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Bringing Achievement Gaps Into Focus

America is a diverse society in which educational differences have the potential to become a progressively larger source of inequality and social conflict. Many people now recognize that eliminating these differences has become a moral and pragmatic imperative. (Miller, 1995, pp. 1–2)

Beyond policy mandates, however, there is a moral mandate. A good education, one that overcomes the burdens on children of racial discrimination and poverty, is the hope of every parent in schools where too many children are failing. (Lewis, 2008, p. xi)

SETTING THE STAGE

The term “achievement gap” is used to describe differences in learning among specified groups of students (Reynolds, 2002). More specifically, it refers to differences in academic achievement between socioeconomically advantaged and white and Asian students, and their minority and socioeconomically disadvantaged peers (Symonds, 2004). It is also widely used to capture efforts to reduce these learning differentials (Bingham, 1994; North Carolina State Department of Education, 2000).

The achievement of minority students represents a long-standing issue in the field of education. Across the U.S., white students and students from wealthy, well-educated

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families have consistently outperformed students from most other ethnic backgrounds and students from impoverished families on virtually every indicator of academic achievement in the host of studies that have addressed this issue. The term “achievement gap” is often used to refer to this phenomenon. (North Carolina State Department of Education, 2000, p. 4)

While the achievement gap represents “a long standing issue in the field of education” (North Carolina, 2000, p. 4) and while analysts have taken notice of differences in achievement between youngsters from different races, cultures, and levels on the economic ladder for some time (Hedges & Nowell, 1999; Meehan, Cowley, Schumacher, Hauser, & Croom, 2003), the achievement gap problem did not begin to generate concerted attention in the United States until the mid-1960s. Or, as Miller (1995) reports, “Substantial societal interest in identifying, understanding, and attempting to eliminate variations in educational attainment and achievement patterns among racial/ethnic groups is a very recent phenomenon” (p. 85). In a broad sense, the civil rights and Great Society movements directed interest to disparities in learning opportunities and outcomes for minority and low-income youngsters. In addition, the achievement gap problem was propelled onto the school-reform stage with the publication of important research studies conducted during these movements. Noteworthy here are the studies of inequality by Coleman and his colleagues (1966) and by Jencks and his research associates (1972). Also important were the development of more refined methodologies to study achievement gaps, especially the introduction of large-scale surveys that employed nationally representative samples (Hedges & Nowell, 1999).

More recently, especially over the last decade, the spotlight has been focused even more directly and more brightly on achievement gaps. Indeed, it is accurate to assert that the issue of learning disparities among groups of students has moved onto center stage in society in general and in the education industry in particular (Hertert & Teague, 2003). As Kober (2001) has observed, “Racial/ethnic gaps in test performance have long been observed and debated, but recent trends in education, demographics, and the economy have made the achievement gap a high priority issue” (p. 15).

If the first wave of attention in the 1960s and 1970s was driven by a sense that addressing the gap problem was the right thing to do for children, the current second wave of attention is also rooted in a sense of the necessity of action. This necessity is for the well-being of the nation in a postindustrial economy and a twenty-first-century society. As the subsequent discussion illustrates, the costs of failure to confront the gap problem are larger and more noticeable today than they were forty years ago (Alvermann, 2005; Ferguson, 2002). Concomitantly, the threads of accountability are much more visible in the educational tapestry today than they were during the 1960s and 1970s (Murphy, 2006), thus pushing educators to assume ownership for problems that could have been simply attributed to others in the past.

For all of these reasons, addressing achievement gaps—which includes an understanding of the problem, an analysis of its root causes, and an investigation of potential solutions (Miller, 1995)—has assumed an unparalleled position of concern, a heightened sense of seriousness, and a palpable sense of urging in America at the dawn of the twenty-first century (Becker & Luthar, 2002; Bennett et al., 2007; Braun, Wang, Jenkins, & Weinbaum, 2006; Chatterji, 2006; Ford, Grantham, & Whiting, 2008; Shannon & Bylsma, 2002). Indeed, it is routinely suggested these days that gaps in academic achievement between minority and

majority students and higher-income and lower-income youngsters represent the most significant educational problem in the United States (Slavin & Madden, 2001; 2006) as well as “the most critical problem facing . . . continued economic development” (McGee, 2003, p. 64) in the nation in general and the major dilemma for urban education in particular (Norman, Ault, Bentz, & Meskimen, 2001). It is now at the “forefront of the debate over public education” (Symonds, 2004, p. 5).

In the balance of this introductory chapter, we undertake three assignments. We investigate the importance of achievement gaps for individuals and for society. We explore definitions of the achievement gap. We also outline important cautions readers need to carry with them as they travel through this volume in particular, and as they think about achievement gap issues generally.

THE IMPORTANCE OF THE PROBLEM

The gaps . . . are enormously costly for minorities as well as for society as a whole. (Miller, 1995, p. 83)

Racial equality is still a dream—and will remain a dream as long as blacks learn less in school than whites and Asians. (Thernstrom & Thernstrom, 2002, p. 131)

As noted above, acknowledgment of, and demands for, action on the achievement gap have grown as the consequences of the problem have come into sharper relief over the last dozen years and as the depth of the problem—its pervasiveness and resistance to change (Ford, Grantham, & Whiting, 2008)—threatens to overwhelm schools. The importance of the problem and the urgency for action are amplified by the fact that the economic, social, and political infrastructure of the nation is being transformed in ways that magnify the consequences of inequalities inherent in patterned achievement differentials by race and class. In terms of “consequences,” we are discovering that the achievement gap problem imposes tremendous costs on both individuals and society at large (Becker & Luthar, 2002; McGee, 2003; Schwartz, 2001): “The persistence of achievement gaps has both immediate and long-term consequences, not only for students . . . but also for the economic and social well-being of a state” (Spradlin et al., 2005, p. 2).

Cost to Individuals

It is widely recognized that these differences in educational outcomes contribute to large disparities in life chances. Viewed solely from the perspective of employment and earnings, educationally underrepresented minorities have much less opportunity to pursue well-paying professional careers and are much more likely to hold low-wage jobs that provide few chances for advancement. (Miller, 1995, p. 1)

While it is true that eliminating the black-white test score gap would not eliminate the black-white earnings gap, the effect would surely be substantial. (Jencks & Phillips, 1998, p. 46)

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According to scholars from a wide array of disciplines, “Disparities in test scores are troubling not only for the underlying educational inequalities that they suggest but also because of the link between performance on tests and outcomes later in life” (Stiefel, Schwartz, & Ellen, 2006, p. 7). The argument in play is (1) that gaps “tilt the playing field precipitously” (McGee, 2003, p. 7) and negatively for many low-income and minority students; gaps are about “opportunities that some students will have and others never will” (p. 13) and (2) “similar achievement outcomes will lead to more equitable access to future education and jobs as well as a better quality of life” (Chatterji, 2005b, p. 48).

