I. THE PROBLEM: THE HEART OF THE RESEARCH PROJECT.¹

A. Research problems are everywhere.

1. Must distinguish between researchable problems and problems that are not researchable.

2. Researchable problems involve use of the scientific method to solve them.

3. Several features contribute to an outstanding research project.²
   a. It asks important questions; not unimportant ones.
   b. It creates new knowledge and new ways of thinking.

4. Good research begets more research, suggesting more problems to study.

B. Keep the problem in focus.

1. The two most important responsibilities of the researcher:
   a. To state the problem clearly: “to formulate a problem that is carefully phrased and that represents the single goal of the total research effort.”³
   b. To resolve the problem

2. But students often have difficulty formulating a research problem.
   a. They do not distinguish between what to think and what to do with respect to the data.

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²Leedy, 45ff.

³Leedy, 46.
C. **Statement of the Research Problem:**

1. The wording of the problem must be such that two things will be stated:
   
   a. The resolution of the problem, which requires *thinking* on the part of the researcher.
   
   b. This thinking then produces *interpretation of the data*.

2. Research problems are *not*:
   
   a. An exercise in providing oneself with self-enlightenment–we are all seeking information.
   
   b. The comparison of two sets of data–this just shows the relationship between the data–this creates a “straw problem.”
   
   c. Finding a coefficient between two sets of data–this ignores the struggle with the data that is necessary in research.
   
   d. Problems with “yes” or “no” answers–this only looks at the surface answers

3. The problem must be stated *completely*.
   
   a. Involves thinking through the issues well enough to say exactly what needs to be said
   
   b. Should involve no fuzzy or useless words
   
   c. Should involve “*a complete grammatical sentence in as few words as possible.*”

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4Leedy, 48; cf. Vymeister, 23-27
4. The statement of the problem involves, thinking, considering, and estimating, just how feasible the study is–students often choose topics too large.

5. The statement of the problem involves saying precisely what is meant.
   a. Failure to do so, either intentionally or unintentionally, strikes at the heart of academic integrity.
   b. Students who find themselves talking more about the problem rather than clearly stating it, do not have a good grasp of the problem.
   c. They are like the student that did not have time to write a 15 page paper; so he wrote a 35 page paper instead!

6. The statement of the problem involves careful editing of your writing--Leedy’s suggestions are excellent:  
   a. Use as few words as possible
   b. Use a thesaurus to select the exact word
   c. Never use a long word where a short one will do
   d. Keep the sentences short
   e. Look critically at each thought expressed
   f. Be ready to modify your written work

D. The Messy Process by which one develops a research problem may be summarized as follows:

1. Write a clear statement of your problem to be researched:
   a. Is the problem stated in a complete, grammatical sentence?
   b. Is it clear how the area of study will be limited/focused?

2. Review your written statement and ask yourself the following questions:

   5Leedy, 51-54.

   6Leedy, 43
3. On the basis of your answers to those questions, edit your written statement:

4. On the basis of your edited statement, reflect over the following questions:
   a. Does the answer to this problem have the potential for providing important, relevant answers and information?
   b. Will the result be more than a simple exercise in gathering information, answering a yes/no question, or making a simple comparison?
   c. Is the problem focused enough to be “doable,” or is it too broad in scope (e.g., attempts to research too much across too large a geographical area or too large a population)?

5. Is this really what you want to investigate?

E. The Pseudo-subproblems and Subproblems:

1. Problems have to be divided into subproblems to be solved.

2. Don’t be tricked by pseudo-subproblems, which are “merely decisions the researcher must resolve before further progress to the resolution of the research problem is possible.”

3. Characteristics of subproblems:
   a. Are subparts of the main problem:
   b. Each subproblem is a researchable unit—“The solution of the subproblems, taken together, combine to resolve the main problem of research.”

\[\text{Leedy, 55.}\]

\[\text{Leedy, 56.}\]
c. Each subproblem is tied to the interpretation of the data

d. The sum of subproblems equals the problem—nothing in excess or nothing omitted.

\[
\text{Problem} = \text{Subproblem 1} + \text{Subproblem 2} + \ldots
\]

e. Should be no proliferation of subproblems:

(1) Usually 2 to 6 subproblems

(2) More usually indicates that:

(a) Pseudo-subproblems have been included

(b) One or more of the subproblems has been fragmented

(c) A mixture of the above two has occurred.

f. Like the main problem, the none of the subproblems should have unrealistic goals.

