

## School Leadership That Works: From Research To Results

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### Chapter 1. In Search of School Leadership

Each school day more than 53.6 million students (National Center for Education Statistics, 2002b) walk into more than 94,000 K–12 schools (National Center for Education Statistics, 2002a) in the hopes that the 13 years of schooling they will experience will dramatically enhance their chances of success in the modern world. Indeed, evidence of income in 2001 supports these hopes. According to the U.S. Census Bureau (March 2002), the earning potential (that is, the median income) of a student who graduates from high school is \$19,900, compared with \$11,864 for a student who does not. If the high school graduate completes college, that earning potential increases to \$37,203. A master's degree increases the figure to \$49,324. A doctorate raises annual income to \$63,952, and with a professional licensure, it reaches \$71,606. School, then, can be the door to advancement—at least financial advancement—in our complex society. For a particular school to be the launchpad to the levels of success sought by students, however, it must operate effectively.

Whether a school operates effectively or not increases or decreases a student's chances of academic success. Marzano (2003) has shown that students in effective schools as opposed to ineffective schools have a 44 percent difference in their expected passing rate on a test that has a typical passing rate of 50 percent. To illustrate, consider two schools—School A and School B. In terms of how they are run, School A is effective and School B is ineffective. (In Chapter 6 we consider the specific characteristics of effective versus ineffective schools.) Now assume that the two schools have a typical population of students—some with many advantages in their home environment and background experiences; some with few if any advantages; most somewhere in the middle. If students in both schools take a test that has a typical passing rate of 50 percent, we would expect 72 percent of the students in the effective school to pass the test and only 28 percent in the ineffective school to pass—a difference of 44 percent. This is depicted in Figure 1.1. (For an explanation of this scenario, see Technical Note 1 on p. 124.)

<b>Figure 1.1. Percentage of Students Expected to Pass or Fail a Test in Effective Versus Ineffective Schools</b>	<b>Expected Pass Rate</b>	<b>Expected Fail Rate</b>
Effective School (A)	72%	28%
Ineffective School (B)	28%	72%

Although the difference in expected student achievement in “effective” versus “ineffective” schools is dramatic, the difference is even greater when we contrast “highly effective” schools with “highly ineffective” schools—more specifically, the top 1 percent of schools with the bottom 1 percent. This scenario produces a difference in passing rates of 70 percent. In the top 1 percent of schools we would expect 85 percent of students to pass a test that has a typical passing rate of 50 percent; in the bottom 1 percent of schools we would expect only 15 percent to pass that same test. (See

Technical Note 2 on p. 129 for a more detailed explanation.)

The central question addressed in this book is this: To what extent does leadership play a role in whether a school is effective or ineffective? That is, How much of a school's impact on student achievement is due to the leadership displayed in that school? We begin with some past and current beliefs about leadership.

## **Past and Current Beliefs About Leadership**

If we consider the traditions and beliefs surrounding leadership, we can easily make a case that leadership is vital to the effectiveness of a school. In fact, for centuries people have assumed that leadership is critical to the success of any institution or endeavor.

The concept of leadership dates back to antiquity. According to Bass (1981), the study of leadership is an ancient art. Discussions of leadership appear in the works of Plato, Caesar, and Plutarch. Additionally, leadership is a robust concept that “occurs universally among all people regardless of culture, whether they are isolated Indian villagers, Eurasian steppe nomads, or Polynesian fisher folk” (p. 5).

Theories of leadership abound. They include approaches such as the “greatman” theory, which suggests that, for example, without Moses the Jewish nation would have remained in Egypt and without Churchill the British would have acquiesced to the Germans in 1940; trait theories, which contend that leaders are endowed with superior qualities that differentiate them from followers; and environmental theories, which assert that leaders emerge as a result of time, place, and circumstance. Regardless of the theory used to explain it, leadership has been intimately linked to the effective functioning of complex organizations throughout the centuries.

