

PART TWO

The Steps in the Process of Research

Now that you have the general road map for your journey, we will start the trip and proceed through each step. Not all researchers go through each step in the order presented here, but many do. By proceeding down the research path, step by step, you will enhance your ability to read, evaluate, and conduct research using both quantitative and qualitative approaches.

The chapters in Part II are:

- ◆ Chapter 2 Identifying a Research Problem
- ◆ Chapter 3 Reviewing the Literature
- ◆ Chapter 4 Specifying a Purpose and Research Questions or Hypotheses
- ◆ Chapter 5 Collecting Quantitative Data
- ◆ Chapter 6 Analyzing and Interpreting Quantitative Data
- ◆ Chapter 7 Collecting Qualitative Data
- ◆ Chapter 8 Analyzing and Interpreting Qualitative Data
- ◆ Chapter 9 Reporting and Evaluating Research



CHAPTER 2

Identifying a Research Problem

Researchers begin a study by identifying a research problem that they need to address. They write about this “problem” in the opening passages of their study and, in effect, give you as a reader the rationale for why the study is important and why you need to read their study. In this chapter, you will learn about specifying a research problem and positioning it within a section that introduces a study, the “statement of the problem” section.

By the end of this chapter, you should be able to:

- ◆ Define a research problem and explain its importance in a study.
- ◆ Distinguish between a research problem and other parts of research process.
- ◆ Identify criteria for deciding whether a problem can and should be researched.
- ◆ Describe how quantitative and qualitative research problems differ.
- ◆ Learn the five elements in writing a “statement of the problem” section.
- ◆ Identify strategies useful in writing a “statement of the problem” section.

Maria begins her research project required for her graduate program. Where does she start? She starts by posing several questions and then writing down short answers to them.

- ◆ “*What is the specific controversy or issue that I need to address?*” Escalating violence in the schools
- ◆ “*Why is this problem important?*” Schools need to reduce the violence; students will learn better if violence is less a part of their lives, etc.
- ◆ “*How will my study add to what we already know about this problem?*” We really don’t have many school plans for addressing this escalating violence
- ◆ “*Who will benefit from what I learn about this problem?*” Schools, anybody interested in learning how schools can respond to escalating violence (the body of literature, administrators, teachers, etc.)

For a beginning researcher, the difficulty is not developing answers to questions, but coming up with the questions to ask yourself. To do this, we need to learn how to write an introduction or “statement of the problem” section for a research study.

WHAT IS A RESEARCH PROBLEM AND WHY IS IT IMPORTANT?

One of the most challenging aspects of conducting research is to clearly identify the “problem” that leads to a need for your study. Individuals do not seem to give enough attention to why they are conducting their studies. **Research problems** are the educational issues, controversies, or concerns that guide the need for conducting a study. Good research problems can be found in our educational settings, such as:

1. The disruptions caused by at-risk students in classrooms
2. The increase in violence on college campuses
3. The lack of parental involvement in schools for students with challenging behaviors

These problems concern personnel in our schools, classrooms, and college campuses. In writing about the research problem, authors state it as a single sentence or several sentences in a research report. To locate the research problem in a study, ask yourself:

- ◆ What was the issue, problem, or controversy that the researcher wanted to address?
- ◆ What controversy leads to a need for this study?
- ◆ What was the concern being addressed “behind” this study?
- ◆ Is there a sentence like “The problem addressed in this study is . . .”?

You can find “problems” in the introduction to a study. They are included in a passage called the “statement of the problem” section. You can locate this passage in the opening, introductory paragraphs of a research report.

We study research problems so we can assist policy makers when they make decisions, help teachers and school officials solve practical problems, and provide researchers with a deeper understanding of educational issues. From a research standpoint, specifying a research problem in your study is important because it sets the stage for the entire study. Without knowing the research problem, readers do not know why the study is important and why they should read the study. What are some educational issues that you might research? Write down these issues.

Although you are aware of many educational problems, it is challenging to write them into a research report. This may be due to a lack of understanding about how to write them or identify them for your study.

HOW DOES THE RESEARCH PROBLEM DIFFER FROM OTHER PARTS OF RESEARCH?

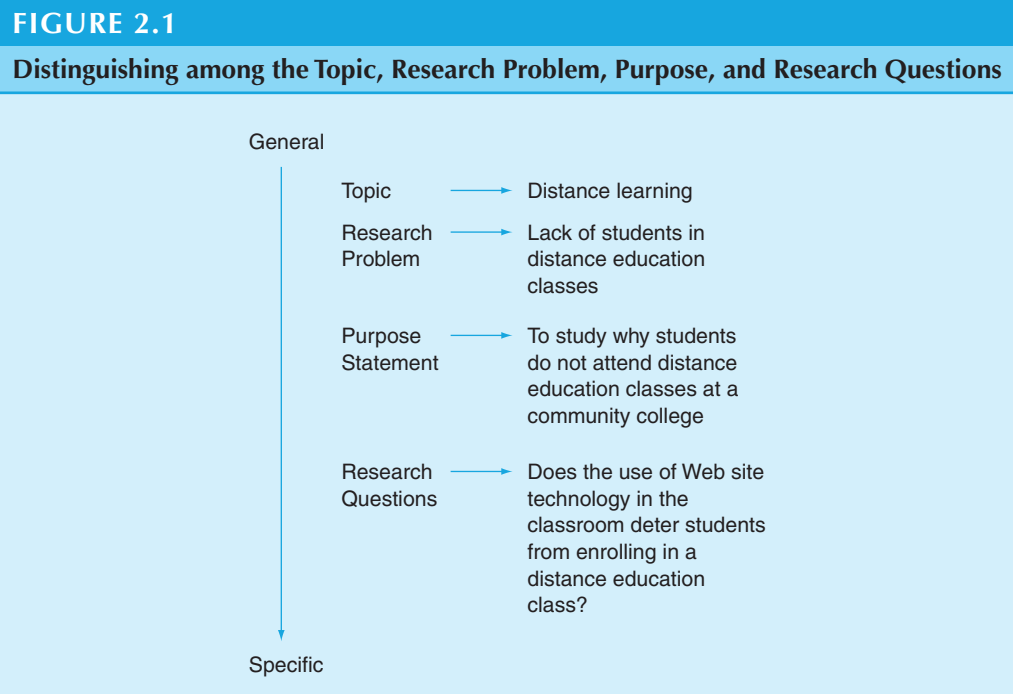
To better understand research problems, you might distinguish them from other parts of the research process. The research problem is distinct from the *topic* of the study (to be addressed later in this chapter), the *purpose* or intent of the study (to be considered in

the chapter on purpose statements), and specific *research questions* (also discussed in the chapter on purpose statements). The research problem needs to stand on its own and be recognized as a distinct step because it represents the problem addressed in the study.

