• Investigator effects may occur (e.g., untrained interviewers may distort data because of personal biases and poor interviewing skills).</td>
</tr>
</tbody>
</table>

**FOCUS GROUPS**

Focus groups, i.e., a small group discussion with a group moderator present to keep the discussion focused. A focus group is a situation where a focus group moderator keeps a small and homogeneous group (of 6-12 people) focused on the discussion of a research topic or issue. Focus group sessions generally last between one and three hours and they are recorded using audio and/or videotapes. Focus groups are useful for exploring ideas and obtaining in-depth information about how people think about an issue.

The following table lists the strengths and weaknesses of focus groups. It, in conjunction with the tables for the other five major methods of data collection, will help you in applying the fundamental principle of mixed research:
### STRENGTHS AND WEAKNESSES OF FOCUS GROUPS

<table>
<thead>
<tr>
<th><strong>Strengths of focus groups</strong></th>
<th><strong>Weaknesses of focus groups</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Useful for exploring ideas and concepts.</td>
<td>• Sometimes expensive.</td>
</tr>
<tr>
<td>• Provides window into participants’ internal thinking.</td>
<td>• May be difficult to find a focus group moderator with good facilitative and rapport building skills.</td>
</tr>
<tr>
<td>• Can obtain in-depth information.</td>
<td>• Reactive and investigator effects may occur if participants feel they are being watched or studied.</td>
</tr>
<tr>
<td>• Can examine how participants react to each other.</td>
<td>• May be dominated by one or two participants.</td>
</tr>
<tr>
<td>• Allows probing.</td>
<td>• Difficult to generalize results if small, unrepresentative samples of participants are used.</td>
</tr>
<tr>
<td>• Most content can be tapped.</td>
<td>• May include large amount of extra or unnecessary information.</td>
</tr>
<tr>
<td>• Allows quick turnaround.</td>
<td>• Measurement validity may be low.</td>
</tr>
</tbody>
</table>

### OBSERVATION

Observation i.e., looking at what people actually do. In the method of data collection called observation, the researcher observes participants in natural and/or structured environments.

- It is important to collect observational data (in addition to attitudinal data) because what people say is not always what they do! Observation can be carried out in two types of environments:
- **Laboratory observation** (which is done in a lab set up by the researcher).
Naturalistic observation (which is done in real-world settings).

There are two important forms of observation: quantitative observation and qualitative observation.

1) Quantitative observation involves standardization procedures, and it produces quantitative data.

- The following can be standardized:
  - Who is observed.
  - What is observed.
  - When the observations are to take place.
  - Where the observations are to take place.
  - How the observations are to take place.

- Standardized instruments (e.g., checklists) are often used in quantitative observation.

- Sampling procedures are also often used in quantitative observation:
  -- Time-interval sampling (i.e., observing during time intervals, e.g., during the first minute of each 10 minute interval).
  -- Event sampling (i.e., observing after an event has taken place, e.g., observing after teacher asks a question).

2) Qualitative observation is exploratory and open-ended, and the researcher takes extensive field notes.

The qualitative observer may take on four different roles that make up a continuum:

- Complete participant (i.e., becoming a full member of the group and not informing the participants that you are studying them).
- Participant-as-Observer (i.e., spending extensive time "inside" and informing the participants that you are studying them).
- Observer-as-Participant (i.e., spending a limited amount of time "inside" and informing them that you are studying them).
- Complete Observer (i.e., observing from the "outside" and not informing that participants that you are studying them).

