PART 9

Writing Research Proposals and Reports

Part 9 discusses how to prepare a research proposal or report. We describe the major sections of such proposals and reports and then describe sections that are unique to reports. We conclude with an example of a student's research proposal, followed by our analysis of it.

25 Preparing Research Proposals and Reports

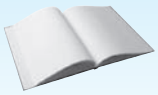
OBJECTIVES **Studying this chapter should enable you to:**

- Describe briefly the main sections of a research proposal and a research report.
- Describe the major difference between a research proposal and a research report.
- Write a research proposal.
- Understand and critique a typical research report or proposal.

INTERACTIVE AND APPLIED LEARNING After, or while, reading this chapter:

Go to the Online Learning Center at www.mhhe.com/fraenkel8e to:

- Review the Guide to Electronic Research



Go to your online Student Mastery Activities book to do the following activity:

- Activity 25.1: Put Them in Order

By now we hope you have learned many of the concepts and procedures involved in educational research. You may, in fact, have done considerable thinking about a research study of your own. To help you further, we discuss in this chapter the major components involved in proposal and report writing. A research proposal is nothing more than a written plan for conducting a research study. It is a generally accepted and commonly required prerequisite for carrying out a research investigation.

Research proposals and research reports are similar in many respects, the main difference being that a **research proposal** is generated *before* a study begins, whereas a **research report** is prepared *after* a study has been completed. In this chapter, we shall describe and illustrate what is expected and usually included in each section of these documents. We shall also discuss what is appropriate to include in the two sections that are unique to research reports—those involving the results of the study and the subsequent discussion of those results. We will highlight what we have found to be the most common mistakes made by beginning researchers in preparing research proposals. Finally, we will present an example of a research proposal prepared by one of our students and comment on its strengths and weaknesses.

The Research Proposal

A research proposal is nothing more than a written plan for conducting a research study. It is a generally accepted and commonly required prerequisite for carrying out a research investigation. It communicates a researcher's intentions, makes clear the purpose of the intended study and its justification, and provides a step-by-step plan for conducting the study. The research proposal identifies problems, states questions or hypotheses, identifies variables, and defines terms. The subjects to be included in the sample, the instrument(s) to be used, the research design chosen, the procedures to be followed, how the data will be analyzed—all are spelled out in some detail, and at least a partial review of previous related research is included.

A research proposal, then, is a written plan of a study. It spells out in detail what the researcher intends to do. It permits others to learn about the intended research and to offer suggestions for improving the study. It helps the researcher clarify what needs to be done and helps him or her avoid unintentional pitfalls or unknown problems. Such a written plan is highly desirable, since it allows interested others to evaluate the worth of a proposed study and to make suggestions for improvement.

Let us begin, then, by describing and illustrating the major components that make up the research proposal.

The Major Sections of a Research Proposal or Report

PROBLEM TO BE INVESTIGATED

The section describing the problem to be investigated usually addresses four topics: (1) the purpose of the study, including the researcher's assumptions; (2) the justification for the study; (3) the research question and/or hypotheses, including the variables to be investigated; and (4) the definition of terms.

Purpose of the Study. Usually the first topic in the proposal or report, the **purpose** states succinctly what the researcher proposes to investigate. The purpose

should be a concise statement, providing a framework to which details are added later. Generally speaking, any study should seek to clarify some aspect of the field of interest that is considered important, thereby contributing both to overall knowledge and to current practice. Here are some examples of statements of purpose in research reports taken from the literature.

- "The purpose of this study was to identify and describe the bedtime routines and self-reported nocturnal sleep patterns of women over age 65 and to determine the differences and relationships between these routines and patterns according to whether or not the subject was institutionalized."[1]
- "The purpose of this study was to explore how young adolescents portray the ideal person in drawing and in response to a survey."[2]
- "This study attempts to identify some of the processes mediating self-fulfilling prophecies in the classroom."[3]

The researcher should articulate any *assumptions* that are basic to the study. For example:

- It is assumed that, if found effective, the methods studied could be adopted by many teachers without special training.
- It is assumed that the descriptive information on family interaction that is provided by this study, if disseminated, will have an influence on family functioning.
- It is assumed that predictive information from this study would be used by counselors in advising students.

Justification for the Study. In the justification, researchers must make clear why this particular subject is important to investigate. They must present an argument for the "worth" of the study, so to speak. For example, if a researcher intends to study a particular method for modifying student attitudes toward government, he or she must make the case that such a study is important—that people are, or should be, concerned about it. The researcher must also make clear why he or she chooses to investigate the particular method. In many such proposals, there is the implication that current methods are not good enough; this should be made explicit, however.

A good justification should also include any specific implications that follow if relationships are identified. In an intervention study, for example, if the method being studied appears to be successful, changes in pre-service or in-service training for teachers may be necessary; money may need to be spent in different ways; materials and other resources may need to be used differently, and so on. In survey studies, strong opinions on certain issues (such as peer opinions about drug use) may have implications for teachers, counselors, parents, and others. Relationships found in correlational or causal-comparative studies may justify predictive uses. Also, results of correlational or ethnographic studies may suggest possibilities for subsequent experimental studies. These should be discussed.

Here is an example of a justification. It is taken from a report of a study investigating the relationship between narrative and historical understanding in a literature-based sixth-grade history program.

> Recent research on the development of historical understanding has focused on secondary students. For several decades research has rested on the premise that historical understanding is demonstrated in the ability to analyze and interpret passages of history—or at least passages containing historical names, dates, and events. The results have indicated that if historical understanding develops at all, it does not appear until late adolescence (Hallam, 1970, 1979; Peel, 1967). From the perspective of those who work with younger children, however, this approach reflects an incomplete view of historical understanding.
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> The inference often drawn from the research is that young children cannot understand history; therefore history should not be part of their curriculum. Certainly, surveys have shown that young children do not indicate much interest in history as a school subject. Yet teachers and parents know that children evince interest in the old days, in historical events or characters, and in descriptions of everyday life in historic times, such as Laura Ingalls Wilder's *Little House* books (e.g., 1953). Children respond to history long before they are capable of handling current tests of historical understanding. The research, however, has not taken historical response into account in the development of mature understanding.
>
> The research on children's response to literature provides some guidelines for examining historical response. Research by Applebee (1978), Favat (1977), and Schlager (1975) suggests that aspects of response are developmental. Other scholars (Britton, 1978; Egan, 1983; Rosenblatt, 1938) extend that suggestion to historical understanding, arguing that early, personal responses to history—especially history embedded in narrative—are precursors to more mature and objective historical understanding.
>
> Little has been done to study the form of such early historical response. Kennedy's (1983) study examined the relationship between information-processing capacity and historical understanding, but concentrated on adolescents.

Reviews of research on historical understanding also fail to uncover studies of early response. There is nothing describing how children respond to historical material in a regular classroom setting. How do children respond on their own, or in contact with peers? What forms of history elicit the strongest responses? How do children express interest in historical material? Does the classroom context influence responses? What teacher behaviors inhibit or encourage response?

These are important questions for the elementary teacher faced with a social studies curriculum that continues to emphasize history, as well as for the theorist interested in the development of historical understanding. Yet these questions cannot easily be answered by traditional empirical models. Research needs to be extended to include focus on the range of evidence available through naturalistic inquiry. . . .

