CHAPTER ONE

Developing the Problem Statement for Your Dissertation Proposal

The Problem Is the Problem

As I said in the introduction, many students wrestle with "the problem is the problem"; they just can't seem to get started. My experiences with doctoral students are not unique; many experts believe that defining a clear, researchable problem is the most difficult part of any research study. Given that, in this chapter, we focus on learning how to identify a specific problem, or research opportunity, and then develop and write a good problem statement. In subsequent chapters, we will see exactly how the problem statement sets the stage for the rest of the dissertation proposal wherein we will include a statement of the purpose of the study, research questions and hypotheses, the review of related literature, and the research method for investigating the problem. By understanding this process, you will be well on your way to writing a quality dissertation proposal.

Finding a Good Research Problem

Problems or opportunities for research are all around us. For many students, the real issue isn't finding a problem to investigate, it's narrowing down the many possibilities—things you've studied in your coursework, personal experiences, issues at your workplace or institution, or by reading about a topic in which you are interested. Other potential areas for investigation can be found by attending professional conferences, speaking with experts in your field, or by replicating the work of others to better understand or apply the results of research they have conducted. We will look at several examples but, before we do, let's talk briefly about the reading required as part of identifying your problem.

Reading the Literature in Your Field Underlies Everything You Do

As I've pointed out several times up to this point, a formal *review of literature (ROL)* is an essential component of a good dissertation proposal. As I mentioned in the introduction, that leads some students to believe that all of the literature they read will be included in the formal ROL, but nothing could be further from the truth. Every part of a good dissertation is influenced and supported by what you read.

For example, in many cases, students identify a potential dissertation problem based on readings in a specific area of interest. As we'll see later in this chapter, however, a good problem statement also discusses the **background of the problem**, as well as why investigating the problem is important: the literature helps in writing both of these sections. In short, the literature you read at this point helps you write a strong problem statement.

The formal ROL, usually in Chapter 2 of a dissertation, expands upon that knowledge and provides the reader with a deeper understanding of the problem area, discusses prior research that has been conducted, and provides a basis for a sound research methodology upon which to investigate the problem. While this may sound somewhat confusing, the key lies in reading other high-quality proposals, dissertations, and journal articles. It will become readily apparent how writers use the literature to support their problem area and then how it is used to better define, understand, and guide the research itself. In this book, we go into greater detail when we get to those sections, but for now let's get back to finding a good research problem.

A Problem Based on Experience

Experience-based problems can be identified in almost any field: education, medicine, business, agriculture, psychology, and so on. In short, an experience-based problem can be identified in any case where we want to investigate a problem to find a solution, develop new technology, improve health care, and so forth.

Let's begin with a straightforward, easy-to-understand problem. In this case, imagine we are working at a university where the attrition rate from the doctoral program is higher than the historical average of doctoral programs throughout the United States; this is clearly a problem I could investigate:

> *Our school has an attrition rate greater than 50%.*

This type of problem is a *practical* or *applied* research problem because it focuses on a specific issue—attrition—within a group or organization, in this case, our school. In short, it tackles a real-world problem and attempts to solve it.

In another case, I might focus on a practical problem in the gym where I work out:

> *Regardless of the amount of exercise they do, participants in aerobics classes do not lose a significant amount of weight.*

Since I live in a state with a large population of older citizens, I might focus on the following problem:

Drivers over the age of 65 are involved in more automobile accidents than drivers in other age groups.

In this example, you might be thinking, "Of course that's true. Older drivers have a slower reaction time, their eyesight tends to be poorer and, because they tend to drive less daily, their driving skills may not be as sharp as younger drivers." If we know the answer already, then why is this a valid research problem for a dissertation? Unfortunately, older drivers are involved in more accidents than most other age groups and this has led to preventative measures, including more frequent license renewals being implemented. Wait a minute though, did I just say, "most other age groups"? Yes, and as you might guess, according to the National Highway Traffic Safety Administration, there are about an equal number of accidents caused by drivers age 24 and younger. Reasons such as lack of experience, being distracted by their phones, speeding, and being with friends seem to relate directly to this problem. Information of this type, gleaned from the literature or other sources, such as publications from the Department of Motor Vehicles, might cause you to have to modify your problem statement:

Drivers over the age of 65 are involved in more automobile accidents than drivers ages 25–65.