The following table lists the strengths and weaknesses of observational data. It, in conjunction with the tables for the other five major methods of data collection, will help you in applying the fundamental principle of mixed research:
## STRENGTHS AND WEAKNESSES OF OBSERVATIONAL DATA

<table>
<thead>
<tr>
<th>Strengths of observational data</th>
<th>Weaknesses of observational data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allows one to directly see what people do without having to rely on what they say they do.</td>
<td>Reasons for observed behavior may be unclear.</td>
</tr>
<tr>
<td>• Provides firsthand experience, especially if the observer participates in activities.</td>
<td>• Reactive effects may occur when respondents know they are being observed (e.g., people being observed may behave in atypical ways).</td>
</tr>
<tr>
<td>• Can provide relatively objective measurement of behavior (especially for standardized observations).</td>
<td>• Investigator effects (e.g., personal biases and selective perception of observers)</td>
</tr>
<tr>
<td>• Observer can determine what does not occur.</td>
<td>• Observer may “go native” (i.e., over-identifying with the group being studied).</td>
</tr>
<tr>
<td>• Observer may see things that escape the awareness of people in the setting.</td>
<td>• Sampling of observed people and settings may be limited.</td>
</tr>
<tr>
<td>• Excellent way to discover what is occurring in a setting.</td>
<td>• Cannot observe large or dispersed populations.</td>
</tr>
<tr>
<td>• Helps in understanding importance of contextual factors.</td>
<td>• Some settings and content of interest cannot be observed.</td>
</tr>
<tr>
<td>• Can be used with participants with weak verbal skills.</td>
<td>• Collection of unimportant material may be moderately high.</td>
</tr>
<tr>
<td>• May provide information on things people would otherwise be unwilling to talk about.</td>
<td>• More expensive to conduct than questionnaires and tests.</td>
</tr>
<tr>
<td>• Observer may move beyond selective perceptions of people in the setting.</td>
<td>• Data analysis can be time consuming.</td>
</tr>
<tr>
<td>• Good for description.</td>
<td></td>
</tr>
<tr>
<td>• Provides moderate degree of realism (when done outside of the laboratory).</td>
<td></td>
</tr>
</tbody>
</table>
SECONDARY/EXISTING DATA

Existing or Secondary data, i.e., using data that are originally collected and then archived or any other kind of “data” that was simply left behind at an earlier time for some other purpose. Secondary data (i.e., data originally used for a different purpose) are contrasted with primary data (i.e., original data collected for the new research study). The most commonly used secondary data are documents, physical data, and archived research data.

1. Documents. There are two main kinds of documents.
   • Personal documents (i.e., things written or recorded for private purposes). Letters, diaries, family pictures.
   • Official documents (i.e., things written or recorded for public or private organizations). Newspapers, annual reports, yearbooks, minutes.

2. Physical data (are any material thing created or left by humans that might provide information about a phenomenon of interest to a researcher).

3. Archived research data (i.e., research data collected by other researchers for other purposes, and these data are save often in tape form or cd form so that others might later use the data)

The following table lists the strengths and weaknesses of secondary/existing data. It, in conjunction with the tables for the other five major methods of data collection, will help you in applying the fundamental principle of mixed research:

<table>
<thead>
<tr>
<th>STRENGTHS AND WEAKNESSES OF SECONDARY DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengths of documents and physical data:</td>
</tr>
<tr>
<td>• Can provide insight into what people think and what they do.</td>
</tr>
<tr>
<td>• Can be collected for time periods occurring in the past (e.g., historical data).</td>
</tr>
<tr>
<td>• Provides useful background and historical data on people, groups, and organizations.</td>
</tr>
<tr>
<td>• Useful for corroboration.</td>
</tr>
<tr>
<td>• Grounded in local setting.</td>
</tr>
<tr>
<td>Weaknesses of documents and physical data:</td>
</tr>
<tr>
<td>• May be incomplete.</td>
</tr>
<tr>
<td>• May be representative only of one perspective.</td>
</tr>
<tr>
<td>• Access to some types of content is limited.</td>
</tr>
<tr>
<td>• May not provide insight into participants’ personal thinking for physical data.</td>
</tr>
<tr>
<td>• May not apply to general populations.</td>
</tr>
<tr>
<td>Strengths of archived research data:</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>• Archived research data are available on a wide variety of topics.</td>
</tr>
<tr>
<td>• Inexpensive.</td>
</tr>
<tr>
<td>• Often are reliable and valid (high measurement validity).</td>
</tr>
<tr>
<td>• Can study trends.</td>
</tr>
<tr>
<td>• Often based on high quality or large probability samples.</td>
</tr>
</tbody>
</table>
CHAPTER 6: SAMPLING PROCEDURES

DEFINITION OF TERMS

Bias (error): Distorted or unreliable survey results. All surveys contain some bias. Bias is increased when the respondents (persons answering the survey) are not representative of the population being questioned, when questions are poorly written or misunderstood, and when the researcher uses inappropriate techniques to analyze the data.

Census: A study using all available elements (members) of a population.

Data: The collection of observations and information resulting from the survey process.

Element (member): The basic unit about which survey information is sought (i.e., person, business, household, car, dog, etcetera).

Heterogeneous: A population whose elements have dissimilar characteristics. Heterogeneity is the state of being dissimilar.

Homogeneous: A population whose elements have similar characteristics. Homogeneity as the state of being similar.

Instrument: The tool or device used for survey measurement; usually a questionnaire.

Non-response: Unit non-response refers to the refusal of persons selected to be sampled to participate in a survey (i.e., person does not return the mail questionnaire). Item nonresponse refers to selected questions left unanswered by the person surveyed.

Population: The universe or collection of all elements (persons, businesses, et cetera) being described or measured by a sample.

Pretest: An initial evaluation of the survey design by using a small, subsample of the intended population for preliminary information.

Questionnaire: A measuring device used to query a population/sample in order to obtain information for analysis.

Respondent: An element or member of the population selected to be sampled.

Sample: Any portion of the population, less than the total.

Sampling Frame: An exhaustive list of all members of the population from which a sample can be drawn.

Survey: A process of inquiry for the purpose of data collection and analysis using observation, polls, questionnaires, and/or interviews.
**Statistics**: Descriptive measures based upon a probability sample.

Before formal research design can take place, it is important to decide who or what the elements are which must be researched. This would mean which publics or population will take part in the research programme or in communication terms, which media reports will be analysed. It may be possible in some cases of certain population to reach every member of the population in the research programme or in case of trade or technical publications, to analyse all publications over a particular period of time. In other instances the population might be too large to reach all its members or the media be too widespread and many. In such cases one must have a representative sample of the population or the media. Based on the information gathered from sample, one can then make certain estimates or assumptions about the entire population or the media.

The purpose of this unit is to provide an overview of the sampling procedures available to a researcher. The differences between the various sampling procedures are discussed and examples are provided to illustrate the use of these procedures. The emphasis of this unit is placed on underlying ideas and methods rather than detailed mathematical derivations.

**WHY SAMPLE**

If a researcher desires to obtain information about a population through questioning or testing, he/she has two basic options:

1. Every member of the population can be questioned or tested, a census; or
2. A sample can be conducted; that is, only selected members of the population are questioned or tested.

Contacting, questioning, and obtaining information from a large population, such as the 370,000 households residing in County, is extremely expensive, difficult, and time consuming. A properly designed probability sample, however, provides a reliable means of inferring information about a population without examining every member or element. Often, researchers are working under strict time constraints which make conducting a census unwieldy. For instance, national polling firms frequently must provide information on the public's perceptions of current events or issues. These polling firms tend to limit their national sample sizes to approximately 1,500 respondents. When properly conducted, a probability sample
of this size provides reliable information with a very small margin of error for the whole population of the United States, which is nearly 300 million persons.

A probability sample frequently is more accurate than a census of the entire population. The smaller sampling operation lends itself to the application of more rigorous controls, thus ensuring better accuracy. These rigorous controls allow the researcher to reduce non-sampling errors such as interviewer bias and mistakes, non-response problems, questionnaire design flaws, and data processing and analysis errors. In part, these non-sampling errors are reduced through pretesting which allows careful testing of the survey questionnaire and procedures. Pretesting cannot be done when conducting a census without causing possible contamination of some of the respondents.

The detail of information that can be asked in a sample is greater than that in a census due to the cost and time constraints under which most researchers are operating. A relatively long and difficult questionnaire can be administered to a sample more easily than a brief questionnaire can be administered to the entire population. However, not all samples are accurate or the appropriate vehicle for gathering information or testing a hypothesis about a population. The following sections of this brochure will briefly discuss the merits and disadvantages of various sampling procedures.

