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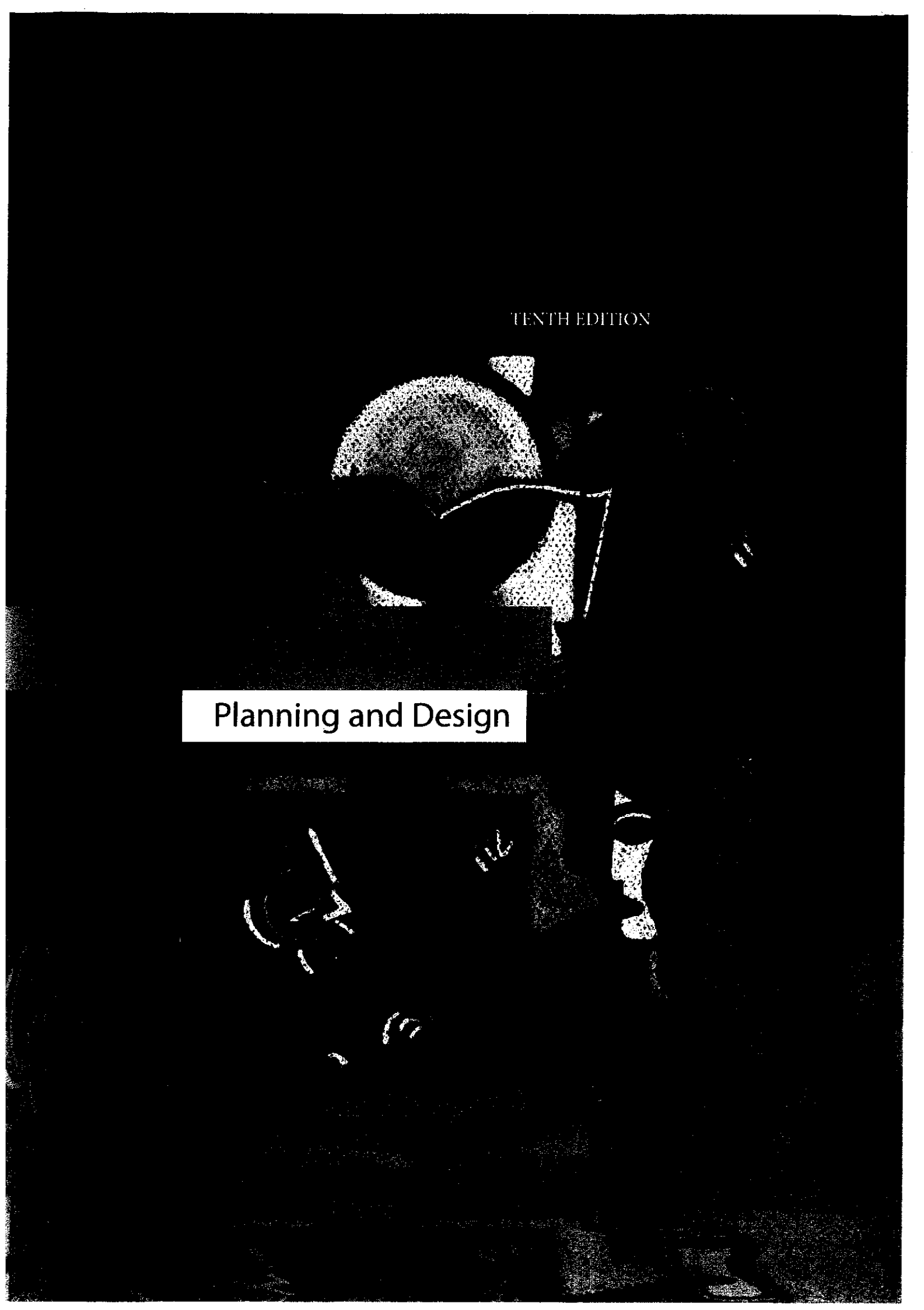
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Writing the Research Proposal

Research proposals are a critical part of the research process. They are a way for researchers to communicate their ideas and objectives to a wider audience, including funding agencies, academic committees, and other researchers. A well-written proposal can help researchers secure the resources and support they need to conduct their research. The proposal should clearly state the research question, the objectives, the methods, and the expected outcomes. It should also demonstrate the researcher's expertise and the significance of the project.

Research is never a solitary activity. It involves many people and requires access to and use of resources far beyond one's own. For that reason, it must be carefully planned, laid out, inspected, and, in nearly every instance, approved by others. The graduate student conducting research for a thesis or dissertation must get the approval of an academic committee. A researcher seeking grant funding must get approval from the university or the organization for which he or she works, and the project must be deemed worthy of funding by the grant-awarding agency. Any researcher who plans to work with human subjects must get the approval of an internal review board, and one who plans to work with animals must get that of an institutional animal care and use committee (see Chapter 4). Such approvals are usually secured through the submission of a document known as a *research proposal*. The proposal lays out the problem for research, describes exactly how the research will be conducted, and outlines in precise detail the resources the researcher will use to achieve the desired results.

A proposal is as essential to successful research as an architect's plans are to the construction of a building. No one would start building a structure by rushing out to dig a hole for the foundation without knowing in detail how the building will look when it is finished. Before one turns a shovelful of earth, many questions must be addressed, many decisions made. What kind of building is desired? Is it a personal residence? If so, will it be a two-story colonial, a split-level, or a one-story ranch? How will the building be placed on the lot? Where will the doors be located? How will the roofs be pitched and shingled? What kind of heating system will be used? Each of these questions is important, and each should be addressed *before* a single pound of dirt is excavated, a single nail driven.

Even after all these decisions have been made, does the digging begin? Not at all! Further planning is necessary. The architect draws a floor plan of the entire structure, floor by floor, showing to the inch precisely where each room, closet, door, and window will be located. The architect also draws a series of elevations of the proposed building, showing each wall to scale as it will appear when completed. Finally, the architect draws up a set of specifications for the building, indicating exactly what lumber is to be used, how far apart certain beams will be placed, what kinds of doors and windows will be put in what locations, and all other details. Nothing is left to chance.

So is it now time to stake off the building's location and start digging for the foundation? Not so fast! Before the construction crew can do anything, they need *permission*. The contractor must get a building permit. Most communities have building codes that govern the kinds of buildings that can be constructed—codes regarding plumbing, wiring, distance from the street, and so on. A permit provides a means of ensuring that new buildings meet these codes. The point is this: *Permission is essential to the plan.*

Like the architect who presents detailed plans for a building, the researcher develops a written proposal for a research project. In this proposal, the problem and its attendant subproblems are clearly stated, hypotheses or questions are articulated, all necessary terms are defined, delimitations

are carefully spelled out, and the reason for conducting the study—why it is important—is explained. The researcher then specifies every anticipated detail of acquiring, organizing, analyzing, and interpreting the data. Parallel to the architect's specifications, the researcher sets forth the resources at hand for carrying out the research: his or her qualifications (and those of any assistants), the availability of the data, the means by which the data will be obtained, any needed equipment and facilities, and any other aspects of the total research process that merit explanation. Nothing is overlooked. All questions that may arise in the minds of those who review the proposal are anticipated and answered. Any unresolved matter is a weakness in the proposal and may seriously affect its approval.

We cannot overemphasize the importance of the proposal. It is the key that unlocks the door to the research endeavor. If it is not clearly and explicitly delineated, it may cause the whole project to be turned down.