Theoretical or Basic Research Problems

We may also investigate *theoretical* or *basic* research problems: those that come from conflicts or contradictions in previous findings or a desire to extend the knowledge about a specific problem area. This is a perfect example of using the literature to help demonstrate the background and **significance of the problem** statement. For example, let's say we have found conflicting research regarding how to support dissertation students in an online environment; we could easily write a problem statement such as:

There is conflicting research on how to support dissertation students in an online environment.

This problem statement implies that multiple studies (i.e., literature focused directly on the problem area) have been conducted about supporting online dissertation students; apparently there is no consensus on the best approach. For example, these studies may have been based on traditional learning theories, such as behaviorism and constructivism—our job would be to conduct further studies using the same constructs to help better explain or support prior results. We might attempt to replicate one or more of the studies to determine whether the results could be different using another population of students or different pedagogical tools based

on the same learning theories. We could also attempt to extend the prior work by investigating a different approach.

In another case, one of my students was interested in using laboratory simulators to teach basic concepts in his undergraduate anatomy and physiology classes for students majoring in nursing. He searched the literature and found that many studies had been conducted using laboratory simulators in other disciplines—unfortunately, none of them dealt with anatomy and physiology in classes taken by nursing majors. Because the results of using laboratory simulators might vary from field to field, it led him to state:

> *There have been no studies investigating the effect of laboratory simulators on achievement by undergraduate nursing students in anatomy and physiology classes.*

In another case, we might find, because of health concerns with insects, molds, and bacteria, that many farmers are irradiating crops before they are packaged. This simply means that these crops are exposed to low levels of radiation to eliminate these perceived threats. While most farmers see no harm in this process, critics of this practice are concerned with the safety of eating irradiated crops and call for long-term studies in animals and humans. This is clearly a problem that could be investigated:

> *There is a lack of research on the long-term effects of irradiated crops and their effect on the health of humans.*

Using Suggestions for Future Research

Whether a student is still taking coursework or starting the dissertation, I always reinforce how important it is to be an expert in their field. They simply won't be able to move forward with a research study until they are intimately familiar with the history of the problem area, current issues, and any future research being called for. In order to do so, I tell them, they must "read, read, read, and then read some more." While reading, an area of research interest may present itself; in other cases, I tell the student to look at the final section of the articles they have found interesting. In more cases than not, they'll find a section titled "Suggestions for Future Research," "Articles of Interest," "Future Trends," "Conclusions," or other similar headings. In many instances, in that section, the article's author points a doctoral researcher in a direction they may want to go.

To demonstrate this, in one of my classes, I chose a random journal and opened it to the first article. In it, the author had written about exploring the career aspirations of undergraduate students majoring in math. His findings showed that most math students felt they were adequately prepared for a job in their field, but he went on to point out that the results were tentative, exploratory, and came from a small sample. He suggested future research that would focus on environmental or developmental factors that might influence a student to major in math. For a

student interested in math education, this article might be a gold mine of inspiration.

Speaking with Experts in the Field

I've found, through the years, that once you have identified a broad topic to work with, many people who are the acknowledged experts in that field are more than willing to help you. For example, when I was writing my dissertation, I was interested in working with elementary school children to help raise their motivation in math and science classes. One of the things holding me back was a survey instrument that was no longer in print, so I contacted the original author directly. She was very gracious and sent me a copy with permission to use it; she even went so far as to follow up by asking how my work was progressing and offering her insight (A. Gottfried, personal communication, July 15, 1991).

Based on successes such as that, I have encouraged my students to reach out to experts for help; very few of these students' inquiries have been ignored, and the success stories are wonderful. One student was led through a civil rights museum by an actual freedom rider from the 1960s, one had a world-famous cardiac surgeon agree to serve on his dissertation committee, and another worked with a person famous in the equestrian world. While he wasn't my student and he wasn't working on a dissertation, one of the best success stories I have ever seen involved our son Andy during a high school science class.

From an early age, Andy dreamed of a career as an astronaut. He had a general idea for a science fair project related to astronautics, but he could not narrow his focus to one specific aspect of the problem. I told him he should identify one of the astronauts involved in the work he was interested in, and send an email asking for help. Andy, never shy, went directly to the top and emailed one of the shuttle commanders from a Hubble space telescope mission. To make a long story short, though he never became an astronaut, our son received a tremendous amount of guidance and information simply because he wasn't too shy to ask a leading professional for his help (L. Shriver, personal communication, May 5, 1997).