In the brief definitions that follow, consider the differences among these parts of research:

- ◆ A *research topic* is the broad subject matter addressed by the study. Maria, for example, seeks to study weapon possession by students in schools.
- ◆ A *research problem* is a general educational issue, concern, or controversy addressed in research that narrows the topic. The problem Maria addresses is the escalating violence in schools due, in part, to students possessing weapons.
- ◆ A *purpose* is the major intent or objective of the study used to address the problem. Maria might state the purpose of her study as follows: “The purpose of my study will be to identify factors that influence the extent to which students carry weapons in high schools.”
- ◆ *Research questions* narrow the purpose into specific questions that the researcher would like answered or addressed in the study. Maria might ask, “Do peers influence students to carry weapons?”

Looking at these differences, you can see that they differ in terms of breadth from broad (topic) to narrow (specific research questions). Let’s examine another example, as shown in Figure 2.1, to make this point. In this example, a researcher begins with a broad topic, distance learning. The inquirer then seeks to learn about a problem related to this topic: the lack of students enrolled in distance education classes. To study this problem, our educator then reformulates the problem into a statement of intent (the purpose statement): to study why students do not attend distance education classes at one community college. Examining this statement requires that our investigator narrow the intent to specific questions, one of which is “Does the use of Web site technology



in the classroom deter students from enrolling in distance education classes?” The process involves narrowing a broad topic to specific questions. In this process, the “research problem” becomes a distinct step that needs to be identified to help readers clearly see the issue.

A common error is stating research problems as the purpose of the study or as the research question. The following examples show how you might reshape a purpose or a research question as a research problem.

Poor model. The researcher intends to identify the research problem but instead presents it as a *purpose statement*: The purpose of this study is to examine the education of women in Third World countries.

Improved model. A revision of it as a *research problem*: Women in Third World countries are restricted from attending universities and colleges because of the culturally oriented, patriarchal norms of their societies.

Poor model. A researcher intends to write about the research problem but instead identifies the *research question*: The research question in this study is “What factors influence homesickness in college students?”

Improved model. An improved version as a *research problem*: Homesickness is a major issue on college campuses today. When students get homesick, they leave school or start missing classes, leading to student attrition or poor achievement in classes during their first semester of college.

As you design and conduct a study, make sure that you are clear about the distinctions among these parts of research and that your written material differentiates among a topic, the research problem, the purpose, and your research questions.

CAN AND SHOULD PROBLEMS BE RESEARCHED?

Just because a problem exists and an author can clearly identify the issue does not mean that the researcher *can* or *should* investigate it. You *can* research a problem if you have access to participants and research sites as well as time, resources, and skills needed to study the issue. You *should* research a problem if the study of it potentially contributes to educational knowledge or adds to the effectiveness of practice.

Can You Gain Access to People and Sites?

To research a problem, investigators need to gain permission to enter a site and to involve people at the location of the study (e.g., gaining access to an elementary school to study children who are minors). This access often requires multiple levels of approval from schools, such as district administrators, principals, teachers, parents, and students. In addition, projects conducted by educational agencies receiving federal funding (most colleges and universities) need to have institutional review approval to ensure that researchers protect the rights of their participants. Your ability to gain access to people and sites can help determine if you can research the issue.

Can You Find Time, Locate Resources, and Use Your Skills?

Even if you can gain access to the people and sites needed for your study, your ability to research the problem also depends on time, resources, and your research skills.

Time

When planning a study, investigators should anticipate the time required for data collection and data analysis. Qualitative studies typically take more time than quantitative studies because of the lengthy process of collecting data at research sites and the detailed process of analyzing sentences and words. Regardless of the approach used, you can gauge the amount of time needed for data collection by examining similar studies, contacting the authors, or asking researchers who are more experienced. Developing a time line for a study helps you assess whether you can reasonably complete the study within the time available.

Resources

Investigators need resources such as funds for equipment, for participants, and for individuals to transcribe interviews. Researchers need to create a budget and obtain advice from other, experienced researchers about whether the anticipated expenses are realistic. Other resources may be needed as well, such as mailing labels, postage, statistical programs, or audiovisual equipment. Dependent on these resource requirements, investigators may need to limit the scope of a project, explore funding available to support the project, or research the project in stages as funds become available.

Skills

The skills of the researcher also affect the overall assessment of whether the study of a problem is realistic. Investigators need to have acquired certain research skills to effectively study a problem—skills gained through courses, training, and prior research experiences. For those engaged in quantitative studies, these skills require using computers, employing statistical programs, or creating tables for presenting information. The skills needed for qualitative researchers consist of the ability to write detailed passages, to synthesize information into broad themes, and to use computer programs for entering and analyzing words from participants in the study.

Should the Problem Be Researched?

A positive answer to this question lies in whether your study will contribute to knowledge and practice. One important reason for engaging in research is to add to existing information and to inform our educational practices. Research adds to knowledge. Now let's examine these ways in more detail as you think about the research problem in one of your studies.

There are five ways to assess whether you should research a problem:

1. *Study the problem if your study will fill a gap or void in the existing literature.* A study fills a void by covering topics not addressed in the published literature. For example, assume that a researcher examines the literature on the ethical climate on college campuses and finds that past research has examined the perceptions of students, but not of faculty. This is a void or gap in the body of research about this issue. Conducting a study about faculty perceptions of the ethical climate would address a topic not studied in the current literature.

2. *Study the problem if your study replicates a past study but examines different participants and different research sites.* The value of research increases when results can apply broadly to many people and places rather than to only the setting where the initial research occurred. This type of study is especially important in quantitative experiments.

In a quantitative study of ethical climate, for example, past research conducted in a liberal arts college can be tested (or replicated) at other sites, such as a community college or major research university. Information from such a study will provide new knowledge.

3. *Study the problem if your study extends past research or examines the topic more thoroughly.* A good research problem to study is one in which you extend the research into a new topic or area, or simply conduct more research at a deeper, more thorough level to understand the topic. For example, in our illustration on ethical climate, although research exists on ethical climates, it now needs to be extended to the situation in which students take exams, because taking exams poses many ethical dilemmas for students. In this way, you extend the research to new topics. This extension is different from replication because you extend the research to these topics rather than participants and research sites.

4. *Study the problem if your study gives voice to people silenced, not heard, or rejected in society.* Your research adds to knowledge by presenting the ideas and the words of marginalized (e.g., the homeless, women, racial groups) individuals. For example, although past studies on ethical climate have addressed students on predominantly white campuses, we have not heard the voices of Native Americans on this topic. A study of this type would report and give voice to Native Americans.