Achievement gaps are seen as significant contributors to opportunity structure (Hedges & Nowell, 1999) and to the educational attainment, employment opportunities, and wages of individuals (Hedges & Nowell, 1999; McGee, 2003; Stiefel, Schwartz, & Ellen, 2006; Toenjes, Dworkin, Lorence, & Hill, 2002). Achievement differences reflected in gaps “hold severe consequences for life trajectories” (Seiler & Elmesky, 2007, p. 394); they “translate directly into differences in high school graduation rates . . . and in income and socioeconomic status” (Slavin & Madden, 2001, p. 4): “These differences have dire consequences once students leave school. Black and Hispanics are much less likely than whites to graduate from high school, acquire a college or advanced degree, or earn a living that places them in the middle class” (Chubb & Loveless, 2002, p. 1). According to scholars who study this area, because of the increasing importance of education in the postindustrial world (Ferguson, 1991; Kusters & Mast, 2003; Marshall & Tucker, 1992; Murnane & Levy, 1996) and because income and class are becoming “increasingly determined by educational success, the gap in achievement has shifted from being an indicator of educational inequality to being a direct cause of socioeconomic inequity” (Harris & Herrington, 2006, p. 210).

For minority and low-income students, achievement gaps are linked to increased risks of falling behind (Neuman & Celano, 2006, p. 179), and significant struggles as one moves into higher grades in the K–12 system (McGee, 2003); higher dropout rates (Balfanz & Byrnes, 2006; Land & Legters, 2002; Natriello, McDill, & Pallas, 1990); lower college attendance (Orr, 2003); higher enrollment in lower-ranked universities (Dabady, 2003; Orr, 2003), and lower college graduation rates (Slavin & Madden, 2006; U.S. Commission, 2004)—to reduced opportunities for higher education across the board (Lee, 2002).

Not unexpectedly, employment opportunities for youngsters on the wrong side of the achievement gap are truncated, leading to quite different and more limited career paths (Maruyama, 2003; McGee, 2003; Miller, 1995; Roscigno, 1998). Given the storyline of reduced career opportunities and a narrowed employment vista, it will come as no surprise to learn that low-achieving students earn less than their higher-achieving peers when they enter the workforce (Ceci & Papierno, 2005; Hedges & Nowell, 1999; Johnson & Neal, 1998; Velez, 1989): “People with higher scores tend to have higher earnings. . . . Disparities in reading and math achievement, as measured by test scores, explain a larger share of the differences between the races in average weekly earnings for young adult males” (Ferguson, 1991, pp. 1, 20). More troubling still, as Clotfelter, Ladd, and Vigdor (2005) document, the gap in scores today “explains a larger percentage of the income gap between the races than it did in the 1960s” (p. 377). Or, seen from a different angle, “A test score gap of a given size involves a greater cost today than was the case in the past” (Murnane & Levy, 2004, p. 402). The takeaway message here is quite clear; reducing test-score differentials is an important dimension of eliminating inequalities in earnings (Fryer & Levitt, 2004).

Costs to Society

The achievement gaps are so wide that they threaten the well-being of the state and its economy. (Gandara, Rumberger, Maxwell-Jolly, & Callahan, 2003, p. 3)

Thus, on economic grounds, anything that can be done to prevent school failure from occurring (or to remediate it quickly after the first signs appear) seems like a rational economic choice. (Ceci & Papierno, 2005, p. 150)

In addition to having a negative impact on individuals, the achievement gap also has profound implications for the larger society (Kober, 2001; Slavin & Madden, 2001). For example, analysts routinely demonstrate that “the magnitude and persistence of [achievement] disparities is rightly regarded as problematic both for our long-run economic competitiveness and the health of our democracy” (Braun, Wang, Jenkins, & Weinbaum, 2006, p. 7) and for social cohesiveness in the nation (Kober, 2001; Miller, 1995). In short, it “will help shape the future of the country” (Becker & Luthar, 2002, p. 209). According to Miller (1995):

If these disparities are allowed to continue, the United States inevitably will suffer a compromised quality of life and a lower standard of living. Social conflict will intensify. Our ability to compete in world markets will decline, our domestic economy will falter, our national security will be endangered. (p. 2)

On the other side of the ledger, closing achievement gaps, in part or whole, will have “beneficial effects on social and economic mobility” (Kosters & Mast, 2003, p. 96). Thus:

Among the most compelling reasons for seeking to eliminate these gaps as soon as possible are the following: (1) the achievement of significantly higher minority education levels is essential to the long-term productivity and competitiveness of the U.S. economy; (2) if minorities are to enjoy the full benefits of their recently won civil rights, they need formal-education-dependent knowledge and skills much closer in quantity and quality to those held by whites; and (3) the maintenance of a humane and harmonious society depends to a considerable degree on minorities’ reaching educational parity with whites. (Miller, 1995, p. 4)

On one front, educational equality via a leveling of the achievement playing field is held to be a necessary factor in “the development and maintenance of a just, socially stable America” (Miller, 1995, p. 12), including reduced crime (Levin, Belfield, Muenning, & Rouse, 2007) and a drop in the social differences and conflicts that amplify racial tensions in the country (Chubb & Loveless, 2002), and as an avenue for “building strong cultural bridges between groups” (Miller, 1995, p. 380). Indeed, Jencks and Phillips (1998) contend that “reducing the black-white test score gap would probably do more to promote [racial equality] than any other strategy that commands broad political support” (p. 45).

On the economic front, analysts connect education in general and academic achievement specifically to the financial health of the nation (Hanushek & Raymond, 2005; Levin et al., 2007). They have established that achievement gaps act as a “growing impediment to U.S.

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productivity performance” (Baumol, Blackman, & Wolff, as cited in Miller, 1995, p. 8; Maruyama, 2003) and that they are responsible for the “declining economic health of the United States” (Miller, 1995, p. 5). These scholars have also documented that efforts to strengthen the education of those on the wrong side of the achievement gap can be viewed “as a public investment that yields benefits in excess of investment costs” (Levin et al., 2007, p. 2).