The traditions and beliefs about leadership in schools are no different from those regarding leadership in other institutions. Leadership is considered to be vital to the successful functioning of many aspects of a school. To illustrate, the list below depicts only a few of the aspects of schooling that have been linked to leadership in a school building:

- Whether a school has a clear mission and goals (Bamburg & Andrews, 1990; Duke, 1982)
- The overall climate of the school and the climate in individual classrooms (Brookover, Beady, Flood, Schweitzer, & Wisenbaker, 1979; Brookover et al., 1978; Brookover & Lezotte, 1979; Griffith, 2000; Villani, 1996)
- The attitudes of teachers (Brookover & Lezotte, 1979; Oakes, 1989; Purkey & Smith, 1983; Rutter, Maughan, Mortimore, Ouston, & Smith, 1979)
- The classroom practices of teachers (Brookover et al., 1978; Brookover & Lezotte, 1979; McDill, Rigsby, & Meyers, 1969; Miller & Sayre, 1986)
- The organization of curriculum and instruction (Bossert, Dwyer, Rowan, & Lee, 1982; Cohen & Miller, 1980; Eberts & Stone, 1988; Glasman & Binianimov, 1981; Oakes, 1989)
- Students' opportunity to learn (Duke & Canady, 1991; Dwyer, 1986; Murphy & Hallinger, 1989)

Given the perceived importance of leadership, it is no wonder that an effective principal is thought to be a necessary precondition for an effective school. To illustrate, a 1977 U.S. Senate Committee Report on Equal Educational Opportunity (U.S. Congress, 1970) identified the principal as the single most influential person in a school:

In many ways the school principal is the most important and influential individual in any school. He or she is the person responsible for all activities that occur in and around the school building. It is the principal's leadership that sets the tone of the school, the climate for teaching, the level of professionalism and morale of teachers, and the degree of concern for what students may or may not become. The principal is the main link between the community and the school, and the way he or she performs in this capacity largely

determines the attitudes of parents and students about the school. If a school is a vibrant, innovative, child-centered place, if it has a reputation for excellence in teaching, if students are performing to the best of their ability, one can almost always point to the principal's leadership as the key to success. (p. 56)

Given the perceived importance of leadership in schools and the central role of the principal in that leadership, one might assume that suggestions regarding leadership practice in schools are based on a clear, well-articulated body of research spanning decades. Unfortunately, this assumption is incorrect for at least two reasons. First, far less research on school leadership has been done than one might expect. To illustrate, in a review of the quantitative research from 1980 to 1995, Hallinger and Heck (1996) identified only 40 studies that address the relationship between school leadership and student academic achievement. In our analysis of the research over the last 35 years, we found more than 5,000 articles and studies that address the topic of leadership in schools, but only 69 that actually examine the quantitative relationship between building leadership and the academic achievement of students. (We discuss our study in depth in Chapter 3.) In spite of the relative paucity of empirical studies on school leadership, books recommending leadership practices for educational administrators abound.

Second, the research that has been done on school leadership is quite equivocal, or at least is perceived as such. For example, some assert that it provides little specific guidance as to effective practices in school leadership. As Donmoyer (1985) explains:

Recent studies of schools invariably identify the principal's leadership as a significant factor in a school's success. Unfortunately these studies provide only limited insight into how principals contribute to their school's achievements. (p. 31)

Others assert that the research does not even support the notion that school leadership has an identifiable effect on student achievement. For example, a recent synthesis of the research on school leadership concluded that statistically there is almost no relationship between school leadership and student achievement. Specifically, as a result of their analyses of 37 studies conducted internationally on the impact of building leadership on student achievement, Witziers, Bosker, and Kruger (2003) report almost no direct relationship. We deal with this particular study in Chapters 2 and 3. However, taken at face value, the findings from this study would lead one to conclude that little effort should be put into developing leaders at the school building level.

## **A Different Perspective**

The conclusions we offer in this book stand in sharp contrast to those suggesting that the research on school leadership provides no guidance as to specific leadership behaviors and to those suggesting that school leadership has no discernable direct effect on student achievement. Our basic claim is that the research over the last 35 years provides strong guidance on specific leadership behaviors for school administrators and that those behaviors have well-documented effects on student achievement. A logical question is, How can we make such claims in light of the previous statements regarding the research (or lack thereof) on school leadership? The answer lies partially in the research process we employed—a methodology referred to as meta-analysis—which is specifically designed for synthesis efforts such as ours.