5. *Study the problem if your study informs practice.* By examining the problem, your research may lead to the identification of new techniques or technologies, the recognition of the value of historical or current practice, or the necessity of changing current teaching practice. Individuals who benefit from practical knowledge may be policy makers, teachers, or learners. For example, a study of ethical issues in a college setting may lead to a new honor code, new policies about cheating on exams, or new approaches to administering tests.

HOW DOES THE RESEARCH PROBLEM DIFFER IN QUANTITATIVE AND QUALITATIVE RESEARCH?

After you identify a research problem, you should also consider if it better fits a quantitative or qualitative approach. Because the two approaches differ in their essential characteristics, there should be a match between your problem and the approach you use. What factors are important in determining this match? What type of research problem is best suited for quantitative research and what type for qualitative research?

Let's look once again at the parent involvement study (Deslandes & Bertrand, 2005) and the mothers' issues of trust in school principals study (Shelden et al., 2010). We can see that each study addresses a different type of problem. In the quantitative parent involvement study, the researchers make a case that we know little about what factors lead parents to decide to (or to *explain why they*) become involved in their adolescents' schooling. Why would such a lack of involvement be important? The authors cite literature suggesting that involvement means fewer disciplinary problems and higher grades. Explaining or predicting relations among variables is an important characteristic of *quantitative* research. Alternatively, in the qualitative study of mothers' issues of trust study, the authors describe a need to gain insight into the trust of mothers of children with disabilities in school principals. This requires *exploring* and *understanding* the nature of trust. Exploring a problem is a characteristic of *qualitative* research.

These two factors—explanation and exploration—provide a standard you can use to determine whether your research problem is better suited for either a quantitative or qualitative study. Here are some additional factors to consider:

Tend to use *quantitative research* if your research problem requires you to:

- ◆ Measure variables
- ◆ Assess the impact of these variables on an outcome
- ◆ Test theories or broad explanations
- ◆ Apply results to a large number of people

Tend to use *qualitative research* if your research problem requires you to:

- ◆ Learn about the views of individuals
- ◆ Assess a process over time
- ◆ Generate theories based on participant perspectives
- ◆ Obtain detailed information about a few people or research sites

HOW DO YOU WRITE A “STATEMENT OF THE PROBLEM” SECTION?

After you have identified your research problem, determined that it can and should be researched, and specified either the quantitative or qualitative approach, it is time to begin writing about the “problem” in a statement of the problem section that introduces your research study.

The **statement of the problem** section includes the actual research problem as well as four other aspects:

1. The topic
2. The research problem
3. A justification of the importance of the problem as found in the past research and in practice
4. The deficiencies in our existing knowledge about the problem
5. The audiences that will benefit from a study of the problem

By identifying these five elements, you can easily understand introductions to research studies and write good introductions for your own research reports.

The Topic

The opening sentences of a “statement of the problem” section need to encourage readers to continue reading, to generate interest in the study, and to provide an initial frame of reference for understanding the entire research topic. Given these factors, it makes sense to start with a broad topic that readers can easily understand. In this way, you bring readers into a study slowly and encourage them to read beyond the first page.

An **educational topic** is the broad subject matter that a researcher wishes to address in a study and that creates initial interest for the reader. As shown in Figure 2.2, researchers state the topic in the title and introduce it in the first sentences. Note that the authors ease into the study with general ideas that most readers can understand (standardized tests, the education of Native Americans, the problem-solving mode of teaching elementary science). For example, assume that an author begins the topic discussion with comments about

FIGURE 2.2

Select Topics and First Sentences of Research Studies Reported in Educational Journals

The Impact of Mandated Standardized Testing on Minority Students

Richard G. Lomax, Mary Maxwell West, Maryellen C. Harmon, Katherine A. Viator, & George F. Madaus, 1995

One of the original reasons for the introduction of mandated standardized tests was to reduce the effects of patronage and thereby open educational opportunities and a range of occupations to a wider population of students (Madaus, 1991). However, . . .

Inhibitors to Implementing a Problem-Solving Approach to Teaching Elementary Science: Case Study of a Teacher in Change

Mary Lee Martens, 1992

The problem-solving mode of teaching elementary science now recommended in many states implies change for many groups of professionals including teachers, administrators, and other individuals charged with implementing educational policy. Teachers, however, . . .

Living and Working in Two Worlds

Case Studies of Five
American Indian
Women Teachers

BRENDA HILL, COURTNEY VAUGHN, AND SHARON BROOKS HARRISON, 1995

The Euro-American education of American Indians began under the auspices of missionaries and a few lay educators, with the ongoing purpose of remaking American Indians into the Euro-American image. In . . .

plagiarism on college campuses. This approach may unnecessarily narrow the topic too soon and lose readers who have not studied or read about plagiarism. Instead, writers might begin with the broader topic of dishonesty on campus and the need to explore the values students learn during their college years.

Let's examine the first sentence. We call it a **narrative hook**. It serves the important function of drawing the reader into a study. Good narrative hooks have these characteristics: cause the reader to pay attention, elicit emotional or attitudinal responses, spark interest, and encourage the reader to continue reading.

A convincing narrative hook might include one or more of the following types of information:

1. Statistical data (e.g., "More than 50% of the adult population experiences depression today.")
2. A provocative question (e.g., "Why are school policies that ban smoking in high schools not being enforced?")
3. A clear need for research (e.g., "School suspension is drawing increased attention among scholars in teacher education.")
4. The intent or purpose of the study (e.g., "The intent of this study is to examine how clients construe the therapist–client relationship.")

Although all of these represent possibilities for you to use, the key idea is that a study begins with an introduction to a topic that the reader can easily understand and with a first sentence that creates reader interest. Examine once again Figure 2.2 and assess whether the first sentence in these three studies captures your interest and encourages

you to continue reading. Evaluate each based on the four types of information for a good narrative hook listed above.

The Research Problem

After stating the topic in the opening discussion, you then narrow the topic to a specific research problem or issue. Recall that a **research problem** is an educational issue, concern, or controversy that the researcher investigates. Authors may present it as a single sentence or as a couple of short sentences. Also, authors may frame the problem as a deficiency in the literature, such as we know little about the factors that lead parents to be involved in their adolescents' schooling (Deslandes & Bertrand, 2005).

What types of research problems do you study? Sometimes research problems come from issues or concerns found in schools or other educational settings. We will call these **practical research problems**. For example, can you see the practical issue in the following research problem posed about the Chinese policy toward single-child families?