**SAMPLING METHODOLOGIES**

Sampling methodologies are classified under two general categories:

1. **Probability Sampling**
   
   In probability sampling, the researcher knows the exact possibility of selecting each member of the population;

2. **Non-Probability Sampling**.
   
   In non-probability sampling, the chance of being included in the sample is not known. A probability sample tends to be more difficult and costly to conduct. However, probability samples are the only type of samples where the results can be generalized from the sample to the population.

   In addition, probability samples allow the researcher to calculate the precision of the estimates obtained from the sample and to specify the sampling error. Non-probability samples, in contrast, do not allow the
study’s findings to be generalized from the sample to the population. When discussing the results of a non-probability sample, the researcher must limit his/her findings to the persons or elements sampled. This procedure also does not allow the researcher to calculate sampling statistics that provide information about the precision of the results. The advantage of non-probability sampling is the ease in which it can be administered. Non-probability samples tend to be less complicated and less time consuming than probability samples. If the researcher has no intention of generalizing beyond the sample, one of the non-probability sampling methodologies will provide the desired information.

**NON-PROBABILITY SAMPLES**

The three common types of non-probability samples are **convenience sampling**, **quota sampling**, and **judgmental sampling** and the fourth is called **Volunteer Sampling**.

**A. Convenience Sampling**

As the name implies, convenience sampling involves choosing respondents at the convenience of the researcher. Examples of convenience samples include people-in-the-street interviews—the sampling of people to which the researcher has easy access, such as a class of students; and studies that use people who have volunteered to be questioned as a result of an advertisement or another type of promotion. A drawback to this methodology is the lack of sampling accuracy. Because the probability of inclusion in the sample is unknown for each respondent, none of the reliability or sampling precision statistics can be calculated. Convenience samples, however, are employed by researchers because the time and cost of collecting information can be reduced.

**B. Quota Sampling**

Quota sampling is often confused with stratified and cluster sampling—two probability sampling methodologies. All of these methodologies sample a population that has been subdivided into classes or categories. The primary differences between the methodologies are that with stratified and cluster sampling the classes are mutually exclusive and are isolated prior to sampling. Thus, the probability of being selected is known, and members of the population selected to be sampled are not arbitrarily disqualified from being included in the results.
In quota sampling, the classes cannot be isolated prior to sampling and respondents are categorized into the classes as the survey proceeds. As each class fills or reaches its quota, additional respondents that would have fallen into these classes are rejected or excluded from the results. An example of a quota sample would be a survey in which the researcher desires to obtain a certain number of respondents from various income categories. Generally, researchers do not know the incomes of the persons they are sampling until they ask about income. Therefore, the researcher is unable to subdivide the population from which the sample is drawn into mutually exclusive income categories prior to drawing the sample. Bias can be introduced into this type of sample when the respondents who are rejected, because the class to which they belong has reached its quota, differ from those who are used.

C. Judgmental Sampling

In judgmental or purposive sampling, the researcher employs his or her own "expert" judgment about who to include in the sample frame. Prior knowledge and research skill are used in selecting the respondents or elements to be sampled. An example of this type of sample would be a study of potential users of a new recreational facility that is limited to those persons who live within two miles of the new facility. Expert judgment, based on past experience, indicates that most of the use of this type of facility comes from persons living within two miles. However, by limiting the sample to only this group, usage projections may not be reliable if the usage characteristics of the new facility vary from those previously experienced. As with all non-probability sampling methods, the degree and direction of error introduced by the researcher cannot be measured and statistics that measure the precision of the estimates cannot be calculated.

D. Volunteer Sample-

This sampling method relies on people who willingly participate with little or no urging. This is especially the case in 800-number or magazine or newspaper research where participation depends on the voluntary decision of the reader or listeners. Volunteers are often people who are particularly interested in the subject. Volunteer samples should be avoided because there are usually some reasons why these individuals want to participate and can therefore no be a representative sample of the population.
PROBABILITY SAMPLES

Four basic types of methodologies are most commonly used for conducting probability samples; these are simple random, stratified, cluster, and systematic sampling. Simple random sampling provides the base from which the other more complex sampling methodologies are derived.

A. Simple Random Sampling

To conduct a simple random sample, the researcher must first prepare an exhaustive list (sampling frame) of all members of the population of interest. From this list, the sample is drawn so that each person or item has an equal chance of being drawn during each selection round. Samples may be drawn with or without replacement. In practice, however, most simple random sampling for survey research is done without replacement; that is, a person or item selected for sampling is removed from the population for all subsequent selections.

At any draw, the process for a simple random sample without replacement must provide an equal chance of inclusion to any member of the population not already drawn. To draw a simple random sample without introducing researcher bias, computerized sampling programs and random numbers tables are used to impartially select the members of the population to be sampled. An example of a simple random sample would be a survey of County employees.

An exhaustive list of all County employees as of a certain date could be obtained from the Department of Human Resources. If 100 names were selected from this list using a random number table or a computerized sampling program, then a simple random sample would be created. Such a random sampling procedure has the advantage of reducing bias and enables the researcher to estimate sampling errors and the precision of the estimates derived through statistical calculations.
B. Stratified Random Sampling

Stratified random sampling involves categorizing the members of the population into mutually exclusive and collectively exhaustive groups. An independent simple random sample is then drawn from each group. Stratified sampling techniques can provide more precise estimates if the population being surveyed is more heterogeneous than the categorized groups, can enable the researcher to determine desired levels of sampling precision for each group, and can provide administrative efficiency.

An example of a stratified sample would be a sample conducted to determine the average income earned by families in the United States. To obtain more precise estimates of income, the researcher may want to stratify the sample by geographic region (northeast, mid-Atlantic, et cetera) and/or stratify the sample by urban, suburban, and rural groupings. If the differences in income among the regions or groupings are greater than the income differences within the regions or groupings, precision of the estimates is improved. In addition, if the research organization has branch offices located in these regions, the administration of the survey can be decentralized and perhaps conducted in a more cost-efficient manner.

C. Cluster Sampling

Cluster sampling is similar to stratified sampling because the population to be sampled is subdivided into mutually exclusive groups. However, in cluster sampling the groups are defined so as to maintain the heterogeneity of the population. It is the researcher’s goal to establish clusters that are representative of the population as a whole, although in practice this may be difficult to achieve. After the clusters are established, a simple random sample of the clusters is drawn and the members of the chosen clusters are sampled. If all of the elements (members) of the clusters selected are sampled, then the sampling procedure is defined as one-stage cluster sampling. If a random sample of the elements of each selected cluster is drawn, then the sampling procedure is defined as two-stage cluster sampling.

Cluster sampling is frequently employed when the researcher is unable to compile a comprehensive list of all the elements in the population of interest. A cluster sample might be used by a researcher attempting to
measure the age distribution of persons residing in Fairfax County. It would be much more difficult for the researcher to compile a list of every person residing in Fairfax County than to compile a list of residential addresses. In this example, each address would represent a cluster of elements (persons) to be sampled. If the elements contained in the clusters are as heterogeneous as the population, then estimates derived from cluster sampling are as precise as those from simple random sampling. However, if the heterogeneity of the clusters is less than that of the population, the estimates will be less precise.

A. Systematic Sampling

Systematic sampling, a form of one-stage cluster sampling, is often used in place of simple random sampling. In systematic sampling, the researcher selects every nth member after randomly selecting the first through nth element as the starting point. For example, if the researcher decides to sample every 20th member of the population, a 5 percent sample, the starting point for the sample is randomly selected from the first 20 members. A systematic sample is a type of cluster sample because each of the first 20 members of the sampling frame defines a cluster that contains 5 percent of the population. A researcher may choose to conduct a systematic sample instead of a simple random sample for several reasons. Systematic samples tend to be easier to draw and execute. The researcher does not have to jump backward and forward through the sampling frame to draw the members to be sampled.