## **The Nature and Function of Meta-Analysis**

There have been a number of calls for a new paradigm of research in educational leadership (see Heck & Hallinger, 1999; Hill & Guthrie, 1999). These calls come at a time when the methodology of meta-analysis has provided impressive advances in the art and science of synthesizing studies within a given domain.

The term *meta-analysis* refers to an array of techniques for synthesizing a vast amount of research quantitatively. The technique was formally developed and made popular by Gene Glass and his colleagues in the early 1970s (see Glass, 1976; Glass, McGaw, & Smith, 1981). Since then, individuals in a variety of fields have used meta-analysis to construct generalizations that were

previously unavailable (see Hunt, 1997). For example, in his book *How Science Takes Stock: The Story of Meta-Analysis*, Hunt provides compelling illustrations of the successful use of meta-analysis in medicine, psychology, criminology, and other fields.

In simple terms, meta-analysis allows researchers to form statistically based generalizations regarding the research within a given field. We discuss some of the more technical aspects of meta-analysis in Technical Note 3 (see p. 130). Here we briefly consider some aspects of meta-analysis that are particularly important to our assertions about the research on school leadership and our reasons for using this particular methodology.

At least two questions might come to mind about our decision to use meta-analysis. First, why did we choose to synthesize the research of others as opposed to conducting a study of our own? That is, why didn't we study the relationship between school leadership and student achievement by examining a number of high- and low-performing schools and the leadership in those schools instead of examining the research of others? The answer is that any study we would have conducted, no matter how well constructed, would have contained "uncontrolled error" influencing its outcome.

As an example, assume we had been able to identify 10 principals who were strong leaders and 10 principals who were weak leaders and randomly assign them to serve for three years in 20 schools with about the same average academic achievement. In educational circles, this type of study would be considered strong. In fact, the No Child Left Behind Act of 2001, passed by an overwhelming margin in both houses of Congress in December 2001 and signed into law on Jan. 8, 2002, recommends the use of research designs (like our hypothetical example) that employ random assignment to experimental and control groups as a form of what it refers to as "scientifically based research" (see Goodwin, Arens, Barley, & Williams, 2002). However, educators quickly note that using a design like our hypothetical example is not only impractical from a resource perspective (for example, how can you find 20 principals willing to work for three years in a school to which they have been assigned?), but unacceptable from an ethical perspective (how can you in good conscience assign 10 principals to schools knowing that they are weak leaders?). Nevertheless, for illustrative purposes, let's assume that we employed this rather "tight" empirical design. Even with this tight level of control, the findings from the study might be strongly influenced by uncontrolled factors, such as substantive differences in the background and experience of the teachers and in the family circumstances of the students in the various schools. Such factors are sometimes referred to as "sampling error."

In practice, it is impossible to control all the error that might creep into a study. This is precisely why researchers assign a probability statement to their findings. That is, when a researcher reports that her findings are significant at the .05 level, she is saying that her findings could occur 5 times in 100 or less if they are a function of some type of uncontrolled error. If she reports that her findings are significant at the .01 level, she is saying that there is even less of a chance—1 in 100 or less—that her findings are a function of this uncontrolled error. Meta-analysis helps control for this error by examining findings across many studies. Doing this tends to cancel out much of that uncontrolled error. Whereas the findings in one study might be influenced positively by the background of the teachers, let's say, another study might be influenced negatively by this same factor. Across many studies the effect of this factor tends to cancel out.

The second question our use of meta-analysis might prompt is, Why did we use a quantitative approach to synthesis research as opposed to the more traditional approach others have used (for example, Cotton, 2003)? Indeed, every doctoral dissertation and every master's thesis in education attempts to include a comprehensive review of the research relative to its specific research topic. However, these reviews typically use what is referred to as a narrative approach (see Glass, 1976; Glass, McGaw, & Smith, 1981; Rosenthal, 1991; Rosenthal & Rubin, 1982). With a narrative approach, a researcher attempts to logically summarize the findings from a collection of studies on a topic by looking for patterns in those studies. Unfortunately, the narrative approach is highly susceptible to erroneous conclusions. To illustrate, in a study of the quality of narrative reviews, Jackson (1978, 1980) found the following:

- Reviewers tended to focus on only part of the full set of studies they reviewed.
- Reviewers commonly used crude and misleading representations of the findings of the studies.
- Reviewers usually reported so little about their method of analysis that no judgment could be made about the validity of their conclusions.
- Reviewers commonly failed to consider the methods used in the studies they reviewed.

To examine the difference between reviewing research using a narrative approach versus a meta-analytic approach, Cooper and Rosenthal (1980) conducted a study in which 40 graduate students were randomly split into two groups. Both groups were asked to examine the same seven studies on gender differences in persistence. Their basic task was to determine whether the seven studies supported the hypothesis that gender is related to persistence. One group used the narrative approach and the other used a rudimentary form of meta-analysis. What the two groups were not told was that, statistically, the seven studies considered as a set supported the hypothesis that gender and persistence are related. The vast majority of graduate students in the narrative group incorrectly concluded that the studies did not support this hypothesis, whereas the vast majority of graduate students in the meta-analysis group correctly concluded that the studies did support the hypothesis. Discussing this study, Glass, McGaw, and Smith (1981) note that these are “strikingly different conclusions for equivalent groups trying to integrate only seven studies” (p. 17). They go on to hypothesize that conclusions based on narrative reviews of vast amounts of research are probably strongly biased by the conventional wisdom to which the synthesizer subscribes.

In summary, we chose to synthesize the research on leadership using a quantitative, meta-analytic approach because it provided the most objective means to answer the question, What does the research tell us about school leadership?

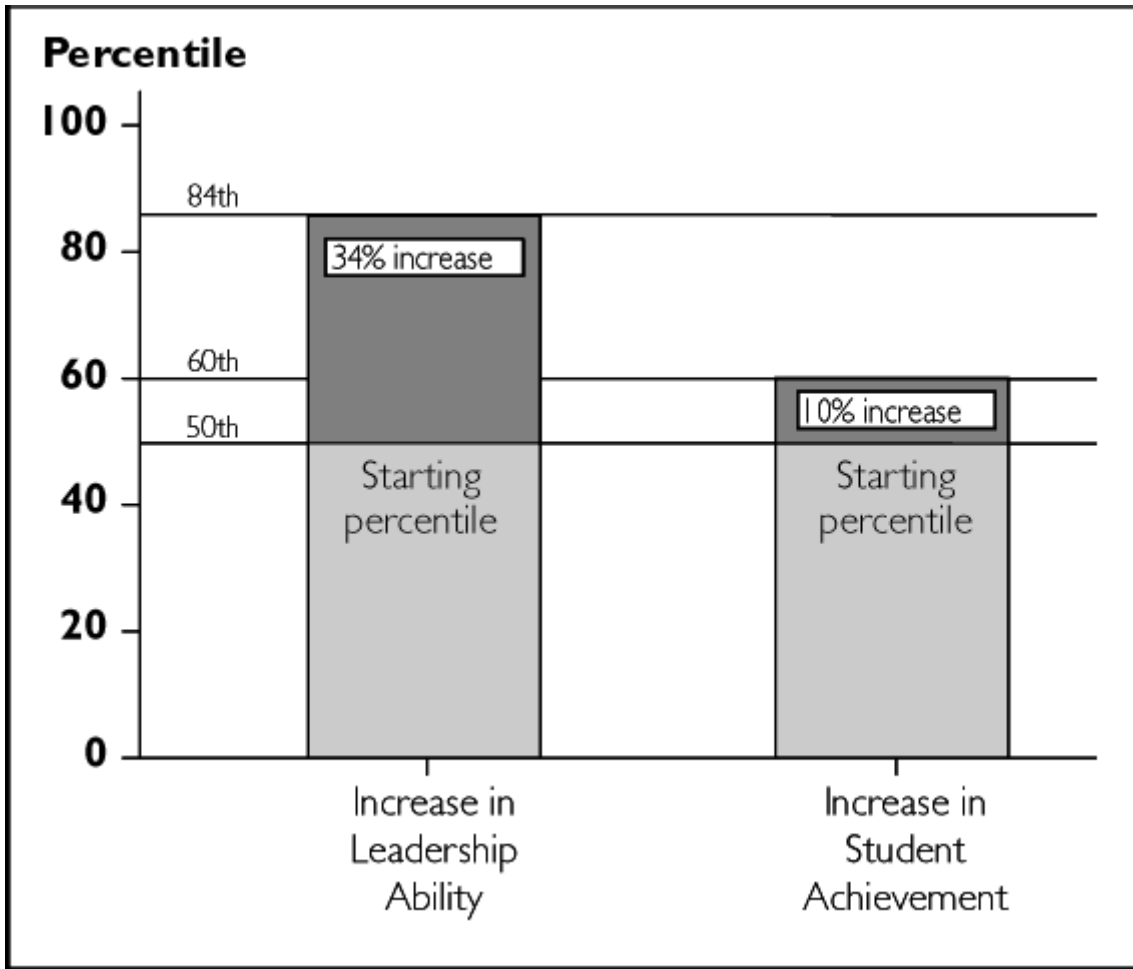
