

Racial and Ethnic Achievement Gap Trends: Reversing the Progress Toward Equity?

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Racial and ethnic achievement gaps narrowed substantially in the 1970s and 1980s. As some of the gaps widened in the 1990s, there were some setbacks in the progress the nation made toward racial and ethnic equity. This article offers a look below the surface at Black-White and Hispanic-White achievement gap trends over the past 30 years. The literature review and data analysis identify the key factors that seem to have contributed to bifurcated patterns in achievement gaps. The conventional measures of socioeconomic and family conditions, youth culture and student behavior, and schooling conditions and practices might account for some of the achievement gap trends for a limited time period or for a particular racial and ethnic group. However, they do not fully capture the variations. This preliminary analysis of covariations in racial and ethnic gap patterns across several large data sets has implications for future research on the achievement of minority groups.

The changing racial and ethnic demography in the United States challenges schools to educate an increasingly diverse student population. Since the Coleman Report in the 1960s brought attention to racial inequity in student outcomes, the achievement gap between White and minority students has raised a multitude of concerns and resulted in a significant body of empirical research (see Coleman et al., 1966; Jencks & Phillips, 1998; Jones, 1984; National Center for Education Statistics [NCES], 1995; Peng & Hill, 1995). This achievement gap in schools is often argued to have lifetime consequences, limiting opportunities for minority students in higher education, employment, and earnings (Carnervale, 1999; Jencks, 1992; Murnane & Levy, 1996; Ogbu, 1994).

Despite the many challenges to improving racial and ethnic equity in learning outcomes, substantial success in narrowing the Black-White achievement gap has been realized since the 1960s. However, a closer examination of the data reveals that this earlier progress has been reversed since the late 1980s. Only passing concerns have been raised about the growing racial and ethnic achievement gaps during the 1990s, and those have been accompanied by few empirical studies (see Bowen & Bok, 1998; Haycock, Gerald, & Huang, 2001; O'Day & Smith, 1993). Moreover, little research has been conducted on changes in the achievement gap between Whites and Hispanics.¹

In light of these trends, this article offers an in-depth exploration of racial and ethnic achievement gap trends and a preliminary examination of different factors that may interact to influence the trends. It offers a comprehensive review of available data on the Black-White and Hispanic-White achievement gaps in reading and mathematics over the last three decades. The achievement gap is measured by national average test-score differences between racial and ethnic groups based on the National Assessment of Educational Progress (NAEP) and SAT results. (See Appendix for descriptions of the variables and data sources.) The central research question is why the Black-White and Hispanic-White achievement gaps narrowed in the 1970s and 1980s but then stabilized or widened in the 1990s. This study does not seek to identify a single cause for the bifurcated trends but instead attempts to explore multiple influences by examining covariations in racial and ethnic gap patterns across several large data sets.

Racial and Ethnic Achievement Gap Trends in Reading and Mathematics

NAEP is regarded as the nation's report card of student achievement in key subject areas. The long-term trend NAEP data shows that, overall, student achievement improved to a small or moderate extent during the last three decades: 1971–1999 in reading and 1973–1999 in mathematics (Campbell, Hombro, & Mazzeo, 2000; Loveless & Diperna, 2000). Despite these aggregate trends, there are substantial differences among different racial and ethnic groups. During the 1970s and the first half of the 1980s NAEP showed substantial academic improvement of Black and Hispanic students and a significant narrowing of the Black-White and Hispanic-White achievement gaps. However, since then this progress slowed down and even showed signs of a setback during the 1990s.

A comparison of the earliest and latest NAEP measures shows that the Black-White achievement gap became smaller across subject areas (reading and mathematics) and age groups (9, 13, and 17) (see Figure 1). The Black-White test score gaps in NAEP reading and mathematics fell by 20% to 40%, or by 0.2 to 0.5 in standard deviation units, over the 1971/1973–1999 period. However, closer examination of Black-White achievement gap trends shows bifurcated patterns in which the gaps narrowed until the mid-to-late 1980s and then began to stabilize or rise slowly. During the period between 1971 and 1986/1988 when the achievement gap between Whites and Blacks narrowed, White students' achievement level was quite flat, whereas Black students made substantial academic gains. In contrast, during the

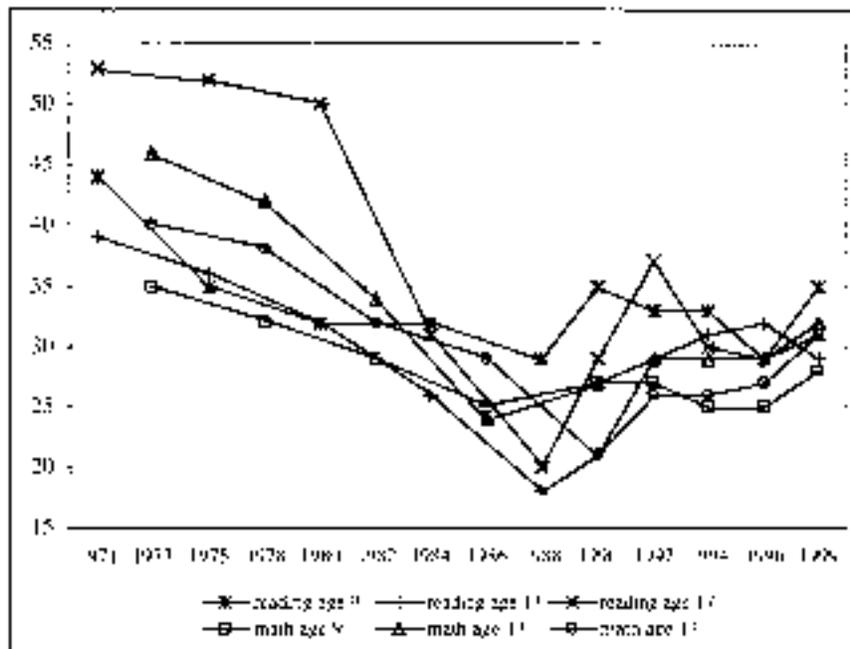


FIGURE 1. Black-White average score gap trends in the 1971–1999 NAEP reading and mathematics.

period between 1986/1988 and 1999, when the gap grew, the pattern reversed: White students improved their achievement but Black students made few gains on NAEP. Consequently, the narrowing of the Black-White achievement gap stopped, and in some cases the gaps returned to the level of the late 1970s or early 1980s. Time-series regression analyses show a significant quadratic (downward slope followed by upward slope or leveling off) trend of the Black-White achievement gap for all age groups in mathematics and for ages 9 and 13 in reading.² The turning point in the Black-White gap trend appeared to be in the late 1980s and early 1990s.