Sometimes novice researchers think the proposal is merely a necessary formality and thus do not give it the serious consideration it deserves. They try to set forth the project in a few hastily written pages. Such an approach often fails. Those sponsoring a project, whether a graduate committee or a funding agency, realize that a researcher invests considerable time, effort, and (sometimes) money when doing research. Accordingly, no one should rush into a project without a clearly conceived goal and a thorough, objective evaluation of all aspects of the research endeavor.

No matter whether you are seeking funding for a project from a grant foundation or seeking approval for a thesis or dissertation from a university faculty committee, a clear, well-written proposal is essential. Nothing is a substitute for an explicit setting forth of both problem and procedure. Other names for a proposal are *prospectus*, *plan*, *outline*, *statement*, and *draft*. If you are asked to present any of these, you are being asked to present a research proposal.

Characteristics of a Proposal

Research demands that those who undertake it be able to think clearly, without confusion. The proposal will demonstrate—for better or for worse—whether the author possesses that ability. When one reads a proposal that is unfocused, poorly organized, and lacking in essential details, one gets the impression that the mind producing such a document is incapable of thinking precisely, logically, systematically, and thoroughly about the job that needs to be done. Unwelcome as the fact may be, the perceived qualifications of a researcher rest, more often than not, squarely on the quality of the proposal submitted.

Therefore, as you embark on the task of writing a research proposal, you should understand exactly what characteristics a proposal should have.

A Proposal Is a Straightforward Document

A proposal should not be cluttered with extraneous and irrelevant material. Right off the bat, it opens with a straightforward statement of the problem to be researched. It needs no explanatory props—no introduction, prologue, or statement telling why the researcher became interested in the problem or feels a burning desire to research it. Nor does it need explanations of why the researcher decided *not* to study certain other topics. Such information may be interesting, but none of it is necessary or appropriate. Those who will review your proposal are not interested in how-I-became-interested-in-my-topic excursions. Indeed, autobiographical excursions suggest that you cannot separate essentials from irrelevancies and so will neither enhance your stature as a researcher nor recommend you as one who can think in a clear and focused manner.

Whatever does not contribute directly to the delineation of the problem and its solution must be eliminated. Anything else is a distraction. Remember the architect's drawing: clean, clear, and economical. It contains all that is necessary, not one detail more.

Journalists are taught—or if not taught, soon learn—that the first words they write are the most important ones. You capture or lose your reader with the first sentence. It is impossible to overemphasize the importance of the beginning, whether it be of a speech, a news story, a journal article, or a proposal.

Imagine a proposal that begins with these words: "Five decades ago, the social and economic status of minority groups in the United States was . . ." A reader's reaction might easily be: "Who cares, at this moment, what the social and economic status of minorities was 50 years ago? That's history. What does the researcher *propose* to do *in the near future*? C'mon, what's the problem? *State it!*"

You see, if your first sentence irritates your reader, you are immediately put at a disadvantage, and you have possibly sacrificed your reader's interest. More significantly, the reader may infer that you cannot distinguish between history and future planning, and thus the reader may wonder about your ability as a researcher to think clearly and critically.

Keep in mind the meaning of *proposal*. The word suggests looking forward, to what the researcher *plans to do in the future*. If a writer intends to make an analytical comparison of the past and present social and economic conditions of minority groups, he or she might begin, "This study *will* analyze the social and economic status of certain minority groups today in comparison with their similar status five decades ago for the purpose of . . ." This is a no-nonsense beginning, and it indicates that the writer knows what a proposal should be.

A Proposal Is Not a Literary Production

An architect's drawing is not a work of art. Similarly, a proposal is not a creative, "literary" production. The purpose of both is simply to communicate clearly. Just as an architect's drawings present a plan for construction with economy of line and precision of measurement, a proposal describes a future research project with an economy of words and precision of expression.

The language must be clear, sharp, and precise. The proposal provides a chance to show with what clarity and detail the researcher can state a problem, delineate the collection of relevant data, and explain how those data will be interpreted and brought to bear on the research problem.

To those who have been taught that writing should be stylistically interesting and artistically creative, the preceding statements may come as a bit of a shock. Yet writing a superb proposal calls for skills of expression just as demanding as those needed for forging an unforgettable sentence.

A Proposal Is Clearly Organized

Proposals are written in conventional prose style, and thoughts are expressed in simple paragraph form. In professional writing, headings and subheadings are the single most commonly used strategy to express the writer's overall organizational scheme. Examine your textbooks—also examine current articles in popular magazines—and you will discover how frequently headings are used to indicate the organizational structure of what has been written. You should communicate the outline of your thoughts to your own readers in the same explicit fashion.

If you are currently working on a master's thesis or doctoral dissertation, your faculty advisor and committee may have a particular organizational scheme they want you to follow, possibly including certain chapter titles and within-chapter headings. Alternatively, if you are writing a grant proposal for a public or private funding agency, it is likely that the agency mandates that a proposal be divided into specific, labeled sections (e.g., "Research Objective," "Relevant Literature," "Proposed Method," "Implications for Professional Practice").

Organizing and Writing a Research Proposal

Proposals follow a simple, logical train of thought. Although there are conceivably many ways to arrange the various topics within a proposal, most proposals use similar formats, especially in quantitative studies. The following is an example of a format you might use in a proposal for a quantitative research study:

- I. The problem and its setting
 - A. The statement of the problem and subproblems
 - B. The hypotheses

- C. The delimitations
- D. The definitions of terms
- E. The assumptions
- F. The importance of the study
- II. The review of the related literature
- III. The data and the treatment of the data
 - A. The data needed and the means for obtaining the data
 - B. The research methodology
 - C. The specific treatment of the data for each subproblem
 - 1. Subproblem 1 (*The subproblem presented in Part I above is restated here.*)
 - a. The data needed to address the subproblem
 - b. The treatment of the data
 - 2. Subproblem 2 (*The same format for Subproblem 1 is followed here.*)
 - 3. *Additional subproblems are discussed in the same manner.*
- IV. The qualifications of the researcher and any assistants
- V. An outline of the proposed study (steps to be taken, timeline, etc.)
- VI. References
- VII. Appendixes

Proposals for qualitative studies sometimes use a slightly different format. The following format is an example of an outline you might use for a qualitative proposal:

- I. Introduction
 - A. General background for the study
 - B. Purpose of the study
 - C. Guiding questions
 - D. Delimitations and limitations
 - E. Significance of the study
- II. Methodology
 - A. Theoretical framework
 - B. Type of design and the assumptions that underlie it
 - C. Role of the researcher (including qualifications and assumptions)
 - D. Selection and description of the site and participants
 - E. Data collection strategies
 - F. Data analysis strategies
 - G. Methods of achieving validity
- III. Findings
 - A. Relationship to literature
 - B. Relationship to theory
 - C. Relationship to practice
- IV. Management plan, timeline, feasibility
- V. References
- VI. Appendixes

One rule governs the writing of proposals and final documents: *The arrangement of the material should be presented in such a manner that it forms for the reader a clear, progressive presentation.* It keeps items together that belong together—for example, the problem and its resultant subproblems, the subproblems and their corresponding hypotheses.