Since the late 1970s a single-child policy has been implemented by the Chinese government to control the largest population in the world. Selective abortion to choose a boy could inevitably skew the Chinese gender distribution, and is clearly prohibited by the government. As a result, although boys were valued higher than girls in traditional Chinese culture, many parents eventually have a girl as their single child. (Wang & Staver, 1997, p. 252)

The practical problem in this study was that boys were valued more than girls and the policy controls people in the population.

In other research studies the “problem” will be based on a need for further research because a gap exists or we need to extend the research into other areas. It might also be based on conflicting evidence in the literature. This type of problem is a **research-based research problem**. For example, see how the author in the next example calls for additional research that connects developmentally appropriate reading practices and teachers' approaches:

Although both teacher beliefs about developmentally appropriate practices with young children and teacher theoretical orientation to early reading instruction have been previously studied, there is a lack of research that connects the two areas. (Ketner, Smith, & Parnell, 1997, p. 212)

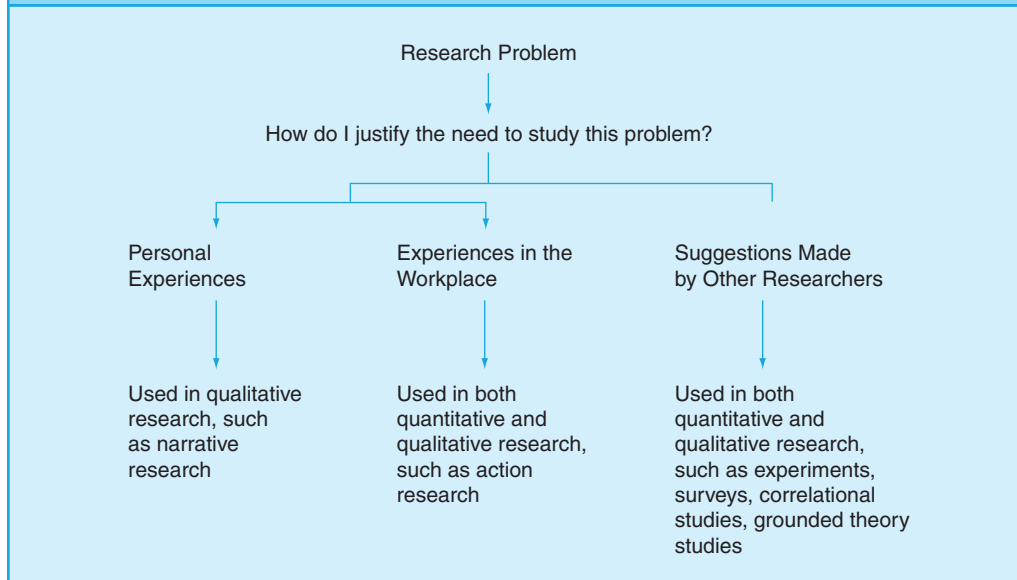
The “problem” in this case is based on a research need for more information.

In some research, you can take both a practical and a research-based approach to the problem and state both types of problems. For example, consider how both play into this statement: “There is a need to better explain reading progress (the practical approach) as well as make up for a lack of research about developmentally appropriate practices and teacher orientation (the research-based approach).”

Whether you find the research problem in a practical setting, find it as a need in the research literature, or both, the point is to state it clearly in a sentence or two in the statement of the problem section. The reader simply needs to know the issue or concern that leads to a need for your study.

Justification of the Importance of the Problem

It is not enough to state the problem or issue. You also need to provide several reasons that explain why this issue is important. **Justifying a research problem** means presenting reasons for the importance of studying the issue or concern. This justification occurs

FIGURE 2.3**The Process of Justifying a Research Problem**

in several paragraphs in an introduction in which you provide evidence to document the need to study the problem. As shown in Figure 2.3, you can justify the importance of your problem by citing evidence from:

- ◆ Other researchers and experts as reported in the literature
- ◆ Experiences others have had in the workplace
- ◆ Personal experiences

These justifications draw from different sources, are used in different types of approaches (i.e., quantitative or qualitative), and typically find expression in select research designs such as experiments, action research, or narrative research (to be addressed more specifically in the research design chapters in part III).

Justification in the Literature Based on Other Researchers and Experts

We will begin with the most scholarly justification—suggestions from other researchers that the problem needs to be studied. Authors often cite research problems that require further study in the conclusions of the literature such as journal articles. For example, note the suggestions for future research in the concluding paragraph in the mothers' trust in school principals study (Shelden et al., 2010):

These findings also suggest a need to examine the extent to which school principal personnel preparation programs are adequately preparing school principals to build trust and effective partnerships with parents of students with disabilities. (pp. 168–169)

Using this example, you might cite Shelden et al. (2010) and use this information as justification for the changes in personnel preparation programs. Another justification from the literature consists of advancing a need for the study based on an incomplete model or theory that explains the relation among elements of the model or theory.

A theory, for example, may be incomplete because it does not address important factors that need to be considered. Thus, a leadership theory may identify the traits of the leader, the characteristics of the follower, and the elements operating in the leadership situation (e.g., congenial environment), but be lacking the element of the daily interactions that occur between the leader and the follower. A research study is needed to account for these interactions and more fully complete the model. Researchers could cite other researchers and experts who have also stated this conclusion but have not followed up on it with a research study.

Cite experts as justification for your research problem. Where do you find references to other researchers or experts who have indicated a need for a study? Often, authors of conference papers, research syntheses, or encyclopedias that report the latest research, such as the *Encyclopedia of Educational Research* (Alkin, 1992), mention the need for additional research on topics. Research experts have often studied topics for years, and they understand future research needs that will contribute to knowledge. You can identify and locate these experts through a search of library references, contact them at professional conferences, or find them through the Internet or through Web site addresses. Individuals who have spent entire careers becoming authorities on research topics or problems generally welcome student questions or requests.

When approaching these individuals, consider the questions you might ask them. Here is a short list of possibilities:

- ◆ What are you working on at present?
- ◆ Is my proposed topic and research problem worthy of study?
- ◆ Who else should I contact who has recently studied this topic and problem?

Although you may be hesitant to contact experts, such conversation yields leads for finding references, names of others interested in your topic, and names of conferences at which your research may be discussed.

Another authority on a particular research problem may be your graduate faculty advisor or your graduate committee members. Your advisor may have a long-term research agenda of examining an educational issue through a series of studies. By participating in the faculty member's research, you can learn about other studies and locate useful research to use as justification for your own research problems.

Justification Based on Workplace or Personal Experiences

You can justify your research problem based on evidence from your workplace or your personal experiences. This is the case for Maria, who based her justification for the study of students possessing weapons on the increased use of weapons in high schools in her school (or workplace) in the district.

Issues arise in educational workplaces that you can address in your research. For example, policy makers need to decide whether to mandate state standards of assessment, or principals and teachers must develop approaches to classroom discipline. Closely related are the personal experiences of our lives that provide sources for researchable problems. These personal experiences may arise from intense personal school experiences or experiences drawn from our childhood or family situations. Personal experiences provide justification especially in those studies with a practical orientation, such as solving a particular classroom dilemma in an action research study. They are also apparent in studies in which the researcher is the object of study, such as in narrative research. Researchers citing their own personal experiences as justification for a research problem need to be forewarned that some individuals (such as those trained in quantitative

research) may feel that such experiences should not be the sole justification for a study. This is a fair warning, and you might consider including not only your own personal experiences, but some of the other reasons mentioned for justifying a research problem.

Consider the following two examples of researchers introducing their own experiences as justification for studying a research problem. One researcher justifies the need to study students in a multiage middle school by referring to her own experiences in school. The study begins:

In the spring of 1992, the opportunity to conduct classroom action research was offered to Madison, Wisconsin teachers. Though my daily schedule was already full, I was drawn to this opportunity because of its emphasis on practical, classroom based research. . . . For me, multicultural curricula, cooperative learning, computer technology, and thematic education were exciting developments in classroom teaching. (Kester, 1994, p. 63)

Another researcher justifies the need for studying the ostracism of African American students in schools by tracing personal family experiences. The study starts:

When I was growing up, there was never a thought in my mind about whether or not I would go to school. It was given that I was going to go to school every day as long as my parents were alive and the Lord woke me up in good health. (Jeffries, 1993, p. 427)

Now consider Maria's justification based on her school experiences. Provide three reasons why a need exists for research on students possessing weapons in school. As a hint, consider how the school, the teachers, and the students themselves might benefit from a better understanding of this problem.

Deficiencies in What We Know

In the “statement of the problem” section, you next need to summarize how our present state of knowledge—both from research and from practice—is deficient. Although a deficiency in the literature may be part of the justification for a research problem, it is useful to enumerate on several deficiencies in the existing literature or practice. A **deficiency in the evidence** means that the past literature or practical experiences of the researchers does not adequately address the research problem. For example, deficiencies in the research may require a need to extend the research, replicate a study, explore a topic, lift the voices of marginalized people, or add to practice. A deficiency in practice means that educators have not yet identified good and workable solutions for schools or other educational settings. As you summarize these deficiencies, identify two or three reasons why existing research and practice are deficient in addressing the research problem, and state these reasons toward the end of the introduction to the study. In the following example, a researcher indicates weaknesses in past research and reflects on personal experiences:

The past research does not address the cultural differences of children in pre-schools. It also does not consider the multiple factors that explain teacher interactions with these students. From observing preschools, the need further exists to better understand how teachers interact with preschool children from different cultures.

In Maria's situation, in what areas would her school committee lack information to help them address the problem of weapons in the schools? They might not know how frequently students actually carry weapons, what types they are, and the places where

they hide the weapons. State at least two other deficiencies in knowledge the school committee might have.

The Audience

The **audience** in a “statement of the problem” section needs to be identified. It consists of individuals and groups who will read and potentially benefit from the information provided in your research study. These audiences will vary depending on the nature of your study, but several often considered by educators include researchers, practitioners, policy makers, and individuals participating in the studies. One author, for example, in ending an introduction section, commented about the importance of the study for school administrators:

By exploring the need for athletic trainers in high schools, school administrators can identify potential issues that arise when trainers are not present, and coaches can better understand the circumstances in which trainers are most needed at athletic events.

As this example illustrates, authors often enumerate multiple audiences. Passages such as these are typically found in the concluding passage in the introduction or the “statement of the problem” section and explain the importance of addressing the problem for each audience. Like the narrative hook, this information continues to draw the reader into the study and it personalizes the research so that readers can see that the study will potentially provide meaningful information. When researchers include comments about the importance of the study for audiences, they also remind themselves about the need to report useful results.

WHAT ARE SOME STRATEGIES FOR WRITING THE “STATEMENT OF THE PROBLEM” SECTION?

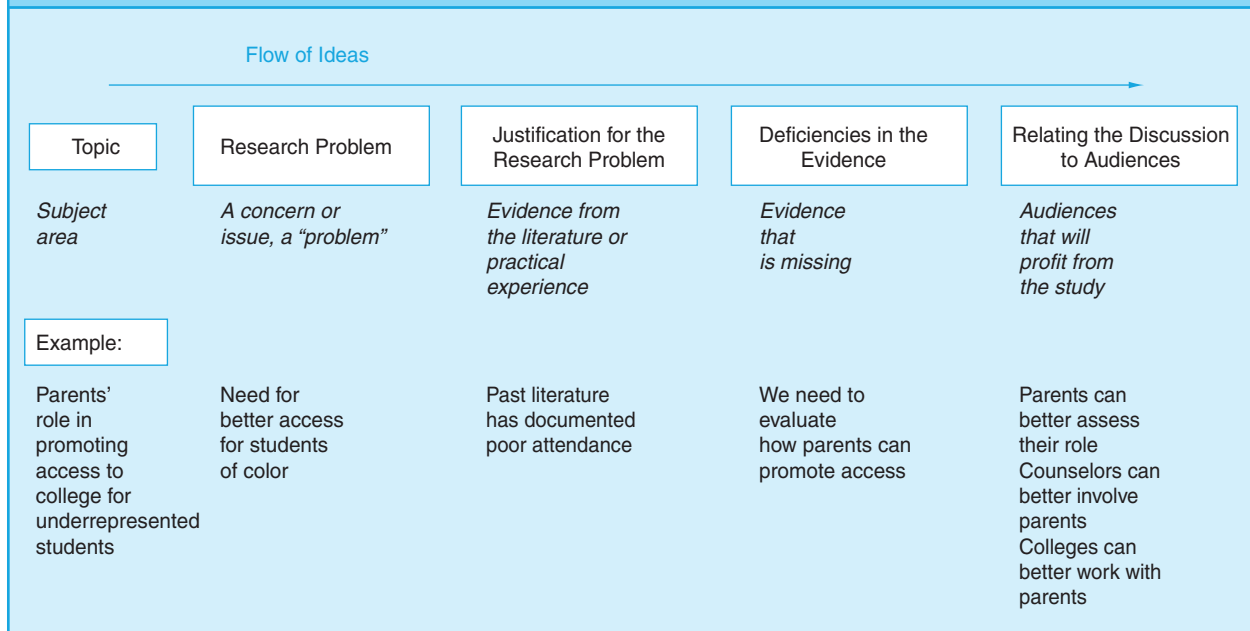
Writing the introduction or “statement of the problem” section as an opening passage in your research report sets the stage for readers to understand your project and appreciate the strong research orientation of your report. Several writing strategies can help you craft this section.