## Our Basic Findings

After examining 69 studies involving 2,802 schools, approximately 1.4 million students, and 14,000 teachers, we computed the correlation between the leadership behavior of the principal in the school and the average academic achievement of students in the school to be .25. We discuss the meaning of this correlation in depth in Chapter 3; however, we briefly consider it here. We should first caution that reducing the findings of a meta-analysis, particularly one that claims to be as comprehensive as ours, to a single correlation is at best an oversimplification of the findings. In fact, Glass, commonly considered to be the founder of modern-day meta-analysis, warns against this practice (Robinson, 2004). With this caution noted, we consider the average correlation found in our meta-analysis because it is still the most commonly used currency for discussing meta-analytic findings in educational research.

To interpret the .25 correlation, assume that a principal is hired into a district and assigned to a school that is at the 50th percentile in the average achievement of its students. (See Technical Note 1, p. 124, for further explanation.) Also assume that the principal is at the 50th percentile in leadership ability. We might say that we have an average principal in an average school.

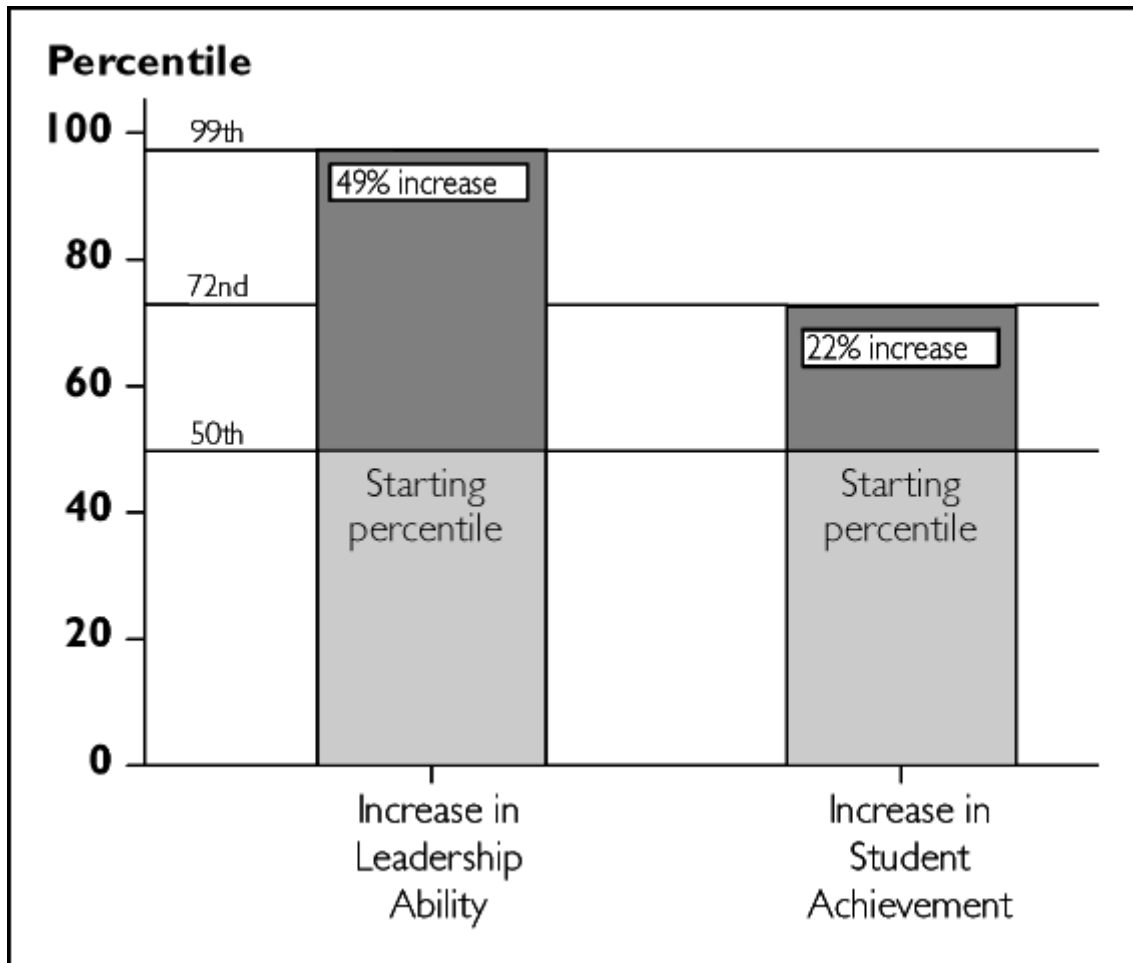
Now assume that the principal stays in the school for a few years. Our .25 correlation tells us that over time we would predict the average achievement of the school to remain at the 50th percentile. But now let's increase the principal's leadership ability by one standard deviation—from the 50th percentile to the 84th percentile. This increase might have occurred as a result of the principal's attendance at an extended set of courses or seminars on leadership offered in the district. Our correlation of .25 indicates that over time we would predict the average achievement of the school to rise to the 60th percentile. This increase is depicted in Figure 1.2. In terms of the average achievement of students in the school, this is substantial.