4. Guidelines for identifying the subproblems involve:\(^9\)

a. Correctly written problems make the subproblems apparent.

b. Write the problem and attempt to boxing off the subproblems by looking for areas that need in-depth treatment, as is exhibited by such key words as “analyze” and “discover.”

c. Leedy’s illustration is excellent.

F. Proper delineation of the problem is demanded:\(^{10}\)

\[^9\text{Leedy}, 57-8.\]

\[^{10}\text{Leedy, 58ff.}\]
1. Delimiting the research problem involves stating exactly what the research does and does not intend to do—the boundaries must be defined.

2. Defining the terms employs specific terms as used in the research project.
   a. These are not to be confused with “limitations,” in which “the researcher honestly states the limits imposed by shortness of time, lack of library facilities, or language limitations,” which, if too numerous “may suggest that a wrong topic has been chosen or poor research is under way.”
   b. These are defined operatively, i.e., as they are “employed in relation to the researcher’s project.”
   c. A formal definition contains a term, the class to which it belongs (genera), and specific characteristics that distinguish it (differentia).
   d. “Only a researcher who thinks carefully about the problem and its focal center will distinguish between what is relevant and what is not relevant to the problem. All irrelevancies to the problem must be firmly ruled out in the statement of delimitations.”

3. Statement of the assumptions allows the reader to see what the researcher takes for granted.
   a. Assumptions are what the researcher takes for granted.
   b. Others may never have thought of what we assume.
   c. Knowing the assumptions a researcher makes allows the reader to evaluate better the research.

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11 Vyhmeister, 28.
12 Leedy, 59.
13 Leedy, 59.
d. “[A]ll assumptions that have a material bearing on the problem should be openly and unreservedly set forth.”

4. Stating the hypothesis allows the researcher to state tentative solutions at the outset.
   a. Hypotheses are neither proved or disproved
   b. The attempt to prove a hypothesis defeats the research's impartiality.
   c. Hypotheses represent “tentative propositions set forth as possible explanations for an occurrence or a provisional conjecture to assist in guiding the investigation of a problem.”
   d. Often there exists a one-to-one correspondence between subproblems and hypotheses—generally as many hypo. as sub.
   e. Null hypotheses reveal “that some influence, force, or factor has either resulted in a significant statistical difference (one that cannot be accounted for by mere chance, that occurs within certain arbitrary statistical limits) or no such difference.”

5. Importance of the study sets forth the reason for undertaking the study by stating what the practical value of the study.

G. Summary of the Process:

1. **Statement of the Problem:** Phrases A, B, C, D.
   a. **Subproblems:** Each phrase of the problem becomes a subproblem, producing: subproblems, A, B, C, D.

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14 Leedy, 60.
15 Leedy, 61.
b. **Delimitations or limitations:** May restate each subproblem as particular areas (or parameters) of investigation, producing: Delimitations A, B, C, D.

c. **Definition of terms:** May include specific terms from the subproblems and delimitations; but they are not limited to those.

d. **Assumptions:** May restate the subproblem and delimitations, producing: Assumptions A, B, C, D.

e. **Hypotheses:** Restates each subproblem, delimitations, and assumptions, producing: hypotheses A, B, C, D.

f. **Importance of the study:**

H. **The Messy process by which one develops subproblems may be summarized as follows:**

1. **Stating the subproblems:** On a separate sheet of paper, write your research problem statement. Allow considerable space between lines. Now do the following after inspecting the problem carefully.

a. Box off within the problem those areas that must receive in-depth treatment if the problem is to be fully explored. Number the boxed-in areas consecutively.

b. Enclose within dotted lines those specified words within your statement of the problem that indicated your intention to interpret the data.

c. Below the problem, which has been thus treated, write in complete sentences the several subproblems for study.

I. The Messy Process by which one writes this first section of the proposal may be describes as:

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16Leedy, 65-66.
1. **Write your hypotheses/questions:** Read again what was stated above about hypotheses. Attempt to write a hypothesis/question using each of your subproblems as a basis. Remember there is one-to-one correspondence between subproblems and hypotheses/questions.

2. **Write your delimitations:** Study your subproblems, attempting to rule out those areas that, though contiguous to your study, lie outside the boundaries of the study. Remember there may be a one-to-one correspondence between subproblems and delimitations.