Using Headings and Subheadings

You must use different formats to indicate the different levels of headings you use. For example, if you have five different levels of headings, the American Psychological Association's *Publication Manual* (2010) specifies the following formats:

Level 1 headings—the most important ones—are in **Boldface Uppercase and Lowercase Letters** and are centered on the page. These are headings of the largest units of writing;

for instance, they may be the titles of the various chapters in a proposal or research report. They correspond with Roman numerals I, II, III, and so on, in an outline.

- ☛ *Level 2 headings* are in **Boldface Uppercase and Lowercase Letters** that begin at the left side of the page—in other words, they are *flush left*. They correspond with the capital letters A, B, C, and so on, in an outline.
- ☛ *Level 3 headings* are in **Boldface first-letter-only-uppercase, ending with a period**. They are *indented* to the same degree that a paragraph is indented, and the first paragraph in the section follows on the same line. (Such headings are sometimes known as *run-in headings*.) They correspond with the numbers 1, 2, 3, and so on, in an outline.
- ☛ *Level 4 headings* are in **Italicized boldface first-letter-only-uppercase, ending with a period**. They are placed, *indented*, at the beginning of the first paragraph in the section. They correspond with the lowercase letters a, b, c, and so on, in an outline.
- ☛ *Level 5 headings* are in **Italicized non-boldface first-letter-only-uppercase, ending with a period**. They are placed, *indented*, at the beginning of the first paragraph in the section. They correspond with the numbers (1), (2), (3), and so on, that you sometimes see in an outline.

If you used this format, your various headings would look like this on the page:

First Level Heading

The first paragraph of this section begins here....

Second Level Heading

The first paragraph of this section begins here....

Third level heading. The first paragraph of this section begins here....

Fourth level heading. The first paragraph of this section begins here....

Fifth level heading. The first paragraph of this section begins here....

To help the headings stand out on the page, you may want to have an extra space (that is, an empty line) immediately preceding each one.

The format we suggest here is not the only one you might use. When choosing appropriate formats for your headings, you should check with any style manuals in your discipline and, if you are a student, with any graduate school requirements.

Above all, you should be *consistent* in how you format your headings. We have seen too many proposals, theses, and dissertations in which headings of equal importance appear in ALL CAPITALS and in Capitals and Lowercase, or perhaps they appear both

Centered

and

Flush Left.

Such inconsistency points to a careless, sloppy writer and, a proposal reviewer might think, perhaps an equally careless and sloppy researcher.

PRACTICAL APPLICATION Writing Your Proposal

Challenging as writing a proposal can be, especially for the beginning researcher, it isn't rocket science. Here we offer two sets of guidelines, one each for writing a first draft and for revising your proposal.

GUIDELINES

The following suggestions are based both on our own experiences as proposal writers and as faculty members who have advised numerous master's and doctoral students.

1. *Use a computer or other word processor.* Whether you begin writing your proposal on a word processor or on paper should depend on which medium allows you to think and write most easily. For example, if you have had considerable experience using a keyboard and can type as fast as you write, you will undoubtedly want to use a word processor from the get-go. In contrast, if you use the more tedious hunt-and-peck approach and have considerable trouble finding such letters as Q, X, and Z, you might want to start off with paper and pencil. At some point, however, you should put your first draft on a word processor to facilitate those inevitable revisions (there will be many!).

Early in the game, take the time to learn any special features of your word processing software that you will need for typing your proposal or your final research report. For example, learn how to insert tables, graphs, footnotes, and other specially formatted features. If you will be including words with accent marks or using punctuation marks different from those in English (e.g., *déjà*, *señor*, *Günter*, *ç*), find out how to type them. If you will need to use certain symbols (e.g., α , Σ , π) or mathematical formulas, learn how to include them in your document.

2. *Adhere to any guidelines required by the institution, organization, or funding agency to which you are submitting the proposal.* If the group to which you are submitting the proposal requires that you (a) use certain headings, (b) follow a particular style manual, or (c) include certain information, do it! Blatant disregard for such guidelines is, for many proposal reviewers, a red flag that the researcher may not have his or her act together sufficiently to conduct the proposed research.

As their names imply, most style manuals also prescribe a certain writing style—for instance, whether to describe the researcher in first person (“I will conduct interviews . . .”) or third person (“The researcher will conduct interviews . . .”) and whether to use active voice (“The researcher will instruct participants to . . .”) or passive voice (“Participants will be instructed to . . .”) in describing procedures. Various academic disciplines have different style preferences, and you should not stray too far from the style typically used in your own field.

3. *When writing the first draft, focus more on organization and logical thought sequences than on exact wording, grammatical correctness, spelling, and nitty-gritty formatting details.* In Chapter 1 we mentioned that human beings can think about only a limited number of things at one time. All of the processes that skillful writing involves—organizing thoughts, following a logical sequence, expressing ideas clearly and succinctly, using acceptable grammar and punctuation, spelling words correctly, and so forth—may far exceed that capacity. In other words, you may very well not be able to do it all at once!

In the first draft, then, you should focus your attention on the big picture—that is, on presenting your ideas in a logical, organized, and coherent fashion. At this point, don't worry about picky details. If you can't think of the right word, leave a blank where it should go and move on. If you can't remember how a word is spelled, spell it in whatever way you can for the time being and then perhaps indicate your uncertainty by adding a question mark in parentheses. If you're not sure about where commas should go, either insert them or don't, and then check a style manual later on.

As you write, you may even discover that you are missing an important piece of information, perhaps something that you need to track down online or at the library. Never mind; let it go for now. Leave a blank and make a note of what you need. Chances are that you will need several such bits of information. You can track them all down later, *after* you have finished your first draft.

4. *Present the research problem at the beginning of the first chapter.* As we stated earlier in the chapter, *always* lead off with your research problem. The problem is at the very center of—and so drives—the entire project.

5. *Provide a context for your research problem.* A good proposal places the research problem within a specific context that helps the reader understand why the problem to be investigated is

a problem in need of solution. For example, perhaps the problem reflects an alarming state of affairs in our physical or social environment—say, an increase in sightings of frogs with birth defects or a high incidence of eating disorders in adolescent girls. Perhaps the problem involves inadequacies in an existing theory or conflicting findings in previous research. Perhaps the problem is a need to evaluate the effectiveness (or lack thereof) of a particular intervention—say, a new medical procedure or instructional method. Whatever form the context for the problem takes, it should be documented with appropriate citations of relevant research, theory, and other literature.

If you are writing a three-chapter proposal for a master's thesis or doctoral dissertation, you should include literature and citations that are key and central to your research problem near the beginning of the very first chapter. A more in-depth review of related literature should be presented a bit later, perhaps in the second chapter.

6. *Convince the reader of the importance of your project.* You must convince your readers that your planned research is not a trivial, meaningless undertaking—that, on the contrary, it can potentially make a substantial contribution to the body of human knowledge and may even, in some small way, help make the world a better place. Although you won't want to get emotional in your presentation, you nevertheless want to generate interest in what you are doing: You want your readers to *want to know* what your project's outcome will be.

As shown in the proposal outlines presented earlier in the chapter, researchers sometimes include a section specifically called "Importance of the Study," "Significance of the Study," or something of that ilk. In other cases researchers simply make a study's importance crystal clear within the introductory discussion of the overall context for the problem.

7. *Assume that your readers know nothing whatsoever about your proposed project.* Novice researchers often leave out critical pieces of information, assuming, somehow, that their readers are already aware of these things. (We have found this to be especially true for students who are writing a proposal for a faculty committee that already has some knowledge about the planned research.) Such omissions can lead to many misunderstandings along the way, and these misunderstandings may get you in trouble later on.

Your proposal is the mechanism through which you describe, in a permanent written form, what you intend to do from beginning to end. In this respect, it is very much like a contract to which you and your reviewers will ultimately agree. Accordingly, leave nothing unsaid, no question unanswered.

8. *Communicate that you have an open mind about what you will find.* Researchers often embark on research studies with the hope that they will uncover evidence in support of their hypotheses. But some novice researchers go too far and assert that they *will* find such evidence. Such statements as "I will show that" or "I will prove that" imply that the results of the study are already known. If the results can actually be predicted with 100% accuracy ahead of time, then what is the point of conducting the research? Truly objective, open-minded researchers place no bets in advance; they keep all options on the table. For instance, they might say "The purpose of this study is to determine *whether* . . ." or "The proposed research project is designed to investigate the *possible* effects of . . ."

9. *Describe your proposed methodology with as much detail and precision as possible.* The extent to which you can describe your methodology will depend to some degree on whether you are using a quantitative or qualitative approach. If you are using a quantitative approach, you will need to specify your sample, measurement instruments, and procedures in the utmost detail. If you are using a qualitative approach, you will probably be making some sampling and procedural decisions as the study proceeds. Nevertheless, at the proposal stage you should outline your sources of data and procedures as specifically as possible. Remember, the more information your reviewers have about your proposed project, the better position they will be in to determine its worth and potential contributions.

10. *If you intend to use data that already exist, describe where the data are located and how you plan to obtain them.* In some studies, and especially in historical research, a researcher may need

certain kinds of records. In such a situation, the researcher should know their exact location. Many novice researchers begin research projects by assuming that records are available but learn too late that either no records exist or the needed records are in an inaccessible location or under such heavy restriction that they are not available. Answer the question, Where are the data located? in no uncertain terms, and determine that you have access to them.

Suppose that the necessary data are letters written by an important historical figure and that they are in the possession of the person's family. You may know where the letters are located, but do you know how you will get them for your research purposes? Perhaps, in a case like this—or in any situation in which records are under other people's control—you might provide the names and addresses of the individuals who possess the data. You might also state that these custodians of the data have consented to your using the data for research purposes. Such details should be clearly stated in the proposal so that your sponsor, your academic committee, individuals at a funding agency, or whoever else is reading your proposal can feel confident that you will have ready access to the data you need.

11. *Describe how you will use the data to address your research problem.* Even though you have not yet collected your data, you will nevertheless need to describe how you intend to organize, analyze, and interpret them so that you can solve your research problem. Do not assume that others will know what you intend to do. Spelling out the treatment and interpretation of the data is a tedious, time-consuming process. But the alternative—attempting to relegate it to the broad sweep, the quick and easy statement, the careless approach—almost invariably courts disaster. Interpretation of the data is the step that gives meaning to the entire enterprise and makes it a genuine research endeavor, and it must therefore be planned and specified well in advance.

To see how some novice researchers fail to answer this most important question—How will the data be interpreted?—let's examine an excerpt from an economics doctoral student's proposal for a dissertation about labor relations. The excerpt appears in Figure 5.1. The student's main research problem is to "analyze the attitudes of professional employees toward certain aspects of management policy and to evaluate the relationship between these attitudes and the responsibility of management to articulate such policy for its employees." The student has organized his discussion of the data in terms of specific subproblems, describing both data collection and data interpretation with respect to each subproblem. In the excerpt, we see how the student says he will resolve the following subproblem:

What does an analysis of the attitudes of employees toward management policy for salary increases and merit pay reveal?

First read the student's restatement of the subproblem, his description of the data needed to resolve the problem, and his discussion of how he intends to secure those data; information about all of these issues appears under appropriate headings in Figure 5.1. Now, with such information in mind, read the section "How the Data Will Be Interpreted." What does the researcher really intend to do? Is he really going to *interpret* the data, to derive meaning from them? Is he going to "determine" anything *through an analysis of employee responses*?

Unfortunately, the student is not talking about interpreting the data. He is merely planning to *tabulate* and *graph* the data. He will rearrange them and present them in another form. The data remain almost as raw as they were originally in employees' responses to the questionnaire. The researcher also tells us that he will find two points of central tendency ("averages") for the data: the median and the mean. The median and mean of *what*? The frequencies? The percentages? Both? And *why* will he calculate the median and mean? What do these statistics tell us about "attitudes of employees toward certain aspects of management policy"? These are critical questions that should be answered *in the proposal*. In the student's proposal as it presently exists there is no discussion of how the data relate to *attitudes of employees*, even though an understanding of these attitudes is central to resolving the subproblem.

What might the student do to interpret his data? After tabulating the data in the manner he describes, he might collapse the responses into two categories—or perhaps into a continuum of categories—that reflect either support of or opposition to management policies. Then he could carefully review each category to identify the characteristics of each. Were people who support

FIGURE 5.1

Where is the interpretation of the data? An excerpt from a student's proposal

Restatement of Subproblem 1. The first subproblem is to determine through an analysis of employee responses the attitudes of employees toward certain aspects of management policy for salary increases and merit pay.

The Data Needed

The data needed to resolve this subproblem are those employee responses to questions concerning salary increases and merit pay.

Where the Data Are Located

The data are located in the employee responses to questions 3, 7, and 13 of the questionnaire, "Survey of Employee Attitudes Toward Management."

How the Data Will Be Secured

The data will be secured by accurately tabulating all of the responses of employees to the above questions on the questionnaire.

How the Data Will Be Interpreted

From the responses of the questions, a table will be constructed similar to the following structural model. It will indicate the employee attitudes, their frequency, and the percentages of these attitudes of the total attitude response to each question.

| Attitude | Frequency | Percentage |
|----------|-----------|------------|
| | | |
| Totals | | |

A graph will then be constructed to show which attitudes received the greatest number of reactions and which had the least number of reactions. The median and the mean will also be found for the total group as a basis for comparison.

management lukewarm in their support? What keywords did they use in their responses? What did the overall category responses indicate about the employees' attitudes?

Despite its obvious weakness, the excerpt in Figure 5.1 does illustrate one effective strategy for discussing the analysis and interpretation of the data. In particular, it can be quite helpful to *address each subproblem separately*. For each subproblem, you might:

- a. Restate the subproblem.
- b. Clearly identify the data that relate to the subproblem.
- c. Explain fully and unequivocally how you intend to analyze and interpret the data to resolve the subproblem.

More generally, *the plan for the treatment of the data should be so unequivocal and so specific that any other qualified person could carry out your research project solely by following your proposal*. Every contingency should be anticipated; every methodological problem should be resolved. The degree to which you delineate how the data will be interpreted will play a significant role in the success or failure of your research endeavor. The method of data interpretation is the key to research success, and it should be described with utmost care and precision.

12. *Use appendices to present informed consent letters, specific measurement instruments, and other detailed materials.* Although you need to describe your procedures precisely and completely, too much detail all in one place can interfere with the overall flow of your writing. Appendices provide an easy way to present any necessary details that are not central to the points you are trying

to make. Simply refer to each appendix as it is relevant to your discussion, perhaps like this: "To recruit participants, the nature of the study will be described, and volunteers will be asked to read and sign an informed consent letter (see Appendix A)." If you have more than one appendix, assign them letters that reflect the order in which you refer to them in the text: The first appendix you mention should be labeled "Appendix A," the second should be labeled "Appendix B," and so on.