Classroom observation suggests that narrative is a potent spur to historical interest. Teachers note the interest exhibited by students in such historical stories as *The Diary of Anne Frank* (Frank, 1952) and *Little House on the Prairie* (Wilder, 1953) and in the oral tradition of family history (Huck, 1981). Research in discourse analysis and schema theory suggests that narrative may help children make sense of history. White and Gagne (1976), for instance, found that connected discourse leads to better memory for meaning. Such discourse provides a framework that improves recall and helps children recognize important features in a text (Kintsch, Kozminsky, Streby, McKoon, & Keenan, 1975). DeVilliers (1974) and Levin (1970) found that readers processed words in connected discourse more deeply than when the same words appeared in sentences or lists. Cullinan, Harwood, and Galda (1983) suggest that readers may be better able to remember things in narratives where the "connected discourse allows the reader to organize and interrelate elements in the text" (p. 31).

One way to help children understand history, then, may be to use the connected discourse of literature. Such an approach also allows the researcher to focus on response as the ongoing construction of meaning as children encounter history in literature. The following study investigated children's responses to a literature-based approach to history.[4]

Key Questions to Ask Yourself at This Point:

1. Have I identified the specific research problem I wish to investigate?
2. Have I indicated what I intend to do about this problem?
3. Have I put forth an argument as to why this problem is worthy of investigation?
4. Have I made my assumptions explicit?

Research Questions or Hypothesis. The particular question to be investigated should be stated next. This is usually, but not always, a more specific form of the problem in question form. As you will recall, we, along with many other researchers, favor **hypotheses** for reasons of clarity and as a research strategy. If a researcher has a hypothesis in mind, it should be stated as clearly and as concisely as possible. It is unnecessarily frustrating for a reader to have to infer what a researcher's hypothesis or hypotheses might be. (See Chapter 2 for several examples of typical research questions and hypotheses in education.) Similarly, qualitative research proposals often include a statement positing one or several propositions (tentative or mini-hypotheses) that are used to help guide data collection and sometimes also analysis.

Key Questions to Ask Yourself at This Point:

5. Have I asked the specific research question I wish to pursue?
6. Do I have a hypothesis in mind? If so, have I expressed it?
7. Do I intend to investigate a relationship? If so, have I indicated the variables I think may be related?

Definitions. All key terms should be defined. In a hypothesis-testing study, these are primarily the terms that describe the variables of the study. The researcher's task is to make his or her definitions as clear as possible. If previous definitions found in the literature are clear to all concerned, well and good. Often, however, they need to be modified to fit the present study. It is often helpful to formulate operational definitions as a way of clarifying terms or phrases. While it is probably impossible to eliminate all ambiguity from definitions, the clearer the terms are—to both the researcher and others—the fewer difficulties will be encountered in subsequent planning and conducting of the study.

Here are some examples of definitions taken from the literature. The first three are taken from a study investigating the relationship between peer experiences and social self-perceptions among Canadian students from a variety of socioeconomic backgrounds in 10 elementary schools:

- *Social preference* was assessed by asking each child to name three other children they would like most and like least for playing together, inviting to a birthday party, and sitting next to each other on a bus.

- *Victimization by peers* was measured by asking each child to nominate up to five other students who could be described as being made fun of, being called names, and getting hit and pushed by other kids.
- *Loneliness* was measured with a 16-item questionnaire with higher scores indicating greater loneliness.[5]

This next definition is taken from a study in which the researcher investigated why students of color were not entering teaching:

- *Minority teacher* was defined as "Latino/Hispanic, African-American/black, Asian American, or Native American."[6]

This last definition comes from a study investigating how people see their work:

- *People who have jobs* was defined as being "only interested in the material benefits from work and do not seek or receive any other type of reward from it." *People who have careers* was defined as having "a deeper personal investment in their work and mark their achievements not only through monetary gain, but through advancement within the occupational structure." *People who have callings* was defined as people who "find their work is inseparable from their life. A person with a Calling works not for financial gain or Career advancement, but instead for the fulfillment that doing the work brings to the individual."[7]

Key Question to Ask Yourself at This Point:

8. Have I defined all key terms clearly (and, if possible, operationally)?

BACKGROUND AND REVIEW OF RELATED LITERATURE

In a research report, the **literature review** may be a lengthy section, especially in a master's thesis or a doctoral dissertation. In a research proposal, it is a partial summary of previous work related to the hypothesis or focus of the study. The researcher is trying to show here that he or she is familiar with the major trends in previous research and opinion on the topic and understands their relevance to the study being planned. This review may include theoretical conceptions, directly related studies, and studies that provide additional perspectives on the research question. In our experience, the major weakness of many literature reviews is that they cite references (often many references) without indicating their relevance or implications for the planned study. (See Chapter 3 for details on literature reviews.) A portion of a literature review follows. It is taken from a study investigating the relationship between kindergarten teachers' theoretical orientation toward reading and student outcomes of children with different initial reading abilities.

> The *whole language* approach to teaching reading has captured the attention of many teachers and teacher educators over the past 20 years. It . . . asserts that children learn language most effectively at their own developmental pace through social interaction in language-rich environments and through exposure to quality literature. This approach is often contrasted with a phonics-oriented strategy in which children receive formal instruction emphasizing sound-symbol correspondence. . . . Stahl and Miller (1989) and Stahl, McKenna, and Pagnucco (1994) conducted meta-analyses of studies conducted in kindergarten and first-grade classrooms comparing the relative impact of whole language and traditional approaches to reading instruction. Both meta-analyses yielded the general conclusion that the overall impact of the two approaches was "essentially similar" (Stahl et al., 1994, p. 175), a position disputed by Schickedanz (1990) and McGee and Lomaz (1990).
>
> In reviewing the whole language/phonics debate, and the inability of researchers to reach similar conclusions after reviewing the same studies, several problematic areas emerge. First, the meaning of the term *whole language* and a set of distinctive classroom practices representing its operationalization are difficult to specify (Stahl & Miller, 1989). This is exacerbated by the fact that some proponents conceive of whole language as a philosophy rather than an explicitly defined instructional methodology (Edelsky, 1990; Goodman, 1986; McKenna, Robinson, & Miller, 1990; Newman, 1985; Rich, 1985). Second, many—if not most—teachers are eclectic in their approach to reading instruction, and pure contrasts between whole language- and phonics-oriented instruction are generally difficult to find in naturally occurring, unmanipulated classroom environments (Slaughter, 1988). Third, with the exception of Fisher and Hiebert (1990), relatively little research has documented differences in the instructional behavior and practices of teachers subscribing to whole language versus traditional approaches to early reading instruction (Feng & Etheridge, 1993; Lehman, Allen, & Freeman, 1990; Stahl et al., 1994). Finally, "relatively few studies" (Stahl et al., 1994, p. 175) comparing whole language and traditional reading instruction have used standardized achievement measures or included large numbers of students (e.g., Watson, Crenshaw, & King, 1984). . . .

A number of researchers have examined the impact of whole language approaches to reading development for students considered educationally at risk. Stahl and Miller (1989) concluded that "whole language/language experience approaches . . . produce weaker effects with populations labeled specifically as disadvantaged" (p. 87). This conclusion is supported by the research of Gersten, Darch, and Gleason (1988), who reported positive effects for at-risk (economically disadvantaged) children of a direct instruction kindergarten classroom, based largely on traditional, phonics-oriented principles. However, a number of recent studies (Milligan & Berg, 1992; Otto, 1993; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Sulzby, Branz, & Buhle, 1993) present evidence consistent with Kasten and Clarke's (1989) argument that whole language-based reading instruction should be especially beneficial for disadvantaged children. . . .

Otto (1993) and Sulzby et al. (1993) presented evidence suggesting that storybook reading, generally associated with developmentally sensitive, whole language approaches to reading instruction, was helpful in increasing the emergent reading ability of inner-city kindergartners (Otto, 1993; Sulzby et al., 1993) and first graders (Sulzby et al., 1993). However, neither of these studies used control groups, either of children not seen as at-risk or of children receiving more traditional instruction in the same schools. Purcell-Gates, McIntyre, and Freppon (1995) reported that children in well-implemented whole language classes showed significantly greater growth in their knowledge of written language and more extensive breadth of knowledge of written linguistic features than their peers in skills-based kindergarten classes. Putnam (1990) found that inner-city kindergarten students in a "Literate Environment" classroom gained more in vocabulary and syntactic complexity than students in "Traditional" or "IBM Write to Read" classrooms.

