

Critical Thinking Skills and Academic Achievement

Critical Thinking Skills

Educational psychology theories indicate that learning in diverse classrooms, where students from different backgrounds communicate their different experiences and perspectives, encourages students to think in more complex ways.³⁴ Because students of different races and ethnic backgrounds often bring different cultural knowledge and social perspectives into schools, classrooms with racially diverse groups of students are more likely to enhance critical thinking by exposing students to new information and understandings.³⁵ Much has already been learned from research in higher education about the benefits of a diverse learning community.³⁶ For example, there is evidence from a multi-institution study that students experiencing classroom diversity – specifically racial and ethnic diversity – “showed the greatest engagement in active thinking processes, growth in intellectual engagement and

34 John D. Bransford and Dan L. Schwartz, “Rethinking Transfer: A Simple Proposal with Multiple Implications,” in *Review of Research in Education*, ed. Asghar Iran-Nejad and P. David Pearson (Washington, D.C.: American Educational Research Association, 1999): 61-101; Allan Wigfield et al., “Development of Achievement Motivation,” in *Social, Emotional, and Personality*, vol. 3, 6th ed. of *Handbook of Child Psychology*, ed. William Damon, Richard M. Lerner, and Nancy Eisenberg (New York: Wiley, in press).

35 Hawley, “Designing Schools;” Jean Piaget, *Biology and Knowledge* (Chicago: Univ. of Chicago Press, 1971).

36 See, e.g., Mitchell J. Chang et al., ed., *Compelling Interest: Examining the Evidence on Racial Dynamics in Colleges and Universities* (Stanford, Calif.: Stanford Univ. Press, 2003) as recognized by the Court in *Grutter v. Bollinger*, 539 U.S. 306, 330 (2003).

motivation, and growth in intellectual and academic skills.”³⁷

Academic Achievement

A substantial body of research has been conducted on the impact of desegregated schooling on students’ academic achievement.³⁸ Reviews of early desegregation research lead to the conclusion that school desegregation has a modest positive impact³⁹ on the achievement of African-American

37 Patricia Gurin, “Expert Report of Patricia Gurin,” submitted in *Gratz, et al. v. Bollinger, et al.*, No. 97-75231 (E.D. Mich. 1999) and *Grutter, et al. v. Bollinger, et al.*, No. 97-75928 (E.D. Mich. 1999); see also Patricia Marin, “The Educational Possibility of Multi-Racial/Multi-Ethnic College Classrooms,” in *Does Diversity Make a Difference? Three Research Studies on Diversity in College Classrooms*, ed. American Council on Education & American Association of University Professors (Washington, D.C.: ACE & AAUP, 2000): 61-83; Jeffrey F. Milem and Kenji Hakuta, “The benefits of racial and ethnic diversity in higher education,” featured report, in *Minorities in Higher Education: Seventeenth Annual Status Report*, Deborah J. Wilds (author) (Washington, D.C.: American Council on Education, 2000): 39-67. Although these studies were more descriptive, experimental work in this area confirms that students exposed to racial diversity relative to those who are not, have improved outcomes. See Greg J. Duncan et al., “Empathy or Antipathy? The Consequences of Racially and Socially Diverse Peers on Attitudes and Behaviors,” Working paper, Joint Center for Policy Research, Northwestern University, 2003; Anthony Lising Antonio et al., “Effects of Racial Diversity on Complex Thinking in College Students,” *Psychological Science* 15, no. 8 (August 2004): 507-10.

38 Much of that research was carried out during the 1960s and 1970s, when research on desegregation primarily was focused on black students attending formerly all-white schools, often examining data during one year, early in the implementation of desegregation plans.

