In addition to their value in helping readers understand how researchers actually obtain the information they need, specifying operational definitions is often helpful in clarifying terms. Thinking about how to measure job satisfaction, for example, is likely to force a researcher to clarify, in his or her own mind, what he or she means by the term. (For everyday examples of times when operational definitions are needed, see Figure 2.2.)

Despite their virtues, however, operational definitions in and of themselves are often not illuminating. Reading that “language proficiency is (operationally) defined as the student’s score on the TOEFL test” is not very helpful unless the reader is familiar with this particular test. Even when this is the case, it is more satisfactory to be informed of what the researcher means by the term. For these reasons we believe that an operational definition should always be accompanied by a constitutive one.

The importance of researchers being clear about the terms in their research questions cannot be overstated. Researchers will have difficulty proceeding with plans for the collection and analysis of data if they do not know exactly what kind of data to look for. And they will not know what data to look for if they are unclear about the meaning of the key terms in the research question.

**Research Questions Should Be Significant**

Research questions also should be worth investigating. In essence, we need to consider whether getting the answer to a question is worth the time and energy (and of-
The Importance of a Rationale

Research in education, as in all of social science, has sometimes been criticized as trivial. Some years ago, Senator Edward W. Brooke gained considerable publicity for his "golden fleece" awards, which he bestowed on government-funded studies that he considered particularly worthless or trivial. Some recipients complained of "cheap shots," arguing that their research had not received a complete or fair hearing. While it is doubtless true that research is often specialized in nature and not easily communicated to persons outside the field, we believe more attention should be paid to:

- Avoiding esoteric terminology
- Defining key terms clearly and, when feasible, both constitutionally and operationally
- Making a clear and persuasive case for the importance of a study

By a somewhat different token, the question may be put: What is the value of investigating a particular question? In what ways will it contribute to our knowledge about education? To our knowledge of human beings? Is such knowledge important in some way? If so, how? These questions ask researchers to think about why a research question is worthwhile—that is, important or significant.

It probably goes without saying that a research question is of interest to the person who asks it. But is it likely to be of interest to someone else? For some people, the answer is a clear yes. They say that any question that someone sincerely wants an answer to is worth investigating. Others, however, say that personal interest, in and of itself, is an insufficient reason. Too often, they point out, personal interest can result in the pursuit of trivial or insignificant questions. Because most research efforts require some expenditure of time, energy, materials, money, and/or other resources, it is easy to appreciate the point of view that some useful outcome or payoff should result from the research. The investment of oneself and others in a research enterprise should contribute some knowledge of value to the field of education.

Generally speaking, most researchers do not believe that research efforts based primarily on personal interest alone warrant investigation. Furthermore, there is some reason to question a "purely curious" motive on psychological grounds. Most questions probably have some degree of hidden motivation behind them, and for the sake of credibility, these reasons should be made explicit.

One of the most important tasks for any researcher, therefore, is to think through the value of the intended research before too much preliminary work is done. There are three important questions to ask:

1. How might answers to this research question advance knowledge in my field?
2. How might answers to this research question improve educational practice?
3. How might answers to this research question improve the human condition?

As you think about possible research questions, ask yourself: Why would it be important to answer this question? Does the question have implications for the improvement of practice? For administrative decision making? For program planning? Is there an important issue that can be illuminated to some degree by a study of this question? Is it related to a current theory that I have doubts about or would like to substantiate? Thinking through possible answers to these questions can help you judge the significance of a potential research question.

In our experience, students justify research proposals for a proposed study are likely to have two weaknesses. First, they assume too much, for example, that everyone would agree with them (i.e., it is self-evident) that it is important to study something like self-esteem or ability to read. In point of fact, not everyone does agree that these are important topics to study; nonetheless, it is still the researcher's job to make the case that they are important rather than merely assuming that they are.

Second, students often overstate the implications of a study. Evidence of the effectiveness of a particular teaching method does not, for example, imply that the method will be generally adopted or that improvement in student achievement will automatically result. It would imply, for example, that more attention should be given to the method in teacher-training programs.
Research Questions Often Investigate Relationships

There is an additional characteristic that good research questions often possess. They frequently (but not always) suggest a relationship of some sort to be investigated. (We discuss the reasons for this in Chapter Three.) A suggested relationship means that two qualities or characteristics are tied together or connected in some way. Are motivation and learning related? If so, how? What about age and attractiveness? speed and weight? height and strength? a principal’s administrative policies and faculty morale?