In contrast, the Hispanic-White test score gaps in NAEP reading and mathematics dropped relatively little, showing a somewhat inconsistent pattern of gains and losses throughout the entire period between 1973/1975 and 1999 (see Figure 2). The earliest measures of Hispanic-White achievement gaps were smaller than the latest gaps in reading and mathematics for age 17 and in mathematics for age 13. Even when the changes were statistically significant, the Hispanic-White achievement gap did not narrow as much as the Black-White achievement gap. While the trends of the Hispanic-White achievement gap in mathematics were not very consistent across age groups and subject areas, it appears that most of the Hispanic gains were made by 1982. Indeed, the Hispanic-White achievement gaps have narrowed very little or even widened since then. Time-series regression analyses show a significant quadratic trend of the Hispanic-White achievement gap for age 13 in mathematics and for none in reading.

Similar trends in racial and ethnic achievement gaps were found for college-bound students who take the SAT (see Figure 3).³ The use of SAT scores to monitor the racial and ethnic achievement gap trends can be misleading because the trends are influenced by changes in the composition of test-takers. With this caveat in

mind, the distribution of SAT scores by race/ethnicity may provide some limited usefulness in projecting different racial and ethnic groups' chances for college admission.

Both Black-White and Hispanic-White SAT score gaps narrowed in the verbal and mathematics areas significantly by the late 1980s, with the Black-White achievement gap narrowing more than the Hispanic-White gap. However, the narrowing of both the Black-White and Hispanic-White achievement gaps in SAT scores stopped in the late 1980s and early 1990s and the gaps have stabilized or widened since then. Like the NAEP trend, a relatively flat SAT achievement trend characterized White students while the scores of Black and Hispanic students exhibited an upward trend in the earlier half of the period studied. These distinctive trends reversed between Whites and Blacks and Hispanics in the latter half of that period (see Figure 3). Comparison of standardized test score gaps shows that the racial and ethnic achievement gaps changed (either narrowing or widening) less on SAT than on NAEP from 1978 to 1999.

Where the Achievement Gap Narrows and Grows

While the average racial and ethnic achievement gap trends give us broad pictures of racial and ethnic equity in academic outcomes, it is also necessary to determine where the gap narrows or grows. Previous research suggested that Black-White gaps diminished over time in the lower distribution of achievement but not in the upper distribution (Hedges & Nowell, 1998). To illustrate the problem, Figure 4 shows long-term NAEP mathematics achievement trends for 13-year-olds at different performance levels by racial or ethnic group. During the period from 1978 to 1986, greater academic improvement of lower performing students across all racial and ethnic groups was observed. Indeed, the amount of average achievement gain varied inversely with achievement level: a 12-point gain for the lower quartile, a 3-point gain

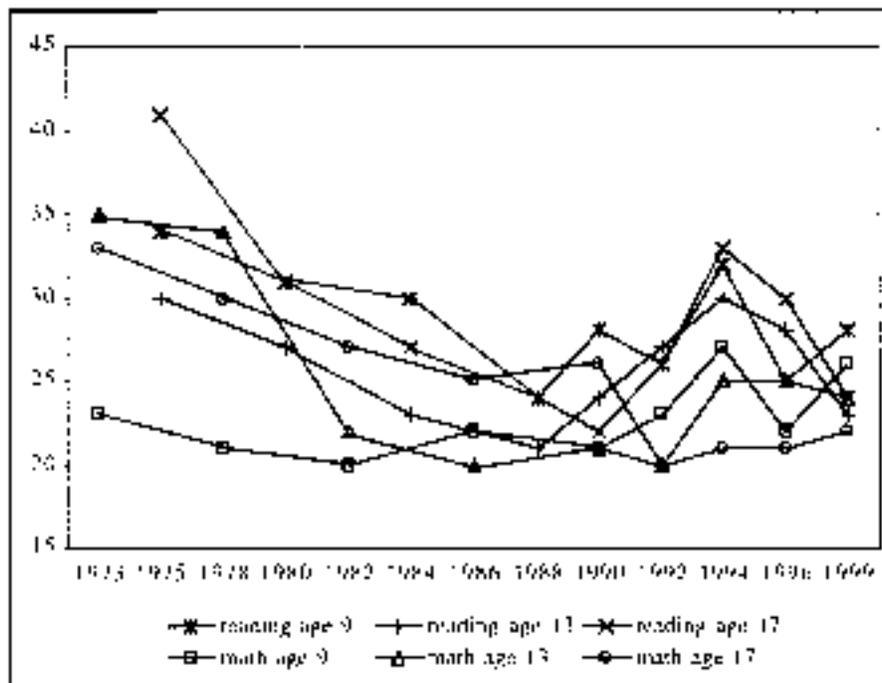


FIGURE 2. *Hispanic-White average score gap trends in the 1973–1999 NAEP reading and mathematics.*

for the middle two quartiles, and a 1-point gain for the upper quartile. Conversely, during the period from 1986 to 1999, the pattern of gain reversed across racial and ethnic groups so that the lower-performing students gained the least: a 4-point gain for the lower quartile, an 8-point gain for the middle two quartiles, and an 8-point gain for the upper quartile.

There are five scale-anchored performance levels (150, 200, 250, 300, and 350) in the long-term NAEP trend that facilitated interpretation of the results (Level 150 = Simple Arithmetic Facts; Level 200 = Beginning Skills and Understandings; Level 250 = Numerical Operations and Beginning Problem Solving; Level 300 = Moderately Complex Procedures and Reasoning; Level 350 = Multi-step Problem Solving and Algebra). As shown in Figure 4, the gain was greater for students scoring between 200 and 250 from 1978 to 1986, whereas the gain was greater for students scoring between 250 and 350 from 1986 to 1999. This change coincides with curricular and instructional shifts during the last three decades from minimum standards focusing on basic skills to high standards with emphasis on advanced content and higher order thinking skills (see O’Day & Smith, 1993).

It is noteworthy that the achievement gain varied among different racial and ethnic groups. Figure 4 clearly shows greater gains for minority students during the earlier period. In fact, White students could not make any significant gains at level 200 because of the ceiling effect; they already reached nearly 100% as of 1978. However, this limit on White students’ academic growth did not operate at level 250 or above where there was ample room for growth. In fact, Black and Hispanic students who performed at the 200–250 score range made greater progress during the 1978–1986 period than their White counterparts who performed at the same level.

These results suggest that race/ethnicity interacted with achievement level to affect academic progress: The gains were greater at minimum competency levels (level 200 to level 250) but the amount of gains varied among racial and ethnic groups, about four times greater for Blacks and Hispanics than for Whites. This pattern was reversed during the 1986–1999 period when White students gained most and the size of the gain was greater at the higher performance level. At level 200, Black and Hispanic students could not make any further progress because almost all of them in both groups reached that level as of 1986. However, there is no limit on progress at level 250 or level 300 for any racial and ethnic group. White students made twice the gains of their Black and Hispanic counterparts during the 1986–1999 period.

It appears that low-performing students gained more than high-performing students when minimum competency was emphasized during the 1970s and early 1980s but the opposite is true as we move to the period of higher learning standards during the late 1980s and 1990s. These results suggest that changes in school curriculum and instruction may differentially benefit students performing at different levels. However, it is an oversimplification to conclude that minority students who were mostly low performing benefited more from the basic skills emphasis while White students who were mostly high performing benefited more from the higher order skills emphasis. The results also indicate that the amount of progress varies from one racial/ethnic group to another group even when they perform at the same achievement level. It remains to be examined why minority students (particularly Blacks) gained more than Whites at the same basic level in the earlier period and why Whites gained more than minorities at the same advanced level in the later period.

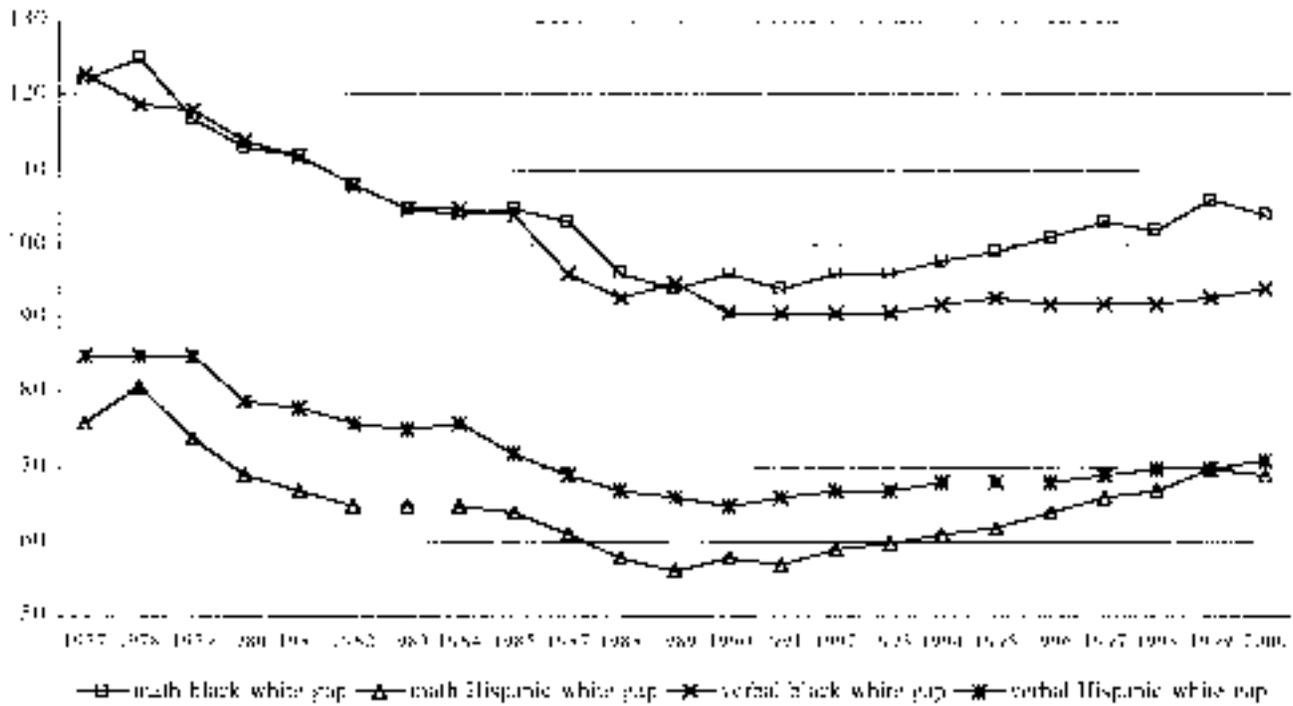


FIGURE 3. Black-White and Hispanic-White average score gap trends in the 1977–2000 SAT verbal and mathematics.

Factors Affecting Racial and Ethnic Achievement Gap Trends

Researchers have paid exclusive attention to the earlier phenomenon that the Black-White achievement gap narrowed and tried to account for the success (see Grissmer, Flanagan, & Williamson, 1998; Hedges & Nowell, 1998; Smith & O’Day, 1991). The list of factors identified as affecting racial and ethnic achievement gaps may include socioeconomic and family conditions (educational attainment, income, poverty, single household); youth culture and student behaviors (motivation and effort for learning, alcohol and illicit drug usage, crime); and schooling conditions and practices (instructional resources, teachers, course taking, dropout, segregation). The sheer number of factors reflects the complexity of studying racial and ethnic achievement gaps.

In the following sections, I describe racial and ethnic gaps in some of the key factors identified above and examine how their changes are related to the NAEP achievement gap trends. The gap measure for positive variables (i.e., high school education, college education, and advanced course-taking) was the ratio of the value for Whites to the value for Blacks or Hispanics, indicating how many times Whites are more advantaged than Blacks or Hispanics with regard to those variables (see Appendix). Conversely, the gap measure for negative variables (i.e., poverty, single household, alcohol use, illicit drug use, crime victimization, and high school dropout) was the ratio of the value for Blacks or Hispanics to the value for Whites, indicating how many times Blacks or Hispanics are more disadvantaged than Whites in terms of those variables (see Appendix). I focus particular attention on developments in the 1990s that might explain the bifurcated racial and ethnic achievement gap patterns.

Changes in Socioeconomic and Family Conditions

Some studies suggest that changes in family conditions (income, parental education, and so forth) could account for part of the Black-White achievement gap reduction in the 1970s and 1980s (Grissmer, Kirby, Berends, & Williamson, 1994; Hedges & Nowell, 1998). However, Grissmer et al. (1994) found that the achievement of Black students increased substantially more than predicted by changes in social class and family structure and ascribed the difference between actual and predicted changes to educational policies that have especially helped Blacks. Hedges and Nowell (1998) came to a similar conclusion but pointed out that it is a mistake to attribute all unexplained changes in the Black-White gap to educational policies if unmeasured social changes impacted the achievement gap.

Figure 5 shows trends of the gap between Blacks and Whites across a variety of socioeconomic and family conditions. The Black-White gap in the percentage of high school education attainment dropped continuously throughout the last three decades, and the gap was almost closed in the 1990s (the gap in the ratio was 1.7 in 1970, 1.2 in 1986, and 1.1 in 1998). Likewise, the Black-White gap in college education attainment narrowed continuously, but the drop slowed down since the late 1980s. Consequently, the college education gap remains substantial whereas the high school education gap no longer exists. At the same time, the Black-White poverty gap generally narrowed over the last three decades, widening temporarily in the late 1980s and stabilizing thereafter. (The gap in the ratio was 3.95 in 1970, 2.76 in 1986, and 2.53 in 1998). Figure 5 also shows that the Black-White gap in the percentage of single parent households nar-

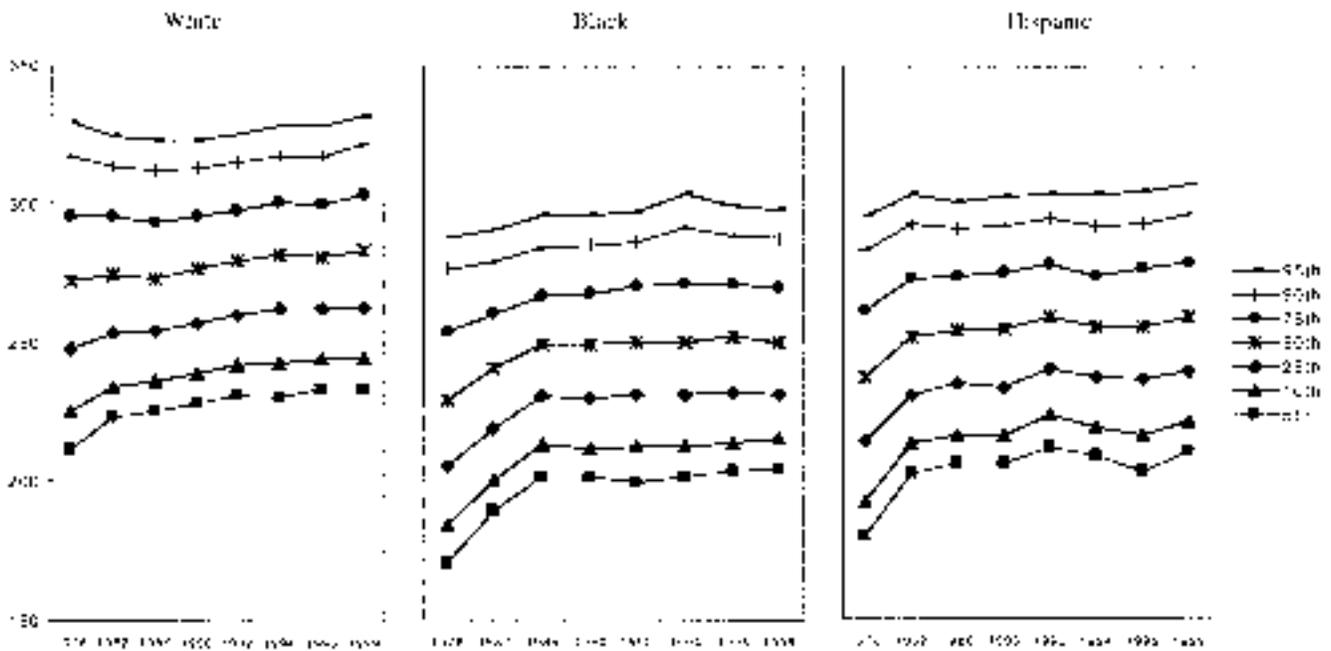


FIGURE 4. White, Black, and Hispanic 13-year-olds' average score trends by percentile rank in the 1978–1999 NAEP mathematics.

rowed throughout the last three decades, but once again the rate of the drop slowed in the late 1980s and 1990s.

These data show that Black-White gaps in socioeconomic and family conditions continuously narrowed from the 1970s through the 1990s, but that this narrowing slowed down in the late 1980s and the 1990s. The acceleration of a narrowing of the Black-White gap in socioeconomic and family conditions in the 1970s and early 1980s parallels a significant drop in the Black-White achievement gap during the same period. Moreover, the deceleration of the narrowing of the Black-White gaps in socioeconomic and family conditions since the late 1980s coincides with a flattening of the achievement gap since that time. Because achievement and socioeconomic conditions covary without any time lag, it appears that they are related to each other. However, this does not fully explain why some of the Black-White achievement gaps rose in the 1990s despite the fact that Blacks' socioeconomic and family conditions did not get worse relative to their White counterparts.

Figure 6 shows corresponding trends of the Hispanic-White gap in socioeconomic and family conditions. The Hispanic-White high school education gap hardly changed over the past three decades. The gap in the ratio was 1.7 in 1975, 1.57 in 1986, and 1.51 in 1998. Likewise, the Hispanic-White gap in college education did not change either. The gap was 2.3 in 1975, 2.39 in 1986, and 2.27 in 1998. Moreover, the Hispanic-White poverty gap has not changed significantly, dropping from 2.65 in 1975 to 2.54 in 1986 to 2.33 in 1998. The Hispanic-White gap in the single household rate was similarly stable over the last 2 decades.

Figure 6 shows that Hispanics did not improve their overall socioeconomic and family conditions relative to their White counterparts during the last 3 decades. This may help to explain the fact that the Hispanic-White achievement gap changed

much less than the Black-White gap during the same period. Nevertheless, such a steady trend in the Hispanic-White gap in socioeconomic and family conditions does not help to explain the lack of a consistent pattern in the Hispanic-White achievement gap.

In sum, changes in socioeconomic and family conditions may not fully account for racial and ethnic achievement gap trends. If we assume that socioeconomic and family conditions influence academic achievement and that those effects are consistent across racial and ethnic groups and stable across time periods, we might expect that the achievement gap between Whites and Blacks would have continuously narrowed, and the achievement gap between Whites and Hispanics would have remained relatively flat throughout the last 3 decades. However, the data do not support these hypothetical trends. This does not deny the possible influence of other factors or unmeasured changes in socioeconomic and family conditions. It simply suggests that the data most commonly used to explain gaps among racial and ethnic groups do not account for the variations that have been noted in the academic achievement of those groups.

Changes in Youth Culture and Student Behaviors

One controversial explanation for the Black-White achievement gap is that peer culture among Black students is more oppositional to achievement (see Ferguson, 2001). Following this line of reasoning, one could argue that minority youth culture changed in a way that made Black and Hispanic students perform at lower levels. Statistics do not seem to support this hypothesis, as they showed that, similar to their White peers, both Black and Hispanic students tended to fare better over time in terms of their readiness and motivation for learning, sense of safety at school, exposure to violence, and drug usage.

Comparison of 1980 and 1990 sophomores, based on the High School and Beyond (HSB) and National Education Longitudinal

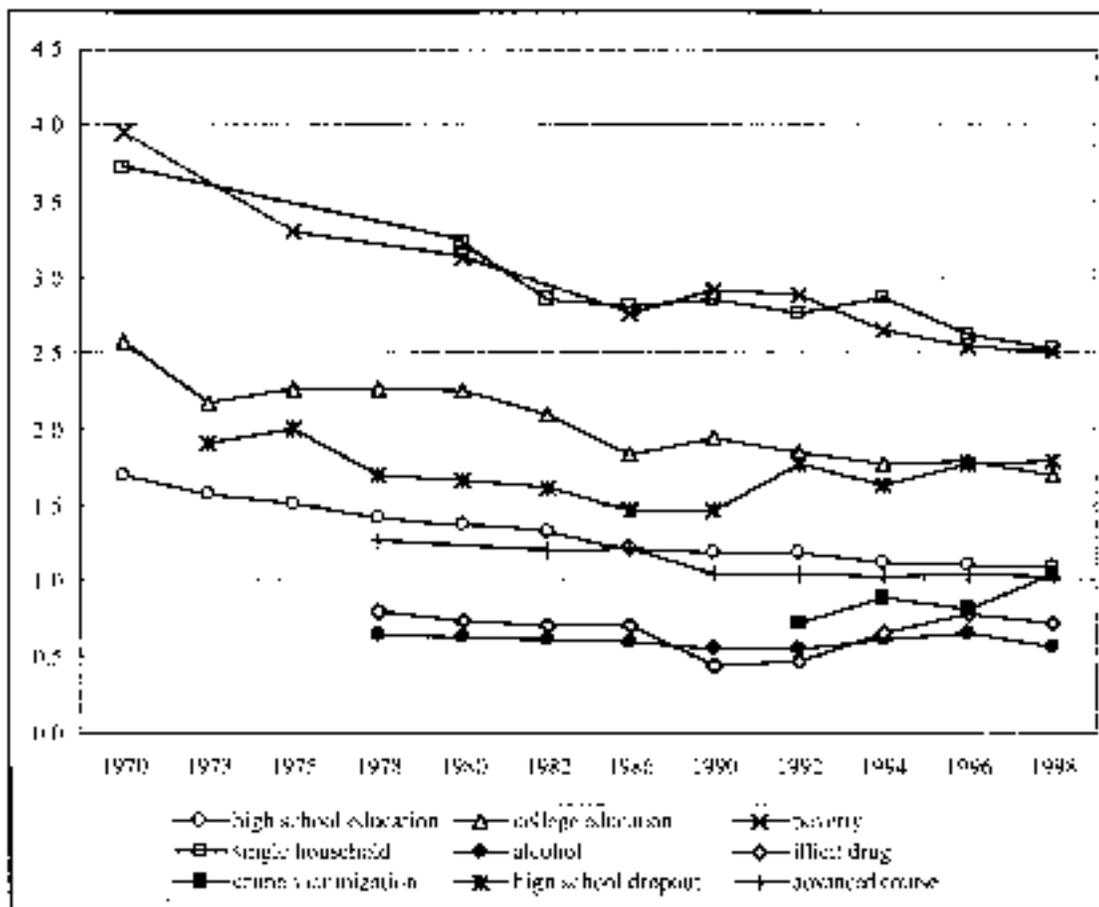


FIGURE 5. Black-White gap (ratio) trends in selected measures of socioeconomic, cultural, and educational conditions from 1970 through 1998.

Study (NELS) data, showed that, in terms of motivation and effort in school, both Black and Hispanic students reported being better prepared in 1990 than in 1980 (see Rasinski & Ingels, 1993). Both groups also reported watching TV less in 1990 than in 1980. Likewise, a greater percentage of Black and Hispanic students reported aspiring to post-secondary education in 1990 than in 1980. White students showed similar increases along these indicators.

Figure 5 and Figure 6 show that alcohol and illicit drug usage by Black and Hispanic students was lower than drug usage by White students from 1978 to 1998. Based on the Monitoring the Future report (see Johnston, O'Malley, & Bachman, 1999), the drug usage rate of 12th graders decreased across all racial and ethnic groups until 1992 but increased since then. Because Black students reported consistently lower illicit drug and alcohol usage than White students, the gap between White and Black students was generally stable throughout the period (see Figure 5). The same can be said of the Hispanic-White gap in drug and alcohol use (see Figure 6).

Black and Hispanic students as well as White students perceived that their schools were safer in 1990 than in 1980 (see Rasinski & Ingels, 1993). Based on more recent indicators of school crime and safety, there was a decline in the victimization rate for all racial and ethnic groups between 1992 and 1998 at

school as well as away from school (see Kaufman et al., 2000). During this period the victimization rate of nonfatal violent crime (including rape, sexual assault, robbery, aggravated assault, and simple assault) for Blacks and Hispanics was lower than for their White peers (see Figures 5 and 6). Although concerns have been raised about student behaviors and safety due to several school shootings in the 1990s, there is no evidence of significant increase in school crime overall for any racial or ethnic group.

In brief, based on the trends identified above, indicators of youth culture and student behavior do not seem at all related to racial and ethnic achievement gap trends. It is possible that all racial and ethnic groups' self-reported attitudes and behaviors may have converged toward more socially desirable responses and that any real gaps might have been underestimated.

Changes in Schooling Conditions and Practices

There has been debate about the effects of school-related factors on the NAEP achievement trend during the last three decades (Greenwald, Hedges, & Laine, 1996; Hanushek, 1996). Regarding Black students' substantial achievement gains during the 1970s and the first half of 1980s, Grissmer, Flanagan, and Williamson (1998) argued that school desegregation and compensatory education program allocated more school resources to Black students and that gains in Black student achievement

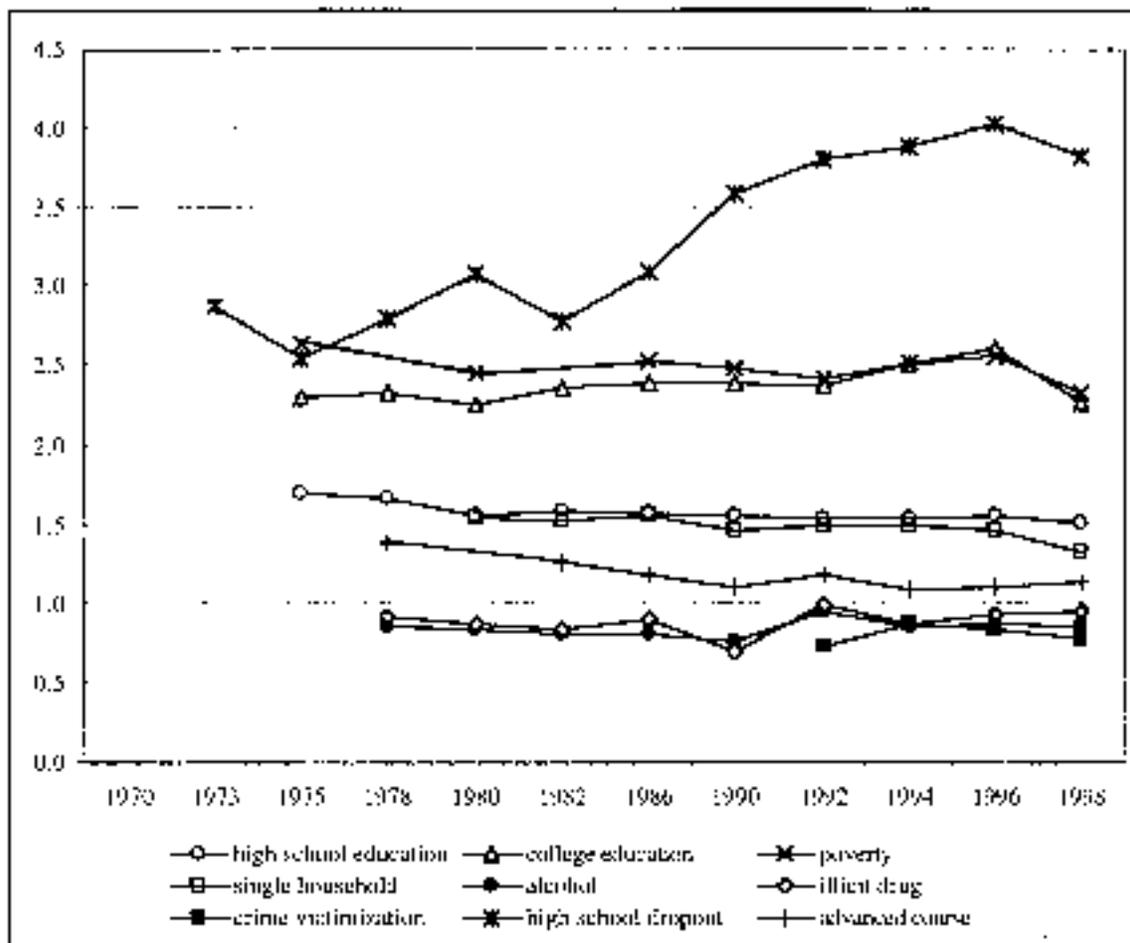


FIGURE 6. *Hispanic-White gap (ratio) trends in selected measures of socioeconomic, cultural, and educational conditions from 1970 through 1998.*

reflected those efforts. In contrast, Hanushek (1996) argued that there is little evidence that the growth in spending had been disproportionately aimed at Blacks or that spending had been more effective for Blacks. Even though resources improved equally across racial and ethnic groups, the possibility exists that disadvantaged minority students benefited more from school resources (see Krueger & Whitmore, 2001).

Data from the Digest of Education Statistics show improvement of schooling conditions throughout the last 3 decades (see National Center for Education Statistics, 1991–1999). Despite this continuous improvement, however, the pace of improvement slowed down significantly in the late 1980s and 1990s. For example, the pupil-teacher ratio in public elementary and secondary schools dropped (from 30 to 18 in elementary education and from 20 to 14 in secondary education) over the last 3 decades. Despite this historical trend, the ratio was stable during the late 1980s and early 1990s. At the same time, teachers' educational levels increased in the 1970s, but leveled off in the 1980s and 1990s. For example, the proportion of teachers with masters degrees increased by 24% from 1971 to 1986, but only by 4% from 1986 to 1996. The median years of teaching experience also increased from 8 years to 15 years from 1971 to 1986, but it did not change at all from 1986 to 1996. Finally, per pupil

expenditures in public elementary and secondary schools increased by 60% from 1970 to 1986 and increased by only 17% from 1986 to 1997. This later slowdown in school improvement might be associated with the slowdown of minority students' academic progress in this period. But it contradicts the acceleration of White students' achievement gains (particularly in mathematics) in the same period.

Classroom opportunity-to-learn, as indicated by students' access to advanced courses, appears to have improved across racial and ethnic groups during the last two decades. According to the NAEP student survey data, the percentage of 17-year-olds who took advanced mathematics courses (algebra I, geometry, algebra II, precalculus or calculus) increased from 76% in 1978 to 85% in 1992 and to 91% in 1999, but the increase was greater for minority students (see Campbell et al., 2000). In fact, the Black-White gap in the ratio of taking advanced mathematics courses narrowed from 1.2 in 1978 to 1.0 in 1999 so that students' access to advanced courses became virtually identical (see Figure 5). In a similar way, the ratio of the mathematics course-taking gap between White and Hispanic 17-year-olds also narrowed from 1.4 in 1978 to 1.1 in 1999 (see Figure 6). A similar trend is also found in the placement of students in college prep or academic programs: The percentage of White high school sophomores in

college prep or academic programs was 1.3 times higher than the percentage of Black students and 1.4 times higher than the percentage of Hispanic students in 1980, but the Black-White and Hispanic-White gaps reduced to 1.2 and 1.0 respectively in 1990 (see Rasinski & Ingels, 1993).⁴ While the narrowing of the racial and ethnic gaps in classroom opportunity-to-learn may have contributed to the narrowing of the achievement gap in the 1980s, it does not help to explain why the racial and ethnic achievement gap widened in the 1990s.

Any analysis of the racial and ethnic achievement gap for high school students needs to consider dropout rate. The pattern of high school dropouts indicates that the Black dropout rate has been 1.5 to 2 times higher than the White dropout rate over the last 3 decades (see Kaufman, Kwon, Klein, & Chapman, 2000). The Black dropout rate fell more than the White dropout rate until the mid 1980s. Since then, Black students' dropout rates have not changed, whereas White students' dropout rates have decreased further. Thus, the Black-White dropout gap narrowed in the 1970s and 1980s but increased in the 1990s (see Figure 5). The pattern for the Black-White dropout gap varies closely with that of the Black-White achievement gap.

In contrast, the dropout rate for Hispanic students was much higher than that for White and Black students and hardly changed over the last 3 decades. Consequently, the Hispanic-White dropout gap had widened substantially by 1998, when the Hispanic dropout rate was four times higher than that of Whites (see Figure 6).⁵

Finally, school segregation for Blacks has followed a path similar to that of the Black-White achievement gap. In other words, beginning in the 1960s, schools became less segregated, but the more recent trend is toward increased segregation. The percentage of Black students in predominantly minority schools (50–100% minority) dropped from 77% in 1969 to 63% in 1987 but increased to 69% by 1997 (Orfield & Yun, 1999). It is argued that the earlier progress in desegregation contributed to narrowing the Black-White achievement gap: Black achievement gains in the 1970s and 1980s were larger in the Southeast region where desegregation occurred most (Grissmer, Flanagan, & Williamson, 1998). By the same token, the later setback in desegregation might be related to the pattern that the Black-White achievement gap began to widen in the 1990s. Conversely, Hispanic segregation grew steadily throughout the last 3 decades, surpassing the level Black segregation in predominantly non-White schools (Orfield & Yun, 1999). However, the Hispanic-White achievement gap never followed the same path, which could suggest that segregation was not associated with the Hispanic achievement gap to the extent that it was associated with the Black achievement gap.

In brief, this analysis of schooling conditions and practices shows that none of the conventional indicators examined above fully accounts for the bifurcated racial and ethnic achievement gap trends that I have described. It could be that changes in racial and ethnic achievement gaps have been affected by changes in education policies and practices that were not captured by conventional indicators (see Lee, 1998; Wong & Lee, 1998).

Conclusion

The historical reduction of racial and ethnic achievement gaps during the last three decades suggests great progress toward equity.

However, there were some setbacks in the last decade when both Black-White and Hispanic-White achievement gaps either stabilized or widened. The racial and ethnic achievement gaps narrowed at the basic skills level in the 1970s and early 1980s but grew at the advanced skills level in the late 1980s and the 1990s. The recent increases in the achievement gaps may be viewed as relatively small when compared to the magnitude of the past decreases. Nevertheless, the overall Black-White and Hispanic-White achievement gaps remained substantially large, with the ranges of those gaps falling between 0.5 and 1.0 in standard deviation units.⁶

It appears that the factors that have been attributed to the narrowing of the racial and ethnic achievement gaps in the past do not easily explain the current widening gap phenomenon. This article proposes that we look beyond conventional measures of racial and ethnic inequity in order to develop a new framework for further empirical research on the bifurcated racial and ethnic gap patterns. Past studies of racial and ethnic achievement gaps tended to focus on the dichotomy of home versus school effects and relied on readily available measures of those effects from a single data set. Given the complexity of studying racial and ethnic achievement gaps, it is necessary to investigate simultaneous changes across a broad range of factors from multiple data sources and to examine their interactive, joint influences on the achievement gap. Past studies of racial and ethnic achievement gap trends tended to assume implicitly that the effects of certain factors on student achievement are constant across time periods and racial and ethnic groups. The data examined in this study challenge that assumption and call for further investigation.

The racial and ethnic achievement gap trends highlighted in this article can be further examined through multidisciplinary and multilevel perspectives. Scholars with different disciplinary expertise may explore possible causes for and influences on the patterns and engage in analysis of related broader policy issues such as immigration, desegregation, funding equalization, standards-based education reform, and high-stakes testing. Researchers also may chart racial and ethnic gaps at different levels of the school system (national, state, district, school, and classroom) and carefully examine any racial and ethnic biases that might have been a part of the educational policies and practices at each level. Synthesis of the findings across multiple fields, levels, and sites has the potential to reveal which factors might reduce or increase the racial and ethnic gaps.

And, finally, studies of racial and ethnic achievement gaps need to include all racial and ethnic groups and should examine the gaps at all achievement levels. As this article suggests, Blacks and Hispanics show different achievement trends from each other and relative to Whites. Cross-examination of the achievement gaps for different minority groups and of the factors affecting those gaps could enhance knowledge of educational conditions and practices that may or may not be effective in reducing the achievement gap for particular racial and ethnic groups.

Appendix: Descriptions of Racial and Ethnic Gap Variables

Diverse kinds of racial and ethnic gap variables were used in this article. The definition and data sources of achievement gap mea-

asures (as shown in Figures 1, 2, and 3) and the other gap measures (as shown in Figures 5 and 6) are described below.

NAEP achievement gap. National average score differences between Whites and Blacks and Hispanics in Long-term Trend NAEP reading and mathematics, 1971–1999. The data came from the National Center for Education Statistics' Web site: <http://nces.ed.gov/nationsreportcard/tables/LTT1999>.

SAT achievement gap. National average score differences between Whites and Blacks and Hispanics in SAT verbal and mathematics, 1977–2000. When the SAT was renormed in 1995, mean scores were set at or near the midpoint of 500 (with a *SD* of 110) of the 200–800 score scale, a process called recentering. All scores reflect that process. Means after 1996 are recentered, and those for 1996 are based on recentered scores plus scores converted from the original to the new scale. Means for 1987–1995 were recomputed after individual scores were converted from the original to the new scale; means for 1977–1986 were converted to the new scale after a formula was applied to the original mean and standard deviation. The data came from the College Board and were prepared by Kristine Nickerson at the Educational Testing Service.

High school education gap. Ratio of White high school education rate to corresponding Black and Hispanic rates. High school education rate is the percentage of people 25 years old and older who have completed high school. The data came from the U.S. Bureau of the Census, 1970–1998 Current Population Survey.

College education gap. Ratio of White college education rates to corresponding Black and Hispanic rates. Education rate is the percentage of people 25 years old and older over who have completed college. The data came from the U.S. Bureau of the Census, 1970–1998 Current Population Survey.

Poverty gap. Ratio of Black and Hispanic poverty rate to corresponding White rate. Poverty rate is the percentage of children under 18 below the poverty level. The data came from the U.S. Bureau of the Census, 1970–1998 Current Population Survey.

Single household gap. Ratio of Black and Hispanic single household rates corresponding to the White rate. The single household rate is the percentage of one-parent family households with own children under 18. The data came from the U.S. Bureau of the Census, 1970–1998 Current Population Survey.

Alcohol gap. Ratio of Black and Hispanic students' alcohol usage rates corresponding to the White rate. Alcohol usage rate is the percentage of 12th graders who report using alcohol in the last thirty days. The data came from the National Institute on Drug Abuse, 1978–1998 Monitoring the Future Survey. (See Table D-28 in Johnston, O'Malley, & Bachman, 1999.)

Illicit drug gap. Ratio of Black and Hispanic students' illicit drug usage rates to the corresponding White rate. Illicit drug usage rate is the percentage of 12th graders who report having used any il-

licit drug in last twelve months. The data came from the National Institute on Drug Abuse, 1978–1998 Monitoring the Future Survey. (See Table D-2 in Johnston, O'Malley, & Bachman, 1999.)

Crime victimization gap. Ratio of Black and Hispanic students' crime victimization rates to the corresponding White rate. The crime victimization rate is the percentage of students ages 12 through 18 who report nonfatal crimes (theft, violent crime, serious violent crime) against them at school. The data came from the U.S. Departments of Education and Justice, 1992–1998 Indicators of School Crime and Safety. (See Table 2.2 in Kaufman et al., 2000.)

Advanced course gap. Ratio of White advanced mathematics course-taking rate to corresponding Black and Hispanic rates. The advanced mathematics course-taking rate is the percentage of 17-year-olds who report having taken any one of the following courses: algebra I, geometry, algebra II, precalculus or calculus. Data for 1999 are displayed for the year 1998 in Figures 5 & 6. The data came from the National Center for Education Statistics, 1978–1998 Long-term Trend NAEP Mathematics Student Survey.

High school dropout gap. Ratio of Black and Hispanic high school students' dropout rates to corresponding White rate. Dropout rate is the percentage of high school dropouts among persons 16 to 24 years old. The data came from the U.S. Department of Education, 1973–1998 Dropout Rates. (See Table A11 in Kaufman, Kwon, Klein, & Chapman, 2000.)

NOTES

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¹ Diversity among Hispanic subgroups needs to be recognized. Among Hispanics, Mexican Americans and Puerto Ricans have the highest rates of poverty and lowest rates of educational attainment and often underperform academically (Valencia, 1997). Because of a lack of information on the status of Hispanic subgroups, they are reported as a whole group in this article.

² A significant change in the direction of the gap does not necessarily mean a significant increase in the size of the gap. However, statistical tests of score differences between the latest and earlier years shows that the Black-White gap increased significantly for age 13 in mathematics from 1986 to 1999 and in reading from 1988 to 1999. Similarly, the gap increased significantly for age 17 in both reading (1988 to 1999) and mathematics (1990 to 1999). The gap increases amount to one-fourth to one third of the pooled standard deviation.

³ Due to major changes in the Student Descriptive Questionnaire in 1986, it was impossible to keep meaningful data on racial and ethnic distribution, and thus 1986 data are not reported. "Hispanic" includes all students with Hispanic or Latino backgrounds, including Mexican, Puerto Rican, and Latin American, for the period from 1987 to 2000. But in the early years "Latin American" was not a questionnaire choice and thus only "Mexican" and "Puerto Rican" are included in the Hispanic category. Because of this change in the definition of the Hispanic category, Hispanic-White achievement gap trends may not be consistent between the two periods of 1977 to 1985 and 1987 to 2000.

⁴ This trend mirrors nationwide detracking efforts during the past 20 years (Loveless, 1999). This does not deny the possibility that significant differences remain in the quality of curriculum and instruction provided to different racial and ethnic groups. Despite detracking efforts in many high schools, curriculum differentiation persists, with differential opportunity for students to take higher level courses such as honors and AP (Oakes & Wells, 1999).

⁵ This relatively large gap in the dropout rate may be due, in part, to high immigration rates for less educated Hispanic young adults who may never have entered U.S. schools. Although high dropout rates among Hispanics were associated with immigration, it should be noted that Hispanic dropout rates were still double those of non-Hispanics when the length of residency in the United States was taken into account (NCES, 1995).

⁶ Murnane and Levy (1996) point out that 17-year-olds should score 300 or more on the NAEP reading and mathematics tests in order to meet the New Basic Skills, the minimum skills people now need to get a middle-class job. As of 1999, 27% of Black and 38% of Hispanic 17-year-olds performed at or above level 300 in mathematics. The corresponding figure for their White peers was 70%.

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