3. **Write the definitions of terms:** Dictionary definitions are not used. The researcher defines these specifically as they are used in his/her research. Remember, there may be a one-to-one correspondence between subproblems and definitions.\(^{17}\)

4. **Write the assumptions:** which are made as a basis for your study. Remember there may be a one-to-one correspondence between subproblems and assumptions.\(^{18}\)

5. **Write the hypothesis/hypotheses:** Remember there is a one-to-one correspondence between subproblems and hypotheses.

6. **Write the section stating the importance of the study:** detailing your reason(s) for undertaking this study. (Because this study is one of your assignments doesn’t count as a valid reason!) Of what use is this study? What practical value does it have? How does it contribution to our present knowledge in this area?

J. Concluding helps: Leedy’s suggestions are excellent.\(^{19}\)

1. Complete the needed background search

2. View the problem from all sides: strengths, weaknesses.

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\(^{17}\) Cf. Vyhmeister, 27.

\(^{18}\) Cf. Vyhmeister, 28.

\(^{19}\) Leedy, 68ff.
3. Think through the whole research process.

4. Use all available tools to learn and research.

5. Seek ideas from others who have researched this area.

6. Discuss your research with others.

7. Allow others to criticize your work.

8. Listen to their constructive criticism.

K. After you have completed the draft of the this introductory section ask yourself the following questions:20

1. Have you completed the necessary background research to make a cognizant decision about what you will research?
   
   a. Are you prepared and knowledgeable enough to see the import of this research in your field?
   
   b. Have you asked a research expert in your field to advise you on the value of your research effort?

2. Have you looked at your research problem from all sides to minimize unwanted surprises?
   
   a. What is good about the potential project?
   
   b. What are the downfalls of attempting this research effort?

3. What research procedure will you follow?
   
   a. Do you have a plan to review the literature?
   
   b. Do you have a plan for data collection?
   
   c. Do you have a plan for data analysis?

20Leedy 69.
d. Do you have a plan to discuss the data you collect?

4. What research tools are available for you to use? Make a list and check their availability. Determine how you will use them.

5. Can you clarify your plan with your peers to satisfy their questions? What comments have they made? What concerns have they shared?

   a. I have discussed the plan with _____, who advised:

   b. I have further discussed the plan with _____, who advised:

II. THE REVIEW OF THE LITERATURE. 21

A. The review of the literature deals with the peripheral investigations germane to your study.

1. There are several purposes for this review:

   a. Reveals investigations related to your own
   b. Suggests avenues of approach to your problem
   c. Indicates sources unknown to the researcher
   d. Introduces key people related to the problem
   e. Gives historical/associational perspectives
   f. Indicates ideas and areas unknown before
   g. Allows comparison of your/their research

2. Beginning a search of related literature

   a. Government publications:


      (2) Can also locate on the www
      (http://info.er.usgs.gov/gils/index.html)

21Leedy, 71ff.; Vyhmeister, 32-61.
Electronic databases help the research process in several ways.

1. Increase speed in the search.
2. Bibliographic databases also aid in the process of filing, sorting, and retrieving acquired data.

Generating bibliography and data:

1. Make as many copies of bibliographies as necessary
2. When possible, computerize (this saves paper and helps in organization)
3. Be fast but accurate (you waste time and multiply work when you have to correct inaccurate information)
4. Be systematic, but thorough (you multiply work and waste time when you have to recheck incomplete notes).

\[\text{Leedy, 75.}\]

\[\text{Leedy, 79.}\]
(a) Review your list of articles and books that you have identified

(b) Record how the search was completed (e.g., which data file was sued, which key were used)

(c) Check to see if the title is “held locally”; if not you may want to interlibrary loan it.

(d) Obtain whatever works are necessary asap.

(5) Generate a bibliography for study that is related to your problem (there are many interesting areas that will do for future research but do not relate to your problem; investigating them now is a waste of time)

B. **Planning the Review of the Literature**

   may follow the following or a similar process.\(^\text{24}\)

1. **Step 1:** Read your problem statement and insert 1, 2, 3, 4, etc., before each subproblem, thus isolating the several subareas of your problem under which you might look (whether abstracts, bibliographies, etc.) to find specified items related to your problem.

2. **Step 2:** As you search for material enter information regarding that material in the chart below (or one similar, depending upon your specific needs), noting the title, library-electronic source, edition, page, and comments (noting particularly how they relate to your specific subproblems. This helps keep your review of the literature focused.

<table>
<thead>
<tr>
<th>Title</th>
<th>Library-Electronic Source</th>
<th>Edition</th>
<th>Page</th>
<th>Comments-Numbers</th>
</tr>
</thead>
</table>

3. **Step 3:** As you continue to search, continually record the information in the above, or similar format.