Finally, research by Pinnell et al. (1994) found that "Reading Recovery," a tutoring program for educationally disadvantaged children, was more effective in improving the reading efficacy of high-risk first graders than a similar program (called "Reading Success") provided by teachers who were more traditional (phonics- or skills-oriented) compared to the "Reading Recovery" teachers. However, given that the "Reading Recovery" and the "Reading Success" teachers also differed in a number of other ways (previous experience and training, training time schedule, training activities), it is impossible to tease out the effects of the teachers' theoretical orientations toward reading.[8]

Key Questions to Ask Yourself at This Point:

9. Have I surveyed and described relevant studies related to the problem?
10. Have I surveyed existing expert opinion on the problem?
11. Have I summarized the existing state of opinion and research on the problem?

PROCEDURES

The **procedures** section includes discussions of: (1) the research design, (2) the sample, (3) instrumentation, (4) the procedural details, (5) internal validity, and (6) data analysis.

Research Design. In experimental or correlational studies, the **research design** can be described using the symbols presented in Chapters 13 or 15. In causal-comparative studies, the research design should be described using the symbols presented in Chapter 16. The particular research design to be used in the study and its application to the study should be identified. In most studies, the basic design is fairly clear-cut and fits one of the models we presented in Chapters 13 to 17 and in Chapters 20 to 22.

Sample. In a proposal, a researcher should indicate in considerable detail how he or she will obtain the subjects—the **sample**—for the study. If generalization is intended, a *random sample* should be used. If a *convenience sample* must be used, relevant *demographics* (gender, ethnicity, occupation, IQ, and so on) of the sample should be described. Lastly, the legitimate population to which the results of the study may be generalized should be indicated. (See Chapter 6 for details on sampling.)

Here is an example of a description of a convenience sample. It was taken from the report of a study designed to investigate the effects of behavior modification on the classroom behavior of first- and third-graders.

> Thirty grade 1 (mean age = 7 years, 1 month) and 25 grade 3 children (mean age = 9 years, 3 months) were identified by their classroom teachers as exhibiting inappropriate classroom behavior, receiving no special services, and having intelligence quotients between 85 and 115. These children represented 23% of the grade 1 children in a large elementary school in the southeastern United States and 21% of the grade 3 children in the same school. All participants were from regular classrooms;

none were receiving special educational services. Fifteen grade 1 subjects were assigned randomly to the experimental treatment and 15 to the control condition; 25 grade 3 subjects were assigned randomly to each of the two conditions, with the experimental treatment receiving 13 and control, 12. The experimental group included 22 boys, 6 girls; 11 black children, 17 white children; 14 of low socioeconomic status, 14 of middle to high socioeconomic status. The control group was composed of 15 boys, 12 girls; 15 black children, 12 white children; 7 of low socioeconomic status, 20 of middle to high socioeconomic status. No attrition occurred during this study.[9]

Key Questions to Ask Yourself at This Point:

12. Have I described my sampling plan?
13. Have I described the relevant characteristics of my sample in detail?
14. Have I identified the population to which the results of the study may legitimately be generalized?

Instrumentation. Whenever possible, existing instruments should be used in a study, since construction of even the most straightforward test or questionnaire is often a very time-consuming and difficult task. The use of an existing instrument, however, is not justified unless sufficiently reliable and valid results can be obtained for the researcher's purpose. Too many studies are done with instruments that are merely convenient or well known. Usage is a poor criterion of quality, as shown by the continuing popularity of some widely used achievement tests despite years of scathing professional criticism. (See Chapter 7 for examples of the many types of instruments that educational researchers can use.)

In the event that appropriate ready-made instruments are not available, the procedures followed in developing the instruments should be described with attention to how validity and reliability will (presumably) be enhanced. At least some sample items from the instruments should be included in the proposal.

Even with instruments for which reliability and validity of scores are supported by impressive evidence, there is no guarantee that these instruments will function in the same way in the study itself. Differences in subjects and conditions may make previous estimates of validity and reliability inapplicable to the current context. Further, validity always depends on the intent and interpretation of the researcher. For all these reasons, the reliability and validity of the scores obtained from all instruments should be checked as a part of every study, preferably before the study begins.

It is almost always feasible to check internal consistency reliability since no additional data are required. Checking reliability of scores over time *(stability)* is more difficult, since an additional administration of the instrument is required. Even when feasible, repetition of exactly the same instrument may be questionable, since individuals may alter their responses as a result of taking the instrument the first time.* Asking respondents to reply to a questionnaire or an interview a second time is often difficult, since it seems rather foolish to them. Nonetheless, ingenuity and the effort required to develop a parallel form of the instrument(s) can often overcome these obstacles.†

The most straightforward way to check validity is to use a second instrument to measure the same variable. Often, this is not as difficult as it may seem, given the variety of instruments that are available (see Chapter 7). Frequently, the judgment of knowledgeable persons (teachers, counselors, parents, and friends, for instance), expressed as ratings or as a ranking of the members of a group, can serve as the second instrument. Sometimes a useful means of validating the responses to attitude, opinion, or personality (such as self-esteem) scales filled out by subjects is to have a person who knows each subject well fill out the same scale (as it applies to the subject) and then check to see how well the ratings correspond. A final point is that reliability and validity data need not be obtained for the entire sample, although this is preferable. It is better to obtain such data for only a portion of the sample (or even for a separate, although comparable, sample) than to obtain no data at all. (For a more detailed discussion of reliability and validity, see Chapter 8.)

In some studies, especially historical and qualitative ones, there may be no formal instrument like a test or a rating scale involved. In such studies, the researcher is often the "instrument" for obtaining data. Even so, ways of maximizing and checking on validity and reliability should be set forth in the proposal and described later in the report.

Here are some examples of instruments taken from the literature:

- *Social class:* "Socioeconomic status (SES) was determined on the basis of parental occupation of father or mother, whomever was higher. Occupations were

*For example, they may look up the answers.

†A compromise is to divide the existing instrument into two halves (as in the split-half procedure) and administer each half with a time interval between administrations.

indexed according to the Warner Revised Occupational Rating Scale. . . . The Warner Scale consists of seven occupational categories with assigned values ranging from 1 to 7, based on the skill requirements and social prestige of the job." Higher scores indicated higher social class standing.[10]

- *Self-esteem:* "We used the Coopersmith Self-Esteem Inventory . . . , a 50-item scale, to measure global self-esteem. Adequate assessments of construct, concurrent, and predictive validity are reported in the manual. Higher scores indicate higher self-esteem."[11]
- *Psychological distress:* "The Symptom Checklist-90-Revised . . . , a 90-item self-report inventory, was used to assess psychological symptoms."[12]

Key Questions to Ask Yourself at This Point:

15. Have I described the instruments to be used?
16. Have I indicated their relevance to the present study?
17. Have I stated how I will check the reliability of scores obtained from all instruments?
18. Have I stated how I will check the validity of scores obtained from all instrument(s)?

Procedural Details. Next, the procedures to be followed in the study—what will be done, as well as when, where, and how—should be described in detail. In intervention studies in particular, additional details are usually needed on the nature of the intervention and on the means of introducing the method or treatment. Keep in mind that the goal here is to make it possible to replicate the study; another researcher should, on the basis of the information provided in this section, be able to repeat the study in exactly the same way as the original researcher. Certain procedures may change as the study is carried out, it is true, but a proposal should nonetheless have this level of clarity as its goal.