39 Most school reforms have little or no effect on improving students’ outcomes (see Richard Rothstein, *Class and Schools* (New York: Teachers College Press, 2004); Jaekyung Lee, *Tracking Achievement Gaps and Assessing the Impact of NCLB on the Gaps: An In-depth Look into National and State Reading and Math Outcome Trends* (Cambridge, Mass.: The Civil Rights Project, 2006)). Thus, the modest impact that desegregation has had on student achievement relative to these other reforms is substantial.

students.⁴⁰ Specifically, desegregation appears to have a positive impact on reading achievement, but there appears to be little or no effect on math scores.⁴¹ The impact of desegregation on achievement varies by context, appearing somewhat stronger for younger students.⁴² It also appears that there are stronger achievement gains when desegregation is voluntary.⁴³

40 Thomas D. Cook, "What Have Black Children Gained Academically From School Integration?: Examination of the Meta-Analytic Evidence," *School Desegregation and Black Achievement*, ed. Thomas D. Cook et al. (Washington, D.C.: Department of Education, May 1984); Rita E. Mahard and Robert L. Crain, "Research on Minority Achievement in Desegregated Schools," in *The Consequences of School Desegregation*, ed. Christine Rossell and Willis D. Hawley (Philadelphia, Pa.: Temple Univ. Press, 1983): 103-25; Schofield, "Review of Research," 597-616.

41 David J. Armor, "The Evidence on Desegregation and Black Achievement," in *School Desegregation and Black Achievement*, ed. Thomas Cook et al. (Washington, D.C.: National Institution of Education, 1984): 43-67; Norman Miller and Michael Carlson, "School Desegregation as a Social Reform: A Meta-Analysis of Its Effects on Black Academic Achievement," in *School Desegregation and Black Achievement*, ed. Thomas Cook et al. (Washington, D.C.: National Institute of Education, 1984): 89-130; Paul M. Wortman, "School Desegregation and Black Achievement: An Integrative View.," in *School Desegregation and Black Achievement*, ed. Thomas Cook et al. (Washington, D.C.: National Institute of Education, 1984): 194-224.

42 Mahard and Crain, "Research on Minority Achievement in Desegregated Schools," 103-25.

43 Walter G. Stephan, "Blacks and Brown: The Effects of School Desegregation on Black Students," in *School Desegregation and Black Achievement*, ed. Thomas Cook et al. (Washington, D.C.: National Institute of Education, 1984): 131-59; Lawrence A. Bradley and Gifford W. Bradley, "The Academic Achievement of Black Students in Desegregated Schools: A Critical Review," *Review of Educational Research* 47, no. 3 (1977): 399-449.

While studies on academic achievement measure student outcomes (defined mainly by test scores), the underlying reasons for these gains in achievement are not entirely clear.⁴⁴ Research has shown that children's motivation to succeed academically is significantly related to their social relationships with others, social skills, and social competence.⁴⁵ It also appears, however, that the improved achievement of students in integrated schools is, in part, related to the fact that schools with greater proportions of non-minority students generally have better resources to help improve learning opportunities, as discussed in Part II.

The findings of more recent studies of desegregated schools are consistent with earlier findings.⁴⁶ One study

44 Whether standardized tests are a valid indicator of achievement or future success, particularly for African Americans, has been questioned when discussing student achievement in desegregated schools.

Jacqueline Fleming, "Standardized Test Scores and the Black College Environment," in *Going to School: The African American Experience*, ed. Kofi Lomotey (Albany, N.Y.: State Univ. of New York, 1990): 143-62; Christopher Jencks et al., *Inequality: A Reassessment of the Effect of Family and Schooling in America* (New York: Basic Books, 1972).

45 Kathryn R. Wentzel, "Adolescent Classroom Goals, Standards for Performance and Academic Achievement: An Interactionist Perspective," *Journal of Educational Psychology* 81, no. 2 (1989): 131-42; Wigfield et al., "Development of Achievement Motivation;" Allan Wigfield and Jacquelynne S. Eccles, "Students' Motivation during the Middle School Years," in *Improving Academic Achievement: Impact of Psychological Factors on Education*, ed. Joshua Aronson (San Diego: Academic Press, 2002): 160-85.