\(^{24}\text{Leedy, 84.}\)
4. **Step 4:** Once you have gathered the material you are ready to begin writing the review of the literature.

5. **Writing the review of the literature**

   a. “The review of the related section is a discussion of the studies, research reports, scholarly or broad spectrum writing in your document as a discussion with a friend . . . about what others have written in relation to what you plan to do.”

   b. Therefore, be clear how this relates to what you are attempting to do.

   c. This section **IS NOT** an “unnecessary appendage” hindering your goal, but “a conscientious and thorough review of the literature related to the problem [which] can open up new possibilities and new ways of looking at the problem that may otherwise be totally missed.”

   d. Plan the review well.

      (1) Historically oriented writings help lay the foundation and connect with your specific problem.

      (2) Take a comprehensive view of the problem working toward the more specific.

         (a) Write an outline of the material that functions as an inverted pyramid

         (b) Strive for clarity

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25 Leedy, 80.

26 Leedy, 80.
e. Emphasize relatedness between the material and your study by pointing out “precisely what the relationship is.”

f. Review the literature, but don’t reproduce it.

(1) Present your own discussion

(2) Paraphrase

(3) Use short quotations

(4) Use long quotations as a last resort.

6. The following process may help you write the review of the literature:

a. Write the problem at the top of the page, where you cannot lose sight of it. In this location it will be a constant reminder of the central axis around which everything revolves

b. Dissect the problem by numbering its subproblems as was done in “Assignment 165.”

c. Make two columns on the paper, starting below the statement of the problem.

d. Cite each specific study in the left column

e. In the right column, opposite each study, note the particular subdivision of your problem to which the study relates and the rationale for including it in the literature.

f. Gather all citations that refer to a specific aspect of the problem so that you have as many groups as you do subproblems.

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27 Leedy, 81.

28 Leedy, 82.
g. Study all of this with the view of planning and organizing your discussion

h. Write the review with headings identical to the statement of the problem

i. Summarize what you have said.

   (1) This summary should focus on what has been said in terms of the significance of the problem.

   (2) The question guiding you in this should be a continually asked: “What does this all mean?”

III. PLANNING THE RESEARCH PROJECT.\textsuperscript{29}

A. Designing the research.

1. The common sense and clear thinking necessary to manage the research.

   a. The strategy of attack for the research problem.

   b. The research should be completely thought through before you begin writing it.

   c. "The design is the plan for the study, providing the overall framework for collecting the data. Once the problem has been concretely formulated, a design is developed in order to provide a format for the detailed steps in the study. The design is relatively specific consisting of a series of guidelines for systematic data gathering. The type of design depends upon the statement of the problem. (Verhonick & Seaman, 1978, p. 30)."\textsuperscript{30}

2. All knowledge comes through either:

\textsuperscript{29}Leedy, 93ff.

\textsuperscript{30}Cited by Leedy, 94.
a. **Deductive logic:**

(1) When observable facts are assembled and studied dispassionately, they frequently suggest certain conclusions which may represent undiscovered truth.

(2) This forms the basis of the scientific method

b. **Scientific Method:** "is a means whereby insight into the unknown is sought" by a four-stepped process:

(1) Problem is identified which defines the goal

(2) Data is gathered toward resolving the problem

(3) A hypothesis is posited as a means of locating the data toward resolution of the problem

(4) The hypothesis is tested by processing and interpreting the data to see if that will solve the problem.

(5) This four-stepped process, "the induction of hypotheses based on observation, the deduction of implications of the hypotheses, the testing of the implication, and the confirmation or disconfirmation of the hypotheses," involves **inductive reasoning**, or observation.

3. Each academic discipline has its own peculiarities, and yet the broad configuration of the research procedure is fundamentally the same for all of them.

a. “In planning a research project, the researcher in quest of the discovery of new knowledge cannot be shackled by curricular

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31 Leedy, 94-5.

32 Leedy, 95.

33 Leedy, 95ff.
restraints. The nature of research is academically global. Research leads the investigator into new and unfamiliar territory that must comprise a part of the journey in pursuit of the solution of a specific problem and the advancement of learning. The sociologist in attempting to resolve the unsolved problems in sociology may conceivably come face to face with problems that are psychological or economic; the educational researcher in exploring the causes of learning disability finds that the resolution of the research problem leads through the psychopathology of the central nervous system, endocrinology, and family counseling. The student in criminal justice may very conceivably be led through the alien territories of abnormal psychology and heredity on the way to finding a solution for a problem in criminology.\(^34\)

b. Thus research cannot be monopolized; neither should it be restricted to one academic area; the answers may come from the work in several areas.

c. Research design should be carefully planned, to save time, effort, resources, etc.