The researcher should also make clear how the information collected will be used to answer the original question or to test the original hypothesis.

Here are some examples of procedural details taken from the literature:

- (From a study investigating why students of color are not entering teaching): "Over a two-year period, I conducted face-to-face, semi-structured interviews with 140 teachers of color in Cincinnati, Ohio; Seattle, Washington; and Long Beach, California. Semi-structured, face-to-face interviewing was selected as the most appropriate research strategy because of the intense and critical nature of the topic under scrutiny and the informants involved."[13]
- (From a descriptive study of eleventh-grade U.S. History classes): "Four 11th-grade United States history classes, located in a large urban high school (grades 9–12) on the west coast of the United States, were observed unobtrusively at least three times a week for six weeks during January and February of 1993. In addition, each of the teachers of those classes were interviewed at length."[14]

Key Question to Ask Yourself at This Point:

19. Have I fully described the procedures to be followed in the study—what will be done, where, when, and how?

Internal Validity. At this point, the essential planning for a study should be nearly completed. It is now necessary for the researcher to examine the proposed methodology for the presence of any feasible alternative explanations for the results should the study's hypothesis be supported (or should nonhypothesized relationships be identified). We suggest that each of the threats to internal validity discussed in Chapter 9 be reviewed to see if any might apply to the proposed study. Should any troublesome areas be found, they should be mentioned and their likelihood discussed. The researcher should describe what he or she would do to eliminate or minimize them. Such an analysis often results in substantial changes in or additions to the methodology of the study; if this occurs, realize that it is better to become aware of the need for such changes at this stage than after the study is completed.

Key Questions to Ask Yourself at This Point:

20. Have I discussed any feasible alternative explanations that might exist for the results of the study?
21. Have I discussed how I will deal with these alternative explanations?

Data Analysis. The researcher then should indicate how the data to be collected will be organized (see Chapter 7) and analyzed (see Chapters 10, 11, and 12).

Key Questions to Ask Yourself at This Point:

22. Have I described how I will organize the data I will collect?
23. Have I described how I will analyze the data, including statistical procedures that will be used and why these procedures are appropriate?

RESEARCH TIPS

Questions to Ask When Evaluating a Research Report

- Is the literature review sufficiently comprehensive? Does it include studies that might be relevant to the problem under investigation?
- Was each of the variables in the study clearly defined?
- Was the sample representative of an identifiable population? If not, were limitations discussed?
- Was the methodology the researchers used appropriate and understandable so that other researchers could replicate the study if they wished?
- Was each of the instruments sufficiently valid and reliable for its intended purpose?
- Were the statistical techniques, if used, appropriate and correct?
- Did the report include a thick description that revealed how individuals responded (if appropriate)?
- Was the researchers' conclusions supported by the data?
- Did the researchers draw reasonable implications for theory and/or practice from their findings?

BUDGET

Research proposals are often submitted to government or private funding institutions in hopes of obtaining financial support. Such institutions almost always require submission of a tentative budget along with the proposal. Needless to say, the amount of money involved in a research proposal can have a considerable impact on whether or not it is funded. Thus, great care should be given to preparing the budget. Budgets usually include such items as salaries, materials, equipment costs, administrative and other assistance, expenses (such as travel and postage), and overhead.

GENERAL COMMENTS

One other comment may not seem necessary, but in our experience it is. Remember that all sections of a proposal must be consistent. It is not uncommon to read a proposal in which each section by itself is quite acceptable but some sections contradict others. The terms used in a study, for example, must be used throughout as originally defined. Any hypotheses must be consistent with the research question. Instrumentation must be consistent with or appropriate for the research question, the hypotheses, and the procedures for data collection. The method of obtaining the sample must be appropriate for the instruments that will be used and for the means of dealing with alternative explanations for the results, and so forth.

Sections Unique to Research Reports

Once researchers have conducted and completed their study, they must write a report of their procedures and findings. The unique features of a report describe what was done in the study, how it was done, what results were obtained, and what they mean. Although the details of a quantitative study may differ somewhat from those of a qualitative study, the emphasis in both should be on accurate description so that the reader is quite clear about what happened. The old standbys—what, why, where, when, and how—are, as always, good guides to follow.

SOME GENERAL RULES TO CONSIDER

A research report should be written as clearly and concisely as possible. If at all possible, jargon is to be avoided. Research reports are always written in the past tense. As might be expected, spelling, punctuation, and grammar must be correct. (The spelling and grammar checks on a computer are a big help here!)

A style manual should be consulted before beginning the report. A good source, recommended by most journal editors and used by many researchers when preparing their research reports, is the *Publication Manual of the American Psychological Association* (APA), 6th ed. (2010). Although various manuals emphasize different rules, all have certain ones in common. The use of abbreviations and contractions, for example, is usually discouraged, the only exceptions being those that are commonly used and understood (such as *IQ*) or those that are repeated frequently in the report. Authors of references cited in the report are usually referred to by last name only (first name and middle initials are given only in the bibliography; Table 25.1). Honorifics (e.g., Dr., Professor, etc.) are not given.

Once a report is completed, it is a good idea to have someone who is knowledgeable about the topic review the report for clarity and errors. Reading the report aloud

TABLE 25.1 *References APA Style*

Type of Reference	Format
Book	Fraenkel, J. R., Wallen, N. E., & Hyun, H. (2012). *How to design and evaluate research in education* (8th ed.). San Francisco: McGraw-Hill.
Edited book	Jacoby, R., & Glauberman, N. (Eds.). (1995). *The bell curve debate: History, documents, opinions.* New York, NY: Random House.
Chapter in a book	Gould, S. J. (1995). Mismeasure by any measure. In R. Jacoby & N. Glauberman (Eds.), *The bell curve debate: History, documents, opinions* (pp. 3–13). New York, NY: Random House.
Journal article	Clarke, A. T., & Kurtz-Costes, B. (1997, May/June). Television viewing, educational quality of the home environment, and school readiness. *The Journal of Educational Research, 90*(5), 279–285.
Dissertation (unpublished)	Spitzer, S. L. (2001). *No words necessary: An ethnography of daily activities with young children who don't talk.* Unpublished doctoral dissertation, University of Southern California.
Book review	Liss, A. (2004). Whose America? Culture wars in the public schools [Review of the book *Whose America? Culture wars in the public schools*]. *Social Education, 68,* 238.
Electronic source	Learnframe. (2000, August). *Facts, figures, and forces behind e-learning.* Retrieved from http://www.learnframe.com/aboutlearning/
ERIC reference	Mead, J. V. (1992). *Looking at old photographs: Investigating the teacher tales that novice teachers bring with them.* Retrieved from ERIC database. (ED346082)

also can help check for mistakes in grammar as well as identify unclearly written passages. These days, the use of a computer can help a great deal, as it provides the ability to rearrange words and sentences easily, check spelling and grammar, and number pages automatically.

FORMAT

The format of a report is the way it is organized. Research reports generally follow a format that reflects the steps involved in the study itself; they also have many of the same components included in research proposals. Figure 25.1 illustrates the organization of a typical research report. Let us address those components we have not yet discussed.

Abstract. The **abstract** is a brief summary of the entire research report. It is usually no longer than a paragraph or two and is typed on a separate page with the word *Abstract* centered at the top of the page. Usually, an abstract contains a brief statement of the research problem, the hypothesis, a description of the sample, followed by a brief summary of the procedures, including a description of the instrument(s) used, how the data were collected, the results of the study, and the researcher's conclusions.