Working with Your Dissertation Advisor in Their Research Area

Many college professors have a research agenda in which they are actively involved; many times, this is a requirement for tenure at their school. In my case, for many years I have been very active in science, technology, engineering, and math (STEM) research. We've primarily focused on how we can raise the STEM interest and awareness of young, minority middle school females. Luckily, I've had a number of students who, after reading or hearing about the work we're doing, ask me about getting involved. I meet with these students to get their background, ask why they want to be involved in the study, what do they expect to learn from the study, and how they can contribute. One of the key questions I ask is whether they are really interested in the topic, or are they just looking for something to work on. So far, I've been lucky enough to find students who really want to work with me, for all the

right reasons. In short, if you identify a professor who you are interested in working with, you should reach out to him or her. Before you do, however, be prepared:

1. Ask yourself—are you really interested in this field and are you willing to devote the amount of time and energy necessary to conduct research in the field?

2. Be up-to-date with the literature in the field—this is especially true of the work your potential chair has been involved in, and his or her publications and presentations.

3. Get to know your potential chair professionally prior to discussing your dissertation. It's a good idea to know their professional interests—organizations they belong to, positions they have held in academia, awards they may have received, and so on.

4. Finally, ask yourself—I will be asking this professor to dedicate a lot of time and effort to work with me. Am I willing to show them my appreciation by working diligently to finish my dissertation?

Attending Conferences or Professional Meetings

This idea is basically the same as speaking to experts in your field but, in this case, it is limited to a specific venue. For example, each year there are literally thousands of conferences dedicated to almost any discipline you can imagine. Personally, I have attended quite a few information systems, business, counseling, psychology, and education conferences. While I am there, I see many people whose names I recognize from the literature I have read. This offers a student several ways to learn more about a potential problem area.

First, look at the conference program and identify sessions you are interested in attending—at the end of the sessions there is usually an open period where anyone can ask questions. That's your big chance: ask the presenter specific questions about the topic you are interested in. You will be surprised how often the speaker appreciates an insightful question and provides informational feedback.

I have also found that approaching an author outside of a formal session, introducing yourself, and asking questions focusing on the author's area of expertise is very productive. In my case, I've had students approach me to ask about articles I have written. I am always so flattered that they've read my work that I am more than glad to spend a few minutes talking with them. Most authors I know feel the same way when students approach them.

Finally, many of the larger organizations have special interest groups, often called SIGs, devoted to a specific topic or field of study. I always enjoy going to presentations and social events hosted by SIGs whose focus interests me. Meeting and talking to people who, up to that point have only been names in the literature, is always refreshing and informative. In fact, I have developed quite a few relationships that have evolved into friendships outside of the professional meetings and

conferences. For example, one of my well-published friends is more than willing to talk to anyone if you respond positively to his suggestion "to continue our conversation over dinner"!

Replicate Previously Conducted Research

When we talk about replicating a previously published study, many people seem to think we're planning to simply copy the work of another author. While this is true to a certain degree, and replication is a valid way to develop a problem statement, it is also the trickiest. I have had many students who read something interesting and wanted to conduct essentially the same study. While this is a potentially good place to start, I always ask them, "Why should you conduct the same research a second time?" In far too many cases, students are not able to clearly answer that question— let me explain what I mean.

I recently had a student from our college of business come to my office to tell me about a study conducted by a friend, a recent doctoral graduate from another university, that focused on increasing corporate telemarketing sales. In his friend's case, he had looked at differences in productivity between telemarketing employees working in traditional offices and colleagues working in home offices. Upon seeing the productivity in his friend's company grow significantly with in-home offices, my student wanted to conduct the same study in his company.

This sounds like a good problem to investigate, right? Yes, it could be, but I asked my student several questions: "Why do you want to do that? What makes your company different from the one where the research has already been conducted? Does your company offer a different product or service? Are their differences in the employees or customers, such as income, that would call for you to conduct the study again? If everything is equal, can't you just assume that your results would be the same as his?" In short, I was asking him to give me his reasoning for replicating his friend's investigation. He admitted that he had not thought about those things, and we agreed that he should do a bit more background work before committing to that direction. That's not to say that my student wouldn't be able to find work to support his idea, it's just that he needed to show why his proposed study was significant.