**Figure 1.2. Predicted Increase in Student Achievement When Leadership Ability Increases from 50th to 84th Percentile**



To further examine the interpretation of the .25 correlation, let's increase the principal's leadership ability even more—from the 50th percentile to the 99th percentile. In other words, the leadership training the principal attends is so powerful that it places the principal at the top percentile in leadership behavior. Our correlation of .25 indicates that over time we would predict the average student achievement of the school to rise to the 72nd percentile. This is depicted in Figure 1.3.

**Figure 1.3. Predicted Increase in Student Achievement When Leadership Ability Increases from 50th to 99th Percentile**



Taken at face value, these findings are compelling. A highly effective school leader can have a dramatic influence on the overall academic achievement of students. Most teachers, parents, and students would be thrilled to see the average performance of their school increase 22 percentile points—even 10 percentile points.

## **Toward Research-Based Principles of School Leadership**

Our meta-analysis was designed to determine what 35 years of research tells us about school leadership. We report our findings in Chapter 3. However, we didn't stop with the findings. Rather, we wove those findings into what we consider to be perhaps the most rigorous and comprehensive set of principles regarding school leadership to date. The reader should note that we purposely avoid the use of the word *theory* in describing our conclusions. Anderson (1983) explains that a theory is a precise deductive system that allows one to accurately predict behavior given knowledge of the variables within the theory. Principles are general rules for behavior but do not constitute a precise predictive system. We offer principles as opposed to a theory in accordance with the most current thinking in educational research. Again, to quote Glass in his article marking the 25th anniversary of meta-analysis, "We need to stop thinking of ourselves as scientists listing grand theories, and face the fact that we are technicians collecting and collating information" (2000, p. 12). Glass credits Meehl (1978) as first pointing out that the "soft social sciences" such as education simply cannot conceive, test, and advance theories in the same manner as the hard sciences such as physics, chemistry, medicine, and the like. This is not to say that educators should not use the results of studies to develop general rules or principles of behavior to guide them in specific situations. This is

precisely what we have attempted to do.

## **Summary and Conclusions**

Leadership has long been perceived to be important to the effective functioning of organizations in general and, more recently, of schools in particular. However, some researchers and theorists assert that at best the research on school leadership is equivocal and at worst demonstrates that leadership has no effect on student achievement. In contrast, our meta-analysis of 35 years of research indicates that school leadership has a substantial effect on student achievement and provides guidance for experienced and aspiring administrators alike.

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