Results/Findings. As discussed previously, the **results** of a study can be presented only in a research report; ordinarily there are no results in a proposal (unless results of some exploratory research or a pilot study are included as part of the background of the proposal). A report of the results, sometimes called the **findings**, is included near the end of the report. The findings of the study constitute the results of the researcher's analysis of his or her data—that is, what the collected data reveal. In comparison-group studies, the means and standard deviation for each group on the posttest measure(s) usually are reported. In correlational studies, correlation coefficients and scatterplots are reported. In survey studies, percentages of responses to the questions asked, crossbreak tables, contingency coefficients, and so forth, are given.

The results section should describe any statistical techniques that were applied to the data and the results that were obtained. Each result should be discussed in relation to the topic studied. The results of any statistical tests of significance should be reported. Qualitative data analysis should present clear descriptions (and sometimes quotations) to support and/or illustrate results obtained through observations and/or interviews. Tables and figures should present clear summaries of the data analysis.

It is particularly important in the results section of a research report that the data collection procedures be

Figure 25.1
Organization of a Research Report

Introductory section
- Title Page
- Table of Contents
- List of Figures
- List of Tables

Main Body

I. Problem to be investigated
- A. Purpose of the study (including assumptions)
- B. Justification of the study
- C. Research question, hypotheses, and propositions
- D. Definition of terms
- E. Brief overview of study

II. Background and review of related literature
- A. Theoretical framework, if appropriate
- B. Studies directly related
- C. Studies tangentially related

III. Procedures
- A. Description of the research design
- B. Description of the sample
- C. Description of instruments used (scoring procedures; reliability; validity)
- D. Explanation of the procedures followed (the what, when, where, and how of the study)
- E. Discussion of internal validity
- F. Discussion of external validity
- G. Description and justification of the data analysis methods (e.g., statistical techniques for quantitative studies and data reduction strategies for qualitative studies)

IV. Findings

Description of findings pertinent to each of the research questions, hypotheses, and propositions stated

V. Summary and conclusions
- A. Brief summary of the research question being investigated, the procedures employed, and the results obtained
- B. Discussion of the implications of the findings—their meaning and significance
- C. Limitations—unresolved problems and weaknesses
- D. Suggestions for further research

References (Bibliography)

Appendixes

clearly described, including what kinds of analyses were done. Here are two examples taken from the literature.

- (From a study investigating the effects of cooperative learning among Hispanic students in elementary social studies): "Means and standard deviations of raw scores for the social studies achievement pretests and posttests, as well as the adjusted means for the social studies achievement posttest, are reported. Results of the ANCOVA revealed a statistically significant main effect for treatment, $F(1,93) = 25.72, p < .001$, favoring cooperative learning over traditional instruction; however, no statistically significant effects were found for gender or for an interaction between

treatment and gender on social studies achievement. The correlation *r* between the pretest and the posttest was .67 ($p = .001$)."[15]

- (From a study investigating the relationship between time to completion and achievement on multiple-choice items): "The relationship between time to completion and examination achievement was explored separately for mid-semester and final examinations. The resultant correlation coefficients were low and not statistically significant ($p > .05$). Although the range of coefficients extended from +.27 (+.02) to −.30, the coefficients of determination for these values suggest that 0.04% to 9% of variance in examination performance could be explained by differences in time to completion variables."[16]

Discussion. The discussion section of a report presents the author's interpretation of what the results imply for theory and/or practice. This includes, in hypothesis-testing studies, an assessment of the extent to which the hypothesis was supported.

In the discussion section, researchers place their results in a broader context. Here they recapitulate any difficulties that were encountered, make note of the limitations of the study, and suggest further, related studies that might be done.

To the extent possible, we believe the results and discussion sections of a study should be kept distinct from each other. A discussion section will typically go considerably beyond the data in attempting to place the findings in a broader perspective. It is important that the reader not be misled into thinking that the investigator has obtained evidence for something that is only speculation. To put it differently, there should be no room for disagreement regarding the statements in the results section of the report. The statements should follow clearly and directly from the data that were obtained. There may be much argumentation and disagreement about the broader interpretation of these results, however.

Let us consider the results of a study on teacher personality and classroom behavior. As hypothesized in that study, correlations of .40 to .50 were found between a test of control need on the part of the teacher and (1) the extent of controlling behavior in the classroom as observed and (2) ratings by interviewers as "less comfortable with self" and "having more rigid attitudes of right and wrong." These were the results of the study and should clearly be identified as such in a report. In the discussion section, however, these findings might be placed in a variety of controversial perspectives. Thus, one investigator might propose that the study provides support for selection of prospective teachers, arguing that anyone scoring high in control need should be excluded from a training program on the grounds that this characteristic and the classroom behavior it appears to predict are undesirable in teachers. In contrast, another investigator might interpret the results to support the desirability of attracting people with higher control need into teaching. This investigator might argue that, at least in inner-city schools, teachers scoring higher in control need are likely to have more orderly classrooms.

Clearly, both of these interpretations go far beyond the results of the particular study. There is no reason the investigator should not make such an interpretation, provided that it is clearly identified as such and does not give the impression that the results of the study provide direct evidence in support of the interpretation. Many times a researcher will sharply differentiate between results and interpretation by placing them in different sections of a report and labeling them accordingly. At other times a researcher may intermix the two, making it difficult for the reader to distinguish the results of the study from the researcher's interpretations. (For examples of discussions, see any of the published research reports presented in Chapters 13 through 17 and 19 through 24.)

Suggestions for Further Research. Normally, this is the final section of a report. Based on the findings of the present study, the researcher suggests some related and follow-up studies that might be conducted in the future to advance knowledge in the field.

References. Finally, the references (bibliography) should list all sources that were used in the writing of the report. Every (yes, every!) source cited in the report must be included in the references, and every (yes, every!) report cited there must appear in the body of the report. The reference section should begin on a new page. Usually a hanging-indent format is used, with all sources listed alphabetically by authors' last names.

Footnotes. Footnotes are numbered consecutively, using a superscript Arabic numeral, in the order in which they appear in the text of the report.

Figures. Figures consist of drawings, graphs, charts, even photographs or pictures. All figures should be numbered consecutively and referred to in the text of the

report. They should be included in a report only when they can convey information better or more clearly than the text itself or when they can summarize information that would require an extremely long explanation. Each figure should be accompanied by a caption that captures the essence of the information illustrated.

Tables. Tables also should be used only when they can summarize or convey information better, more simply, or more clearly than the text alone. Tables (and figures) should always be viewed as supplements to text, never as providing new information meant to stand alone. They should always, however, be referred to in the text. Like figures, each table should have a brief title that captures the essence of the information contained in the table. It is a good idea to consult the APA *Publication Manual* for specifics regarding the presentation of figures and tables in a research report.

A FEW COMMENTS ABOUT QUALITATIVE RESEARCH REPORTS

Much of the information that needs to be included in a qualitative research report is similar to that included in a quantitative research report. At present, however, there is no commonly agreed-on format for a qualitative research report. One currently finds a variety of formats, with researchers often including such things as poems, stories, diaries, photographs, essays, even song lyrics and drawings in their reports.

Two noticeable characteristics of qualitative reports that are rarely found in quantitative reports are that (1) qualitative researchers often write their reports in the first person (e.g., using the pronouns *I* or *we* rather than *the researcher* or *the author*), and (2) they often use the active rather than the passive voice ("We observed classroom *X,*" rather than "Classroom X was observed by the researcher.")*

Furthermore, the issue of confidentiality is of greater concern in qualitative than quantitative reports. Often a considerable amount of information, much of it extremely private, is obtained from the participants in a qualitative study. A simple guarantee of confidentiality is often insufficient to protect their identity. As a result, fictitious names are frequently used in qualitative reports because the sample involved is usually so much smaller than that used in quantitative studies. If a researcher is conducting a series of interviews in an inner-city high school, for example, over a period of weeks, many readers might be able to recognize who he or she interviewed. The use of fictitious names, therefore, is a further protection of their identity.

AN OUTLINE OF A RESEARCH REPORT

Figure 25.1 shows an outline of a research report. Although the topics listed are generally agreed to within the research community, the particular sequence may vary in different studies. This is partly because of different preferences among researchers and partly because the headings and organization of the outline will be somewhat different for different research methodologies. This outline may also be used for a research proposal, in which case sections IV and V would be omitted (and the future tense used throughout). Also, a budget might be added.

A Sample Research Proposal

The research proposal that follows was prepared by a student in one of our classes and is a good example of a beginning effort. Such a proposal will normally go through further revision based on the comments of faculty and others, but this will give you some idea of what a completed proposal by a student looks like. We comment on both its strengths and weaknesses in the margins.

Note that this proposal does not follow the organization recommended in Figure 25.1 exactly. It does, however, contain all of the major components previously discussed. It also includes a report of a **pilot study**—a small-scale trial of the proposed procedures. Its purpose is to detect any problems so that they can be remedied before the study proper is carried out.

*The APA *Publication Manual* recommends such practice even for quantitative reports.

THE EFFECTS OF INDIVIDUALIZED READING
UPON STUDENT MOTIVATION IN GRADE FOUR

Nadine DeLuca*

Purpose

The general purpose of this research is to add to the existing knowledge about reading methods. Many educators have become dissatisfied with general reading programs in which teacher-directed group instruction means boredom and delay for quick students and embarrassment and lack of motivation for others. Although there has been a great deal of writing in favor of an individualized reading approach which is supposedly a highly-motivating method of teaching reading, sufficient data has not been presented to make the argument for or against individualized reading programs decisive. With the data supplied by this study (and future ones), soon schools will be ~~free~~ to make the choice between implementing an individualized reading program or retaining a basal reading method.

Requires documentation

Demonstrates importance of study

Indicates implications if hypothesis is supported

Replace with "better able"

Definitions

Motivation: Motivation is inciting and sustaining action in an organism. The motivation to learn could be thought of as being derived from a combination of several more basic needs such as the need to achieve, to explore, to satisfy curiosity.

Could be more specific to this study

"Motivation to read" is really the variable.

An operational definition would help.

Individualization: Individualization is characteristic of an individualized reading program. Individualized reading has as its basis the concepts of seeking, self-selection, and pacing. An individualized reading program has the following characteristics:

You should delete this sentence.

1. Literature books for children predominate.
2. Each child makes personal choices with regard to his reading materials.
3. Each child reads at his own rate and sets his own pace of accomplishment.
4. Each child confers with the teacher about what he has read and the progress he has made.
5. Each child carries his reading into some form of summarizing activity.
6. Some kind of record is kept by the teacher and/or the student.

Good—clear and specific

*Used by permission of the author.

7. Children work in groups for an immediate learning purpose and leave group when the purpose is accomplished.
8. Word recognition and related skills are taught and vocabulary is accumulated in a natural way at the point of each child's need.

Prior Research

Abbott, J. L., "Fifteen Reasons Why Personalized Reading Instruction Doesn't Work." Elementary English (January, 1972), *44:*33–36.

This article refutes many of the usual arguments against individualized reading instruction. It lists those customary arguments then proceeds to explain why the objections are not valid ones.

OK

It explains how such a program can be implemented by an ordinary classroom teacher in order to show the fallacy in the complaint that individualizing is impractical. Another fallacy involves the argument that unless a traditional basal reading program is used, children do not gain all the necessary reading skills.

Barbe, Walter B., Educator's Guide to Personalized Reading Instruction. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1961.

Mr. Barbe outlines a complete individualized reading program. He explains the necessity of keeping records of children's reading. The book includes samples of book-summarizing activities as well as many checklists to ensure proper and complete skill development for reading.

OK

Hunt, Lyman C., Jr., "Effect of Self-selection, Interest, and Motivation upon Independent, Instructional and Frustrational Levels." Reading Teacher (November, 1970), *24:*146–151.

Dr. Hunt explains how self-selection, interest, and motivation (some of the basic principles behind individualized reading), when used in a reading program, result in greater reading achievement.

Miel, Alice, Ed., Individualizing Reading Practices. New York: Bureau of Publications, Teachers College, Columbia University, 1959.

Veatch, Jeanette, Reading in the Elementary School. New York, NY: The Roland Press Co., 1966.

This is not really a literature review, although it is a good beginning at preparing one. Additional material needs to be added and summarized to justify the study.

West, Roland, Individualized Reading Instruction. Port Washington, New York, NY: Kennikat Press, 1964.

The three books listed above all provide examples of various individualized reading programs actually being used by different teachers. (The definitions and items on the rating scale were derived from these three books.)

Good—shows relevance to present study

Hypothesis

The greater the degree of individualization in a reading program, the higher will be the students' motivation.

Variables are clear and hypothesis is directional

Population

Right

An ideal population would be all fourth graders in the United States. Because of different teacher-qualification requirements, different laws, and different teaching programs, though, such a generalization may not be justifiable. One that might be justifiable would be a population of all fourth-grade classrooms in the San Francisco-Bay Area.

Sampling

Good sampling plan

The study will be conducted in fourth-grade classrooms in the San Francisco-Bay Area, including inner-city, rural, and suburban schools. The sample will include at least one hundred classrooms. Ideally, the sampling will be done randomly by identifying all fourth-grade classrooms for the population described and using random numbers to select the sample classrooms. As this would require excessive amounts of time, this sampling might need to be modified by taking a sample of schools in the area, identifying all fourth-grade classrooms in these schools only, then taking a random sample from these classrooms.

Add "random"!

Two-stage sampling

Instrumentation

Appears to have good content validity: items are consistent with definition

Instrumentation will include a rating scale to be used to rate the degree of individualization in the reading program in each classroom. A sample rating scale is shown below. Those items on the left indicate characteristics of classrooms with little individualization.

Should state how data on different days will be used; it can be used to check stability

Reliability: The ratings of the two observers who are observing separately but at the same time in the same room will be compared to see how closely the ratings agree. The rating scale will be repeated for each classroom on at least three different days.

Three days may not be sufficient to get reliable scores.

Validity: Certain items on the student questionnaire (to be discussed in the next section) will be compared with the ratings on the rating scale to determine if there is a correlation between the degree of individualization apparently observed and the degree indicated by students' responses. In the same manner, responses to questions asked of teachers and parents can be used to indicate whether the rating scale is a true measure of the degree of individualization.

Would parents be qualified to judge this?

Good

Another means of instrumentation to be used is a student questionnaire. A sample questionnaire is included. The following questions have as their purpose to determine the degree of motivation by asking how many books read and how the child indicates what he feels about reading: questions numbered 1, 4, 5, 6, 7, 9, 10, 11, 12, and 13. Questions 2, 3, 4, and 8 have as their purpose to help determine the validity of the items on the rating scale. Questions 14 and 15 are included to determine the students' attitudes toward the questionnaire to help determine if their attitudes are possible sources of bias for the study. Questions 8 and 9 have an additional purpose which is to add knowledge about the novelty of the reading situation in which the child now finds himself. This may be used to determine if there is a relationship between the novelty of the situation and the degree of motivation.

Can't use the same item for both variables

Most items appear to have logical validity, but the lack of definition of motivation to read makes it difficult to judge.

Good idea, but may be too few items to give a reliable index

Good idea, but may not be enough items to give a reliable index

But why? to control novelty as an extraneous variable?

	RATING SCALE					
1. Basal readers or programmed readers predominate in room.	1	2	3	4	5	There is an obvious center in the room containing at least five library books per child.
2. Teacher teaches class as a group.	1	2	3	4	5	Teacher works with individuals or small groups.
3. Children are all reading from the same book series.	1	2	3	4	5	Children are reading various materials at different levels.
4. Teacher initiates activities.	1	2	3	4	5	Student initiates activities.
5. No reading records are in evidence.	1	2	3	4	5	Children or teacher are observed to be making notes or keeping records of books read.

	RATING SCALE	
6. There is no evidence of book summarizing activities in the room.	1 2 3 4 5	There is evidence of book summarizing activities around room (e.g., student-made book jackets, paintings, drawings, models of scenes or characters from books, class list of books read, bulletin board displays about books read . . .).
7. Classroom is arranged with desks in rows and no provision for a special reading area.	1 2 3 4 5	Classroom is arranged with a reading area so that children have opportunities to find quiet places to read silently.
8. There is no conference area in the room for the teacher to work with children individually.	1 2 3 4 5	There is a conference area set apart from the rest of the class where the teacher works with children individually.
9. Children are doing the same activities at the same time.	1 2 3 4 5	Children are doing different activities from their classmates.
10. Teacher tells children what they are to read during class.	1 2 3 4 5	Children choose their own reading materials.
11. Children read aloud in turn to teacher as part of a group using the same reading textbook.	1 2 3 4 5	Children read silently at their desks or in a reading area or orally to the teacher on an individual basis.

Student Questionnaire

Age _____ Grade _____ Father's work _____

Mother's work _____

Is your intent here to get at socioeconomic level?

Appears valid

1. How many books have you read in the last month? _____
2. Do you choose the books you read by yourself? _____

Appears valid

If not, who does choose them for you? _____

Some indication of the scoring system should be given. Open-ended questions must rely on logical analysis of responses. You could use examples from your pilot study.

Appears valid

3. Do you keep a record of what books you have read? _____
   Does your teacher? _____

Appears valid

4. What different kinds of reading materials have you read this year?

Questionable validity

5. Do you feel you are learning very much in reading this year? _____
   Why or why not? _____

How scored?

6. Complete these sentences:
   Books _____
   Reading _____

Appears valid

7. Do you enjoy reading time? _____

Appear valid as indications of novelty; generally not a good idea to have one item (9) dependent on another item (8)

8. Have you ever been taught reading a different way? _____
   When? _____ How was it different? _____

9. Which way of learning to read do you like better? _____
   _____ Why? _____

Appears valid

10. If you couldn't come to reading class for some reason, would you be disappointed? _____ Why? _____

Appears valid

11. Is this classroom a happy place for you during reading time? ____

Questionable validity

12. Do most of the children in your classroom enjoy reading?
    _____

Appears valid

13. How much of your spare time at home do you spend reading just for fun? _____

Good idea

14. Did you like answering these questions or would you have preferred not to? _____

15. Were any of the questions confusing? _____
    If so, which ones? _____
    How were they confusing? _____

Student Questionnaire:

Reliability: An attempt will be made to control item reliability by asking the same question in different ways and comparing the answers.

Which items will be compared?

Validity: Validity may be questionable to some degree since school children may be reluctant to report anything bad about their teachers or the school. Observers will be reminded to establish rapport with children as much as possible before administering questionnaires and to assure them that the purpose of the questions does not affect them or their school in any way.

Good point

Good idea

Why do you want this information?

A teacher questionnaire will also be administered. A sample questionnaire is included. Some of the questions are intended to indicate if the approach being used by the teacher is new to her and what her attitude is toward the method. These questions are numbered 1, 2, 3, and 4. Question 5 is supposed to indicate how available reading materials are so that this can be compared to the degree of student motivation. Questions 6 and 8 will provide validity checks for the rating scale. Question 7 will help in determining a relationship between socioeconomic levels and student motivation.

Why? How is this related to your hypothesis?

Good

May be too few items to give reliable index

Reliability: Reliability should not be too great a problem with this instrument since most questions are of a factual nature.

Incorrect. It is the reliability of information that counts. Persons may or may not be consistent in giving factual information. It does seem likely that these questions would provide reliable data.

Validity: There may be a question as to validity depending upon how the questions are asked (if they are used in a structured interview). The way they are asked may affect the answers. An attempt has been made to state the questions so that the teacher does not realize what the purposes of this study are and so prejudice her answers.

Good

Why include? as a means of controlling "experience"?

Teacher Questionnaire

1. How long have you been teaching? _____

Why? to assess novelty?

2. How long have you taught using the reading approach you are now using? _____

Why?

3. What other approaches have you used? _____

Why?

4. If you could use any reading approach you liked, which would you use?

_____

Why? _____

Under procedures, you explain that items 1–5 and 7 are intended as attempts to control extraneous variables. This is a very good idea, but the purpose should be made clear earlier (in this section).

Why?

5. In what manner do you obtain reading materials? _____

_____

Where did you get most of those you now use? _____

_____

Appears valid for individualization

6. How often are the children grouped for reading? _____

_____

7. From what neighborhood or area do most of the children in this class come?

To assess socioeconomic status

_____

Appears valid for individualization

8. How do you decide when and how word recognition skills and vocabulary are taught to each child? _____

_____

Good idea; parents should be able to judge "motivation to read."

If it were feasible, an excellent instrument would be a parent questionnaire. The purpose of it would be to determine how much the child reads at home, his general attitude toward reading, and any changes in his attitude the parent has noticed.

Procedures

Identify the research method to be used.

Since the sample of one hundred classrooms is large and each classroom will need to be visited at least three times for thirty minutes to one hour during each visit on different weeks, quite a large team of observers—probably around twenty—will be needed. They will work in pairs observing independently. They will spend about one-half hour each visit on the rating scale. The visits should take place between Monday and Thursday, since activities and attitudes are often different on Fridays. The investigation will not begin until after school has been in session for at least six weeks so that all programs have had sufficient time to function smoothly.

Good idea

Control of extraneous variables: Sources of extraneous variables might include that teachers using individualized reading might be the more skillful and innovative teachers. Also, in cases where the individualized reading program is a new one, teacher enthusiasm for the new program might carry over to students. In this case it might be the novelty of the approach and teacher enthusiasm rather than the program itself that is motivating. An attempt will be made to

Good

Good

This section does a good job of identifying and attempting to control variables likely to be detrimental to internal validity.

determine if there is a relationship between novelty and teacher enthusiasm and student motivation by correlating the results of the teacher questionnaire (showing newness of program and teacher preference of program), indications from questions on student questionnaire, and statistics on motivation in a scatterplot. The influence of student socioeconomic levels on motivation will be determined by comparing the answers to the question on the teacher questionnaire concerning what area or neighborhood children live in, the question on parental occupations on the student questionnaire with student motivation. The amount and availability of materials may influence motivation also. This influence will be determined by the answers of teachers concerning where and how they get materials.

Good

OK but could be clearer

Better to use term "relationship," since we aren't sure about causality, which is implied by the word "influence"

You should delete this.

Good

"relate to"

Good, but how will information be scored?

The presence of observers in the classroom may cause distraction and influence the degree of motivation. By having observers repeat procedures three or more times, later observations may prove to be nearly without this procedure bias. By keeping observers in the dark about the purpose of the study, it is hopeful that will control as much bias in their observations and question-asking as possible.

Isn't it likely that all classrooms would be affected the same? Further, it seems unlikely that your second variable (individualization) would be affected. If so, it's no problem so far as internal validity is concerned.

Will you use all of the observations?

Good idea. However, since they both observe (individualization) and administer your questionnaire (motivation) they may well figure out the hypothesis. If there is concern that this "awareness" could influence their ratings and/or administration of the questionnaire, it would be preferable to have each instrument administered by different persons.