In another case, I had a student tell me about a study investigating technology acceptance that she would like to replicate. I asked her the same questions as those above, and she was able to support her desire to move forward. She pointed out that the original study investigated technology acceptance in a corporate environment, and she wanted to work with primary school teachers. She felt that gender gaps within the two types of organizations might have an effect on the results. She supported this by showing that females made up about 76% of primary school teachers, but only 22% of corporate executive-level positions. Because a limited number of studies had been conducted focused in this area, and none that she could find directly addressed her proposed area of study, she was able to support her desire to replicate the original work.

Characteristics of a Good Problem

Regardless of how we identify a problem, before we move forward with our investigation, we need to ensure it meets six criteria. As you're reading these, keep in mind that we're not going to look at them in any specific order; all of these characteristics must be met before we can move forward (Terrell, 2021).

1. The problem must be interesting to the researcher.
2. The scope of the problem must be manageable by the researcher.
3. The researcher must have the knowledge, time, and resources needed to investigate the problem.
4. The problem can be researched through the collection and analysis of data.
5. Investigating the problem has **theoretical** or **practical significance**.
6. It is ethical to investigate the problem.

Let's look at examples of each of these characteristics to ensure that we know what we need to do.

The Problem Must Be Interesting to the Researcher

Many times, I run into students who simply want to finish their dissertation and really don't care what they work on, as long as they're working on something. Unfortunately, this approach often fails simply because they are not interested enough to see the problem under investigation through to the end. For example, I once had a student who was near her wits' end trying to find a topic for her dissertation. She was a very bright student, so I asked her to work with me on a project investigating the abysmal failure rate of students taking algebra at a community college. She jumped at the chance to work on the project, not necessarily because she was interested but because she saw it as a way to graduate. Unfortunately, she did not finish the project with me; she simply did not have the interest, energy, and enthusiasm she needed to work on something for which she really didn't have a commitment. Two good things did come from her experience with me: she did graduate after she found a suitable project and I ultimately finished what I was working on. Both of us met our goals because we were working on a project we were interested in.

The Scope of the Problem Must Be Manageable by the Researcher

As I said earlier, when my students tell me they cannot find an interesting problem to work on for their dissertation, in many instances I tell them, "It's not that you can't find a problem, it's just that you can't find one with a scope you can manage." For example, look at the following "problem statement" presented to me by one of my students:

Many inner-city children throughout the United States come from single-parent homes and live at or below the poverty level. Research shows that these students are more likely to drop out of high school than their peers from different socioeconomic backgrounds.

The problem here is certainly clear: students from lower socioeconomic, single-parent homes are more likely to drop out of high school than students coming from more affluent, traditional families. This certainly seems to be a serious problem, one that bears investigating. While important, however, is this something that my student could investigate as written? Of course not! The scope is much too broad; in this case, it seemed my student was suggesting an investigation of students throughout the country. In cases like this, I tell my students not to attempt to "boil the ocean"; if the issue is so large that it cannot be easily investigated, focus on narrowing it down into something more specific and manageable.

My student might be able to reword this proposal as a more manageable practical problem statement by simply stating:

Many children in our school come from single-parent homes and live at or below the poverty level. Research shows that these students are more likely to drop out of high school than their peers from different socioeconomic backgrounds.

By narrowing down the first statement, the student was able to create a problem statement that could more easily be investigated. Let's look at another example:

Initiations for admission into fraternities and sororities are problematic throughout the United States. Published reports have shown that problems such as alcohol abuse, physical harm, and other criminal activities are often related to these rites of passage.

Instead of asking what's wrong with this problem statement, it might be easier to ask if there is anything right with it! First, the idea of investigating problems at institutions throughout the United States is monumental. Following that, trying to define exactly what we mean by "alcohol abuse" would be debatable: some schools are well-known for partying, others have very strict student conduct codes that limit or prohibit drinking alcoholic beverages. Finally, what does "physical harm" mean? While I knew that a symbolic "paddling" from my fraternal big brother was part of the process, other institutions may forbid such behavior at any level. In short, in this case, the physical scope of the problem (i.e., the United States), as well as the broad scope of some of the areas to be investigated, would preclude this from being a viable problem statement.

Believe it or not, issues with the scope of a problem occur more often than you might imagine; I suppose that some students believe that the bigger the problem, the more impressed I'll be. When that happens, I tell them three things:

1. Don't try to investigate all of the world's problems.
2. Don't try to investigate some of the world's problems.
3. Investigate one problem.