46 Kathryn M. Borman et al., "Accountability in a Postdesegregation Era: The Continuing Significance of Racial Segregation in Florida's Schools," *American Educational Research Journal*, 41, no. 3 (2004): 605-31; Stephen J. Caldas and Carl Bankston, "The Inequality of Separation: Racial Composition of Schools and Academic Achievement," *Educational Administration Quarterly* 34, no. 4 (1998): 533-57; Adam Gamoran, "The Stratification of High School Learning Opportunities," *Sociology of Education* 60, no. 3 (1987): 135-55; Jeannie Oakes, *Multiplying Inequalities: The Effects of Race, Social Class, and Tracking on Opportunities to Learn Mathematics and Science* (Santa Monica, Calif.: Rand Corporation, 1990); Mark Berends et al., *Examining Gaps in Mathematics Achievement Among Racial-Ethnic Groups, 1972-1992* (Santa Monica, Calif.: Rand Corporation, 2005).

using National Assessment of Educational Progress (NAEP) data across every state found that when controlling for socioeconomic status, most of the negative relationship with segregated schools and achievement is eliminated for whites but not for black students, although the relationship varied among states.⁴⁷

A recent study in Texas analyzed the impact of racial composition of classmates on the test scores of students, from 4th to 7th grade.⁴⁸ A longitudinal dataset following multiple cohorts of 200,000 students across all Texas public schools enabled the researchers to track achievement score gains on an annual basis, and in this respect the study is methodologically superior to studies that analyze a crosssection of data at one point in time. The study's findings suggest that a decrease in the black percentage of classmates for black students, particularly when cumulated over many years, could have a substantial impact on

⁴⁷ David J. Armor, "Lessons Learned from School Desegregation," in *Generational Change: Closing the Test Score Gap*, ed. Paul Peterson (Lanham, Md.: Rowman & Littlefield, 2006): 115-42.

⁴⁸ Eric A. Hanushek, John F. Kain, and Steven G. Rivkin, "New Evidence about Brown v. Board of Education: The Complex Effects of School Racial Composition on Achievement," Working paper, National Bureau of Economic Research, Cambridge, Mass., 2006.

increasing their achievement.⁴⁹ This relationship held even when other variables such as school quality and peers' achievement were taken into account. The study found that desegregation had a negligible impact on white achievement scores. Thus, decreasing black segregation may improve black achievement scores without adversely affecting white achievement scores.

While the findings on the achievement of Latino students, who are the most segregated students of color in the United States,⁵⁰ are more limited, a review of literature on the effect of school desegregation found that the few early studies reported modestly positive or no effect on Latino achievement.⁵¹ A recent study examined the impact that ending court-ordered school desegregation in Keyes – where the Supreme Court established desegregation rights for Latinos – had for students. The study found modest negative impacts on average math achievement levels for Latinos in racially isolated schools in Denver relative to Latinos in schools that are more racially integrated.⁵² A study of 50 Mexican-origin students who displayed all the

49 Specifically, the authors found that an increase of 1% of black students was related to a decrease of .0225 of a standard deviation in the test scores of black students, per year. Desegregating black students across Texas in grades 5-7 alone would close the achievement gap with whites by 15 percent.

50 Richard R. Valencia, Martha Menchaca, and Rubén Donato, “Segregation, Desegregation, and Integration of Chicano Students: Old and New Realities,” in *Chicano School Failure and Success: Past, Present, and Future*, 2nd ed., ed. Richard R. Valencia (London: RoutledgeFalmer, 2002): 70-113.