Finally, attacking the achievement gap is important for the larger society because it is a required step in providing citizens with “the knowledge and skills necessary to exercise their legal rights effectively” (Miller, 1995, p. 10). Analysts here discern “a strong link between educational performance and the capacity of minority groups to climb all rungs of the intergenerational advancement ladder” (p. 11). They assert:

The relatively low educational achievement and attainment levels of economically disadvantaged children and students of color are fundamentally in conflict with core principles underlying public education . . . namely, that public schools should be avenues of opportunity for children, and that children should attend schools where they all have chances of succeeding through hard work. (Maruyama, 2003, p. 655)

Context Amplifying Importance

The demographic shift is almost certain to continue to be a powerful underlying rationale for accelerating the educational advancement of minorities for years to come. (Miller, 1995, pp. 23–24)

The answer to the following question is important for school leaders and educational policy makers alike: The achievement gap is as old as our educational system; why is it that it has only risen to the top of the reform agenda in the last dozen years? That is, as noted briefly above, “importance,” “seriousness,” and “urgency” are descriptors newly attached to racial and class learning gaps. What forces are in play that transformed achievement gaps into a matter of national concern? The answer can be traced, to a major extent, to the changing context in which the business of schooling exists. More specifically, economic and social forces, and movements in the larger world around education, have combined to recalibrate the value of low-achieving youngsters and to push the schooling industry to address problems that were allowed to lay fallow in the past.

Let us start with economic forces. As society has moved from a primarily industrial-based economy to a postindustrial economy, new expectations and requirements have been placed on schools (Marshall & Tucker, 1992; Murnane & Levy, 1996; 2004). Academic performance expectations have been ratcheted up across the board. Schools are being asked to help youngsters reach dramatically higher skill levels than was the case only a generation ago—something akin to a doubling of productivity. Equally important here, economic forces are pushing schools to ensure that all students, most particularly those on the wrong side of the achievement gap, reach these ambitious performance targets.

The evolution to a postindustrial, global economy has not only ushered in advanced performance expectations, it has also helped create a focus on outcomes and accountability that was largely absent for most of the twentieth century. In short, schools are being required to account for their effectiveness in ways that were not required for most of their history (Chatterji, 2005a; Stiefel, Schwartz, & Ellen, 2006). Perhaps the best example of this accountability in action are “the mandates of the federal Elementary and Secondary Education Act of 2001 (ESEA)

regarding identifying and eliminating disparities in student achievement” (Shannon & Bylsma, 2002, p. 10), and the No Child Left Behind Act (Meehan et al., 2003; Rouse, Brooks-Gunn, & McLanahan, 2005). Chatterji (2005a) explains:

The passage of the No Child Left Behind (NCLB) Act of 2001 has drawn attention to achievement differentials in diverse U.S. students, commonly referred to as the “achievement gap.” By law, public schools are now held accountable for equitable achievement outcomes in subgroups of minority versus non-minority, normally achieving versus exceptional, as well as socioeconomically advantaged versus disadvantaged students (P.L. 107–110, Stat. 1425, 2002). As a consequence of such school reform legislation, disparities among children’s mathematics achievement as well as factors that influence the observed differences, are now of central concern to researchers, practitioners, policy-makers, and the public alike. (p. 2)

The other upshot of the changing economy is that there is no longer a home in the economy for large numbers of students who do not perform well in school. As Miller (1995) cautions, the economic-opportunity structure for low income and minority students with limited schooling and low-level skills is bleak. And as we described above, the consequences for these youngsters are often tragic. In the new economy, the importance of education has become much more pronounced (Levin et al., 2007) and in the process, the spotlight has been directed for the first time on those groups of students who historically have not been well educated. Under the new economy and new accountability landscape, “The achievement gap has become a critical indicator of the efficacy of the educational system” (Braun et al., 2006, p. 5) for the first time.

Emerging social forces, many linked to economic factors, also are causing society and its educational institutions to underscore the significance of achievement gaps and to attend more proactively to the schooling of low-income and minority students. Most noticeable on this front is the fact that the social consequences that accompany achievement gaps become more visible (1) as the economic divide between the haves and have not widens and (2) as the social fabric of the nation is rewoven by dramatic increases in minority populations (Bempechat, 1992; Cole-Henderson, 2000; Uhlenberg & Brown, 2002). In 1970, African American and Hispanic students made up about 15 percent of the children in U.S. public schools. By 2000, they constituted 30 percent of the school-age population (Kober, 2001). By 2020, they will account for 46 percent of the school population (Miller, 1995). The result is:

American society has a compelling interest in seeing to it that those minority groups, which have long been disadvantaged educationally, increase their academic skills rapidly enough to ensure that, as their share of the population rises, the average skill level of the population as a whole does not decline. (Miller, 1995, p. 82)

DEFINING THE ACHIEVEMENT GAP

While isolating the causes of the achievement gap is often difficult and complex work, defining the problem is rather straightforward. The achievement gap refers to patterned differences in learning and attainment outcomes between groups of students. Norm-referenced and criterion-referenced standardized test scores are the learning outcomes most commonly seen in discussions of achievement gaps. Other measures of academic performance, such as end-of-course

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examinations and grades, are also used to compute achievement gaps. In the domain of attainment, one often sees measures such as graduation from high school (or dropout rates), matriculation to college, and college completion. To measure gaps, students are clustered into identifiable groups—by race, ethnicity, gender, class, and special learning needs designations. The most studied achievement gap to date is between white students and African American students.

Gaps are defined in many ways in the research literature, with three predominating and with one of those dominating the narrative. The key difference between them revolves around the comparison criterion underscored and the achievement matrix employed. Infrequently used but quite useful are assessments of whether targeted students (e.g., children from low-income homes) gain more in a grade than the time spent there (Balfanz & Byrnes, 2006). Under this design, if a student gained 1.3 years in reading during the 1.0 year spent in the fourth grade, the gap would be said to be closing. The comparison criterion here is expected growth and the achievement matrix—the focus—is *value-added learning*.

While Shannon and Bylsma (2002) help explain how “the gap is usually defined in terms of the difference in academic performance on tests among identified groups, the gap can also be defined as the difference between how a group performs as compared to what is expected of it” (p. 11). Here we are “concerned not with differences in average levels but with the percent of students who do not demonstrate acceptable levels” (Hoerandner & Lemke, 2006, p.2). Under this design, if 25 percent of African American students were expected to score in the top category (e.g., distinguished) and only 17 percent did so, it would be noted that a gap exists. The comparison criterion here is predefined proficiency, and the focus—the achievement matrix—is *level of achievement*.

Third, and by far most common, it is held that “An achievement gap exists when there is a gap in academic skills across identifiable groups of students, such as whites and blacks” (Hoerandner & Lemke, 2006, p. 3). Under this design, if low-income students scored 4.6 in mathematics at the end of fourth grade and higher-income students scored 5.4, we would say a gap exists. If at the end of the fifth grade, low-income students scored 5.8 in mathematics while higher-income students scored 6.4, we would say that the gap is closing, from .8 to .6 grade-level equivalents. Note that the distribution of scores between groups is spotlighted in this third approach (Hedges & Nowell, 1999; Shannon & Bylsma, 2002). The comparison criterion here is the growth of the other group (e.g., high-income students) and the matrix—the focus—is *equity in achievement*.