The Researcher Has the Knowledge, Time, and Resources Needed to Investigate the Problem

This requirement is pretty obvious, isn't it? A researcher lacking any of these criteria might cause the research to fail or, at best, add significantly to the length of time it would take to complete. For example, I was involved in a study that looked at the need for mental health counseling for families of soldiers returning from combat deployment. My initial literature search indicated that levels of posttraumatic stress disorder were, in many instances, as severe in family members as it was for the returning service members. I was applying for grant funding and needed a certified mental health counselor as part of my team. Since one of my best students is a nationally certified counselor, I assumed she had the knowledge, time, and resources needed to get involved with the project. I thought we had a "win–win" situation; I would have someone to help me, and she could write her dissertation as part of the study (Stevenson, 2014).

Unfortunately, my assumption that she had the knowledge, time, and resources didn't hold true. While she did ultimately finish her dissertation, despite her knowledge and experience as a counselor, I had put her into a situation where she did not have the specific knowledge needed to work within the military culture. Because of that, before she was able to move forward with writing her proposal, she had to spend time reading and talking to members of the military in order to understand the dynamics of military families. She also did not have the resources necessary to investigate the problem and it took her several months to find military families that were willing to participate in the counseling program. Again, she did finish her dissertation, but it took quite some time for her to overcome these obstacles.

Finally, many doctoral students underestimate the cost or availability of resources they might need to finish their dissertation. For example, one of my students focused on understanding the life experiences of single mothers returning to graduate school. Her plan seemed simple enough: she would record interviews with 12–15 students and then analyze transcripts of those interviews. Unfortunately, it didn't go as smoothly, financially, as she might have hoped. First, she needed recording equipment and software that cost several hundred dollars, and after the interviews, she quickly found out that accurately transcribing over 20 hours of interviews was a job best left for a professional; that wound up costing another $1,200 or so. While needing resources such as these might sound obvious, they can be easily overlooked while planning research. Costs for other things, such as travel, testing instrumentation, surveys, software, work–study assistance, or anything else that is required to finish your dissertation, should be identified and planned for while writing your proposal.

The Problem Can Be Researched through the Collection and Analysis of Data

This requirement is also quite obvious. When we are investigating a problem, we have to be able to collect data to help in our decision making. Depending on the problem, we might need numeric **quantitative data**, such as grades, miles per gallon, or medical measurements, such as weight or blood pressure. In other cases, we might need **qualitative data** from interviews, transcripts, or texts. Finally, there are problems we can address only by collecting both quantitative and qualitative data. We'll talk more in detail about different types of data and issues with data collection later when we get into the methodology chapters, but for now let's just accept the fact that data are required to investigate a problem and move forward.

Investigating the Problem Has Theoretical or Practical Significance

Simply put, whether a problem has theoretical or practical significance means that it can pass the "Who cares?" test. In looking back at the problems dealing with attrition rates from doctoral programs or high school dropout by students from inner-city schools, we can readily see that these are practical problems and investigating each problem is worthwhile.

In other cases, we might investigate a problem that has theoretical significance. In my dissertation, for example, I investigated the following problem:

> *Students in fifth-grade math classes have low levels of intrinsic motivation. Research has shown that low levels of intrinsic motivation lead to low levels of achievement.*

I ultimately based my study on a theory that suggested achievement feedback that is timely and informational and would lead to higher levels of student intrinsic motivation (Deci & Ryan, 1985). In doing that, I looked at the differences between elementary school students receiving weekly graphical "cause-and-effect" report cards versus traditional report cards received every 6–9 weeks. Unfortunately, my intervention did not work as planned. We'll discuss this problem in more detail later, but now suffice it to say that sometimes there is value in showing what doesn't work.

Let's look at a few more examples and determine whether their investigation is either theoretically or practically significant:

> *Imported cars are better than domestically made cars.*

At first glance, this seems like a practical problem, doesn't it? We want to find out whether foreign-built cars are better than those we make here in the United States. It seems, though, that there are too many issues here to make it a practical problem. First, what does "better" mean? Would we be comparing fuel mileage,

crash test results, resale value, or one of the myriad characteristics that contribute to the definition of "better" in this context? Second, what does "imported" and "domestic" mean? Are we talking about companies whose headquarters are in foreign countries versus those that are based in the United States? While that may be something to look at, we have to keep in mind that, among others, Honda, Hyundai, and Mercedes-Benz have plants here in the United States. I'm sure there are other issues we should be worried about, but the bottom line is that this doesn't seem like a very good problem statement for a student to investigate.

