

**Ethnic and Racial Disparities in Education:
Psychology's Contributions to Understanding and Reducing
Disparities**



American Psychological Association

A Report by the American Psychological Association
Presidential Task Force on Educational Disparities

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Report of the APA Presidential Task Force on Educational Disparities

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Acknowledgements

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Foreword to *Ethnic and Racial Disparities in Education: Psychology's Contributions to Understanding and Reducing Disparities*

As I considered concerns that could be addressed by the contributions of psychological science, the problem of pervasive ethnic and racial disparities in educational achievement became a focus for me. African American, American Indian, Latina/o, and Southeast Asian groups underperform academically, relative to Whites and other Asian Americans. This is a problem for several reasons, including that the majority of the U.S. population will be people of color by the middle of this century. Unless more ethnic and racial minority young people achieve higher levels of education and training, the U. S. society in general will fail to cultivate the human talent that is essential for the health and success of our nation.

Education has been an important strategy for the ability to make contributions to one's community, as well as to gain access to a better life. This reality became obvious to my parents when they were young adults. My parents, who each only had elementary educations, were charter members of the local American G.I. Forum (AGIF) in the hometown in which I grew up in Central Texas. Education is the first of several objectives of this veterans organization, founded in my home state by an Army veteran medical doctor, Dr. Hector P. Garcia, who encountered and witnessed prejudice and discrimination upon return from service after World War II. "*Education is our Freedom and Freedom Should be Everyone's Business*" is the official motto of the AGIF, the largest Federally Chartered Hispanic Organization in the United States with Chapters in 40 states and Puerto Rico. Dr. Garcia and the AGIF had a tremendous positive influence on my parents and on my community. My parents proceeded to ensure that their seven children, and those of many others, engaged in and obtained as much education as possible.

The American G. I. Forum was established in 1948; this organization, in combination with the 1954 *Brown v. Topeka* Supreme Court decision that desegregated schools, led my parents to believe that education would become available for racial/ethnic minority and poor students. Fast forward over 60 years, and while there has been progress, a very problematic educational gap still exists, and the personal and social costs of educational underachievement for these groups are considerable for individuals, their families, their communities and for the economic viability of our nation. What's more, these effects are often passed onto the next generation, as there is a connection between parents' social class and their children's level of educational and occupational attainments.

The factors that contribute to the problems are complex and vary to some degree, but they are identifiable. Patterns of educational disparities are generally similar across ethnic and racial minority groups, but there are variations. For example, Latinos are characterized by having a large representation of immigrants whose native language is not English; the research demonstrates that quality bilingual programs can close academic achievement gaps between language minority and majority children. By the age of three years old, language development and related skills are critical, and quality Early Childhood Education (ECE) programs are highly effective, but access is limited. Research indicates that teachers and even some parents promote gender stereotypes with lower academic expectations for boys, especially boys of color. Girls are



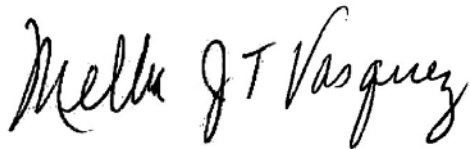
Melba Vasquez, PhD, ABPP
President
American Psychological Association, 2011

exposed to gender stereotyping related to their ability to perform in math and science. The Task Force provided a deeper understanding of these and other processes and their effects on the problem of educational disparities. The report identifies the fact that many young people from immigrant, ethnic, and racial minority students value education and do very well academically and socially, but many other families do not have access to information about the educational system in a way that helps support their children to be successful in the U. S. school system.

The report includes recommendations of the Task Force that focus on psychological research (especially about studying and replicating successful and promising educational practices), public policy goals (e.g. expanding access to educational programs that have been effective in reducing educational disparities such as ECE and bilingual programs), and translating psychological scholarship into educational practices (especially those that reduce ethnic, racial and gender bias in the relationships between students and their educators), and a focus on the social, personal and academic assets that ethnic and racial minority students bring with them to the classroom.

I am deeply grateful for the talents and hard work of Task Force members Stephen M. Quintana (Chair), A. Wade Boykin, Andrew Fuligni, Sandra Graham, Samuel Ortiz, and Frank C. Worrell and APA Educational Directorate staff Rena Subotnik and Ashley Edminton for the production of this report, which was officially received unanimously by the APA Council of Representatives in August, 2012.

My sincere and heartfelt hope is that the findings and recommendations will be inspiring and supportive of the efforts of those of you who have ability to make a difference!

A handwritten signature in black ink that reads "Melba J. T. Vasquez". The signature is written in a cursive, flowing style.

Melba Vasquez
President, APA, 2011

Executive Summary

Pervasive ethnic and racial disparities in education follow a pattern in which African American, American Indian, Latinos, and Southeast Asian groups underperform academically, relative to Whites and other Asian Americans. These educational disparities (1) mirror ethnic and racial disparities in socioeconomic status as well as health outcomes and healthcare, (2) are evident early in childhood and persist through the K-12 education, and (3) are reflected in test scores assessing academic achievement, such as reading and mathematics, percentages of repeating one or more grades, drop-out and graduation rates, proportions of students involved in gifted and talented programs, enrollment in higher education, as well as in behavioral markers of adjustment, including rates of being disciplined, suspended, and expelled from schools.

Although the general pattern of educational disparities is similar across these ethnic and racial minority groups, there are several ways that disparities are accentuated in some areas for each group. Latinos are characterized by having a relatively large representation of immigrants or children of immigrants and classified as English Learners (EL), or whose native language is not English. The disparities for African Americans, on the other hand, include a large discipline gap with disproportionately greater numbers receiving behavioral sanctions in schools. There is less research on American Indian and Southeast Asian groups, but the available evidence suggests that factors similar to those affecting African American and Latinos appear to be influencing disparities associated with the smaller ethnic and racial minority groups.

Ethnic and racial disparities in education are evident prior to children's entry into K-12 schooling. Although early childhood education (ECE) programs, such as Head Start, have been found to help close some of the gaps in academic skills that are associated with these disparities. Access to ECE programs, especially access to high quality programs, is limited. In many states, only children whose family incomes are below the poverty line have access to some ECE programs. The ECE programs that working poor or working class families attend are typically of lower quality, particularly relative to those ECE programs that more affluent families use. Given the evidence supporting the efficacy of ECE programs, wider access and funding for these programs is critical to reducing the ethnic and racial disparities in education during early childhood.

Many children of foreign-born parents have an immigrant advantage relative to academic achievement in U.S. schools. Controlling for socioeconomic status, immigrants from Asian and Latin American nations report valuing educational achievement and working harder, relative to their U.S. born counterparts. However, aggregated together, Asian Americans match or exceed the academic performance of Whites whereas Latinos have poorer performance on most markers of educational achievement. Some of these differences in achievement are due to the differential selectivity of immigrants from these two regions in the world, where proportionally more Latino immigrants are allowed to immigrate for family reunification, while relatively more immigrants from Asian countries enter the U.S. to fill employment shortages in the U.S. economy and, thus arrive in the U.S. with higher levels of education. Additionally, recent research suggests that the differences between Latinos and Asian Americans may be due to different levels of access to educational resources, the access of which is partly due to relatively higher socioeconomic status for Asian Americans. Many of the Asian Americans who succeed are able to convert educational

and socioeconomic resources into supports for the academic achievements of the children. On the other hand, Latinos' rates of educational performance are commensurate with their over-representation in the lower socioeconomic strata.

Access to bilingual education is critical to many language-minority children, with Latinos making up one of the largest groups of English learners. Conclusions from five separate meta-analyses confirm that children who receive instruction in their native language have higher rates of academic achievement, even when the markers of achievement are in English, compared to their peers who receive less instruction in their native language. Longitudinal research demonstrates the long-term benefits of instruction in a child's native language and the significant costs associated with immersion in English language instruction. This research demonstrates that quality bilingual programs can close academic achievement gaps between language minority and majority children.

There is research documenting the differential treatment of ethnic and racial minority children based on gender leading to disparities early in children's education; boys' reading abilities are lower and boys demonstrate higher rates of behavioral problems, relative to girls. Research indicates that teachers, and even some parents, perpetuate gender stereotypes in academic achievement, with lower expectations for boys' general academic skills, even after controlling for actual academic performance. Boys of color, particularly African American boys, are referred for disciplinary infractions more often than girls and nonminority children. Research has shown that this discipline gap is related primarily to behaviors that involve subjective interpretations, and that there are few ethnic and racial differences in referrals for behavior problems that are objectively identified, such as physical altercations and possession of weapons in schools. Girls across racial groups are exposed to gender stereotyping, particularly related to their ability to perform in science and math domains.

Children's and adolescents' awareness of discrimination and of their stigmatized racial status is associated with educational disparities. There are complex connections between ethnic and racial identity and academic adjustment. A strong sense of ingroup affiliation and identification with one's ethnic or racial group can be negatively or positively associated with academic achievement, depending on context. For example, in contexts involving high levels of stereotype threat, strong ingroup affiliation for the stereotyped groups is inversely related to academic performance. On the other hand, strong identification with academically successful role models is positively associated with achievement. Research has identified several social-psychological interventions that help reduce the gaps in achievement and the deleterious effects of stereotype threat.

Racial desegregation of schools has been, historically, one of the more ambitious attempts to redress educational disparities. Research subsequent to the *Brown vs. Board of Education* U. S. Supreme Court decision finds support for the educational benefits of attending racially integrated schools. Higher levels of racial integration are associated with elevated achievement scores, particularly for reading and during the elementary grades, but also in reduced dropout rates for African Americans and higher rates of enrolment in higher education. These effects associated with racial integration hold even after controlling for socioeconomic status and several other demographic indices. Psychological research supports the connection

between inter-racial friendships, school climate and academic achievement. Racial diversity influences psychological processes in several ways including promoting critical thinking in academic discourse conducted in multiracial groups and increased access to networks promoting academic achievement and career aspirations.

There are, nonetheless, several educational trends associated with the re-segregation of schools and classrooms that may increase the achievement gap. For the past three decades, court decisions have reversed previous trends in school desegregation, such that ethnic and racial minority students attend segregated schools in which at least 70% of students are of the same ethnic group. Within schools, assembling students into different academic tracks reduce the benefits of racial integration within the schools for ethnic and ethnic and racial minority children. Differential treatment of ethnic and racial minority children in integrated contexts will also undermine the potential academic benefits of racially integrated schools.

The overrepresentation of ethnic and racial minority children in the low levels of academic achievement distribution results in their underrepresentation in gifted and talented programs. Improving ethnic and racial minority children's performance in general education is likely to decrease their underrepresentation in gifted and talented programs.

To redress these educational disparities across immigrant, linguistic, gender, ethnic and racial status, the U.S. educational system needs reform. This Task Force distinguishes between technocratic and transactional reforms. Technocratic reforms alter school procedures, regulatory practices, and structural factors around which schooling is organized, which have included extending the school day or the school year, reducing class size, and reconstituting the school by altering the reward structure of the school, removing public funding from underperforming schools—many of these reforms have had a positive impact on educational achievement. Instead, this Task Force envisions an important role for psychological science to understand and enhance the transactional processes in education, which involve reciprocal interactions between teachers and students, students becoming actively engaged in their schools, schoolwork and their education. These transactional practices represent the proximal processes by which various demographic contexts, including race, ethnicity, socioeconomic status, gender, and racial segregation in schools and classrooms are translated into educational disparities.

Recommendations of the Task Force focus on psychological research, public policy goals, and translating psychological scholarship into educational practices. Several key areas of research are identified as promising and where additional research is required to inform more fully educational practices. Policy recommendations include expanding access to educational programs that have been demonstrated to reduce educational disparities, including quality ECE programs and bilingual programs that are designed to build on children's native language skills while transitioning them to English-based instruction. Although these programs have been demonstrated to have significant benefits, they remain underfunded. The Task Force also recommends investigating those transactional processes that reduce ethnic and racial bias in the relationships between students and their educators such that more attention is brought to bear on the social, personal, and academic assets that ethnic and racial minority students bring with them to the classroom.

Ethnic and Racial Disparities in Education: Psychology's Contributions to Understanding and Reducing Disparities

Some ethnic and racial¹ groups have not fared well, historically and presently, in the U.S. educational system. It is widely documented that African Americans, Latinos, Native Americans, and several Asian American subgroups underperformed relative to their White American counterparts (e.g., Aud et al., 2010; Hollins, King & Hayman, 1994; Jencks & Phillips, 1998; King, 2005; National Assessment of Educational Progress [NAEP], 2011; National Center for Educational Statistics [NCES], 2010). These educational disparities cry out for immediate, sustained, and profound attention.

Psychological science offers important research and theory to inform an understanding of educational disparities and strategies to redress them. APA President, Melba Vasquez, appointed a Task Force to review relevant psychological scholarship and identify some of the more promising directions in psychological research and theory that can contribute to solving the perplexing challenges of educational disparities. Our Task Force, drawn from across psychological disciplines, brings multiple perspectives and a unique organization to the psychological literature in the field. We describe psychological constructs and processes fundamental to educational disparities, identify emerging consensus within subareas of the field, identify promising trends, and suggest some directions for future research in psychological science relevant to educational disparities.

Scope of Task Force

The APA Presidential Task Force on Educational Disparities organized its approach by identifying three components of educational research: outputs, inputs, and ‘through’puts. The outputs of the U.S. educational system are the academic outcomes of ethnic and racial minority students with a focus on the educational disparities and relative equity of the outcomes, compared to their peers. Although focusing mainly on the compulsory educational system within the US, we reviewed how preschool and early childhood education influence disparities as an important input condition for children matriculating their K-12 education. This report describes several other input factors—socioeconomic, immigrant, linguistic, ethnic and racial status, and ethnic and racial segregation/integration of school contexts—that are associated with the academic underachievement of ethnic and racial minority children. These demographic variables are indirect predictors of educational disparities and we were particularly interested in

¹ We use the terms race and ethnicity throughout the report, so we want to be clear about how we define those terms. In theory, race is an ascribed category, with a race being a group of persons with shared genetic, biological, and physical features. Using that definition, Blacks or African Americans, Whites, and Asian Americans represent different races. However, we also acknowledge that race is more socially constructed than biologically determined, in that the meaning of racial group membership changes across time and context and that the variability within racial groups far exceeds that between groups (e.g., Helms, Jernigan, & Mascher, 2005). Ethnicity, on the other hand, is defined as a category that reflects a group’s common history, including national origin, geography, language, and culture. With common origins in Latin America or the Caribbean, Latinos/Hispanics can be of any racial group and the construct of ethnicity allows us to define their shared identity. We prefer the term Latino to Hispanic and take the position that the terms race and ethnicity are distinct but not mutually exclusive and we often use them together in this report. However when referring to distinct research literatures (e.g., interracial friendships between Blacks and Whites) we use the specific term most appropriate to that literature.

identifying, where possible, more proximal processes, or ‘through’puts, associated with these status variables that influence and interact with students’ experiences within the U.S. educational system to produce educational disparities. We sought to identify the psychological mediators and moderators associated with these status variables and how these processes contribute to educational outcomes that often result in ethnic and racial disparities. These psychological processes are fundamental to understanding how to reduce current educational disparities. As a Task Force with finite resources, we focused on translating the implications of demographic factors for the psychological science of educational disparities associated with race and ethnicity. We sought to offer some practical directions by using extant research to inform a vision for transforming the educational experiences for ethnic and racial minority youth. We made recommendations for promising trends for psychological research, educational practice and public policy advocacy. We recognize that there are a number of other critical dimensions associated with ethnic and racial disparities in education, which we were unable to address due to space and resource limitations, including but not limited to (a) private, religious, and charter schools and academies; (b) overrepresentation in special education; (c) disparities in summertime activities; (d) neighborhood characteristics; (e) availability and involvement of family in education; and (f) intersection of a variety social identities with ethnic and racial status. Reviewing each of these complex issues in sufficient detail would exceed the scope and resources of the Task Force.

Educational Disparities Defined

Not all differences are considered disparities. The term, *disparities*, is used to connote unjust or unfair differences, and implies the need for redress of these differences. Our Task Force focused on differences in educational outcomes and achievement across ethnic and racial groups in the United States. Our Task Force defined educational disparities to include those differences in educational outcomes that may result from (a) differential or biased treatment of ethnic and racial minority students within the educational system, (b) differences in socioeconomic status, and (c) different responses to educational systems or different sets of educational needs.

Disparities due to differential treatment. Ethnic or racial differences in achievement that are the consequence of discrimination by educators, whether intentional or not, represent the more obvious and egregious forms of ethnic and racial disparities. Ethnic and racial discrimination takes many different forms and expressions. Discrimination may reflect hostility or patronizing attitudes, expressed in explicit or implicit forms (Devine, Plant, Amodio, Harmon-Jones, 2002; Dovidio, Kawakami, & Gaertner, 2002), and can be experienced as microaggressions (Sue, 2010) or as more overt forms of aggression, all of which stigmatize these ethnic and racial minority groups and contribute to educational disparities. In an example specific to education, McKown and Weinstein (2008) demonstrated that teacher bias—evidenced by teachers treating children of equivalent academic abilities differently based on the child’s ethnic and racial status—accounted for nearly a third of a standard deviation of the ethnic and racial differences in educational achievement over the course of one academic year. Relatively few studies estimate the effect of differential treatment on the ethnic and racial disparities for academic achievement.

Disparities due to socioeconomic status. Many researchers agree that educational disparities are reflected in the poor quality of schools and schooling that children from low SES schools marginalized ethnic minority backgrounds attend (Aud, Fox, & KewalRamani, 2010; Darling-Hammond, 2001) which result in unequal opportunities to learn. There is less consensus in the field on how to approach the overlap between social class and ethnic and racial status: Should only those ethnic and racial differences in educational performance that remain after controlling for social class be considered ethnic and racial disparities? There are significant SES differences across ethnic and racial groups, with the differences in educational performance mirroring, to a large extent, the differences in economic and occupational standing (Aud et al., 2010; Coleman et al., 1966; Yeskel, 2008). Some researchers attempt to examine ethnic and racial disparities that are uniquely associated with racial or ethnic status independent of social class (see Farkas, 2003). Indeed, across a number of studies, ethnic and racial differences remain even after controlling for markers of social class (e.g., Coleman, 1966; Rothsten, 2004). Moreover, although schooling reduces disparities associated with social class, school factors have been found to widen ethnic and racial disparities in achievement (Condrón, 2009).

The Institute of Medicine (IOM, 2002) specifically included differences in health across ethnic and racial groups that were mediated by income and social class as disparities that need to be addressed and monitored. Our Task Force on educational disparities concurs and extends IOM's (2002) logic to the educational domain. Consequently, we considered educational disparities to include those ethnic and racial differences in educational achievement that overlap with social class. Ignoring the portion of educational disparities that is confounded with social class disregards the accumulation of disadvantage over generations. That is, racial and ethnic discrimination has played an important role historically in why ethnic and racial minority groups disproportionately occupy the lower rungs of the social class ladder in contemporary U.S. society (e.g., Acuna, 2008). The disadvantages associated with social class are often passed down or reproduced from generation to generation (e.g., Brooks-Gunn & Duncan, 1997), resulting in accumulations of disadvantage and there are even unique effects that are passed down two generations, from grandparents to grandchildren (Ferguson & Ready, 2011). Furthermore, research has shown that social and educational situations that make people experience "stereotype threat" influence ethnic minorities and Whites differently even after controlling for variables such as socioeconomic status or previous academic performance (e.g., see Steele & Aronson, 1998; Steele, 2010). Thus, equating ethnic minority and majority groups on income, for example, does not equate the two groups in terms of their routine social experiences. Importantly, we believe that ethnic and racial disparities in education should be redressed, regardless of their overlap with social class standing, given the need for U.S. educational system to remain competitive in a global context (Boykin & Nogura, 2011).

Disparities due to different responses to educational practices. An important, but not often acknowledged source of educational disparities involves differences in responses to the same educational conditions based on ethnic and racial status. The IOM's (2002) definition of health disparities specifically included outcomes that result from different reactions to the health care system. Health disparities result when equivalent forms of health care are provided, but where the response to that care differs across racial or ethnic groups. Similarly, there may be educational practices that are equivalent, but are associated with different outcomes across ethnic and racial groups. In short, the Task Force's definition of educational disparities includes those

educational outcomes that differ across ethnic and racial minority children based on different responses to educational systems.

Because our focus is on the U.S. educational system, the task force will not consider as educational disparities those differences that reflect processes outside of the U.S. educational system. To illustrate, a portion of Latino immigrants have arrived in the U.S. after receiving only grammar school-level education and are not seeking further education within the U.S. educational system—this group of immigrants would be classified as status dropouts even though they were never enrolled in any educational system within the U.S. On the other hand, there are immigrants who arrive in the U.S. in the midst of their education and consequently enter and complete their educational training within the U.S. educational system—this group of immigrants will be considered as part of the estimations of ethnic and racial disparities in education.

Psychological Dimensions of Educational Disparities

The APA Task Force on Educational Disparities is focused on identifying the ways in which psychological science can contribute to the understanding and reduction of educational disparities. We recognize that many of the educational disparities are not psychological in origin and that many reflect structural aspects of U.S. society, including socioeconomic and racial stratification (Coleman, 1966; Condrón, 2009). The most effective manner to eliminate educational disparities is to eliminate these social class and other structural inequities in U.S. society. These inequities are related to elevated stress in families from many factors including (a) being unable to meet basic financial obligations for food and shelter, (b) living in high risk neighborhoods with elevated levels of violence and depressed levels of social capital, and (c) not having the means to provide educational and social opportunities to enrich children's development, which may involve placing children in high quality child care, public or private schools, and affording selective or elite colleges and universities. However, those structural changes to U.S. society are not imminent, with some indicators suggesting that status divisions within U.S. society may become wider (Barr, 2008). Until those inequities in U.S. society are eliminated, it is critical to make inroads toward reducing educational disparities. Indeed, reducing educational disparities may be a critical component of reducing other kinds of inequities in the United States (Smeeding, 2005). Psychological science contributes important perspectives and insight into the nature of the educational disparities and into strategies for reducing educational disparities.

There are several broad areas associated with educational disparities where psychological science can contribute including developmental, interpersonal, motivational, cognitive, linguistic, and social identity characteristics associated with educational disparities among ethnic and racial minority groups. To illustrate, developmental psychologists have identified how differences in the socialization environment, such as types of early childhood education and childcare, are associated with academic performance and school readiness for ethnic and racial minority children prior to their entry into K – 12 schools (e.g., Howes & Shives, 2006). Moreover, psychological science examining second language acquisition has produced important findings about how linguistic minority children function, identifying the types of resources they need to perform commensurate with their cognitive abilities (Thomas & Collier, 1997). Psychological theory informs our understanding of how immigration is related to educational

disparities and explains why some Asian American groups do well educationally compared to Latinos who do not fare as well, despite both groups having large segments born outside the U.S. and a home language that is not English (Fuligni 2011; Harris, Jamison, & Trujillo, 2008). Importantly, how schools are organized and how students are engaged in their learning are of critical importance for educational achievement of students across ethnic and racial groups (Boykin & Noguera, 2011). Educational disparities are evident in markers of low academic performance and graduation rates, as well as the underrepresentation of students of color in gifted and talented educational programs, and psychological theory speaks to how to cultivate academic talent across the range of students in the schools. The psychology of individual and group differences can inform our understanding of the educational implications of important forms of human difference and exceptionality in educational systems (Steele, 2010).

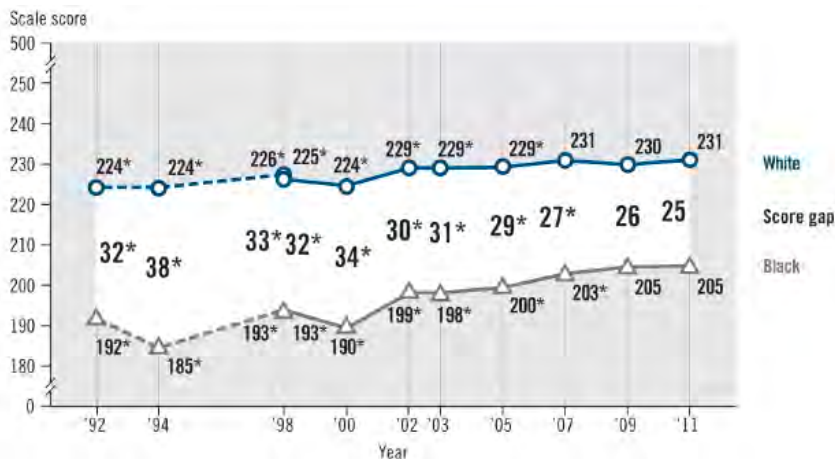
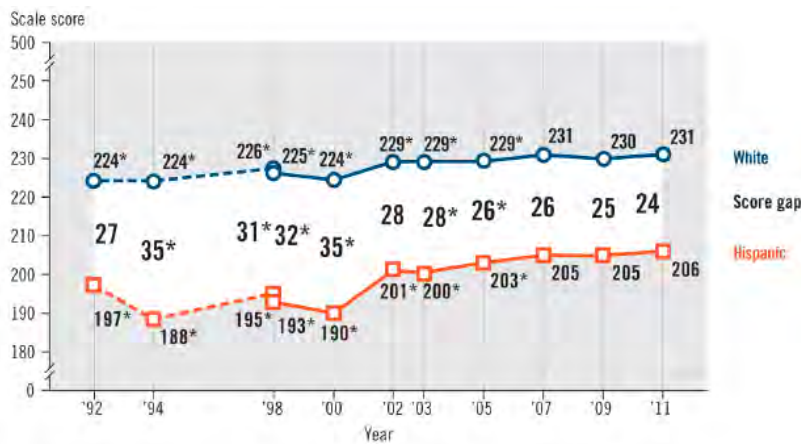
Overview of Educational Disparities

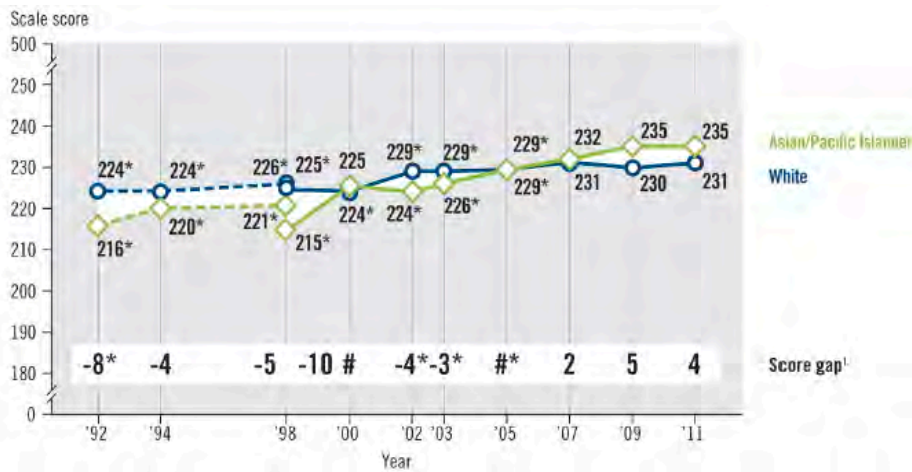
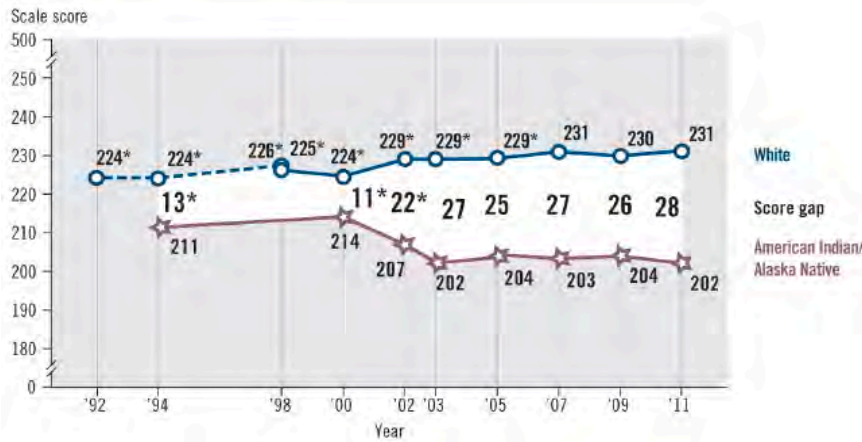
Disparities in educational outcomes. Despite considerable attention to this national crisis over the past six decades, NAEP data reveal disparities in academic achievement continue to exist and, in some cases, have increased over the past decade for ethnic and racial minority children and adolescents (Aud, Fox, & KewalRamani, 2010). Of particular concern, African American, Latino, and Native American children, as well as students from some Asian American subgroups, demonstrate consistent underachievement in academic performance from pre-kindergarten through twelfth grade, and are concomitantly underrepresented in high school graduation rates, placement in gifted and talented programs, and admission rates to postsecondary education, when compared to their White and other Asian American peers. To illustrate, the drop out rate for Latino students is nearly four times the rate of White students, and the suspension and expulsion rates for African American students is three times the rate for White students (Aud et al., 2010). The high school graduation rates for most ethnic and racial minority groups continue to stagnate at just over 60% (NAEP, 2010), with many large urban districts serving primarily low income and minority students having high school graduation rates substantially below 50% (Swanson, 2008). Attendance in higher education for American Indian young adults is less than half of White students, even after controlling for high school graduation. Educational disparities also exist for ethnic subgroups of Asian-Americans (Asian American Legal and Education Defense Fund, 2008). Within racial groups, males fare worse than females on most indices, and multiracial youth report being physically threatened in school at higher rates than the other ethnic and racial groups (NAEP, 2010).

Disparities in academic achievement. Racial disparities are evident not only in the outcome or endpoint in students' educational careers, but are reflected at every level of the educational system. At four years of age, between 18.8% and 28.3% of Black, Latino, and American Indian children—compared to between 36.8% and 49.4% of White and Asian children—are proficient in letter recognition (Aud et al., 2011). Proficiency in recognizing numbers and shapes is higher for all groups but the disparities still exist (40% - 54.1% for ethnic and racial minority and 73% - 81% for White and Asian groups). In mathematics achievement, 8% - 9% of fourth grade White and Asian children scored at the below basic proficiency levels, but 29% to 36% of Black, Latino, and American Indian children scored below basic. The proportion of White and Asian American children reading at below basic levels remains fairly constant from 4th to 12th grade, ranging between 21 - 26%. In contrast, the proportion of 4th grade Black and Latino children reading below basic level is substantially higher at between 50

to 54% and drops in twelfth grade at 40% and 46% respectively, which remain quite high and almost double the rates for the higher achieving groups. The somewhat lower rate of Black and Latino children reading below basic in twelfth grade may be due, in part, to the high dropout rates for these groups. Moreover, as can be seen in Figure 1, the pattern of disparities has been consistent over the last two decades and the patterns are similar across reading and mathematics for Grades 4, 8 and 12. On Advanced Placement (AP) tests, where a score of 3 or above is considered “successful,” 62 – 64% of White and Asian students’ scores are considered successful, whereas approximately 43% of Latino and American Indian students are successful, and only 26% of Black students who take the AP test have scores considered successful. Figures 1 and 2 demonstrate the pattern of disparities across the five ethnic and racial groups, with White and Asian Americans scoring above the cluster of three ethnic and racial minority groups for 4th and 8th grade.

Figure 1. Reading Scores for 1992 to 2011 by racial/ethnic group.





Source: National Center for Educational Statistics (2011)

Disparities in grade retention and disciplinary sanctions. There are critical disparities across race as well as sex in the rates of grade retention and discipline problems. More boys than girls have repeated a grade with more than 1 out of every 4 African American boys repeating a grade compared to just over 1 out of 10 White or Latino boys. Approximately 1 out of every 7 African American girls and 1 out of 10 Latinas, and just over 1 out of every 20 White girls repeat a grade in their K-12 school careers (NAEP, 2010). Analogously, nearly 1 out of every 2 African American males was suspended, compared to 1 out of 3 Latino boys and 1 out of 5 White boys. More than 1 of every 3 African American girls has been suspended, compared to 1 out of 7 Latinas, and 1 out of 10 White girls. Interestingly, multiracial youth had the highest rate (13.3%) of being threatened or injured with a weapon in school and becoming involved in physical altercations, but are among the least likely to have carried a weapon in school (NAEP, 2010).

The graduation rates for those who were enrolled in ninth grade are 91.3% and 80.3% for Asian and White students, respectively, while the graduation rates ranged from 60% to 63% for the three ethnic and racial minority groups (NAEP, 2011). There are significant disparities when considering the educational attainment of adolescent and young adult population. Approximately 17% of Latino and American Indian children are considered status dropouts,

defined as the proportion of the 16-24 year old population not enrolled in school and without a high school diploma. The status dropout rate is lower for Blacks (9.3 %) and even lower for White and Asian 16 – 24 year old population (5.3% – 6.1%). The relatively higher rate of status dropouts for Latinos includes those youth and adults who immigrated to the U.S. after the end of their educational career. The status dropout is 11.5% for US-born Latinos (closer to the rate of Blacks), while the status dropout rate is 34.3% for foreign-born Latinos (NAEP, 2010).

Not all youth problems reflect disadvantage for ethnic and racial minority populations. The rates of substance abuse is slightly higher for Whites than for any of the other ethnic or racial groups with, for example, 18% of Whites compared to 10% and 15% of Black and Latino students abusing alcohol. However, the prevalence rates for teen-age pregnancy mirror rates of educational disparities. Whereas about 3% of White females give birth before 19 years of age, between 6.0 and 8.4% for females from the three ethnic and racial minority groups have a child before 19 years of age. Encouragingly, these rates declined over the past 20 years.

Disparities in postsecondary schooling. The disparities are smaller for enrollment in colleges and universities in the fall subsequent to high school graduation with 55.7% and 63.9% of Black and Latino graduates attending higher education, compared to 71.7% of Whites. It is important to note that these rates exclude those who did not graduate from high school. The percentage of 18 – 24 year olds enrolled in college or university was 44.2% for Whites, 57.6% for Asians, and 25.8 and 32.1% for Latino and Black young adults, respectively. Differences across race are reflected in enrollment rates at different kinds of higher educational institutions. A larger portion of Blacks (15.2% vs. 7.8% for all other groups) are enrolled in for-profit forms of higher education and a disproportionately large rate of Latinos (49% of Latinos compared to 33- 36% of other racial groups) are enrolled in public community colleges, relative to their peers. There are sex differences in college enrollment across racial groups, with a female:male ratio for Whites of 56:44. Blacks have a 64:36 female:male ratio. The ratio for Latinos and American Indians is approximately 58:42 and Asian American female:male ratio is 54:46. Sex differences are even higher in the rates of enrollment in graduate education with 55 – 60% of White and Asian graduate students being female, approximately 63% of Latinos and American Indian enrollments being female, and 71.3% of Blacks enrolled in graduate education being female (NAEP, 2010).

Economic and educational capital differences. There are clear ethnic and racial disparities in social class for students in the U. S. educational system. While 10.1% and 11.1% of the White and Asian children are living in poverty, 27.1%, 34.1%, and 32.7% of Latino, Black and American Indian children are living in poverty (NAEP, 2010). Approximately 5% of White children and 10.5% of Asian American children are living with a mother or father who did not graduate from high school compared to 12% of Black and 40% of Latino children. The proportion of children who are eligible for free or reduced lunches is 29% and 34% for White and Asian children, respectively and range between 68% and 77% for children from the three ethnic and racial minority groups. The level of professional certification among teachers varies depending on the ethnic and racial composition of schools. Approximately 2 out of every 3 teachers in majority White schools are certified in their assignment subjects, whereas only 1 out of 2 teachers were certified in schools in which either the proportion of African Americans or Latinos was greater than 50% of the population.

