A literature review should be a critical assessment of the literature on a topic. Novice writers often make two common mistakes that lead to non-critical reviews. First, they often take the results of each study to be "facts" that have been proven. As indicated below, all studies should be presumed flawed and, therefore, offer only degrees of evidence, not "truths" to be accepted noncritically. Second, novice writers often discuss all studies as though they were equal in quality when some studies are methodologically superior to others.

To prepare to write a critical review, the writer should assess the quality of each research article that will be cited. The first important area that requires critical assessment is sampling. More often than not, researchers work with samples that are less than ideal (such as volunteers instead of random samples of the populations of interest). Weaknesses in sampling limit the generalizability of the results. For instance, the results of a study on learning theory using a sample of psychology students who volunteered to serve as participants would have limited generalizability to nonvolunteers.

The second important area that requires critical assessment is instrumentation (i.e., measurement instruments). It is safe to presume that all instruments are flawed to some extent. Furthermore, it is safe to presume that various methods of measuring a given variable might lead to somewhat different results. For instance, one researcher on nutrition might measure by asking overweight adolescents to keep diaries of what they eat throughout a day. Fearing that participants might not be completely truthful in diaries, another researcher on nutrition might observe the food choices of overweight adolescents in the school cafeteria. The second method has the limitation of being conducted in a highly structured environment, where the food choices might be limited. Neither method is right or wrong. Instead, both methods have limitations, which should be considered when critically assessing the results of the studies.

The third important area to consider when critically assessing studies that will be cited in a literature review applies only to experiments (i.e., studies in which treatments are administered to participants so that one can estimate the effects of the treatments on the participants' subsequent behaviors). Experiments are often flawed by having inappropriate control conditions (such as comparing a treatment group consisting of volunteers with a control group from the general population). Also, laboratory experiments (e.g., receiving rewards for making appropriate food choices in a laboratory setting) may have limited generalizability to receiving rewards in a natural environment (i.e., the rewards may have different effects in the natural environment from those in the laboratory setting).

Issues in sampling are discussed in detail in Part C of this book, while issues in instrumentation are covered in Part D, and considerations in the evaluation of experiments are covered in Part E. Careful attention to these parts of the book will help in making informed assessments of the results of published studies.

Fortunately, researchers often discuss the limitations of their studies, usually in the last section of their research reports. Examining researchers' self-assessments of the limitations of their research can help writers of literature reviews when citing the studies. Example 1 shows a portion of such a discussion of limitations.

**Example 1**

This study has four limitations that must be taken into account. The first limitation concerns the data. Because of the small numbers of Latino and Native American youth in the sample, these cases were combined with those involving African American youth into a nonwhite category. As a result, this study only compares outcomes for White versus nonwhite youth rather than for each individual racial category.

Because flaws are widespread in research, it is important to assess the seriousness of the flaws and use appropriate terms when describing the results. For instance, Example 2 shows some terms that might be used to describe the results of research with serious weaknesses.

**Example 2**

Doe's (2008) study provides some evidence that....
Recent research by Doe (2008) raises the possibility that....
Preliminary evidence suggests that...(Doe, 2008)....

Of course, some studies provide strong evidence such as a national survey using a large, representa-
tive sample. Also, sometimes there is a series of studies on the same topic, all of which have similar results, making the overall findings of the series highly reliable. Terms that might be used to refer to strong evidence are shown in Example 3.

Example 3
Overall, this set of studies clearly indicates that....
In summary, the five studies described above provide nearly conclusive evidence that....
Doe's (2006) national survey demonstrates that....

It is not necessary to use terms such as those in Examples 2 and 3 to qualify every comment about each study cited in a literature review. However, keep in mind that when a writer presents a finding or statement from the literature without qualification, readers are likely to assume that the writer believes that the underlying methodology and logic are reasonably sound.

Exercise on Topic 17

1. According to the topic, novice writers often make two common mistakes. What is the first one that is mentioned in this topic?

2. According to the topic, novice writers often make two common mistakes. What is the second one that is mentioned in this topic?

3. "More often than not, researchers work with samples that are less than ideal." According to this topic, is this statement "true" or "false"?

4. "It is safe to assume that flawed instruments are rare in research." According to this topic, is this statement "true" or "false"?

5. Do researchers often discuss the limitations of their own studies?

6. When a writer presents a finding or statement from the literature without qualification, readers are likely to assume what?

Question for Discussion

7. Suppose this statement appeared in a literature review: "The results of Doe's (2006) study clearly prove that A is higher than B." In light of the information in this topic, is such a statement justified? Explain.

For Students Planning Research

8. In the past, have you ever written an uncritical literature review for a term project? Has this topic convinced you that such reviews can be misleading? Explain.