Let's look at one last problem:

Emergency room physicians historically make more diagnostic mistakes than physicians in other specialties.

This was an actual problem statement presented to me by one of my doctoral students. The authors of the original study (Berner & Graber, 2008) found that many physicians are overconfident in their diagnostic abilities, leading to a higher number of errors than might be expected. The authors noted that a key to addressing this issue might be teaching decision-making strategies to physicians in an effort to decrease the number of errors of this type.

At first, this seemed like a problem that might bear investigation. It stands to reason that, when the health of a patient is at stake, physicians would want to quickly make a diagnosis that is as accurate as possible. In this case, my student wanted to develop a software system that emergency room physicians could use during the examination of their patient. I told her to go ahead with the initial work on her dissertation based on her assertion that it could have both practical and theoretical significance. Unfortunately, her proposed study fell through very quickly as she learned that, while theoretically the diagnoses might be more accurate, in many instances, emergency room physicians simply do not have time to turn their back on their patients in order to enter data into a computer and wait for diagnostic help. It is best for the physicians to rely on the skills they were taught in school and that are reinforced by their training residencies, internships, and experience.

It Is Ethical to Investigate the Problem

There are many examples in the history of research of studies that were clearly unethical. Among others, these include withholding drugs from terminally ill patients in the Tuskegee Syphilis Studies (Jones, 1993), to Milgram's (1974) research focusing on the simulation of electric shock to investigate a person's reaction to authority. It's obvious to most researchers when a study is not ethical, but at most colleges and universities, institutional review boards (IRBs) have been established to ensure any study conducted within their venue meets prescribed organizational and legal standards. In most instances, approval is not an issue but when human or animal subjects are part of a research study, proposals are closely scrutinized to determine whether they should be approved. For example, do you think the study

using computers to assist emergency room physicians would be considered **ethical research**? Probably not, since a patient's life is hanging in the balance. It's best to err on the side of caution; regardless of the type of study you are conducting, if you're not sure whether it's ethical, always ask. We discuss this issue in far greater detail later in the book.

Writing the Problem Statement

In the preceding sections, we defined and discussed the characteristics of a good problem statement. We now have to put those things together and learn how to actually write a good problem statement using the following criteria:

Problem Statements Must Be Clear and Concise

The most important thing to keep in mind as you write a problem statement is that the reader must understand what the problem is—it must be stated as clearly and concisely as possible. We alluded to this issue in an earlier section but let's look at another example to ensure we understand exactly what this means. It's common for me to receive a problem statement such as this:

Higher student engagement in courses using online learning management systems.

What does this mean? Is what the author trying to say clear and concise? In this case, it is not; in order to state the problem more clearly, the author needs to establish the relationship between student engagement and learning management systems. It could be presented in this manner:

Observations indicate that there are low levels of student engagement when using online learning management systems in our school.

Thinking back, does this statement meet our six criteria? First, we can only hope that it's interesting to the researcher and the necessary time, skills, and resources are available; if not, why would it be worth investigating the problem? Next, the problem can certainly be analyzed through the collection and analysis of data—numeric data from a survey designed to measure engagement, or interviews with students discussing their reaction to using online learning management systems. The results of the study would seem to have practical significance and while it appears it would be ethical to investigate the problem, it would be best to have an IRB confirm that for us. Finally, the scope of the problem is manageable because it is limited to our school.

Is this problem statement clear and concise?

Seizure disorders and diet.

In this case, we don't know much about what the researcher is proposing to investigate, but it could be reworded to make it clearer:

Seizure disorders in children are a prevalent concern in the United States. There has been only limited research investigating the relationship between these disorders and children's diets.

Here again, we're assuming the researcher is interested in the problem and has the knowledge, skills, and time necessary to study it properly. Investigating this problem has both theoretical and practical significance, and numeric data can be collected. There is still an issue with the ethics of investigating this problem in that the participants are children and they are being treated for a medical condition; both of these issues raise a red flag with IRBs and would be closely examined to ensure the health and well-being of the children while in the study. The scope of the problem, however, seems to be our biggest concern. Who are the children the author wants to work with? All of those in the United States? The state where the children live? Who? In short, this problem statement should reflect a much narrower scope, one the researcher has access to and has the ability to work with.

The Problem Statement Must Include All Variables to Be Considered

The second criterion for writing a good problem statement is that each of the variables to be investigated must be included. For example, in the problem statement where we wanted to investigate the relationship between online learning management systems and student engagement, no other variables were included in the problem statement.

In another case, suppose we were notified that our insurance company would no longer cover a brand-name medicine that patients use to control cholesterol and triglycerides, and instead it would only cover a generic brand of the specific medication. Although the drug manufacturers have assured physicians that there is no difference in the efficacy of the drug, researchers could state:

Physicians are concerned that a generic version of a medication does not control cholesterol as well as the brand-name version of the same medication.

In this case, our problem statement is clear, but it does not include both variables. If the drug is advertised as controlling both cholesterol and triglycerides, in order to fully address the physicians' concerns, the problem statement could better be stated as:

Physicians are concerned that a generic version of a medication does not control cholesterol and triglycerides as well as the brand-name version of the same medication.

The Problem Statement Should Not Interject the Bias of the Researcher

Here again lies one of the biggest pitfalls that underlie research: far too many people want to "prove" things or conduct research that supports their personal beliefs or goals. For example, if I was arguing for the need for more technology in our public schools, I might write:

> *Students who do not use computers as part of their curriculum have lower achievement than students who use computers as part of their curriculum.*

That's a fairly large assumption on my part, isn't it? Suppose I do conduct research and show that there is increased achievement after obtaining new technology? Have I proven anything? Absolutely not! There are far too many things that affect achievement: the students themselves, a change in the curriculum, new teachers who work in a manner different from their predecessors, and the like. At the same time, what would occur if achievement went down? Would we go back to Apple, Dell, or Gateway and demand our money back? Of course not, we do not know whether the technology had any effect on student achievement. There are far too many factors that influence achievement to assume we can "prove" anything. Instead of the problem statement above, what about the following one?

> *Research has shown a clear positive relationship between the use of computers as part of a public school curriculum and achievement. The schools in our district do not have an ample number of computers to support student needs.*

In this case, we are clear and concise. We have included all variables to be considered—in this case, technology and achievement—and we have not interjected our personal bias. This seems to be a good problem statement.

Before we move forward, however, there is one caveat we need to discuss. When I said that the problem should not interject the bias of the researcher, this isn't to say that the researcher cannot use his or her personal judgment when identifying a problem or writing a problem statement. We see a great example of this in the next section.

The Problem Statement as Part of a Dissertation Proposal

Even though we're able to write a good problem statement, that is not enough for a dissertation proposal. We need to clearly tell the reader the genesis of the problem; we call this the **background** of the problem. We also need to tell the reader why investigating the problem is important; we call this the **significance** of the problem.

We touched on both ideas while discussing the characteristics of a good problem, but let's look at how we would actually include these in a dissertation proposal.

When a student approaches me with a potential dissertation idea, I tell him or her not to create a full proposal right from the outset; instead, I want a three- to five-page paper that tells me the background and significance of a potential problem. I insist that the background and significance are not just their own opinion and that they must include substantiating references from other related literature. By doing this, I am assured that the student is off to a good start on their dissertation proposal.

For example, let's use an actual problem statement from one of my former students. He works at an institution described as a historically Black college or university (HBCU). This is the problem he described to me (Poorandi, 2001):

> *African American students at ABC College fail entry-level algebra I*
> *classes at a rate higher (i.e., 22%) than the historical U.S. average of*
> *15%.*

When I asked my student how he knew this, the answer was simple: faculty at the college knew they had a high failure rate but were astonished to find it was higher than the national average. When I asked him to provide me with the background of the problem, he presented me with something along the lines below. As I said earlier, including references from the problem area is important; for the sake of the example, I'm paraphrasing what he said and "inventing" the references he used:

The Background of the Problem

Many students enter college with weak math backgrounds (Bosley, 2009). In schools where general requirements include math classes, historically the failure rate for algebra I is approximately 15% (Alderman, 2011).

So far, this is looking good; my student has laid the groundwork by establishing a firm background for his problem. He followed up with the following section explaining why investigating the problem is important (i.e., the significance); again, he included references to the literature to help make his point:

The Significance of the Problem

Failure of classes early in a student's academic career not only extends their time in school for having to repeat a course but it is also a major predictor of dropping out of college (Schneider, 2006).

When my student put all of this together, it was a perfect introduction to his research proposal:

The Background, Problem, and Significance Together

Many students enter college with weak math backgrounds (Bosley, 2009). In schools where general requirements include math classes, historically the failure rate for algebra I is approximately 15% (Alderman, 2011). African American students at ABC College fail entry-level algebra I classes at a significantly higher rate (i.e., 22%). Failure of classes early in a student's academic career not only extends their time in school for having to repeat a course, it is also a major predictor of dropping out of college (Schneider, 2006).

This is a great example, but my students will tell you that in many instances writing the problem statement section isn't as easy as we've just demonstrated; it's often quite more extensive in terms of the material needed to write a meaningful and supportable problem statement. At the same time, in every case, the background/problem/significance model should be followed.

SUMMARY OF CHAPTER ONE

Understanding and clearly stating the problem you are investigating is the first step in writing a good proposal. Keep in mind, while formulating a good problem statement, that you must ensure you meet the following criteria:

1. You must be interested in the problem you are investigating.
2. The scope of the problem you want to investigate must be manageable.
3. You must be comfortable in terms of the knowledge, time, and resources necessary for you to investigate the problem.
4. You must be able to collect and analyze data.
5. There must be a practical or theoretical reason for you to investigate the problem.
6. It must be ethical for you to investigate the problem.

Once you are sure you have met these criteria and begin writing the actual problem statement, you must ensure that you are clear and concise, that all variables to be investigated are included, and that you do not interject your personal bias. Following all of these rules ensures that you have a viable problem statement. Keep in mind that stating a valid research problem is only the first step of the proposal. As I stated above, the problem statement is followed by the purpose statement, the research questions, hypotheses, a review of literature, and a detailed research method. We cover all of these topics in the following chapters but, for now, let's see how much we've learned up to this point.

Do You Understand These Key Words and Phrases?	
Background of the problem	Qualitative data
Ethical research	Quantitative data
Mixed methods data	Significance of the problem
Practical significance	Theoretical significance

REVIEW QUESTIONS

Evaluate each of the problem statements below; are all six criteria for a good problem statement met? Are they clear and concise? Do they include all variables, and do they avoid interjecting personal bias? If the problem statement does not meet the criteria, what is wrong?

1. Birth weights of babies born to drug-addicted mothers.

2. Employees working in the older section of an industrial plant are concerned with the effects of asbestos used in building the plant.

3. Farmers in the United States are concerned that strict immigration laws will not allow them to hire enough farmhands to reap their annual harvests.

4. Publishers are concerned that the ever-increasing costs of printing traditional textbooks will cause decision makers in the elementary school market to opt for electronic textbooks.

5. Subscriber feelings toward anonymous text messages used for advertising.

6. Is there a difference in recovery times among patients who receive medication for back injuries, patients who receive physical therapy for back injuries, and patients who receive a combination of medication and physical therapy for back injuries?

7. Engineering students at Wattsamatta University are concerned that changes in gravitational pull during the 28-day lunar cycle are affecting the structure of the microwave tower on their classroom building.

8. High-altitude climbers are concerned with hypoxia: the inability of the human body to perform due to a generalized lack of oxygen in the body.

9. Clients at an inner-city mental health facility who are suffering from depression and are working with therapists using a psychoanalytic approach are not responding to therapy as effectively and efficiently as those working with therapists using a cognitive-behavioral approach.

10. This study will investigate morale between soldiers wearing camouflage uniforms versus those wearing khaki uniforms.

LET'S START WRITING OUR OWN PROPOSAL

I always tell my students that the key to learning to write a good dissertation is to just begin writing. Given that, I want you to start writing a proposal; you'll expand it as we move through each chapter by adding the material that was the focus of that chapter. Granted, by the end of this book, you probably won't have a dissertation proposal 100% ready for your dissertation supervisor and committee to approve, but you will have learned the process, and will be well on your way!

Given that, take a few minutes to think about a problem you would like to investigate. Reflect on articles you have read, classes you have taken, experts you may have talked to, or one of the myriad other sources for a good dissertation problem. Then, keeping in mind the six characteristics of a good problem, just start writing. Make sure that what you are writing is clear, includes the variables you are interested in, and does not interject your personal bias. As you are writing, ensure you reinforce the problem statement by using literature to develop sound background and significance sections.

Once you've finished, it's always a good idea to put your work aside for a day or so and then read it again with a "fresh set of eyes"; it never hurts to get someone else to read it and give you feedback. Chances are you won't get it right the first time but just keep trying; as trite as it sounds, practice does make perfect!