GUIDE

Revising Your Proposal

You must remember that your first draft will almost certainly *not* be your last one. This is true not only for research proposals and reports but for other major writing projects as well. Here we offer some suggestions for polishing your proposal into its final form.

1. *Set the proposal aside for a few days.* After writing your first draft, put it aside for a while so that, later, you can approach it with a fresh eye. If you reread it too soon, you will read it with what you *thought you had said* still fresh in your mind and so won't necessarily read what you *actually wrote*.

2. *Read a paper (rather than electronic) copy of your first draft.* As we mentioned in Chapter 1, paper copies often reveal problems with a text that somehow escape our attention on the computer screen. We aren't sure why this is, but we have repeatedly found it to be so.

Your proposal should, at this point at least, be double-spaced rather than single-spaced and have wide margins, leaving you lots of room for writing corrections and comments. You should expect that *you will write all over your first draft*. Figure 5.2 presents many commonly used editing marks for small-scale changes. For more significant changes (e.g., adding and moving text), you may want to use arrows, indicate pages where sentences or paragraphs should be moved to or from, and have blank sheets of paper or your computer nearby for major rewrites.

3. *Carefully scrutinize what you have written, looking for disorganized thoughts, illogical thinking, and inconsistencies in terminology.* Look for places where you move unpredictably from one topic to another, go off on unnecessary tangents, or draw unwarranted conclusions. Also, look at each paragraph under each one of your headings: All paragraphs under a particular heading should deal specifically with the topic that the heading identifies.

In addition, strive for consistency in your terminology. Novice researchers sometimes bounce from one label to another when talking about a single characteristic or variable, and the inconsistency can be confusing for readers. For instance, imagine that an educational researcher is investigating an aspect of human motivation—in particular the kinds of goals that students set for themselves as they study academic material. One such goal is the desire to truly learn and understand the topic of study—a goal that some motivation theorists call a *learning goal* and others call a *mastery goal*. In writing a research proposal, then, the researcher decides to appease both groups of theorists, using one term in some places and the other term in other places. Readers of the proposal are apt to be perplexed, perhaps thinking, "What's the difference between these two?" when there *isn't* a difference between them. Better to choose one term or the other and stick to it.

Consistency is important, too, when referring to the different groups of participants you might have in a study. For instance, imagine a medical researcher who wants to study the effects of a new pain reliever for alleviating the symptoms of chronic arthritis. The researcher plans for some arthritis sufferers to take the pain reliever and for others to take a sugar pill that, on the surface, looks identical to the pain reliever.¹ The researcher might call the first group *Group 1*, the

¹In such a study, the researcher must not deceive the sugar-pill recipients that they are getting a pain reliever. Such a deception would be a violation of basic ethical standards for research (see Chapter 4, especially the section "Voluntary and Informed Participation"). Instead, all participants in the study should be informed of the nature of the study: a comparison of the effects of a new pain reliever with those of a placebo. They do not need to be informed about which kind of pill they are taking, as such information might affect their subjective *perceptions* of pain and thereby distort the results of the study.

FIGURE 5.2
Commonly used editing marks

| | |
|--------------------|--|
| ⧏ or ⧐ or ⧑ | delete; take it out |
| ○ | close up; print as <u>one</u> word |
| ^ or > or < | caret; insert <u>here</u> (something) |
| # | insert <u>a</u> space |
| stet | let marked text stand as set |
| tr | transpose, change <u>order</u> the |
| / | used to separate two or more marks and often as a concluding stroke at the end of an insertion |
| ¶ | begin a new paragraph |
| Ⓟ | spell out (set <u>5 lbs</u> as five pounds) |
| cap | set in <u>capitals</u> (CAPITALS) |
| lc | set in <u>Lowercase</u> (lowercase) |
| bf | set in <u>boldface</u> (boldface) |
| = or -/ or ⚭ or /# | hyphen |
| √ | superscript or superior (² as in π^2) |
| ∧ | subscript or inferior (₂ as in H ₂ O) |
| ^ | comma |
| ∨ | apostrophe |
| o | period |
| ; | or √ semicolon |
| : | or ⊙ colon |
| ↕↕ or ∨∨ | quotation marks |
| ≠ ≠ | parentheses |

Treatment Group, or the *Experimental Group*, and might call the second group *Group 2*, the *Placebo Group*, or the *Control Group*. The researcher should decide which terms to use and be consistent in using them. Moving back and forth willy-nilly among the different labels might lead a befuddled reader to conclude that the proposed research project will have six groups instead of two!

4. *Look for places where you are not as clear as you might be.* Ambiguous phrases and sentences—those with several possible meanings and those with no obvious meaning at all—significantly weaken the power of a research proposal. As an example, consider this excerpt from a literature review written by a former master's student:

It appears to be the case that not only is note taking superior for recall immediately after lecture, but that the entire memory storage and recall process is further strengthened as time goes on when one takes notes on a lecture. And, of course, this is generally how American college students are tested.

What does the student mean by the phrase “the entire memory storage and recall process is further strengthened”? And to what does the word *this* refer in the second sentence? Even though one of us authors is an educational psychologist who knows a great deal about both human memory processes and American testing procedures, neither of us has any idea what this student was trying to communicate.

5. *Keep your sentences simple and straightforward.* As a general rule, try to keep your sentences short. Vary the length, of course, but break up those long, contorted sentences into shorter, more

succinct ones. Be alert to how and where you use adjectives, adverbs, and other modifiers. Misplaced phrases and clauses can wreak havoc with the thoughts you want to communicate. As a simple, nonacademic example, consider this example of misplaced modification in a classified ad: "Piano for sale by a woman with beautifully carved mahogany legs that has arthritis and cannot play anymore." Move the prepositional phrase and add a comma, and the ad makes more sense: "FOR SALE: A piano with beautifully carved mahogany legs, by a woman who has arthritis and cannot play anymore."

6. *Choose your words carefully.* A thesaurus—perhaps a book, the "thesaurus" feature in your word processing software, or an online thesaurus (e.g., www.merriam-webster.com)—can help you find the exact word you need. Never use a long word where a short one will do. In a straightforward discussion, use one- or two-syllable words rather than longer ones. Use professional jargon only when you need it to relate your ideas to existing theories and literature in the discipline.

7. *Check carefully for errors in grammar, punctuation, spelling, and formatting.* Now is the time to attend to grammar, punctuation, spelling, correct heading formats, and other minor details. Ultimately you want your proposal to be, if not perfect, then as close to perfect as any human being can reasonably make it. Careless errors and other signs of sloppiness may suggest to your reviewers that the way you conduct your research project may be equally careless and sloppy.

Your word processing software will, of course, be helpful in this respect. For instance, *use the grammar checker.* Grammar checkers can search for word expressions, clichés, multiple negation, too many prepositional phrases, and other common problems. Some word processors even have a built-in function to measure the reading level of your writing; such information might be helpful in ensuring that you are writing at the appropriate level for your audience.

In addition, *use the spell checker, but don't rely on it exclusively.* As we pointed out in Chapter 1, a spell checker typically does nothing more than check each word to see if it is a "match" with a word in the English language or in some other list you specify. It will not tell you whether you have used the *right* words in every case. So even if you take advantage of the spell checker, always follow up by reading your document, word for word, to be sure that every word is spelled correctly. If you are a poor speller, then ask someone else—a good speller, obviously—to proofread the entire document for errors.

You or your proofreader should be alert not only for spelling errors but also for the use of *homonyms*—sound-alike words that are spelled differently and have different meanings—in place of words you actually intended to use. Following are several commonly misused homonyms that we authors have often seen in research proposals and research reports:

it's versus its

it's is a contraction for "it is"

its is the possessive form of the pronoun *it*

there versus their versus they're

there is typically used either as (a) an adjective or adverb referring to a location or (b) an indefinite pronoun that begins a sentence (e.g., "There is no reason to . . .")

their is the possessive form of the pronoun *they*

they're is a contraction for "they are"

affect versus effect

affect as a *verb* means to have an influence on (e.g., "motivation affects learning")

affect as a *noun* is a synonym for emotion (e.g., "sadness and guilt are both forms of unpleasant affect")

effect as a *verb* means to bring something about (e.g., "to effect change")

effect as a *noun* means the causal result of an event (e.g., "rainfall has an effect on crop production")

The difference between *affect* and *effect* can be especially troublesome, in large part because *affect* as a verb and *effect* as a noun both involve an influence of some sort. But using the incorrect

word instead of its more appropriate homonym, especially when done frequently throughout the proposal, communicates to the reader that you have not taken the proposal-writing task seriously.

Speaking of *it's* versus *its*, we urge you to watch your use of apostrophes to indicate possessive nouns. In general, an apostrophe comes before the *s* in a singular noun (e.g., “a person’s income level”) but after the *s* in a plural noun (e.g., “companies’ marketing strategies”). However, when a plural noun has no *s* unless it is possessive, the apostrophe comes before the *s* (e.g., “children’s behaviors,” “people’s attitudes”). And when a singular noun ends in *s* even when it is *not* a possessive, you should add an apostrophe and an *s* (in that order) to indicate possession (e.g., “in Dr. Strauss’s research”).

8. *Make sure that items in bulleted lists are parallel in structure.* In writing a research proposal, a sequence of bullets or numbered items is often an effective way to present such things as the definitions of key terms and the major assumptions underlying a research project. All of the items in the sequence should have the same general grammatical structure—at a minimum by all being short phrases *or* by all being complete sentences. Mixing complete and incomplete sentences within a single list is frowned on. For example, in his dissertation proposal regarding cartographers and the Strong Vocational Interest Blank, which we previously mentioned in Chapter 3, Arthur Benton defined two of his terms as follows:

Cartographer. A cartographer is a professional employee who engages in the production of maps, including construction of projections, design, drafting (or scribing), and preparation through the negative stage for the reproduction of maps, charts, and related graphic materials.

Discrete interests. Discrete interests are those empirically derived qualities or traits common to an occupational population that serve to make them distinct from the general population or universe.

Notice how both definitions use complete sentences to describe the meanings of terms. Alternatively, the author might have used *incomplete* sentences, perhaps like the following:

Cartographer. A professional employee who engages in the production of maps, including construction of projections, design, drafting (or scribing), and preparation through the negative stage for the reproduction of maps, charts, and related graphic materials.

Discrete interests. Those empirically derived qualities or traits common to an occupational population that serve to make them distinct from the general population or universe.

Careful attention to such parallelism in form is yet another sign of a careful, meticulous researcher.

9. *Make sure there is a one-to-one correspondence between the citations in the text and the references in the reference list.* Every source you cite in the text or in footnotes should be included in more complete form in the proposal’s reference list—no matter whether the source is a book, journal article, conference presentation, Internet website, or some other entity to which you are giving credit. Furthermore, every item in the reference list should be cited at least once in the text. The formats for citations and reference lists should be consistent with the style manual typically used in your particular academic discipline. The four most commonly used styles are listed in Table 12.1 in Chapter 12.

10. *Consider the feasibility of your project once again.* Now that you have laid everything out in the proposal, check one more time to be sure you have the time, resources, and energy to do everything you say you are going to do.

11. *Print out your second draft, and read your proposal carefully once again.* Look critically at each thought as it stands on paper. Do the words say exactly what you want them to say? Read carefully phrase by phrase. See whether one word will carry the burden of two or more. Throw out superfluous words.

12. *Seek the feedback of others.* We cannot stress this point enough. No matter how hard you try, you cannot be as objective as you would like to be when you read your own writing. Ask people to read and critique what you have written. Don't ask friends or relatives who are likely to give you a rubber stamp of approval. Instead, ask people who will read your work thoroughly, give you critical feedback, and make constructive suggestions.

One final comment: *Get used to writing.* Researchers write continuously—sometimes to communicate with others, at other times to facilitate their own thinking. Paper or a word processor can be effective for personal brainstorming sessions. Take time to sit back and use pencil or keyboard to help you clarify your thoughts and ideas.

PRACTICAL APPLICATION Strengthening Your Proposal

Not all research proposals get approved, of course. This is certainly the case for many proposals requesting funding from a private or government agency. But some proposals to conduct non-funded research get turned down as well, usually for one or more very good reasons. In Figure 5.3 we list shortcomings that experienced proposal reviewers have often observed. Proposals submitted by students for academic research projects (e.g., for theses and dissertations) tend to have a number of these shortcomings.

Once you have written what you believe to be your final proposal, you should scrutinize it one more time, preferably after you have set it aside for a few more days. *Take a critical approach, looking for what's wrong rather than what's right.* The following checklist can provide guidance about what to look for.

✓ CHECKLIST

Features Detracting from Proposal Effectiveness

Check each item to be sure that your proposal exhibits *none* of the following characteristics:

FOR ANY RESEARCH PROPOSAL

- _____ 1. The statement of the problem is vague, or it is so obscured by discussions of other topics that it is impossible to find.
- _____ 2. The methodology is incompletely described; an explanation of exactly how the research will be conducted is not specifically delineated.
- _____ 3. The proposed treatment of each subproblem is general and cursory; it does not convey clearly how the data will be used and interpreted to resolve the subproblem or the overall research problem.
- _____ 4. Criteria for the admissibility of the data are weak or nonexistent.
- _____ 5. The proposal lacks sharpness. It is not logically organized. Without clear divisions that set forth the 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 important parts of the proposal.
- _____ 6. The proposal is phrased in terms that are too general, ambiguous, or imprecise to be useful for evaluation. Such phrases as "tests will be given" and "measurements will be taken" are largely meaningless.
- _____ 7. The format of the proposal deviates from the guidelines set forth by the approval group or funding agency.
- _____ 8. Some cited sources do not appear in the reference list; alternatively, the sources are incompletely or incorrectly cited.

FOR A PROPOSAL TO A FUNDING AGENCY

- _____ 9. The problem does not address the research area outlined by the funding agency.
- _____ 10. The proposal is too ambitious for the grant money available.
- _____ 11. Items included in the budget are disallowed by the terms of the grant.
- _____ 12. A clear and explicit budget statement outlining program expenditures is lacking, or the summary of estimated costs is ambiguous and indefinite.
- _____ 13. The section of the proposal explaining the study's importance is not set forth clearly enough for the funding agency to see a relationship of the study to the purpose for which the grant is awarded.

FIGURE 5.3

Common weaknesses in research proposals

Weaknesses Related to the Research Problem:

- The description of the project is so nebulous and unfocused that the purpose of the research is unclear.
- The problem as presented is not empirically testable.
- The problem is not framed within an appropriate context.
- The problem is unimportant or unlikely to yield new information.
- The hypothesis is ill-defined, doubtful, or unsound; it is based on insufficient evidence or illogical reasoning.
- The problem is more complex than the investigator realizes.
- The problem is of interest only to a particular, localized group, or in some other way has limited relevance to the field as a whole.

Weaknesses Related to the Research Design and Methodology:

- The description of the design and/or method is so vague and unfocused as to prevent adequate evaluation of its worth.
- The proposed methodology violates basic ethical standards.
- The data the investigator wishes to use are either difficult to obtain or inappropriate for the research problem.
- The proposed methods, measurement instruments, or procedures are inappropriate for the research problem (e.g., proposed measurement instruments may have poor reliability and validity).
- Appropriate controls are either lacking or inadequate.
- The equipment to be used is outdated or inappropriate.
- The statistical analysis has not received adequate consideration, is too simplistic, or is unlikely to yield accurate and clear-cut results.

Weaknesses Related to the Investigator:

- The investigator does not have sufficient training or experience for the proposed research.
- The investigator appears to be unfamiliar with important literature relevant to the research problem.
- The investigator has insufficient time to devote to the project.

Weaknesses Related to Resources:

- The institutional setting is inadequate or unsuitable for the proposed research.
- Proposed use of equipment, support staff, or other resources is unrealistic.

Weaknesses Related to the Quality of Writing:

- The proposal does not stay focused on the research problem; it rambles unpredictably.
- The proposal inadequately or incorrectly cites related literature.
- The proposal does not adhere to the appropriate style manual.
- The proposal has grammatical and/or spelling errors.

Sources: Based on Allen, 1960; Cuca & McLoughlin, 1987; Davitz & Davitz, 1996; Wong, n.d.

Final Thoughts about Proposal Writing

Possibly the most challenging part of a proposal, at least for novice researchers, is the discussion of how the data will be handled. Spelling out every minute detail of planned data analyses and supporting one's choices with solid rationales can be tedious and time-consuming. All too often, novice proposal writers leave out critical details about data analysis procedures, assuming or hoping that readers will mentally fill in reasonable analysis procedures. But in a good proposal, you cannot ask your reader to make such a journey of faith.

When drawing up a contract, an attorney meticulously includes all of the rights and obligations of the parties included in the contract. The proposal writer should prepare a proposal with the same precision. In a sense, a proposal is, under certain circumstances, a form of contract, or what we might call a *quasi* contract.

Are you submitting a proposal for a grant to underwrite a research project? If so, you (as the party of the first part) are proposing to undertake a research project in exchange for a monetary consideration from the agency providing the grant (the party of the second part). Regarded from a legal standpoint, your proposal, on acceptance by the granting agency, is a formal contractual relationship.

Now let's look at the situation from an academic standpoint. Certainly there are differences between a proposal presented to a funding agency and a proposal presented by a student to an academic advisor. Yet in another way the two kinds of proposals are very similar: In both cases, the basic elements of the research problem, the methodology, the data, and any other factors critical to conducting the inquiry must be clearly set forth and mutually agreed on before the actual research activity can begin.

Most faculty advisors will want to review the proposal periodically as it is being developed; they will also want to monitor your progress as you proceed with your study. Such a process of ongoing guidance from an experienced professional and researcher is to be welcomed, not avoided. It is perhaps the single best way you can learn the tricks of the research trade.

Proposals are mandatory for many academic research projects. For instance, any thesis or dissertation must begin with a proposal, and any project involving human subjects must get IRB approval before it ever gets off the ground. But even when a proposal is not mandatory, it is always *advisable*, regardless of the magnitude of the project or its academic sophistication. From a student's perspective, a proposal has two distinct advantages:

1. It helps the student organize the research activity.
2. It communicates to the student's advisor what the student intends to do, thereby enabling the advisor to provide counsel and guidance in areas that may pose exceptional difficulty.

A proposal for any research endeavor merits words that are carefully chosen, a style that is clear and concise, attention to the most minute procedural detail, and for each procedure, a rationale that is logically and clearly stated. All of this is a tall order, but the result reveals the scholarship of the proposal author as perhaps no other academic assignment can ever do.

It is an awesome fact to contemplate, but to no small degree *your proposal is you!* It defines your ability to think critically and to express your thoughts clearly. *It is the practical application of your research competence laid bare on a sheet of paper.*

A Sample Research Proposal

We conclude this chapter by presenting an example of what a research proposal—in this case, a proposal for a doctoral dissertation at the University of Northern Colorado—might look like. The author, Rosenna Bakari, uses the very first paragraph of the proposal to present the research problem clearly and concisely:

Attitudes that teachers bring into the classroom are a critical factor in the academic failure of African American students (Irvine, 1990). Preliminary research suggests that many in-service and prospective teachers do not hold positive attitudes toward teaching African American students (Irvine, 1990). As a result, many researchers see attitudes and values clarification of preservice teachers concerning race as a critical aspect of multicultural teacher education (Gay, 1994; Wiggins & Follo, 1999; Zeichner, 1996). However, there are no adequate instruments available to measure preservice teachers' attitudes about teaching African American students. Hence, the intent of this research is to develop and validate an instrument to measure preservice teachers' attitudes toward teaching African American students. (p. 1)

We now fast-forward to Bakari's methodology section. As we have in previous chapters, we present the proposal itself on the left and add our observations on the right.

DISCUSSION 2

METHODOLOGY

This study is intended to develop and validate a survey instrument that assesses preservice teachers' attitudes toward teaching African American students. The survey instrument was developed based on educational recommendations and research literature indicating that culture is an important consideration in educating African American students effectively. Two pilot studies were conducted as preliminary investigations. This chapter will summarize the pilot studies and discuss the methodology of the current study.

[The student describes the two pilot studies she conducted previously relative to her present study. We pick the proposal up later, as she describes her proposed sample, measurement instruments, data collection, and data analysis.]

Sample

Three sub-groups will be solicited for participation. The first group will represent institutions where preservice teachers have little exposure to African American issues in education. The majority of participants are expected to be White and have little exposure to African American populations.

In the second group, preservice teachers will be solicited from teacher education programs that have more program goals or objectives related to teaching African American students. For example, diversity courses may be a requirement for graduation. In addition, preservice teachers are likely to have greater exposure to African American student populations during student teaching, in their university courses, or in their living communities than group one. However, the majority of participants are still expected to be White.

The third group of preservice teachers will be solicited from historically Black colleges or universities (HBCUs). Although HBCUs may differ in many respects, their focus is a "commitment, dedication, and determination to enhance the quality of life for

Comments

The author begins by reminding the reader of the purpose of the proposed research. The repetition of the research problem at this point, though not essential, is helpful to the reader, who can then put the procedures that follow into proper perspective.

The first paragraph is an advance organizer for the reader, who then can follow the author's subsequent train of thought more easily.

Earlier in the proposal the author presented her rationale for giving the instrument to three different groups. She predicted that the three groups would, on average, respond differently to the instrument, thereby providing evidence for the validity of the instrument.

Although the author is expecting the three groups to have different proportions of students from different racial groups, she will nevertheless seek information in support of her prediction through a demographic information sheet that she describes later in her proposal.

Always spell out what an abbreviation stands for before using it. For instance, here

African Americans" (Duhon-Sells, Peoples, Moore, & Page, 1996, p. 795). The majority of participants from this group are expected to be African American.

A minimum of 100 students will be solicited from each group. Sample size is critical because it provides a basis for the estimation of sampling error (Hair, Anderson, Tatham & Black, 1995). A sample size of at least 100 is recommended to conduct a confirmatory factor analysis because a sample less than 100 may not provide enough statistical power to reject the null hypothesis. A small sample could lead to acceptance of a model which is not necessarily a good fit, simply because there was not enough statistical power to reject the model. On the other hand, if the sample is too large, the model may be rejected due to sensitivity in detecting small differences, because the larger the sample, the more sensitive the test is to detecting differences (Hair, Anderson, Tatham & Black, 1995). Hair, Anderson, Tatham, and Black (1995) recommend a sample size between 100 and 200.

In order to achieve the minimum participant requirement for each group, involvement from more than one university may be necessary. For instance, four universities may represent group one while two universities may represent group two. This flexibility is important due to the variability in size of teacher education programs. Moreover, the reliance on instructors' willingness to contribute class time to this research may minimize the number of participants. All participants will be undergraduate or graduate preservice teachers and enrolled in a required course for a teacher preparation program. Graduate students must also be in pursuit of initial teacher certification. Students may be in any phase of their teacher preparation program. Preservice teachers who are not currently enrolled in any of the classes where the instrument will be distributed will not be selected for participation. Further, only students who are in attendance on the day the instrument is distributed will be selected for participation. For those students solicited to participate, participation will be voluntary, and anonymous.

Instrumentation

Four instruments will be employed for data collection in this research. They include the demographic data sheet, Teaching African American Students Survey, Responding Desirably on Attitudes and Opinions measurement (RD-16), and General Attitudes toward Teaching Survey. The demographic data sheet and the Teaching African American Students Survey (TAASS) were both designed by the researcher for this particular study. The General Attitudes toward Teaching Survey is an adaptation from a published Teacher Efficacy Scale and the TAASS. The RD-16 is a published instrument designed to measure social desirability. A description of the four instruments follows.

[Under four separate subheadings, the author then describes each instrument in detail, including the specific items that each one includes and any known information about validity and reliability.]

Data Collection

Participants will be contacted in their classes, where the instructor has agreed to allow class time to conduct this research. Participants will be told that the objective of the research is to gather information about future teachers, particularly, who they are

the author refers to "historically Black colleges or universities" and identifies the abbreviation HBCU in parentheses. She can then use "HBCU" in future discussions and her readers will know to what she is referring.

Here the author provides a justification for her sample size. We discuss the issue of statistical power in Chapter 11; at that point, we also revisit the concept of a null hypothesis.

The author explains why she is drawing her sample from several universities. It appears that she is predicting, and then answering, the kinds of questions the reader might have about her method.

The author gives enough information about her sample to enable any qualified reader to conduct the study she proposes. In addition, by describing the nature of her sample, she provides information about the population to which her study's results could reasonably be generalized.

Once again we see an advance organizer for the discussion that follows.

The author uses abbreviations (TAASS and RD-16) for two of her instruments. To be consistent, she should probably introduce them both in the second sentence of the paragraph, rather than leave TAASS for the third sentence as she does here.

The heading "Procedure" is more commonly used than "Data Collection" in human subjects research, but the latter is acceptable as well.

(demographics) and what they believe about teaching. To avoid a social desirability response set, participants will not be informed about the specific focus of the study (developing and validating an instrument to measure preservice teachers' attitudes toward teaching African American students). A statement will be read aloud to the class that informs students of their right to refuse to participate without any negative consequences, as well as the possibility of being requested to participate in follow-up research (test-retest reliability for the TAASS).

Requests for names and student identification numbers will be prohibited as any part of the data collection. However, participants will be asked to create identifications for themselves that cannot be traced to them by others. Pseudo-identification is necessary for students to remain anonymous, yet allows the researcher to conduct a retest for reliability measures. Examples of anonymous identifications will be given, such as a favorite noun, verb, or adjective (chair, jump, lazy). Students will be duly cautioned about selecting identifications that can be traced to them, such as mothers' maiden names, any part of their social security numbers, or nicknames.

Individual surveys will not be seen by anyone other than the participant once they are completed. Students will be requested to place their completed surveys in a designated "return" envelope. The last student to return the surveys will be requested to seal the return envelope. Only when the last survey is placed in the return envelope, and the envelope is sealed, will the administrator be permitted to handle the materials.

In classes where the researcher does not administer the instruments, research packets will be prepared for the person who does. Research packets will contain a disclosure statement to be read aloud to the participants. In addition to the disclosure sheet, the packets will include a demographic information sheet, the TAASS, and only one of the validity criteria instruments. Half of the participants will receive the RD-16 in their packet, and the other half will receive the General Attitudes Scale. The order of the instruments will also vary in the packets, with the exception of the demographic data sheet. The demographic data sheet will always appear last. Administrators will be instructed to avoid interpreting items on any of the three survey instruments. If students ask for interpretation of any items on the surveys, administrators will be instructed to respond, "Please use your best interpretation to answer all the items." However, clarifications may be made about the demographic information, if requested.

Three weeks after the initial research data have been collected, classes will be selected (based on availability) for retest of the TAASS. Participants will be solicited in a minimum of three classes that participated in the initial research. Only the TAASS will be administered for the retest. Students will be required to use the pseudo-identification selected in the initial research.

Data Analysis

LISREL and SPSS statistical software will be used for all analyses. As Hair, Anderson, Tatham, and Black, (1995) point out, there is no method of dealing with missing data that is free of disadvantages. Anytime missing data are imputed there is a risk of biasing the results (e.g., distributions, or correlation). Even the option of using the complete case approach has disadvantages. When only completed data are used, there is a

Here the author describes her procedures regarding informed consent.

Here she describes the steps she will take to ensure participants' right to privacy.

Notice how the author uses future tense to describe her proposed methodology. Later, when she rewrites the methodology section for her final research report, she will, of course, change her description of procedures to past tense.

The author will vary the order in which participants respond to the instrument, presumably as a way of determining whether taking one instrument affects how a participant responds to the instruments that follow.

The author is taking steps to increase the reliability of the instrument by standardizing its administration.

The author will administer the TAASS to some participants twice so that she can determine its test-retest reliability.

Notice that the author describes her proposed methods of data analysis as well as her methods of data collection. By doing so, she helps the reader determine whether her analyses will be appropriate for her research questions.

risk of reducing the sample size to an inappropriate number. Moreover, the results may no longer be generalizable to the intended population if the missing data are systematized rather than randomized (Hair, Anderson, Tatham & Black, 1995). Before any approach will be decided as to how to handle missing data, the missing data will be reviewed for systematic avoidance of response.

[The author then describes the specific analyses she plans to conduct and how they relate to her research problem.]

NOTE: Excerpt is from a research proposal submitted by Rosenna Bakari to the University of Northern Colorado, Greeley, in partial fulfillment of the requirement for the degree of Doctor of Philosophy. Reprinted with permission.

Notice, too, that the author will consider the nature of the data before and during her data analyses.

A book by Hair, Anderson, Tatham, and Black (1995) is cited several times in the methodology section. To be consistent with APA style (which she adheres to in her proposal), the author should list all four authors only for the first citation; after that, she can shorten the citation to "Hair et al. (1995)."

For Further Reading

- Bernstein, T. M. (1977). *The careful writer: A modern guide to English usage*. New York: Atheneum.
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