51 Schofield, “Review of Research,” 597-616.

52 Catherine Horn and Michal Kurlaender, *The End of Keyes – Resegregation Trends and Achievement in Denver Public Schools* (Cambridge, Mass.: The Civil Rights Project, April 2006).

characteristics that normally predict school failure (e.g., low-income, parents without high school diplomas, and Spanish-speaking households) but who excelled academically in elite colleges and universities found that the overwhelming majority (70%) of these students had attended desegregated schools, even though most of them lived in segregated neighborhoods. Among the critical aspects of this desegregated schooling experience was the confidence it gave them to compete academically.⁵³

In addition, educational research has documented how widespread but unfounded beliefs about racial inferiority hinder the academic performance of minority students. This phenomenon is known as “stereotype threat” and it undermines performance in this manner: Students perceiving stereotypic expectations about their own intellect from teachers and fellow students and who are motivated to disprove these stereotypes can become distracted in stressful assessment situations, such as testing, and fail to perform to their capacity. Much of the empirical research documenting the effects of stereotype threat has been done among college students,⁵⁴ but research also indicates that stereotype threat can affect elementary school age children. For example, African-American, Latino, Asian, and Native American students (ages 6-10) who were aware of their racial group stereotypes performed significantly worse than white and minority

⁵³ Patricia Gándara, *Over the Ivy Walls: The Educational Mobility of Low Income Chicanos* (Albany, N.Y.: State Univ. of New York Press, 1995).

⁵⁴ Claude Steele and Joshua Aronson, “Stereotype Threat and the Intellectual Performance of African-Americans,” *Journal of Personality and Social Psychology* 69, no. 5 (1995): 797-811; Patricia M. Gonzalez, Hart Blanton, and Kevin J. Williams, “The Effects of Stereotype Threat and Double-Minority Status on the Test Performance of Latino Women,” *Personality and Social Psychology Bulletin* 28, no. 5 (2002): 659-70.

students who were unaware of their group stereotypes.⁵⁵ In addition to negatively affecting short-term academic achievement scores, research suggests that students who feel threatened by stereotypes may adopt habits that will undermine future academic success.⁵⁶

Numerous studies – recent as well as those that were conducted in the immediate aftermath of court-ordered desegregation – suggest that school desegregation has little or no measurable negative impact on the test scores of white students.⁵⁷ Thus, fears that desegregation will undermine their achievement seem unfounded. Further, research showed that there were no gains for white students following the end of the desegregation plan as schools resegregated in Denver.⁵⁸

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55 Clark McKown and Rhona Weinstein, "The Development and Consequences of Stereotype-Consciousness in Middle Childhood," *Child Development* 74, no. 2 (2003): 498-515. Studies have also confirmed the effect of stereotype threat for girls in math. Catherine Good, *Stereotype Threat and Its Relation to Theories of Elementary Girls' Mathematics Achievement and Task Choices* (Austin, Tex.: Univ. of Texas, 2001); Barbara Muzzatti, "Gender and Mathematics: Attitudes and Stereotype Threat Susceptibility in Children," (Ph.D. diss., Università degli studi di Padova, 2005); Nalini Ambady et al., "Stereotype Susceptibility in Children: Effects of Identity Activation on Quantitative Performance," *Psychological Science* 12, no. 5 (2001): 385-90.

56 Kira Alexander and Janet Ward Schofield, "Stereotype Threat: How Students' Responses to Perceived Negative Stereotypes Undermine their Achievement," in *Migration Background, Minority-Group Membership and Academic Achievement: Research Evidence from Social, Educational, and Developmental Psychology*, ed. Janet Ward Schofield et al. (Berlin: Social Science Research Center Berlin, 2006): 13-42.

57 Borman et al., "The Continuing Significance of Racial Segregation in Florida's Schools," 605-31; Patchen, "Black-White Contact in Schools," 182-84; Schofield, "Review of Research," 597-616; Harry Singer, Harold B. Gerald, and David Redfearn, "Achievement," in *School Desegregation: A Long-Term Study*, ed. Harold B. Gerard and Norman Miller (New York, Plenum Press, 1975): 69-87.

58 Horn and Kurlaender, *The End of Keyes*.