Data Analysis

Observations on the rating scale and answers on the questionnaires will be given number ratings according to the degree of individualization and amount of motivation respectively. The average of the total ratings will then be averaged for the two observers on the rating scale, and the average of the total ratings will be averaged for the questionnaires in each classroom to be used on a scatterplot to show the relationship between motivation and individualization in each classroom. Results of the teacher questionnaire will be compared similarly with motivation on the scatterplot. The correlation will be used to further indicate relationships.

Delete. This is incorrect. Do you see why?

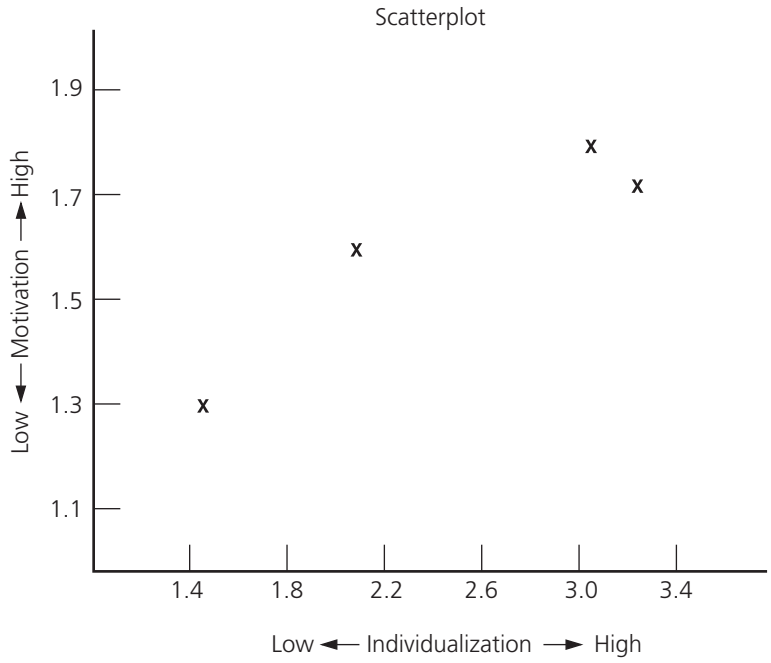
But teacher questions lack content validity as indicators of "motivation." Items 6 and 8 can check "individualization," however.

PILOT STUDY

Procedure

The pilot study was conducted in three primary grade schools in San Francisco. The principals of each school were contacted and were asked if one or two reading classes could be observed by the investigator for an hour or less. The principals chose the classrooms observed. About forty-five minutes was spent in each of four third-grade classrooms. No fourth grades were available in these schools.

Room	Individualization	Motivation
#1	1.4	1.3
#2	2.1	1.6
#3	3.0	1.8
#4	3.2	1.7



The instruments administered were the student questionnaire and the rating scale.

Both the questionnaire and rating scale were coded by school and by classroom so that the variables for each classroom might be compared. The ratings on the rating scale for each classroom were added together then averaged. Answers on items for the questionnaire were rated "1" for answers indicating low motivation and "2" for answers indicating high motivation. (Note: Some items had as their purpose to test validity of rating scale or to provide data concerning possible biases, so these items were not rated.) Determining whether answers

indicated high or low motivation created no problem except on Item #1. It was decided that fewer than eight books (two books per week) read in the past month indicated low motivation, while more indicated high motivation. The ratings for these questions were then added and averaged. Then these averaged numbers for all the questionnaires in each classroom were averaged. The results were as follows:

Although this pilot study could not possibly be said to uphold or disprove the hypothesis, we might venture to say that if the actual study were to yield results similar to those shown on the graph, there would be a strong correlation (estimate: r = .90) between individualization and motivation. This correlation is much too high to be attributed to chance with a random sample of 100 classrooms. If these were the results of the study described in the research proposal, the hypothesis would seem to be upheld.

Indications

Unfortunately, I was unable to conduct the pilot study in any fourth-grade classrooms which immediately throws doubt upon the validity of the results. In administering the student questionnaire, I discovered that many of the third-graders had difficulty understanding the questions. Therefore, the questioning took the form of individual structured interviews. Whether or not this difficulty would hold for fourth-graders, too, would need to be determined by conducting a more extensive pilot study in fourth-grade classrooms.

Good observation

Right

It was also discovered that Item #7 in the rating scale was difficult to rate. Perhaps it should be divided into two separate items—one concerning desk arrangement and one on the presence of a reading area—and worded more clearly.

Right

Item #8 on the student questionnaire seemed to provide some problems for children. Third-graders, at least, didn't seem to understand the intent of the question. There is also some uncertainty as to whether the answers on Item #15 reflected the students' true feelings. Since it was administered orally, students were probably reluctant to answer negatively about the test to the administrator of the test. Again, a more extensive pilot study would be helpful in determining if these indications are typical.

Right

Although the results of the pilot study are not very valid due to its size and the circumstances, its value lies in the knowledge gained concerning specific items in the instruments and problems that can be anticipated for observers or participants in similar studies.

Go back to the **INTERACTIVE AND APPLIED LEARNING** feature at the beginning of the chapter for a listing of interactive and applied activities. Go to the **Online Learning Center** at **www.mhhe.com/fraenkel8e** to take quizzes, practice with key terms, and review chapter content.

Main Points

RESEARCH PROPOSAL VERSUS RESEARCH REPORT

- A research proposal communicates a researcher's plan for a study.
- A research report communicates what was actually done in a study and what resulted.

MAJOR SECTIONS OF A RESEARCH PROPOSAL OR REPORT

- The main body is the largest section of a proposal or a report and generally includes the problem to be investigated (including the statement of the problem or question, the research hypotheses and variables, and the definition of terms); the review of the literature; the procedures (including a description of the sample, the instruments to be used, the research design, and the procedures to be followed; an identification of threats to internal validity; a description and a justification of the statistical procedures used); and (in a proposal) a budget of expected costs.
- All sections of a research proposal or a research report should be consistent with one another.

SECTIONS UNIQUE TO RESEARCH REPORTS

- The essential difference between a research proposal and a research report is that a research report states what was done rather than what will be done and includes the actual results of the study. Thus, in a report, a description of the findings pertinent to each of the research hypotheses or questions is presented, along with a discussion of what the findings of the study imply for overall knowledge and current practice.
- Normally, the final section of a report offers suggestions for further research.

For Review

1. Review the problem sheets that you have completed to see how they correspond to the suggestions made in this chapter.
2. Review any or all of the critiques of studies included in the chapters on quantitative and qualitative research to see how they correspond to the suggestions made in this chapter.

Key Terms

abstract 625
discussion 627
findings 625
hypothesis 619
justification (of a study) 618
literature review 620
pilot study 628
procedures 621
purpose (of a study) 617
research design 621
research proposal 617
research report 617
results (of a study) 625
sample 621

For Discussion

1. To what extent should a researcher allow his or her personal writing style to influence the headings and organizational sequence in a research proposal (assuming that there is no mandatory format prescribed by, for example, a funding agency)?
2. To what common function do the problem statement, the research question, and the hypotheses all contribute? In what ways are they different?
3. When instructors of introductory research courses evaluate research proposals of students, they sometimes find logical inconsistencies among the various parts. What do you think are the most commonly found inconsistencies?
4. Why is it especially important in a study involving a convenience sample to provide a detailed description of the characteristics of the sample in the research report? Would this be necessary for a random sample as well? Explain.
5. Why is it important for a researcher to discuss threats to internal validity in (*a*) a research proposal and (*b*) a research report?
6. Often researchers do *not* describe their samples in detail in research reports. Why do you suppose this is so?

Notes

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