A Template

One strategy you can use as you write your “statement of the problem” section is to visualize this section as five paragraphs, with each paragraph addressing one of the five aspects of the section. Take sections in order beginning with the topic, the research problem, the justification, the deficiencies, and the audience. Examine the flow of ideas as shown in Figure 2.4. This figure shows that a “statement of the problem” section has five elements, and it provides a brief definition for each element and an example to illustrate the element. The researcher begins with the topic of parents’ role in promoting access to college for their students of color. This is a sensitive topic and it could be difficult to study. However, the topic merits a research study. Also, from practical experiences on campuses, past literature has documented low attendance by students of color and that there has been a norm of underachievement by these students in college. Thus, parents might play a key role in encouraging college attendance, and we need evidence

FIGURE 2.4

Flow of Ideas in a “Statement of the Problem” Section



from parents about how they might construct this role. By studying this problem and gaining insight from parents, the role of parents can be better understood, school counselors can reach out to involve parents in encouraging their children, and colleges can better recruit underrepresented students to their campuses. The flow of ideas runs from the topic to the problem and its justification and deficiencies that, if studied, will aid specific audiences.

Other Writing Strategies

Another writing strategy is to use frequent references to the literature throughout this introductory passage. Multiple references add a scholarly tone to your writing and provide evidence from others, rather than relying on your own personal opinion. The use of references in your study will build credibility for your work. A third strategy is to provide references from statistical trends to support the importance of studying the research problem. How many teenagers smoke? How many individuals are HIV positive? This form of evidence is especially popular in quantitative studies. Another writing strategy is to use quotes from participants in a study or from notes obtained from observing participants to begin your “statement of the problem” introduction. This approach is popular and frequently used in qualitative studies. Finally, be cautious about using quotes from the literature to begin a study, especially in the first sentence. Readers may not extract the same meaning from a quote as the researcher does. The quotes are often too narrow to be appropriate for an introductory section in which you seek to establish a research problem and provide justification for it. To use quotes effectively, readers often need to be led “into” as well as “out of” the quote.



Think-Aloud About Writing a “Statement of the Problem”

I will model how I would write a “statement of the problem” to illustrate the actual practice of research. My approach applies the five-step model regardless of whether the study is quantitative or qualitative. However, close inspection of the research problem indicates a different emphasis in the two approaches. In quantitative research, an emphasis will be on the need for an *explanation* of outcomes, whereas in qualitative research, I will explore a *process, event, or phenomenon*.

My introduction begins with a general discussion about the topic of the research. I try to present the first sentence as a good “narrative hook” so that readers will be encouraged to read the report. The writing of this first sentence is difficult, and I may draft numerous revisions before I am satisfied that it will be general, timely, and understandable. I think about the wide range of students in my class who have varied backgrounds and majors, and whether they would understand and relate to my first sentence. I find it helpful to think about my audiences as a diverse group when I write the opening sentence of this passage.

As I’ve said, the opening paragraph needs to gently lead the reader into the study. My analogy for this is lowering a bucket into a well to get water. I hope to gently lower the bucket rather than drop it suddenly into the depths of the well. With this example in mind, I introduce the study in a paragraph or two and focus the reader’s attention on a single subject area and its general importance in education.

With any given topic, several issues may present themselves. Some arise from my experiences in a school or from a review of the past research on a topic. While reading about my topic in research articles (typically in journal articles), I am open to issues that need to be studied, and am most interested in specific issues that other authors suggest need to be studied. These issues are located in future research sections at the conclusion of articles. I often make a list of these suggestions for research on a piece of paper and try to follow up on one of them. When reviewing these studies, I try to become familiar with authors who are leaders in the field. These are often individuals frequently cited in published studies or commonly heard at conferences. Because of their expertise, I may contact these authors by phone or by e-mail to discuss my proposed study.

Once I have an understanding of a problem and can adequately justify studying it through evidence from the literature, I begin the process of writing the first section of a research report, the “statement of the problem.” I follow my five elements for writing this section, write the section, and check it for all five elements. My goal is to present a solid rationale for why my study is needed, and I support this need with several arguments using multiple forms of evidence. I extensively cite references in the introductory passage of my study. To ensure that the importance of the study is clear to the audience, I end the “statement of the problem” section with comments about the utility of the study for several audiences.

EXAMPLES OF “STATEMENT OF THE PROBLEM” SECTIONS

An example of a “statement of the problem” section is shown in Figure 2.5. This is from my study about teenage smoking in high schools. I introduce the topic and research problem in the first paragraph. This shows how the topic and the research problem can sometimes blend. I then cite evidence for this problem in the second paragraph. Note