4. A distinction must be made between Research Planning and Research Methodology.

a. Research planning involves the broad lines of the scientific method regardless of the problem being discussed--it is general in nature and refers to the general process of research

b. Research methodology has to do with the specific tools developed or employed to retrieve and interpret the data.

c. A good research project contains four criteria:\(^35\)

1. **Universality:** the research should be able to be carried out by any competent person.

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\(^34\)Leedy, 96.

\(^35\)Leedy, 97ff.
(2) **Replication:** the research should be repeatable.

(3) **Control:** the research has certain parameters, or limitations--factors critical to the investigation are isolated.

(4) **Measurement:** the retrieved data should be such that they can be measured.

d. A good research design is actually a shortcut; poorly designed research takes longer, is harder to manage, and, consequently, most frustrating.

B. The Data: Their Nature and Role in Research\(^{36}\)

1. “Data” (pl., “datum,” sg.) derives from the past participle of the Latin "dare," meaning "to give."

2. Data are those facts which give information.

3. Research seeks, through data, to discover truth.

4. The truth always lies just beyond the data.

5. Data are elusive in that as the interpretation of data yield new insights, new problems are also discerned.

6. Data are also ephemeral in that they are almost outdated.

7. Therefore, “Researchers should recognize . . . that even the most reliable, most refined, most carefully controlled data may have a very elusive quality about them, and that tomorrow or next week or next year they may, in fact, have no counterpart in reality whatsoever.”\(^{37}\)

8. Specifically:

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\(^{36}\)Leedy, 99ff.

\(^{37}\)Leedy, 100.
a. The elusive nature of data is different for different fields.

b. Because people’s opinions change rapidly, sociological may change very rapidly.

c. Historical, archaeological, literary, etc., data, while not changing as rapidly, or not at all (“facts are facts”), still have an elusive quality, in that every time something “new” is learned this reshapes the picture of what is known, i.e., new data is added.

9. “The researcher's only perceptions of truth are the layers of various density of truth-revealing fact. The data that lie in juxtaposition to the Truth are the most valid, the most illuminating, the most Truth-manifesting. These data are primary in the sense that they lie closest to the truth.”

10. If primary data lies closest to the truth, secondary data lies next in line.

a. In biblical studies the primary data is the text itself (the Hebrew, Aramaic, and Greek texts).

b. Everything else (commentaries, dictionaries, language aids, introductions, sermon outlines, etc., are secondary data).

c. **Excursus:** The relationship of “truth,” to primary and secondary data in biblical studies:

   (1) The “truth” is what is imbedded in the text (primary data) and attempted to be ascertained through the research of scholars worldwide as recorded in the volumes of secondary data (commentaries, dictionaries, language aids, introductions, sermon outlines, etc.)

   (2) In biblical studies, many of us, have confused the data (the text and commentaries) with the thing learned (truth).

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38Leedy, 101.
(3) The truth is what God, via inspiration, wanted us to learn and so had recorded in the primary data (the text).

(4) All secondary data are attempts to understand and explain what the primary data say about the truth.

(5) Because many of us have confused the truth communicated (truth via inspiration) with the primary data revealing that truth (the biblical text) we have become near idolaters, honoring the primary data rather than the truth it contains.

(6) We need to keep in mind that Bibles are made of ink, paper, leather, glue, etc.

(7) As such “they are not holy”!

(8) **BUT THE MESSAGE REVEALED IN THE BIBLES IS INSPIRATION ITSELF; GOD’S TRUTH FOR YOU AND ME; WITHOUT IT WE ARE LOST!**

11. The true researcher is cautious because he/she knows:

that no one has ever glimpsed Ultimate Truth, nor can anyone come to a knowledge of the data that reflect that Truth except through the gross and shadowy channels of dull and imperfect senses. Such a humiliating awareness helps the researcher be cautious and adds new respect for such words and phrases in the reporting of research findings as *perhaps, it seems, one might conclude, and it would appear to be.*

a. Leedy is not saying here that “truth is relative.”

b. Rather he is affirming that the honest researcher realizes that he **NEVER LEARNS IT ALL**--thus each new piece of data, each new fact learned, changes his understanding of the truth.

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c. This is especially true in biblical studies, in which people are condemned who "ever learn, but are never able to come to a knowledge of the truth."

(1) Such people are condemned not because they continue to learn, but because they do not have a “knowledge” (relationship) with truth.

(2) Truth is not relative, we can always learn more about it, but think of people who are always learning, facts, or data, but have know real interpretive, understanding that changes their lives about the truth learned (“never able to come to a knowledge of the truth”).

12. Criteria for data admissibility:

a. Not all data is acceptable, it can be defective.

b. Defective data comes via imperfections in nature.

c. If not recognized the imperfect data can corrupt the entire corpus.

d. “... certain criteria must be adopted, certain limits established, certain standards set up that all data must meet in order to be admitted for study.”

e. “We hem the data in on all sides, place upon them the restriction of criterion after criterion so that we are able to isolate only those data that are acceptable for our use. This is what we term the criteria for the admissibility of data.”

f. In biblical studies the text is defective through errors made in copying, etc., which are noted via textual criticism; but note this does not affect the truth since inspiration guided the writing of the original autograph.

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40Leedy, 102-3.

41Leedy, 103.

a. The methodology created to analyze the data must be interdependent with the data, that is, it must recognize the nature of the data being analyzed.

b. There are different methodologies that have evolved, all of which follow the basic rule that the data dictates the research methodology.

14. Quantitative and Qualitative approaches\(^{42}\)

a. **Quantitative Studies** inquire “into a social or human problem based on testing a theory composed of variables, measured with numbers and analyzed with statistical procedures, in order to determine whether the predictive generalizations of the theory hold true.”\(^{43}\) These:

b. **Quantitative Studies** usually start with a preformed hypothesis to be tested, isolate the relevant variable, control extraneous variables, collect standardized data from participants, analyzed the data in a way that supports or rejects the hypothesis, and state general conclusions.

c. **Qualitative Studies** inquires into a social or human problem, “based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting.”\(^{44}\)

d. **Qualitative Studies** start with general questions, collect verbal data from participants, and present the findings with words/descriptions that attempt to accurately reflect the situation under study.

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\(^{42}\)Leedy, 104.

\(^{43}\)Leedy, 104.

\(^{44}\)Leedy, 105.
15. Characteristics of Quantitative and Qualitative approaches.

a. **Purpose:**

   (1) QUAN seek explanations that will generalize about persons and places, intending to establish, confirm, or validate relationships, and develop generalizations that contribute to a theory.

   (2) QUAL attempt to understand out the participants understand the world about them; they attempt to discover, build, or enhance a theory, instead of testing it.

b. **Process:**

   (1) QUAN studies have carefully structured guidelines for conducting them; definitions occur before the study begins; they attempt to measure objectively variable(s) of interest.

   (2) QUAL is more holistic allowing for developing and changing instruments along the research road; researches are prepared to interact with the participants.

c. **Data Collection:**

   (1) QUAN researches use experimental instruments designed to reduce error and bias; from these they attempt to describe the norm of the population sampled.

   (2) QUAL researchers get personally involved with the research participants in attempting to learn the range of behavior related to the research focus.

d. **Data Analysis:**

   (1) QUAN researchers rely on deduction as a form of analysis, moving from the general to the specific, from a premise to a conclusion.
QUAL researchers use an inductive form of analysis in which observations are generalized to a particular class of cases; a theory is constructed from this analysis.

e. **Communicating Findings:**

1. QUAN researchers reduce their data to numbers which they present as statistical results.
2. QUAL researchers use interpretative narrative to describe the data in an attempt to capture the complexity of the phenomenon under study.

f. **Summary:** A good researcher must understand, and be able to use both methods.

C. Choosing a research approach.\(^{45}\)

1. Use the following table to determine whether your study should be QUAN or QUAL.

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\(^{45}\)Leedy, 108-111.
Use this approach if:

<table>
<thead>
<tr>
<th>1. Your belief that:</th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is an objective reality that can be measured</td>
<td>Familiar with/supportive of quantitative studies</td>
<td>There are multiple constructed realities</td>
</tr>
<tr>
<td>2. Your audience is:</td>
<td>Confirmatory, predictive</td>
<td>Familiar with/supportive of qualitative studies</td>
</tr>
<tr>
<td>Relatively large; Covers a lot of breath</td>
<td>Exploratory, interpretive</td>
<td></td>
</tr>
<tr>
<td>3. Your research question is:</td>
<td>Relatively short</td>
<td>Limited or missing</td>
</tr>
<tr>
<td>Medium to low</td>
<td>Involves in-depth study</td>
<td></td>
</tr>
<tr>
<td>4. The available literature is:</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>5. Your research focus is:</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>6. Your available time is:</td>
<td>Statistics and deductive reasoning</td>
<td>Attention to detail and inductive reasoning</td>
</tr>
<tr>
<td>7. Your ability/desire to work with people is.</td>
<td>Technical, scientific writing</td>
<td>Literary, narrative writing</td>
</tr>
<tr>
<td>8. Your desire for structure is:</td>
<td></td>
<td></td>
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<tr>
<td>9. Your skills are in the area(s) of:</td>
<td></td>
<td></td>
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<tr>
<td>10. Your writing skills are strong in the area of:</td>
<td></td>
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</tr>
</tbody>
</table>

1. Comfort with QUAL or QUAN research?
2. Audience (me) will be comfortable with either.
3. Is the question exploratory or interpretative?
4. Strength of literature base? If it is weak a QUAL will be best used.

5. QUAL is essential for studying a specific problem, in-depth, with small number of participants.

6. Time? QUAL’s take more time?

7. Rapport with subjects interviewed, etc.? Essential in QUALs.


9. Creative thinking one of your strengths? Needed in QUALs.

10. Writing a strength? Necessary in QUALs.

11. Study table 5.3 to gain an appreciation of other ways of describing research. Determine which one of these your study will be most like.

12. The following process will be of help in developing a research methodology.⁴⁶

   a. Make two columns on a piece of paper. Write your problem statement across the page over the columns.

   b. In the left-hand column, write the subproblem(s).

   c. Immediately below each subproblem write a description of the data you will need to resolve the subproblem.

   d. In the right-hand column, write the criteria that you will establish for the admissibility of those data into your research design.

   e. Be very specific; avoid generalized statements.

⁴⁶Leedy, 114ff.
B. **The following** may help you determine whether you need to do QUAN or QUAL analysis in your study.\(^1\)

1. **Question 1: What data are needed?** A visualization of the data, an appreciation of their nature, and a clear understanding of their treatment are fundamental to any research effort. In order to determine what data are mandatory ask the following:
   
   a. What is the nature of this data?
   b. Are they documentary? Statistical? Interview?
   c. Questionnaire replies? Observations?
   d. Experimental data recorded before and after certain processes?
   e. Specifically, what data are needed and what are its characteristics?

2. **Question 2: Where are the data located?** Students often come up with very fascinating research topics, but seem to have no idea where they will get the data to resolve the problem. For example, if you are doing a documentary study, what documents are needed? What library collection will be used? The researcher must answer these basic questions.

3. **Question 3: How will the data be secured?** This question cannot be ignored. The answer to this question may be the difference between a researchable project and a pipe dream. So will it be retrieved by questionnaire, by an analysis of a passage or passages, measuring the change of ideas, concepts, thoughts, themes, etc.?

4. **Question 4: How will the data be interpreted?** What precisely do you intend to do with the data to effect the solution of the research problem or subproblem? Review the second lecture, “What is Research? and The Tools of Research” to help you design the methodology.

5. **Ethical Standards:**

   a. Demand that each researcher maintain absolute honesty, willing to reveal everything about the research conducted.

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\(^1\)Leedy, 115-119.
b. The “Code of Ethics” should be followed; at Faulkner an IRB committee oversees this process. At the very least:

   (1) Researchers must maintain objectivity.
   (2) Plagiarism in writing is not tolerated.
   (3) Findings should be reported honestly, without distortion.
   (4) The researcher is a “trustee of integrity.”
   (5) This should be no problem for Christians.

II. WRITING THE RESEARCH PROPOSAL.48

A. Why write a proposal, or a paper at all?

1. Approval of academic committee, university, grant-awarding agency.

2. Write to remember; what you don’t write you forget.

3. Write to understand, to clarify the relationship among ideas.

4. Write to gain perspective; writing improves thinking; it clarifies and aids critical thinking.

B. Researcher and Architect: Planners in Common49

1. The researcher, in writing the proposal, is like the architect designing a building--He plans everything that is necessary to build the building.

2. In conducting the research the researcher is like the builder who translates the diagrams of the architect into a real structure.

3. As builder, he brings those plans to fruition--conducts the study.

C. Characteristics of a proposal50


49 Leedy, 123ff.

50 Leedy, 124ff.
1. A straightforward document, not cluttered with extraneous matter, beginning without introduction, with a forthright statement of the problem to be researched; anything not directly contributing to the study is deleted.