CAUTIONS FOR THE VOYAGE

One should take care not to draw conclusions about individuals from group averages or to invoke stereotypes. Many African American . . . students perform at very high levels. Indeed, the full range of achievement, from high to low, occurs in all subgroups. (Kober, 2001, p. 17)

Attempts to improve efficiency of the regular school day (e.g., lowering class size) may be beneficial, but, unless they are withheld from higher-achievement students, they may benefit all students in a way that does not close gaps. (Davison, Young, Davenport, Butterbaugh, & Davison, 2004, p. 761)

It is possible for two investigators to examine identical racial data and draw opposite conclusions about whether the status of blacks improved or deteriorated, depending on whether they focus on relative or absolute changes. (Farley, 1984, p. 13)

At first blush, strategizing about closing the achievement gap at a broad level seems fairly straightforward, a difficult task to accomplish to be sure but not an especially complex one to conceptualize. The differences in scores between group A (say low-income students) and group B (say middle-to-high income students) needs to decline, with the goal of arriving at the point where the scores between the two groups are equivalent. As we peer more deeply into the matter, however, we find that achievement gap work is a good deal more complex, more multifaceted, and more nuanced than it appears at first.

Indeed, a host of issues, beginning with decisions about the types of measures to use to chart the gap, carrying through to ways to measure and interpret scores, and ending up with questions about the effectiveness of varying gap reduction strategies belie the “straightforward” tag that just seemed so appealing. While it is not essential that educational leaders study each theme in the achievement gap narrative of caveats, it is important that they become familiar with the central cautions that need attention as the work of closing achievement gaps unfolds. In this section, we discuss the key warning signs to which leaders would do well to attend. We begin with some concerns about the measures employed to generate gap data, present some cautions about the interpretation of those data, analyze warning signs associated with efforts to close gaps, and explore concerns about outcomes of gap closing strategies.

Cautions About Understanding the Data

It is not clear from the data what policies should be pursued to mitigate the effects of group differences in the distribution of test scores. (Hedges & Nowell, 1999, p. 131)

One point worth noting at the start is that achievement gap data are enmeshed in larger sets of data on student learning. They provide one way to think about achievement. At the same time, as Kober (2001) correctly observes:

The existence of an achievement gap does not mean that student achievement is declining or that schools are getting worse. Some political leaders and analysts incorrectly point to the gap as an indicator that schools are failing. The fact is, U.S. students as a whole are performing better on key tests than they did thirty years ago, especially in mathematics. Every racial/ethnic subgroup has made gains in achievement during the past twenty-five to thirty years. (p. 10)

Concomitantly, it is instructive to place gap data in a larger historical context:

It is important to remember not only that these gaps were much larger only a few decades ago, but that our society did not begin to organize itself in a substantial way to eliminate them until the middle 1960s. That was a time when no nation in the world

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possessed an extensive body of research-proven strategies for modifying educational systems and practices that could quickly raise the academic achievement of students from extremely disadvantaged or undereducated segments of society to the levels of the most educationally successful groups. (Miller, 1995, pp. 12–13)

In the last section, we provided a number of ways to calculate achievement gaps. We also reported that standardized achievement tests are the overwhelming measure of choice used to portray learning differentials. While there are advantages to using standardized tests, there are disadvantages as well, limitations that “remind one that standardized test data must be interpreted with caution” (Miller, 1995, p. 46), especially when it comes to the topic of achievement gaps. Because “standardized tests themselves can give inaccurate and sometimes even misleading information about the performance of students in the academic areas that tests are supposed to measure . . . the information that standardized tests give about the academic achievement gap is not fully reliable” (Rothstein, 2004, p. 85). “Indeed, the measures of achievement that underscore the gap . . . merit skeptical scrutiny” (Norman et al., 2001, p. 1111). As we stand at the dawn of the twenty-first century:

Nearly all of our theories and explanations of the achievement gap are based on correlations, cross-sections, and/or national- or state-level comparisons many levels removed from classroom teaching and learning. As a result, many of our insights are based on mean or average levels of group performance rather than on close analysis of individual- or classroom-level achievement growth patterns. (Balfanz & Byrnes, 2006, p. 145)

In a related vein, it is instructive to note that the size of achievement gaps will vary “according to which test is used [and] which subjects, ages, and time periods are examined” (Kober, 2001, p. 17) and which company’s examination is selected (Rothstein, 2004). Also, while it is not the norm in the area of state and national tests, it makes more sense for leaders to examine cohorts of students rather than simply rely on trend data (Kober, 2001). That is, the better question to ask is not how well ninth graders perform in 2010 versus how other ninth graders performed in 2005, but rather how do students entering school in a given year perform over their school career; what are the gaps for these students as first graders, fifth graders, ninth graders, and so on? Even here, it is important for educators to remember that the data show patterns, “but they give limited or no information on the reasons for the patterns” (Chatterji, 2005b, p. 62).

Cautions About Interpreting the Data

Presenting the average scores of students by broad, socially constructed racial and ethnic categorizations obscures considerable diversity within these groups. (Magnuson & Duncan, 2006, p. 367)

While the phrase “children who grow up in poverty” appears to convey a certain uniformity, this is far from the case; these children are an incredibly diverse group. (Knapp, 2001, p. 176)

If the gap were to remain because all children improved, that too would be quite acceptable. (Ferguson, 1998b, 368)

There are also important cautions that leaders need to keep front and center as they interpret achievement gap data. We examine the most important of these warnings below.

Differences Within Subgroups

One of the most critical issues is to remember that even when tests scores are disaggregated by groups (e.g., white vs. African American), these subgroup scores themselves mask differences. One part of the problem surfaces because there are often distinctive subgroups within racial and ethnic groupings. Or, as Bainbridge and Lasley (2002) note: “Each racial group is far from homogeneous in itself” (p. 425). For example, Shannon and Bylsma (2002) reveal that while the subgroup “Asian students” generally has achievement equal to or higher than white students, for some groups of Asian students (i.e., those from particular cultures and nations), there are significant achievement gaps. Miller (1995) makes the same point for Asian students using attainment data when he documents that education patterns varied dramatically within this highly diverse group. For example:

Japanese Americans had high school and college completion rates of 82 percent and 26 percent, respectively, while the comparable rates were 31 percent and 6 percent for Laotians, 71 percent and 37 percent for Chinese, 22 percent and 3 percent for Hmong, 80 percent and 52 percent for Asian Indians, and 62 percent and 13 percent for Vietnamese. Among the Pacific Islanders, Native Hawaiians had high school and college completion rates of 69 percent and 10 percent, while the comparable rates were 47 percent and 11 percent for Melanesians and 61 percent and 7 percent for Samoans. (pp. 33–34)

Farley (1984) makes a similar point in regard to the African American population. Drawing on the scholarship of Moynihan and Wilson, he shows that there are different African American populations that correspond to economic status. And finally, Natriello and his colleagues (1990) unpack the myth of homogeneity among the Hispanic population. They reveal that there are significant “social and economic differences among the Hispanic subgroups” (p. 19), including Puerto Rican, Cuban, and Central and South American Hispanics. They maintain these differences “point to the diversity in the Hispanic population” (p. 20). The message for leaders is that differences within subgroups are lost when disaggregation stops at the currently used designations. School leaders are advised to peer more deeply into gap scores and to be more thoughtful about how they interpret gap-related data.

Second, and equally problematic, is the tendency to lump disaggregated groups together, e.g., treating African American and Hispanic children under the broader rubric of minority students (Natriello, McDill, & Pallas, 1990). Obviously, all the problems listed above arise here as well. Equally important, there is evidence that in some cases different gap-reduction strategies are more appropriate for one group than another. The lumping phenomenon negates the possibility of using this knowledge effectively.

Third, even if one were to uncover all the appropriate subgroups within the various gap classifications, the use of subgroups still masks the condition of individual students (U.S. Commission, 2004). While “almost everyone would agree that these categories are useful for discussing the needs of groups of children, they are less than precise means for characterizing the educational fate of individual children” (Natriello, McDill, & Pallas, 1990, p. 14). The

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“use of averages obscures considerable variation in skills within each of the racial and ethnic groups” (Magnuson & Duncan, 2006, p. 368) and within the subgroups within each classification (e.g., Puerto Rican vs. Cuban). Thus, “aggregated averages by group . . . hide important data about the performance of students” (Shannon & Bylsma, 2002, p. 14). As the U.S. Commission (2004) reminds us, “Not all Asian American students are high achievers; just as not all African American . . . students are academic underachievers” (p. 2). According to Beckford and Cooley (1993), in addition to understanding variations among groups, leaders need to pay attention to “the extensive overlap of distributions” (p. 8). There are low- and high-achieving youngsters in all groups (Beckford & Cooley, 1993; Magnuson & Duncan, 2006). Lee, Magnuson, and Duncan (2004) put the issue in concrete terms as follows:

Making a generalization based on the average racial achievement gaps can be misleading, as within-group variability in achievement is much greater than between-groups variability. According to the 1999 long-term trend NAEP math results, the average national Black-White gap is about 31 points, whereas the gap between high-performing (2 standard deviations above the mean) and low-performing (2 standard deviations below the mean) students of the same race (both Blacks and Whites) amount to 112 points. About 15 percent of Black students perform better than an average White student. (p. 64)

The use of averages obscures considerable variation in skills within each of the racial and ethnic groups. Although the average gap in math achievement between white and black kindergartners in the ECLS-K was two-thirds of a standard deviation, nearly one-quarter of black children outscored the typical (median) white student in reading achievement. (Magnuson & Duncan, 2006, p. 367)

The central caution on this third point is as follows: equity in learning in the achievement gap literature is defined in terms of groups rather than in terms of individuals. While this group definition of equity is critical, equally important is the reality that equity must be determined one student at a time.

Understanding Measures of Learning

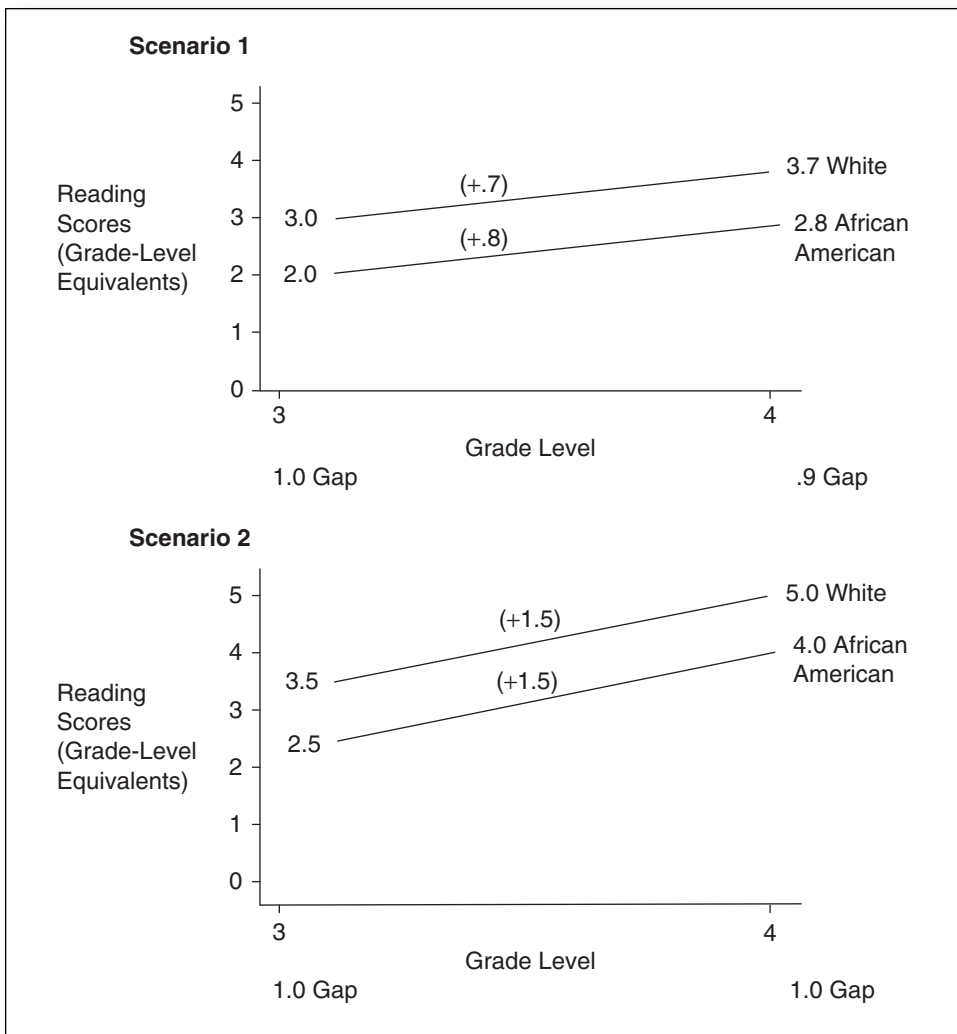
A second caution in the area of data interpretation focuses on the truncated understanding of “success” found in the bulk of the achievement gap literature. As introduced above, work with achievement gaps highlights one measure of success, equity in the distribution of achievement scores and attainment levels. Because schools that “serve as equalizers may not be comforting to all [learners]” (Downey, von Hippel, & Broh, 2004, p. 633), they would do well to adopt a broader definition of success (Murphy, Hallinger, & Peterson, 1986)—one that includes “equity” but also incorporates information on achievement “levels” and “value added” to achievement (see Murphy, Hallinger, & Peterson, 1986; also Baenen, Dulaney, Yamen, & Banks, 2002; Downey, von Hippel, & Broh, 2004). In short, not all gap reductions are equal.

On the issue of achievement “level,” Lee (2004) provides a critical insight when he concludes that, “no matter how much the relative achievement gap among different racial and social groups has been narrowed, some disadvantaged minority students’ performance level still may not be acceptable” (p. 61). Magnuson and Duncan (2006) apply the same logic when they observe that:

Interventions can be designed to improve black (and/or white) children's relative skills and absolute levels of academic skills at differing points in the skill distribution. However, it is not immediately obvious which is more detrimental to blacks and to society in general—lower levels of achievement among black children or lower achievement of black as compared with white children. (p. 388)

On the “value added” dimension of success, the critical issue is what gains over time are attributable to the school. As we illustrate in Figure 1.1, schools sometimes: (1) are given credit for high levels of student learning for which they may not be responsible (e.g., a fourth-grade student who starts the year at 7.2 grade-level equivalents in reading and exits at 7.9 grade-level equivalents looks very strong in terms of level, but the school has not contributed much to that success, at least not in the fourth grade) and (2) are blamed for gaps not under their control (increasing gaps because of higher summer gains for white than for African American youngsters).

Figure 1.1 Equity, Level, and Value-Added Dimensions of Achievement Gaps



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Figure 1.1 helps us see these cautions in concrete terms. In Scenario 1, we see a portrait that many working on the gap problem would consider good news. “Equity” is increasing; the gap is declining. While the achievement gap in reading was 1.0 grade levels at the start of third grade, by the start of the fourth grade, it was only .9 grade levels. However, when we factor in the “level” and “value added” dimensions of success to the analysis, we arrive at a less sanguine conclusion. While equity has been enhanced, neither growth (value added) (only eight months for African American students in Grade 3) nor the level of achievement (Grade 2, eighth month at the start of Grade 4) is acceptable. The overall storyline here is not one that should be labeled as successful.

In Scenario 2, using the traditional (i.e., “equity”-only) achievement gap frame, the assessment would not be viewed positively as the reading gap has remained unchanged from the start of Grade 3 to the beginning of Grade 4. However, when we apply “level” and “value-added” criteria, we arrive at a different conclusion. African American students gained a full year and a half in reading in Grade 3, nearly double the growth noted in each of the three previous years on average. Also, they are now reading at grade level. Even though the gap has not closed, the overall storyline in Scenario 2 is positive.

Our earlier caution was that equity needs to be assessed using more than subgroup averages. Our warning here is that using equity as the only barometer for measuring success is problematic. Equity, level, and value-added scores all need to be examined to make thoughtful judgments about school success. Our next caveat in the area of data interpretation leads into a discussion of the importance of examining both absolute and relative improvement.

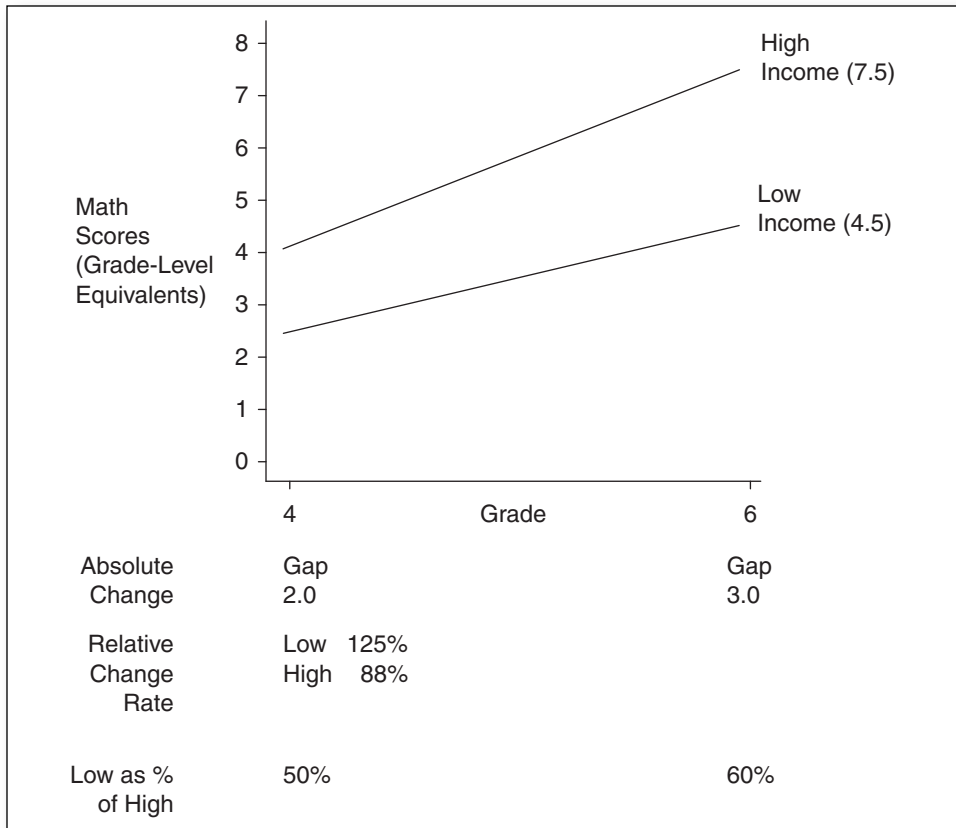
Absolute vs. Relative Improvement

We argued above that the metrics employed have a good deal to do with the conclusions one reaches about the gap problem and work to confront it. Here we see that the lenses used to interpret scores are also important. The caution spotlighted is whether attention is directed to improving the absolute level or reducing the relative gap (Lee, 2004). Figure 1.2 helps us to illustrate this concern. The question in play for Figure 1.2 is as follows: Is progress being made in closing the achievement gap? Using absolute lenses, the answer is “no.” At the start of fourth grade, there is a 2.0 year gap in mathematics achievement between low-income and high-income students. By the beginning of the sixth grade, the gap had increased to 3.0 years. Using relative lenses, the answer would be “yes,” the gap is closing. Even though the overall gap has expanded, the rate of growth for low-income students is much higher than for high-income youngsters (125 percent vs. 88 percent). Also, while the low-income students were performing only 50 percent as well as their high-income peers at the start of the fourth grade, at the beginning of the seventh grade, they are doing 60 percent as well. (Note that using our earlier categories, that “level”[4.5] remains unacceptable for low-income youngsters but growth [“valued added”] is good, 2.5 years across the fourth and fifth grades.)

The goal, here, and in Scenario 1 as well, is not simply to provide equations to evaluate claims about whether the gap problem is being addressed effectively or not. Rather, it is to help leaders understand that appropriate metrics and lenses need to be employed in making judgments about gap reductions. We want to reinforce the conclusions by scholars who argue that policy frameworks for helping eliminate school achievement gaps should spotlight increasing achievement among low-skilled children more than reducing gaps between groups.

We also want to presage a point threaded throughout this volume. That is, that gains designed to assist African American and low-income pupils are likely to benefit all youngsters (Natriello, McDill, & Pallas, 1990) and may accelerate the growth of nontargeted youngsters more quickly than targeted students.

Figure 1.2 Absolute vs. Relative Interpretations of Gap Closure



Cautions About Efforts to Close Gaps

Nearly all the research on racial gaps has focused specifically on children’s academic achievement. Yet other dimensions . . . may also be of consequence for school success. (Magnuson & Duncan, 2006, p. 391)

When predicting test scores, the effect of a school policy by racial group may . . . vary by race. (Bali & Alvarez, 2003, p. 488)

To reduce and ultimately close the gap, students of color will need to accelerate their achievement at a much faster rate in the future if whites continue to improve as well. (Shannon & Bylsma, 2002, p. 17)

In this section, we introduce some cautions for leaders to attend to as they undertake the work of closing achievement gaps.

Those who assume the mantle of gap closer need to be attentive to claims about the grounds of recovery actions, including the promulgation of overly simplistic strategies that it is argued will alleviate learning disparities. As Braun and colleagues (2006) conclude, there are reasons why achievement gaps have been “generally resistant to policy interventions” (p. 5). And Barton (2003), in his work on the gap problem, points out another caution that

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requires notice: “The current knowledge base . . . does not inspire as much confidence as desired” (p. 5). Two points in particular merit notice here. First the knowledge base on closing the achievement gap for minority students is especially thin (Miller, 1999). Second, there is a host of preestablished solutions in the general school-reform environment (e.g., school choice, comprehensive school reform) that advocates link to the achievement gap problem with very little evidence that they will impact learning differentials—solutions in search of problems, if you will. In short, understanding needs to connect to data. There is no magic elixir that will solve the achievement gap problem.

Undue Limiting of Focus

One of the most cogent critiques of the work in the area of gap closures is the nearly exclusive focus on standardized measures of achievement, and achievement often limited to the domains of language arts and mathematics. Rothstein (2004), in particular, raises warning flags first about the dangers of ignoring the many noncognitive, social skills we would like to see developed at school and, second, about the failure to measure gaps in these important areas. He and other analysts also warn against inattention to the measurement and documentation of gaps in subjects other than reading and mathematics. Finally, Rothstein (2004) reminds leaders to be cautious about relying almost exclusively on indices of accomplishment on basic skills, as opposed to more advanced and generally more valued skills. His overarching caution is against narrowness in the quest to enhance equity and quality. His concern is “that a too-exclusive focus on academic test scores may blind us to the relative benefits that Black students gain from education” (p. 103). His antidote is for balance, balance of domains (i.e., cognitive and noncognitive), subjects, and skills.

Attending to Factors That Advantage Students At Risk

If we return to the dominant understanding of closing the achievement gap as an increase in equity—or improving the rate of learning of targeted students at a faster rate than for other pupils (Davison et al., 2004; Kober, 2001), then it is apparent that closure requires actions that disproportionately advantage these students (Braun et al., 2006; Harris & Harrington, 2006; Myers, Kim, & Mandala, 2004; Spradlin et al., 2005): “Disadvantaged students cannot catch up to their initially higher scoring peers by making the same progress as those peers” (Ding & Davison, 2005, p. 94); “as long as the same level of improvement occurs, the gap will not close” (Shannon & Bylsma, 2002, p. 48). The advantaging process can occur in two ways. First, as Alexander, Entwisle, and Olson (2001) remind us, “To address the achievement gap specifically, programs will need to target disadvantaged students specifically” (pp. 176–177). Second, leaders can underscore interventions that “influence the test scores of groups differentially” (Bali & Alvarez, 2003, p. 486). That is, they can spotlight strategies that provide greater gains to targeted students. For example, the use of cooperative learning strategies and small class sizes in the early grades benefit African American students more than white students. The key warning signs for leaders are as follows: (1) raising student achievement generally and reducing the achievement gap are not the same thing; (2) if equity is the goal, focusing on reform strategies that power higher achievement for all youngsters along similar trajectories will not ameliorate the gap problem; (3) “Most school policies have

a small effect on test scores, impacting all racial groups in a similar manner, without redistributing benefits across groups” (Bali & Alvarez, 2003, p. 485); and (4) different policies are required for different goals (Hanushek & Raymond, 2005).

*Not All Groups Are the Same, and Students
Within Specific Groups Are Not the Same*

An important caution to carry as work unfolds on addressing the needs of African American and low-income youngsters is to pay attention to differences between groups and within groups (Carpenter, Ramirez, & Severn, 2006). To begin with, as we noted above, evidence suggests that some gap-solution strategies work better with one group (say Hispanic youngsters) than others (say African American students) (Bali & Alvarez, 2003; Downey, von Hippel, & Broh, 2004). That is, “school factors [may] influence the test scores of racial groups differently” (Bali & Alvarez, 2003, p. 486) and the commonly accepted assumption that factors contributing to gaps and their reductions “are the same or sufficiently similar for all minority groups” (Carpenter, Ramirez, & Severn, 2006, p. 113) may not be accurate. For example, Ferguson (1991) found that while greater teaching experience and the possession of a master’s degree had a small positive impact on African American students relative to white students (i.e., helped close the African American-white achievement gap) these factors were negative for Hispanic students relative to white youngsters (i.e., increased the Hispanic-white achievement gap).

Second, there are differences within groups of students that have real implications for how schools address learning gaps (Knapp, 2001). All African American students are not the same; nor are all low-income youngsters. For example, while it is true that the average twelfth grade African American pupil performs significantly below the average white student, in the neighborhood or four years below, some African American students perform very well relative to other African Americans and relative to whites. The caution is that grouping masks individual differences, differences to which leaders need to attend.

Implementation Designs Matter

Over the last few years, we have been able to forge important principles of work that need to be followed if gap-reduction work is to be most effective. We illustrate these principles throughout the volume, especially in Part 3 where we explore solution strategies. We introduce some of them here as cautionary rules of thumb that should be added to the achievement gap toolbox at the outset of our work.