A systematic sample may spread the members selected for measurement more evenly across the entire population than simple random sampling. Therefore, in some cases, systematic sampling may be more representative of the population and more precise. One of the most attractive aspects of systematic sampling is that this method can allow the researcher to draw a probability sample without complete prior knowledge of the sampling frame. For example, a survey of visitors to the County's publications desk could be conducted by sampling every 10th visitor after randomly selecting the first through 10th visitor as the starting point.

By conducting the sample in this manner, it would not be necessary for the researcher to obtain a comprehensive list of visitors prior to drawing the sample. As with other types of cluster sampling,
systematic sampling is as precise as simple random sampling if the members contained in the clusters are as heterogeneous as the population. If this assumption is not valid, then systematic sampling will be less precise than simple random sampling. In conducting systematic sampling, it is also essential that the researcher does not introduce bias into the sample by selecting an inappropriate sampling interval.

For instance, when conducting a sample of financial records, or other items that follow a calendar schedule, the researcher would not want to select as the sampling interval because the sample would then be comprised of observations that were all on the same day of the week. Day-of-the-week influences may cause contamination of the sample, giving the researcher biased results.
CHAPTER 4: RESEARCH ETHICS

What is Research Ethics?
Ethics is the division in the field of philosophy that deals with values and morals. It is a topic that people may disagree on because it is based on people’s personal value systems. What one person or group considers being good or right might be considered bad or wrong by another person or group. In this chapter, we define ethics as the principles and guidelines that help us to uphold the things we value.

ETHICAL GUIDELINES FOR RESEARCH WITH HUMANS
1. Informed Consent. Potential research participants must be provided with information that enables them to make an informed decision as to whether they want to participate in the research study.
2. Informed Consent with Minors as Research Participants.
   - Consent must be obtained from parents or guardians of minors.
   - Also, assent must be obtained from minors who are old enough or have enough intellectual capacity to say they are willing to participate. Assent means the minor agrees to participate after being informed of all the features of the study that could affect the participant’s willingness to participate.
3. Passive versus Active Consent
   - Active consent (i.e., when consent is provided by the potential participant signing the consent form). Active consent is usually the preferred form of consent. Passive consent is the process whereby consent is given by not returning the consent form. An example is shown in Exhibit 4.5.

Here is the key passage in the passive consent form: “Participation in this study is completely voluntary. All students in the class will take the test. If you do not wish for your child to be in this study, please fill out the form at the bottom of this letter and return it to me. Also, please tell your child to hand in a blank test sheet when the class is given the mathematics test so that your child will not be included in the study.”
4. Deception
   - Deception is present when the researcher provides misleading information or when the researcher withholds information from participants about the nature and/or purpose of the study. Deception is allowable when the benefits outweigh the costs. However, the researcher is ethically obligated not to use any more deception than is needed to conduct a valid study. If deception is used, debriefing should be
used. Debriefing is a post study interview in which all aspects of the study are revealed, any reasons for deception are explained, and any questions the participant has about the study are answered.

**DEBRIEFING HAS TWO GOALS:**

A. Dehoaxing-informing study participants about deception that was used and the reasons for its use.

B. Desensitizing-helping study participants deal with and eliminate any stress or other undesirable feelings that the study might have created.

5. Freedom to Withdraw

Participants must be informed that they are free to withdraw from the study at any time without penalty. If you have a power relationship with the participants (e.g., if you are their teacher or employer) you must be extra careful to make sure that they really do feel free to withdraw.

6. Protection from Mental and Physical Harm

This is the most fundamental ethical issue confronting the researcher. Fortunately, much educational research poses minimal risk to participants (as compared, for example, to medical research).

7. Confidentiality and Anonymity

Confidentiality is a basic requirement in all studies. It means that the researcher agrees not to reveal the identity of the participant to anyone other than the researcher and his or her staff. A stronger and even better condition (if it can be met) is called anonymity. Anonymity means that the identity of the participant is not known by anyone in the study, including the researcher. An example would be where the researcher has a large group of people fill out a questionnaire but NOT write their names on it. In this way, the researcher ends up with data, but no names.