FIGURE 2.5

Sample “Statement of the Problem” Section

Statement of the Problem Elements	Exploring the Conceptions and Misconceptions of Teen Smoking in High Schools: A Multiple Case Analysis
The Topic	Tobacco use is a leading cause of cancer in American society (McGinnis & Foefe, 1993). Although smoking among adults has declined in recent years, it has actually increased for adolescents. The Center for Disease Control and Prevention reported that smoking among high school students had risen from 27.5 percent in 1991 to 34.8 percent in 1995 (USDHHS 1996). Unless this trend is dramatically reversed, an estimated 5 million of our nation’s children will ultimately die a premature death (Center for Disease Control, 1996).
The Research Problem	Previous research on adolescent tobacco use has focused on four primary topics. Several studies have examined the question of the initiation of smoking by young people, noting that tobacco use initiation begins as early as junior high school (e.g., Heishman et al., 1997). Other studies have focused on the prevention of smoking and tobacco use in schools. This research has led to numerous school-based prevention programs and intervention (e.g., Sussman, Dent, Burton, Stacy, & Flay, 1995). Fewer studies have examined “quit attempts” or cessation of smoking behaviors among adolescents, a distinct contrast to the extensive investigations into adult cessation attempts (Heishman et al., 1997).
Evidence Justifying the Research Problem	Of interest as well to researchers studying adolescent tobacco use has been the social context and social influence of smoking (Fearnow, Chassin, & Presson, 1998). For example, adolescent smoking may occur in work-related situations, at home where one or more parents or caretakers smoke, at teen social events or at areas designated as “safe” smoking places near high schools (McVea et al., in press).
Deficiencies in Evidence	Minimal research attention has been directed toward the social context of high schools as a site for examining adolescent tobacco use. During high school students form peer groups which may contribute to adolescent smoking. Often peers become a strong social influence for behavior in general and belonging to an athletic team, a music group, or the “grunge” crowd can impact thinking about smoking (McVea et al., in press). Schools are also places where adolescents spend most of their day (Fibkins, 1993) and are available research subjects. Schools provide a setting for teachers and administrators to be role models for abstaining from tobacco use and enforcing policies about tobacco use (O’Hara et al., 1999).
The Audience	Existing studies of adolescent tobacco use are primarily quantitative with a focus on outcomes and transtheoretical models (Pallonen, 1998). Qualitative investigations, however, provide detailed views of students in their own words, complex analyses of multiple perspectives, and specific school contexts of different high schools that shape student experiences with tobacco (Creswell, in press). Moreover, qualitative inquiry offers the opportunity to involve high school students as co-researchers, a data collection procedure that can enhance the validity of student views uncontaminated by adult perspectives. By examining these multiple school contexts, using qualitative approaches and involving students as co-researchers, we can better understand the conceptions and misconceptions adolescents hold about tobacco use in high schools. With this understanding, researchers can better isolate variables and develop models about smoking behavior. Administrators and teachers can plan interventions to prevent or change attitudes toward smoking, and school officials can assist with smoking cessation or intervention programs.

that I am not discussing any study in detail here in the introduction; in many of my studies, specific reference to individual studies will appear later in the literature review section. Following the evidence for the problem, I mention in the fourth paragraph the “deficiencies” in past studies and the need for extending past research. In the final paragraph, I appeal to various audiences (i.e., researchers, administrators, and teachers) to read and use this study.

You can learn how to write “statement of the problem” sections from reading introductions to studies, looking for the five elements, and noting sentences that capture the research problem. Examine the following two additional examples to see how an author of a *qualitative* study and an author of a *quantitative* study wrote introductory sections for their studies. Both followed the template, but the type of problem is more exploratory in the qualitative and more explanatory in the quantitative. Following each example, we will relate the passages to each of the five elements of a “statement of the problem” section. The first example is a qualitative study by Brown (1998) on distance learning in higher education, and this passage presents the entire introduction to her study.

Distance learning is an increasingly important aspect of higher education because it meets the needs of an expanding pool of nontraditional students who find education necessary for jobs in today’s information age. Distance learning provides a flexible manageable alternative for this developing segment of society. However, students in distance classes work at computers miles apart at varying times of the day and night. This feeling of being alone is overcome when students join in a community of learners who support one another (Eastmond, 1995). The process of forming a community of learners is an important issue in distance learning because it can affect student satisfaction, retention, and learning (Gabelnick, MacGregor, Matthews, & Smith, 1990c; Kember, 1989; Kowch & Schwier, 1997; Powers & Mitchell, 1997). It may even affect faculty evaluations, which tend to be lower in distance education courses (Cordova, 1996).

In reviewing the literature on distance learning for adults and nontraditional students in higher education, I found a decided lack of research about community building within the class and within the institution. However, other research has paved the way for the exploration of this topic. Studies discussed the need for institutional support (Dillon, Gunawardena, & Parker, 1989) and for student/student and student/faculty interaction (Hiltz, 1986, 1996; Powers & Mitchell, 1997) which appear to be steps in building a community of distance learners. (Brown, 1998, p. 2)

In this example, Brown opens with a comment about distance learning and its importance today (the topic). She then argues that there are several problems facing distance education: Students feel alone (evidence from practice) and faculty evaluations are low (evidence from past research). Next she assesses a shortcoming in past research: the need to explore community building (a deficiency in past research). Brown does not end the passage with implications for a specific audience, although she might have discussed the importance of addressing community-building in distance learning for the student, teacher, or college personnel. Overall, Brown’s “statement of the problem” section contains four of the five elements.

Next you will read the complete “statement of the problem” introducing a quantitative study by Davis et al. (1997) that was reported in a journal article. The study deals with the topic of tobacco use among high school students.

Adolescent use of all tobacco products is increasing (3–6). By age 18 years, approximately two thirds of United States teenagers have tried smoking and approximately one fourth have smoked in the last 30 days (3). In addition, more than 20 percent

of white adolescent males use smokeless tobacco products (4). Adolescent tobacco use has been reported by race/ethnicity, gender, and grade level (5); however, the relationship between sports intensity, race, and tobacco use has not been studied to the best of our knowledge. (Davis et al., 1997, pp. 97–98)

This example models the elements of the “statement of the problem” section. Contained within two opening paragraphs in a journal article, it begins with a discussion about the prevalence of smoking in high school (the topic). The authors then advance the issue of the high rate of smokeless tobacco use among athletes (the research problem) and provide evidence for this issue drawing on past studies and statistical trends (evidence from past research documenting this as a problem). Following this, the authors indicate that sports intensity (defined later in the study), race, and tobacco use have not been studied (a deficiency). They seek an explanation for the influence of sports intensity and race on tobacco use. Although the authors do not comment about the audience that will profit from this study, the intended audience is likely students, teachers, schools, coaches, and researchers who study high school students and adolescent tobacco use.

REEXAMINING THE PARENT INVOLVEMENT AND THE MOTHERS’ TRUST IN SCHOOL PRINCIPALS STUDIES

Let’s revisit the quantitative parent involvement study (Deslandes & Bertrand, 2005) and the qualitative mothers’ trust in school principals study (Shelden et al., 2010) to examine the “statement of the problem” introductory sections to the studies. In the parent involvement study (Deslandes & Bertrand, 2005), the authors introduce the problem and integrate the literature review in the first 12 paragraphs. They mention the problem early by framing it within the existing literature: we know little about the factors that influence parents’ involvement in adolescent schooling. The authors do not present the issue strongly as a “problem”; instead, they talk about the positive advantages of parent involvement. Then they review the literature about the four factors that influence parent involvement. They continue to review the literature about the four factors, and then state the deficiencies of the literature and establish a need for their study. They mention that investigations are needed (i.e., the literature is deficient) to better understand what motivates parents to become involved and that the combined contribution of the four factors has not been studied across secondary grade levels. In this opening passage, the authors do not mention the audiences who will profit from this study. However, in the concluding sections of the article, the authors mention the benefits of the study for researchers, school administrators, and teachers. In sum, the authors followed the template for a good problem statement that we have discussed.