It is important to understand how the term relationship is used in research, since the term has other meanings in everyday life. When researchers use the term relationship, they are not referring to the nature or quality of an association between people, for example. What we and other researchers mean is perhaps best clarified visually. Look, for example, at the data for groups A and B in Figure 2.3. What do you notice?

The hypothetical data for group A show that out of a total of 32 individuals, 16 are Republicans and 16 are Democrats. It also shows that half are male and half are female. Group B shows the same breakdown by party affiliation and gender. What is different between the two groups is that there is no association or relationship between gender and political party in Group A, whereas there is a very strong relationship between these two factors in group B. We can express the relationship in group B by saying that males tend to be Republicans while females tend to be Democrats. We can also express this relationship in terms of a prediction. Should another female join group B, we would predict she would be a Democrat since 14 of the previous 16 females are Democrats.

![Figure 2.3 Illustration of Relationship between Voter Gender and Party Affiliation](image)

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/fraenkel6e or your Student Research Companion CD-ROM to access the chapter study guide to take quizzes, practice with key terms, and review chapter content. Go to the Online Learning Center to access Web links and PowerWeb articles and news feeds related to the chapter.
RESEARCH PROBLEM

A research problem is the focus of a research investigation.

RESEARCH QUESTIONS

- Many research problems are stated as questions.
- The essential characteristic of a researchable question is that there be some sort of information that can be collected in an attempt to answer the question.

CHARACTERISTICS OF GOOD RESEARCH QUESTIONS

- Research questions should be feasible—that is, capable of being investigated with available resources.
- Research questions should be clear—that is, unambiguous.
- Research questions should be significant—that is, worthy of investigation.
- Research questions should be ethical—that is, their investigation should not involve physical or psychological harm or damage to human beings or to the natural or social environment of which they are a part.
- Research questions often (although not always) suggest a relationship to be investigated. The term relationship, as used in research, refers to a connection or association between two or more characteristics or qualities.

DEFINING TERMS IN RESEARCH

- Three common ways to clarify ambiguous or unclear terms in a research question involve the use of constitutive (dictionary-type) definitions, definition by example, and operational definitions.
  
- A constitutive definition uses additional terms to clarify meaning.
  
- An operational definition describes how examples of a term are to be measured or identified.

Constitutive definition 30
Empirical referent 28
Operational definition 30

For Discussion

1. Here are three examples of research questions. How would you rank them on a scale of 1 to 5 (5 = highest, 1 = lowest) for clarity? for significance? Why?
   a. How many students in the sophomore class signed up for a course in driver training this semester?
   b. Why do so many students in the district say they dislike English?
   c. Is inquiry or lecture more effective in teaching social studies?

2. How would you define humanistically oriented classroom?

3. Some terms used frequently in education, such as motivation, achievement, and even learning, are very hard to define clearly. Why do you suppose this is so?

4. How might the term excellence be defined operationally? Give an example.
5. "Even the clearest of definitions does not always guarantee meaningful communication." Is this really true? Why or why not?

6. We would argue that operational definitions should always be accompanied by constitutive definitions. Would you agree? Can you think of an instance when this might not be necessary?

7. Most researchers do not believe that research efforts based primarily on personal interest warrant investigation. Do you agree in all cases? Can you think of a possible exception?
Research Exercise Two: The Research Question

Using Problem Sheet 2, restate the research problem you listed in Research Exercise One in a sentence or two, and then formulate a research question that relates to this problem. Now list all the key terms in the question that you think are not clear and need to be defined. Define each of these terms both constitutively and operationally, and then state why you think your question is an important one to study.

**PROBLEM SHEET 2**

**The Research Question**

1. My (restated) research problem is:

2. My research question is:

3. Following are the key terms in the problem or question that are not clear and thus need to be defined:
   a. 
   b. 
   c. 
   d. 
   e. 
   f. 

4. Here are my constitutive definitions of these terms:

5. Here are my operational definitions of these terms:

6. My justification for investigating this question/problem (why I would argue that it is an important question to investigate) is as follows: