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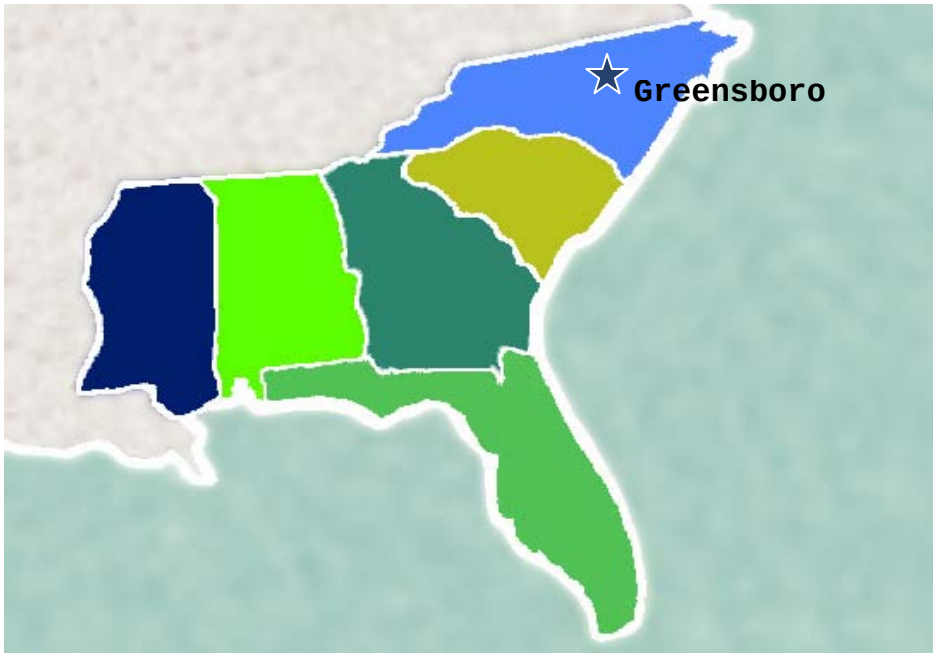
April 2008, EBE # 188

EVIDENCE BASED EDUCATION REQUEST DESK

OUR GOAL

To assist educators and policymakers in their efforts to apply the evidence base to decisions about policies, programs, and practices they encounter.



REQUEST:

What is the research base regarding what is working for reducing the achievement gap; specifically, what does the research say about the effectiveness of particular approaches/strategies?

RESPONSE

General Information

REL-SE staff members conducted searches of the Internet and UNCG online education databases (EconLit, Google Scholar, Wilson Web, etc.) for research and studies regarding the academic achievement gap and strategies for closing the achievement gap. REL-SE staff members also consulted relevant non-profit organizations (AIR, Mathematica, NASSP, RAND, Urban Institute, etc.) as well as U.S. government websites (U.S. ED, GAO, IES, WWC, etc.) for evaluation and research involving the achievement gap.

The search produced a series of papers and studies that roughly fall into two categories: general academic research concentrating on the extent and impact of the achievement gap and more applied papers examining "best practices" and strategies that have been deemed to improve the academic performance of ethnic minority students in various settings. The latter group of studies range in methodological approach from more rigorous to expert opinion.

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The primary resources in the general academic literature examining the extent and impact of the achievement gap include Berends, Lucas, Sullivan, and Briggs (2005); Cannon and Karoly (2007); Clotfelter, Ladd, and Vigdor (2006); Fryer and Levitt (2004 & 2005); Hanushek and Rivkin (2006); Jencks and Phillips (1998); and Murnane, Willett, Bub, and McCartney (2006). The majority of these studies analyze large data sets, such as the Early Childhood Longitudinal Study or statewide data, to examine trends over time and provide good reviews of the literature. Jenck and Phillips (1998), in particular, provide a good overview of the various aspects of the empirical analyses within the literature. While the literature consistently notes the persistence of the achievement gap, particularly for black and Latino children, the source of the gap is still debated. Most studies in this group find that family background, socioeconomic status, and school factors such as teacher quality are the most consistent predictors of the achievement gap.

The second group of studies examines the impact of specific schools, districts and/or states to determine the effectiveness of certain interventions and/or policies to narrow the gap and assist targeted students. This group includes Akkus, Gunel, and Hand (2007); Card and Rothstein (2007), Gordon, Paik and Walberg (2007), Guskey (2005), Hannaway (2005), Holland (2007), Lewis, James, Hancock, and Hill-Jackson (2008), Lubenski (2007), Murnane (2008), Noguera (2007), Singham (2003); and U.S. Department of Education (2006 & 2007). Noguera (2007) provides the most succinct summary of strategies deemed successful in narrowing the achievement gap:

> In the best schools where all children are achieving regardless of race or class, there are typically several strategies in place, including: 1) a commitment to engage parents as partners in education with explicit roles and responsibilities for parents and educators laid out; 2) strong instructional leadership focused on a coherent program for curriculum and instruction that teachers support and follow; 3) a willingness to evaluate interventions and reforms to ensure quality control; 4) a recognition that discipline practices must be linked to educational goals and must always aim at re-connecting troubled students to learning; and 5) a commitment to finding ways to meet the non-academic needs of poor students.[1]

Several studies also note the importance of high-quality professional development for teachers (Guskey, 2005; Hannaway, 2005; Holland, 2007; and U.S. Dept. of Education, 2006 & 2007) as well as the general importance of teacher quality (Hannaway, 2005; and Hanushek and Rivkin, 2006). Murnane (2008) integrates the broader themes that various bodies of the literature promote: the importance of organizational design and district policies and the importance of improving incentives. U.S. Department of Education (2006 & 2007) focus their discussion on charter schools, but the principles and strategies highlighted are applicable in other institutional settings.

Overall, findings from this limited sample of studies indicate that the achievement gap for ethnic minority students is often narrowed and, at times, statistically significant improvement in student achievement is achieved. However, these are mostly quasi-experimental and simple observational studies that lack strong external validity (which

[1] Retrieved March 19, 2008, from http://www.inmotionmagazine.com/er/pn_strat.html.

would allow inferences to be generalizable to other settings and/or populations). Caution should be used when interpreting and using the results provided in these studies. Common themes, as those discussed above, are emerging in both the causes and the possible strategies for successfully dealing with the achievement gap.

References

Akkus, R., Gunel, M., & Hand, B. (2007). Comparing an inquiry-based approach known as the Science Writing Heuristic to traditional science teaching practices: Are there differences? *International Journal of Science Education, 29*(14), 1,745–1,765.

Authors' abstract: A study examined the effectiveness of the Science Writing Heuristic (SWH) inquiry-based approach compared to traditional science instructional practices with regard to student achievement levels and teacher implementation of the approach. Participants were seven teachers of different subjects at different grade levels and 592 of their students, 322 of whom received the SWH approach in the classroom. Findings revealed that the quality of teacher implementation of the SWH approach affected student achievement. Moreover, high-quality implementation of this approach had significant advantages in reducing the achievement gap between classrooms. Other findings and limitations of the study are discussed.

Berends, M., Lucas, S. R., Sullivan, T., & Briggs, R. J. (2005). *Examining gaps in mathematics achievement among racial-ethnic groups, 1972–1992*. Santa Monica, CA; RAND Corporation.

Abstract: As schools in the United States become more output driven, students, educators, administrators, and policymakers are being held accountable for improving the academic achievement of all students. Federal education policy now mandates that states, districts, and schools monitor achievement gaps among students of different socioeconomic, racial-ethnic, and language groups. This book examines several nationally representative senior high school student cohorts between the early 1970s to early 1990s to understand trends in the mathematics scores of these different racial-ethnic groups, and analyzes how changes in family, school, and schooling measures help explain changes in the test score gaps over time. The authors find that there were positive changes in some socioeconomic family background characteristics for black and Latino students, helping them narrow the gap with white students. Moreover, although there were few positive changes between schools, the within-school experiences of black and Latino students changed for the better compared with white students when measured by student self-reported academic track placement. Despite some beneficial changes for black and Latino students, inequalities persist. The authors point out the possibilities of various policies that address improving the socioeconomic and educational opportunities of students. Policymakers should think in more creative, coordinated, and comprehensive ways if the nation is to more effectively address student achievement gaps. [**PDF included**]

Cannon, J. S., & Karoly, L. A. (2007). *Who is ahead and who is behind? Gaps in school readiness and student achievement in the early grades for California's children*. Santa Monica, CA: RAND Corp.

Authors' Abstract: To evaluate the adequacy and efficiency of preschool education, the RAND Corporation has undertaken the California Preschool Study to improve understanding of achievement gaps in the early elementary grades, the adequacy of preschool education currently given, and what efficiencies or additional resources might be brought to bear in early care and education. Despite rising achievement levels in recent years, a substantial percentage of 2nd- and 3rd-graders do not meet state education standards in English-language arts and mathematics. Some groups of students are falling short by larger margins than others. English learners and students whose parents did not graduate from high school have the highest proportion who fall short of proficiency in 2nd and 3rd grade. Percentages of black, Hispanic, and economically disadvantaged students falling short of proficiency in the same grades are also high. Measures of student performance in kindergarten and 1st grade show similar patterns of who is ahead and who is behind. Preschool appears to be a promising strategy for narrowing achievement differences. The size of the achievement gaps that currently exist and the strength of the evidence of favorable education benefits from well-designed preschool programs make a solid case for considering preschool as a component of a multi-pronged strategy for closing achievement gaps in California. [**PDF included**]

Card, D., & Rothstein, J. (2007). Racial segregation and the black–white test score gap. *Journal of Public Economics, 91*(11–12), 2,158–2,184.

Authors' abstract: Racial segregation is often blamed for some of the achievement gap between blacks and whites. We study the effects of school and neighborhood segregation on the relative SAT scores of black students across different metropolitan areas, using large microdata samples for the 1998–2001 test cohorts. Our models include detailed controls for the family background of individual test-takers, school-level controls for selective participation in the test, and city-level controls for racial composition, income, and region. We find robust evidence that the black–white test score gap is higher in more segregated cities. Holding constant family background and other factors, a shift from a highly segregated city to a nearly integrated city closes about one-quarter of the raw black–white gap in SAT scores. Specifications that distinguish between school and neighborhood segregation suggest that neighborhood segregation has a consistently negative impact while school segregation has no independent effect, though we cannot reject equality of the two effects. Additional tests indicate that much of the effect of neighborhood segregation operates through neighbors' incomes, not through race per se. Data on enrollment in honors courses suggest that within-school segregation increases when schools are more highly integrated, potentially offsetting the benefits of school desegregation and accounting for our findings. [**PDF included**]

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2006). The academic achievement gap in grades 3 to 8. Cambridge, MA: National Bureau of Economic Research Working Paper No. 12207.

Authors' abstract: Using data for North Carolina public school students in grades 3 to 8, we examine achievement gaps between white students and students from other racial and ethnic groups. We focus on successive cohorts of students who stay in the state's public schools for all six years, and study both differences in means and in quantiles. Our results on achievement gaps between black and white students are consistent with those from other longitudinal studies. The gaps are sizable, are robust to controls for measures of socioeconomic status, and show no monotonic trend between 3rd and 8th grade. In contrast, both Hispanic and Asian students tend to gain on whites as they progress through these grades. Looking beyond simple mean differences,

we find that the racial gaps in math between low-performing students have tended to shrink as students progress through school, while racial gaps between high-performing students have widened for black and American Indian students. [**PDF included**]

Fryer, R. G., & Levitt, S. D. (2004). Understanding the black-white test score gap in the first two years of school. *Review of Economics and Statistics, 86*(2), 447–464.

Authors' abstract: In previous research, a substantial gap in test scores between white and black students persists, even after controlling for a wide range of observable characteristics. Using a newly available data set (the Early Childhood Longitudinal Study), we demonstrate that in stark contrast to earlier studies, the black-white test score gap among incoming kindergartners disappears when we control for a small number of covariates. Real gains by black children in recent cohorts appear to play an important role in explaining the differences between our findings and earlier research. The availability of better covariates also contributes. Over the first two years of school, however, blacks lose substantial ground relative to other races. There is suggestive evidence that differences in school quality may be an important part of the explanation. None of the other hypotheses we test to explain why blacks are losing ground receive any empirical backing. [**PDF included**]

Fryer, R. G., & Levitt, S. D. (2005). The black-white test score gap through third grade. Cambridge, MA: National Bureau of Economic Research Working Paper No. 11049.

Authors' abstract: This paper describes basic facts regarding the black-white test score gap over the first four years of school. Black children enter school substantially behind their white counterparts in reading and math, but including a small number of covariates erases the gap. Over the first four years of school, however, blacks lose substantial ground relative to other races; averaging .10 standard deviations per school year. By the end of 3rd grade, there is a large black-white test score gap that cannot be explained by observable characteristics. Blacks are falling behind in virtually all categories of skills tested, except the most basic. None of the explanations we examine, including systematic differences in school quality across races, convincingly explain the divergent academic trajectory of Black students. [**PDF included**]

Gordon, E. W., Paik, S. J., & Walberg, H. J. (2007). *Narrowing the achievement gap: Strategies for educating Latino, Black, and Asian students*. New York: Springer.

Table of Contents: Preface.- Foreword.- Contributors.- Introduction and Overview.- Fostering Latino Parent Involvement in the Schools: Practices and Partnerships.- Parenting, Social Emotional Development, and School Achievement of African-American Youngsters.- Asian Pacific American Cultural Capital: Understanding Diverse Parents and Students.- The Mobility/Social Capital Dynamic: Understanding Mexican American Families and Students.- Educational Attainment of Immigrant and Non-Immigrant Young Blacks.- Divergent Origins and Destinies: Children of Asian Immigrants.- Educational Issues and Effective Practices for Hispanic Students.- Improving the Schooling Experiences of African-American Students: What School Leaders and Teachers Can Do.- The Truth and Myth of the Model Minority: The Case of Hmong Americans.- Conclusion and Recommendations.

Guskey, T. R. (2005). A historical perspective on closing achievement gaps. *NASSP Bulletin, 89*(644), 76–89.

Author's abstract: Although much has been written recently about gaps in the achievement of different groups of students, the problem has been with us for many years. This manuscript presents a historical perspective of the problem, viewing it as one of reducing variation in students' achievement. Specifically, it reviews the work of renowned educator Benjamin S. Bloom, who argued that to reduce variation in students' achievement and have all students learn well, we must increase variation in instructional approaches and learning time. Bloom also outlined a specific strategy to accomplish this instructional differentiation, labeling it "mastery learning." Bloom's work is described, along with common misinterpretations of his ideas and the results of research on the effectiveness of their implementation. [**PDF included**]

Hannaway, J. (2005). Poverty and student achievement: A hopeful review. In J. Flood and P. L. Anders (Eds.), *Literacy Development of Students in Urban Schools* (pp. 3–21). Newark, DE: International Reading Association.

Author's abstract: This chapter focuses on the relationship between poverty and factors associated with poverty and student academic achievement in urban areas. Researchers and practicing educators have long known of the strong link between family background characteristics, particularly family economic status, and the academic achievement of students. After reviewing demographic data on urban America, we present student achievement data over a number of years to show how the achievement gap has persisted, but also to highlight factors that are likely to affect it. The analysis then shifts to a review of the literature, exploring three classes of explanation for the achievement gap (increases in the number of language minorities and of racial and ethnic minorities, and poverty in urban schools), concluding with an examination of possible social/economic and school policy solutions. Class-size reductions, accountability policies, and well-structured early-childhood education programs show significant benefits for disadvantaged students and appear to offer some hope for reducing the achievement gap. Additionally, the literature suggests that hiring and retaining better qualified teachers may help urban districts reduce the achievement gap. While some districts may find this latter option beyond their control, investing in professional development could provide an appropriate alternative.

Hanushek, E. A., & Rivkin, S. G. (2006). School quality and the black-white achievement gap. Cambridge, MA: National Bureau of Economic Research Working Paper No. 12651.

Authors' abstract: Substantial uncertainty exists about the impact of school quality on the black-white achievement gap. Our results, based on both Texas Schools Project (TSP) administrative data and the Early Childhood Longitudinal Survey (ECLS), differ noticeably from other recent analyses of the black-white achievement gap by providing strong evidence that schools have a substantial effect on the differential. The majority of the expansion of the achievement gap with age occurs *between* rather than *within* schools, and specific school and peer factors exert a significant effect on the growth in the achievement gap. Unequal distributions of inexperienced teachers and of racial concentrations in schools can explain all of the increased achievement gap between grades 3 and 8. Moreover, non-random sample attrition for school changers and much higher rates of special education classification and grade retention for blacks appears to lead to a

significant understatement of the increase in the achievement gap with age within the ECLS and other data sets. [**PDF included**]

Holland, H. (2007). Can educators close the achievement gap? Interview with R. Rothstein and K. Haycock. *Journal of Staff Development, 28*(1), 54–8, 62.

Author's abstract: An interview with Richard Rothstein, Economic Policy Institute research associate, and Kati Haycock, Education Trust director, is provided. Rothstein and Haycock discuss whether educators can close the achievement gap. [**PDF included**]

Jencks, C., & Phillips, M. (1998). *The black-white test score gap.* Washington, DC: Brookings Institution Press.

Table of Contents: 1. The Black-White Test Score Gap: An Introduction / Christopher Jencks and Meredith Phillips -- Pt. I. Test Bias, Heredity, and Home Environment. 2. Racial Bias in Testing / Christopher Jencks. 3. Race, Genetics, and IQ / Richard E. Nisbett. 4. Family Background, Parenting Practices, and the Black-White Test Score Gap / Meredith Phillips, Jeanne Brooks-Gunn and Greg J. Duncan [et al.] -- Pt. II. How and Why the Gap Has Changed. 5. Black-White Test Score Convergence since 1965 / Larry V. Hedges and Amy Nowell. 6. Why Did the Black-White Score Gap Narrow in the 1970s and 1980s? / David Grissmer, Ann Flanagan and Stephanie Williamson -- Pt. III. The Impact of Schools and Culture. 7. Does the Black-White Test Score Gap Widen After Children Enter School? / Meredith Phillips, James Crouse and John Ralph. 8. Teachers' Perceptions and Expectations and the Black-White Test Score Gap / Ronald F. Ferguson. 9. Can Schools Narrow the Black-White Test Score Gap? / Ronald F. Ferguson. 10. The Burden of "Acting White": Do Black Adolescents Disparage Academic Achievement? / Philip J. Cook and Jens Ludwig. 11. Stereotype Threat and the Test Performance of Academically Successful African-Americans / Claude M. Steele and Joshua Aronson -- Pt. IV. Do Test Scores Matter? 12. Racial and Ethnic Preferences in College Admissions / Thomas J. Kane. 13. Scholastic Aptitude Test Scores, Race, and Academic Performance in Selective Colleges and Universities / Fredrick E. Vars and William G. Bowen. 14. Basic Skills and the Black-White Earnings Gap / William R. Johnson and Derek Neal -- Pt. V. Commentary. 15. The Role of the Environment in the Black-White Test Score Gap / William Julius Wilson.

Lewis, C. W., James, M., Hancock, S., & Hill-Jackson, V. (2008). Framing African-American students' success and failure in urban settings: A typology for change. *Urban Education, 43*(2), 127–153.

Authors' abstract: Grounded in critical race theory, this article seeks to frame the ideological positions of success and failure for African-American students in urban school settings. First, we revisit national data and research literature that illustrate the ongoing urban black-white achievement gap. Second, the Matrix of Achievement Paradigms is shared in an attempt to advance the conversation on African-American students' achievement. It provides a serviceable organizational tool for framing African-American students' success and failure. Finally, we bridge rhetoric with practical ideas for stakeholders by providing recommendations for closing the achievement gap in urban settings. [**PDF included**]

Lubienski, S. T. (2007). What we can do about achievement disparities. *Educational Leadership, 65*(3), 54–59.

Author's abstract: Part of a special issue on making math count. Advice for schools on closing the mathematics achievement gap for low socioeconomic status (low-SES) and minority students is provided. They should help students move beyond the belief that math is simply memorization, help students understand rich math problems, analyze math disparities, and protect low-SES students' interests. [**PDF included**]

Murnane, R. J. (2008). Educating urban children. Cambridge, MA: National Bureau of Economic Research Working Paper No. 13791.

Author's abstract: For a variety of reasons described in the paper, improving the performance of urban school districts is more difficult today than it was several decades ago. Yet economic and social changes make performance improvement especially important today. Two quite different bodies of research provide ideas for improving the performance of urban school districts. One group of studies, conducted primarily by scholars of organizational design, examines the effectiveness of particular district management strategies. The second, conducted primarily by economists, focuses on the need to improve incentives. Each body of research offers important insights. Each is somewhat insensitive to the importance of the insights offered by the other literature. A theme of this paper is that insights from both literatures are critical to improving urban school systems. [**PDF included**]

Murnane, R. J., Willett, J. B., Bub, K. L., & McCartney, K. (2006). Understanding trends in the black-white achievement gaps during the first years of school. In G. Burtless and J. R. Pack (Eds.), *Brookings-Wharton Papers on Urban Affairs: 2006* (pp. 97–135). Washington DC: Brookings Institution.

Abstract: The research described in this paper has two goals. The first is to examine the extent to which trends in black-white achievement gaps during the first years of school reported by Fryer and Levitt are sensitive to model specification. The second goal is to examine whether the patterns that Fryer and Levitt documented in the Early Childhood Longitudinal Study (ECLS-K) data set are also present in a smaller but richer longitudinal data set collected with the support of the National Institute of Child Health and Human Development (NICHD). The authors of this paper examine trends in the black-white gap in mathematics and English Language Arts skills from the beginning of kindergarten to the end of 3rd grade. They also examine the impact of a measure of parenting behavior when children were very young and three types of school quality indicators on students' academic achievement. One finding is that trends in black-white achievement gaps are quite different in the NICHD data set than in the ECLS-K data set. A second is that the measure of early parenting behavior is a strong predictor of subsequent mathematics and English Language Arts skills. A third is that the racial-ethnic composition of the student body and amount of time spent on mathematics instruction influence children's mathematics skills. [**Includes commentary by E. Hanushek and R. Maynard; PDF included**]

Noguera, P. (2007). Closing the racial achievement gap: The best strategies of the schools we send them to. *In Motion Magazine*, published online.

Link: http://www.inmotionmagazine.com/er/pn_strat.html

Singham, M. (2003). The achievement gap: Myths and reality. *Phi Delta Kappan, 84*(8), 586–591.

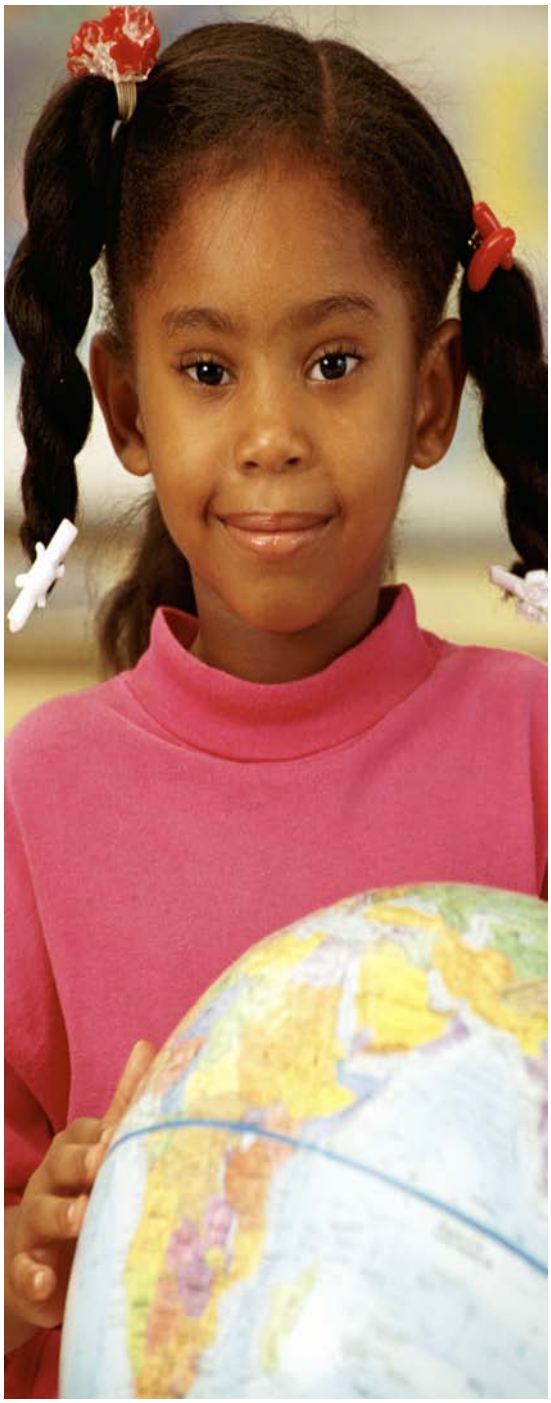
Author's abstract: The repeated efforts to explain and remedy the frustrating problem of the achievement gap have clearly been inadequate. The gap between black and white students has been blamed on, among other things, biased standardized tests, tests that do not match the learning styles of black students, less money spent on educating black students, socioeconomic variation, and lack of motivation. Although, as with most complicated problems, the usual strategy is to attempt to rank-order the difficulties and deal with them one at a time, the failure to close the achievement gap suggests that such a linear approach may not be appropriate in this situation. The writer argues that it may be better to focus on implementing remedies that are good for all students. [**PDF included**]

U.S. Department of Education (2006). *Charter high schools: Closing the achievement gap*. Washington, DC: Office of Innovation and Improvement.

Abstract: This guide profiles eight charter secondary schools that are making headway in meeting the achievement challenge. [**PDF included**]

U.S. Department of Education (2007). *K–8 charter schools: Closing the achievement gap*. Washington, DC: Office of Innovation and Improvement.

Author's abstract: The *K–8 Charter Schools: Closing the Achievement Gap* publication features seven schools that are making significant inroads toward closing the achievement gap in their school communities. As a group, they have created learning environments where historically underserved children are thriving. Schools featured in the guide are located in Arizona, Colorado, Connecticut, Illinois, New York, Ohio, and Texas. [**PDF included**]



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