The qualitative mothers’ trust in school principals study (Shelden et al., 2010) opens with the broad topic of the role of parent involvement in their students’ education. It then reviews the literature on trust and the importance of school leaders. Then we learn about the “problem” that parents of children with disabilities have the right to implement due process proceedings if they disagree with the decisions of the school staff. These proceedings, if implemented, can be quite costly and escalate conflict between parents and team members. Principals can intervene because of their important school role. Thus, further research is needed on how principals influence trust with parents. No audiences were specified in the introduction who could profit from this research, but implications for several audiences were developed at the end of the article. Thus, the authors did identify a focus for the study, specify a problem, review the literature, and

make a case for deficiencies in our understanding of the problem. What characterized this introduction is that the authors brought in the problem *after* the literature review rather than before it in our order of topics learned about writing a problem statement.

KEY IDEAS IN THE CHAPTER

Define a Research Problem and Explain Its Importance

A research problem is an educational issue, concern, or controversy that the investigator presents and justifies in a research study. In a research report, the investigator introduces this problem in the opening paragraphs of a study in a section called the “statement of the problem.” It may consist of a single sentence or several sentences.

Distinguish between a Research Problem and Other Parts of Research

The research problem is distinct from the topic of a study, the purpose, and the research questions. The topic is the subject matter of the study, the purpose statement sets forth the intent of the study, and the research questions raise questions that the researcher will answer based on data collected in the study.

Criteria for Deciding Whether a Problem Can and Should Be Researched

Before designing and writing about the problem, researchers need to consider whether it can and should be studied. The researcher must have access to people and sites and possess the time, resources, and skills to study the problem. The study needs to contribute to knowledge and practice. There also needs to be a match between the research problem and the approach—quantitative or qualitative—chosen for the study.

The Difference between Quantitative and Qualitative Research Problems

Research problems best studied using the quantitative approach are those in which the issue needs to be explained; problems best addressed by the qualitative approach are those that need to be explored.

The Five Elements of a “Statement of the Problem” Section

The “statement of the problem” section or the introduction to a study includes five elements: the educational topic, the research problem, a justification for the problem based on past research and practice, deficiencies or shortcomings of past research or practice, and the importance of addressing the problem for diverse audiences. This is an ideal order for these sections.

Strategies Useful in Writing the “Statement of the Problem” Section

Several writing strategies assist in this process of designing and writing a “statement of the problem” section. These strategies include writing the elements of this section in order using a template as a guide, using ample citations to the literature, and including references to statistical information in quantitative studies and quotes in qualitative studies.

USEFUL INFORMATION FOR PRODUCERS OF RESEARCH

- ◆ Assess whether a problem can and should be researched. Apply three criteria: (a) Can the participants and sites be studied? (b) Can the problem be researched given the researcher's time, resources, and skills? (c) Will a study of the issue contribute to knowledge and practice?
- ◆ Identify and write a distinct research problem. Make it separate from the topic, the purpose of the study, and the research questions.
- ◆ Position the research problem in the “statement of the problem” section, and present it as the opening passage of a study.
- ◆ When writing the “statement of the problem,” introduce the reader to the topic, convey the research problem, justify the need to study the research problem, identify deficiencies in the evidence, and target audiences who will benefit from the study.
- ◆ Consider writing the “statement of the problem” section in five distinct paragraphs to ensure inclusion of all elements. Use extensive references, cite statistics for a quantitative study, and include quotes from participants for a qualitative study.

USEFUL INFORMATION FOR CONSUMERS OF RESEARCH

- ◆ The actual “problem” in a study may be hidden in the opening paragraphs. Look for the issue or concern leading to the study. Ask yourself what educational “problem” is addressed by the study.
- ◆ Recognize that not all research problems should and can be researched. A problem *can* be researched if the inquirer has access to people and sites and if the investigator has the time, resources, and skills to adequately study the problem. A problem *should* be researched if the investigator can claim that studying it will add to knowledge or practice.
- ◆ Look for five elements in the introduction to a study: the topic, the research problem, the justification for this problem, the deficiencies in this evidence, and the importance of the study for audiences. This structure can help you understand the opening passages of a study and the author's intent.

UNDERSTANDING CONCEPTS AND EVALUATING RESEARCH STUDIES

You can test your knowledge of the content of this chapter by answering the following questions that relate to the parent involvement study and the mothers' trust in school principals study. Answers to questions are found in appendix A so that you can assess your progress.

1. Examine the first sentence—the narrative hook—for each study as stated below. Evaluate whether it is an effective narrative hook.
 - a. In past decades, a wealth of studies have showed that parent involvement is essential in children's educational process and outcomes (Deslandes & Bertrand, 2005).
 - b. Parents are meant to be included as fundamental participants in educational organizations (Shelden et al., 2010).

2. Identify and review the research problem found in the parent involvement study and in the mothers' trust in school principals study. Why is the first problem best suited for quantitative research and the second for qualitative research?
3. A research problem should be researched if it contributes to educational knowledge or practice. Listed below are five ways a study might contribute to knowledge:
 - a. Fills a void or extends existing research
 - b. Replicates a study with new participants or at new sites
 - c. Studies a problem that has not been studied or is understudied
 - d. Gives voice to people not heard
 - e. Informs practiceIdentify for both the parent involvement study and the mothers' trust in school principals study how they contribute to knowledge.
4. For both the parent involvement study and the mothers' trust in school principals study discuss a justification of each study based on personal experiences.
5. If multiple references add a scholarly tone to a "statement of the problem" section, which article, the parent involvement study or the mothers' trust in school principals study introduces a better scholarly introduction to their study? Why?
6. For an educational topic of your choice, write down the topic, the research problem, your justification for the problem based on practice or research, potential deficiencies in the knowledge about the problem, and the audiences that will benefit from your study.

CONDUCTING YOUR RESEARCH

Write a "statement of the problem" section for a research study you would like to conduct. Identify the topic, the research problem, justification for the problem, the deficiencies in knowledge about the problem, and the audience that will benefit from studying the problem.



Go to the Topic "Selecting and Defining a Research Topic" in the MyEducationLab (www.myeducationlab.com) for your course, where you can:

- ◆ Find learning outcomes for "Selecting and Defining a Research Topic."
- ◆ Complete Assignments and Activities that can help you more deeply understand the chapter content.
- ◆ Apply and practice your understanding of the core skills identified in the chapter with the Building Research Skills exercises.
- ◆ Check your comprehension of the content covered in the chapter by going to the Study Plan. Here you will be able to take a pretest, receive feedback on your answers, and then access Review, Practice, and Enrichment activities to enhance your understanding. You can then complete a final posttest.