2. Not a literary production, in the sense of being artistic, but communicating clearly, exactly, what is to be studied, with an economy of words.

D. Clearly organized with proper uses of subheadings.\(^{51}\)

1. The one described by Vyhmeister is very simple.\(^{52}\)

2. Others are given in Turabian (1:37-38) and other style manuals.

3. Consistency is required.

E. Formatting: Components and Sequencing.\(^{53}\)

1. The content should follow a simple, logical form of organization and presentation.

2. "The arrangement of the material should be so presented that it forms for the reader of the document a clear, progressive presentation by keeping items together that belong together....\(^ {54}\)

3. Creating the first draft.\(^ {55}\)

   a. Success begins with the proposal in that a well written proposal, this "map," states beforehand what exactly will be and what will not be done.

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\(^{51}\)Leedy, 126-7.

\(^{52}\)Vyhmeister, 88.

\(^{53}\)Leedy, 127-8; Vyhmeister, 102-16.

\(^{54}\)Leedy, 158.

\(^{55}\)Leedy, 128.
b. Students who fail theses and dissertations usually do so because of a poorly written proposal.

c. The poorly written proposal has data that is not interpreted, and, as a result, hypotheses that have not been resolved.

d. Lois DeBakey's suggestions, as cited by Leedy are excellent.56

(1) Write the first draft with attention exclusively to orderly sequence and without consideration for grammatical or rhetorical perfection.

(2) Because, in any unit of exposition (whether sentence, paragraph, or full composition) two of the most important positions are the first and the last, the introduction must be prepared with special care. Once this is done, everything else about the paper “will be a breeze.”

(3) This introduction should lead smoothly into the section on materials and methods, describing the selection of subjects or materials and the provision of controls for variables that might be confused with experimental effect. Be sure your design is rational, ethical, and defensible.

(4) Describe next the expected results, which are written obviously and honestly. Estimate the potential results and the basis for this judgment. Any tests, instruments, publications, films, or other educational material that may be byproducts of the projects should be noted.

(5) In the discussion express your familiarity with the various aspects and implications of the problem and present the potential significance of the prospective results. Compare what you are going to do with previous work.

56Leedy, 128ff.
(6) Revise this draft after giving yourself a little time away from it so that when you revise it you may do so objectively.

(7) Do not promise more than you can deliver.

F. Criticality of interpretation of the Data.

1. The proposal is a clear statement of a problem and subproblems, the data and their processing, including interpretation.

2. The proposal, therefore, should spell out all of this as it is expected to solve the problem; this involves preplanning.

3. Planning the interpretation of the data
   a. Systematic description of how the data will be treated.
   b. Clear statement of exactly what data is needed.
   c. Description of where the data is located.
   d. Statement of exactly how the data will be obtained.
   e. Clear statement of how the data will be interpreted.
   f. Exact statement of each step in the interpretation of the data.
   g. Spell out every step in the interpretation of the data.
   h. This process is cyclical; the “if-test technique” tests for circularity.

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57 Leedy, 130ff.
58 Leedy, 131-2.
59 Leedy, 134.
The data must support the conclusions; your enthusiasm will not prove the point.

G. **The Following may help you fine tune your proposal.**

1. The statement of the problem is vague or is so obscured by other discussion that it is impossible to find.

2. The methodology is not clearly stated and an explanation of exactly how the research will be conducted is not specifically delineated.

3. The projected treatment of each subproblem is cursory and is phrased in statements that are too general to convey a clear concept of exactly how each subpart of the project will be resolved and the way the data will be interpreted.

4. Criteria for the admissibility of the data are weak or nonexistent

5. The outline of the proposed study is missing or so indefinite as to fail t communicate a clear concept of the overall structure of the investigation.

6. The proposal lacks sharpness. It is not logically organized. Without clear divisions that set forth the several areas of the research project, it rambles. The reader has difficulty isolating the discussion of the problem. The subproblems, the related studies, the methodology, the interpretation of the data, and other related parts of the proposal.

7. The proposal is phrased in terms that are too general, ambiguous, or inexact to be useful for evaluation. Such phrases as “tests will be given” and “tests will be made are largely meaningless.

8. The proposal does not follow directions or conform to the guidelines set forth in the informational literature of the funding or approving agency.

9. The section of the proposal explaining the study’s importance is not set forth clearly enough to see a relationship between this study and previous studies on the topic.

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60Leedy, 139.