- Race is important but socioeconomic status is the critical issue; “social class matters more than race” (Rothstein, 2004, p. 52).
- There is no silver bullet that will solve the achievement gap problem; a combination of strategies is required to gain traction on the issue.
- An integrated, cohesive design that thoughtfully brings multiple strategies together is desirable; isolated actions and ad hoc work are of more limited value.
- Equity can only be achieved if the design features strategies that disproportionately advantage students on the wrong side of the achievement gap.

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- The cohesive design needs to include both out-of-school factors (e.g., academically oriented summer programs in elementary school) and in-school variables (e.g., more rigorous curriculum).
- In the school part of the cohesive design, both academic (e.g., quality instruction) and environmental (e.g., clubs for African American students) factors need to be included.
- Some factors carry more weight in certain periods of a student's career (e.g., small class size is more valuable in the early grades).
- Not all factors are equal; some carry more weight than others (e.g., prekindergarten).
- Local context matters a good deal; indeed, "There is considerable evidence that different strategies . . . work best in different settings" (Thompson, 2002, p. 4).
- Since closing achievement gaps once they have developed is difficult work, prevention always trumps remediation in dealing with achievement gaps (Heckman, 1995); it is easier to solve the ninth-grade problem in preschool than in the ninth grade.
- Length of time in treatment is important; for many gap interventions, benefits escalate the longer the intervention unfolds (e.g., small class size, quality instruction).
- There are no short-term solutions.
- Students rarely arrive; supports often should not be withdrawn even when gaps are reduced; continued work is required to hold gains.

Cautions About Outcomes

There are trade offs. Class size reductions may mean cuts in other programs that schools now offer or might offer. (Thompson & O'Quinn, 2001, p. 11)

Since the 1970s, dropout rates have been declining faster for Blacks than for Whites. . . . This particular type of effect might act to increase the Black-White achievement difference on the assumption that the more precipitous decline in Black dropout rates is likely to increase the number of academically weak students in a Black sample. (Bacharach, Baumeister, & Farr, 2003, p. 116)

The literature on achievement gaps is nearly silent on two issues of great importance to educational leaders, costs and cost-benefit data and unintended consequences of interventions. School leaders and policy makers need to remember that interventions to close gaps (e.g., reducing class size at the elementary level, adding advanced placement classes in high schools) have both benefits and costs. And while it is often difficult to isolate the impact of particular interventions (Thompson, 2002), "Considerably more effort than is now the norm needs to be devoted to assessing both of these dimensions of reform efforts and trying to determine the ratio between the two, to determine where efforts are most cost effective" (Barton, 2003, p. 37). If the same gain, say a 10 percent reduction in the achievement gap between low- and high-income pupils, can be garnered from strategy A that costs one-half the amount of strategy B, absent some really strong countervailing information, it would be wise to pursue strategy A.

Leaders would also be wise to anticipate unintended as well as hoped-for outcomes of gap-reduction initiatives. The operant caution is to assume that there will be some. The policy landscape of districts and schools is pot marked with seemingly wise reform strategies

that produced, in addition to benefits sought, quite unpleasant results, often of a magnitude to more than offset the benefits gained. This was the case with the famous homestead acts that opened up the Southwest plains to farmers in the early part of the twentieth century. These policies led directly to the worst natural disaster in the history of the United States, the dust bowl of the 1930s (Egan, 2006). Closer to home, many school leaders can remember when the policies of the 1960s and 1970s to provide services to at-risk youngsters and students with special needs resulted in the promulgation of “pullout” programs and the separation of at-risk students from regular students. The message is that some thought needs to be devoted to working through these potential unintended consequences before gap initiatives are undertaken. And positive, unintended consequences should not be overlooked either.

CONCLUSION

Addressing the achievement gap is both important and urgent.

(Shannon & Bylsma, 2002, p. 13)

In this chapter, we reported that achievement gaps in education have important consequences for individuals and for the nation as a whole. We observed that gaps are associated negatively with measures of educational attainment, employment opportunities, and earnings. We also noted that achievement gaps damage the economic and social fabric of society, undermine civil rights and social justice for a growing segment of the population, and destroy the principles of democracy. Because of significant economic and social shifts under way and a rising sense of national outrage, we argued that the achievement gap problem has moved to center stage in society in general, and in education specifically. A palpable sense of urgency around this issue has emerged in the last dozen years. We recorded how the new commitment is leading to new gap closing strategies.

To provide an understanding of the extent and depth of the achievement-gap problem, we spent some time exploring the definition of the problem. We then laid out a series of cautions and warning signs that require attention as we move into our discussion of the causes of the gap in Part 2, and more important, into our analysis of solutions to the gap problem in Part 3. The focus here was on helping the reader develop a deeper and more nuanced understanding of the achievement gap problem.

What should be clear at this point in our chronicle is that efforts to address the problem are much in demand: “We must commit ourselves to overcoming the substantial racial and ethnic [and class] differences in educational achievement that remain” (Haskins & Rouse, 2005, p. 1). As Shannon and Bylsma (2002) maintain, both individual and organizational analysis and reflection are called for, “followed by courageous actions to change the status quo across school systems” (p. 12) and the policy frameworks buttressing, or failing to support, the social structures that help determine educational opportunity (Rothstein, 2006; 2008).

Going forward naively, however, will do no one any good. Given what we have seen so far, it should also be clear that closing gaps will be arduous work. The gap remains and continues to bedevil change agents of all ideological and reform persuasions (Ainsworth-Darnell & Downey, 1998; Hedges & Nowell, 1998). As Neuman and Celano (2006) remind us, “Achievement differences among poor and minority children compared to their middle-class

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counterparts have deep roots” (p. 179). And let us not forget that some of those who are advantaged by these inequalities are likely to resist action that might disturb the current state of affairs. In addition, the obvious should not be overlooked: “With growing minority populations and an increasing percentage of students living in poverty, the threat of the achievement gap widening is very real” (Spradlin et al., 2005, p. 3). In short, “There is nothing inevitable about achieving the goal” (Haskins & Rouse, 2005, p. 6) and, “Evidence provides little hope that achievement gaps will simply disappear with the passage of time” (Magnuson & Duncan, 2006, p. 372).

Yet, there is a real sense of hope here as well. A moral ground swell has materialized around the achievement gap problem (Jencks & Phillips, 1998), one that supplements the press for action resulting from the changing economic and social conditions of a postindustrial world. Across the spectrum, we have discovered that the “Black-white tests score gap does not appear to be an inevitable fact of nature” (Jencks & Phillips, 1998, p. 44): “Academic abilities are not simply inherited aptitudes,” but are subject to change “through a broad range of social and educational interventions” (Gordon, Frede, & Irvine, 2004, p. 1). We also have some fairly impressive examples of places that are tackling the problem effectively.