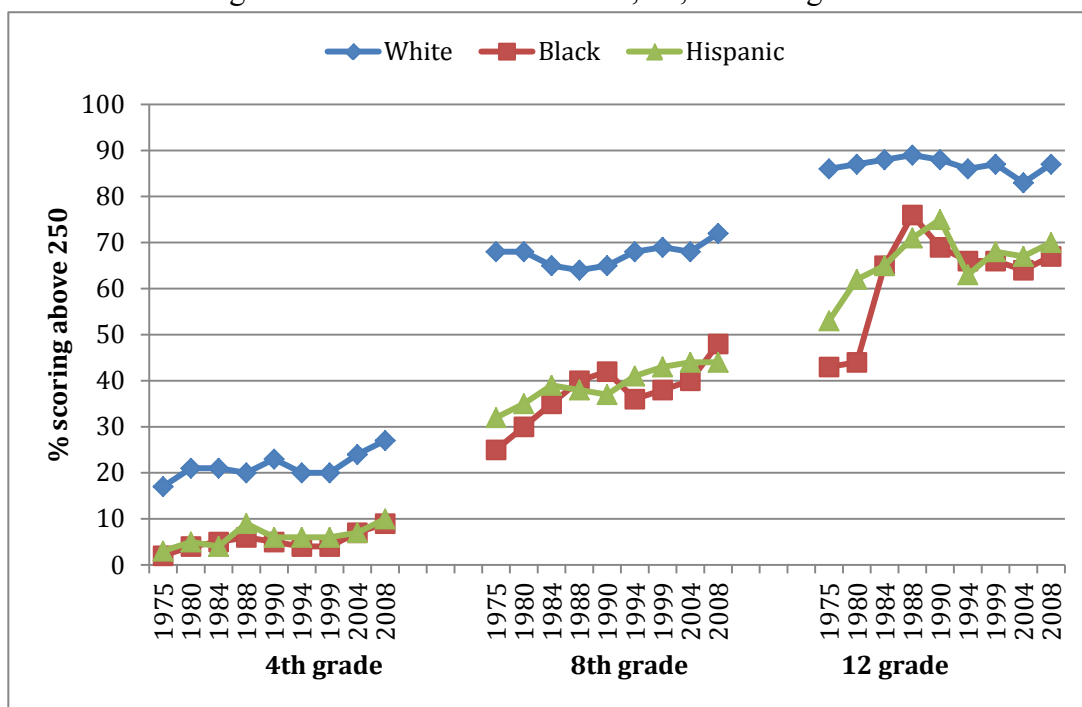
Subgroup variation in Latino and Asian American groups. There are important subgroup variations, which become evident when data are disaggregated for Asian Americans and Latinos. For Latinos, while Puerto Rican and Mexican American students have substantially lower achievement than European Americans, Cuban Americans have comparable performance to Whites (Harris, Jamison & Trujillo, 2008). Analogously, there are wide disparities evidenced for Americans of Southeast Asian descent, relative to Whites and other Asian Americans. The U.S. Census (2000, 2010) indicates high dropout rates (approximately 40%) for Laotian, Hmong, and Cambodian Americans that are comparable to the rates for Latinos, African Americans, and American Indian groups. Ngo and Lee (2007) pointed out that the mean income for these three Southeast Asian groups ranges from \$6,613 to \$11,454, compared to Latinos, African Americans, and American Indian groups which range between \$12,000 and \$15,000 and \$21,000 for the overall U.S. population. The rates of earning baccalaureate degrees for Southeast Asians reflect similar levels of disparities (Ngo & Lee, 2007). This APA Task Force on Educational Disparities does not want to perpetuate the overgeneralization of the stereotype that all Asian American groups are performing well academically, given that the same educational disparities can be found in specific subgroups of Asian Americans as in African Americans, Latinos, and American Indians. Unfortunately, many of primary sources cited in this Task Force report have not disaggregated the different Asian groups. When disaggregated, Southeast Asians appear to struggle with many of the same challenges that the other ethnic and minority groups face.

In summary, the patterns of achievement are fairly consistent with high levels of achievement for Whites and Asian Americans aggregated across ethnic subgroups relative to the achievement levels for African American, Latino, and American Indian groups. Speaking a language other than English and the probability of being foreign-born mark the Latinos and Asian groups relative to other ethnic and racial groups. Despite relatively high percentages of foreign-born and speaking a language other than English at home, aggregated data reveal that Asian American students tend to perform as well as and sometimes better than Whites. Hence, being foreign-born and an English Learners (EL) do not necessarily predict educational disparities—this apparent inconsistency is discussed below. The rates of (a) suspension and (b) being retained a year school are particularly high for African Americans, especially African American males. Enrollment in college subsequent to high school graduation is somewhat less disparate across racial/ethnic groups, though the Latinos are overrepresented in community colleges and African Americans are over represented in private, for profit schools.

Educational Disparities in the US: Historical and Global Context

It is helpful to contextualize the contemporary educational disparities within a larger historical context. For illustrative purposes, we examine the pattern of reading achievement across four decades (see Figure 2 below; NAEP, 2010) for the three racial groups for which this scope of data is reliably available. Examining patterns of achievement during 4th grade, it is apparent that educational disparities in reading have remained stable for the past 40 years, with a slight increase in the gap during the 2000s. Examining 8th and 12th grade scores suggest that the disparity gap was closing during the 1970s and 1980s. However, the disparities increased or remained stable through 1990s onward across each of the grade levels.

Figure 2: Percent Reading Scores at or above 250 for 4th, 8th, and 12th grades



Source: Educational Digest, NAEP 2010; Reading scores above 250 reflect ability to search for specific information while reading, interrelate ideas and make generalizations about literature, science, and social studies materials.

It seems important to consider the individual and societal costs for the pervasive underperformance of ethnic and racial minority students. The personal and social costs of educational underachievement for these groups are considerable for individuals and their families as well as for the economic viability of the nation. During the most recent recession, the unemployment rates were particularly staggering for those without a college education. Moreover, African Americans unemployment went from 8.6% in 2007 to 15.8% in 2009 (5.8% to 12.9% for Latinos), with the unemployment for Whites remaining under 10% from 2007 to 2009 (Reidenbach & Weller, 2010). The social costs of undereducation and underemployment are often passed onto the next generation, given the connection between parents' social class and their children's level of educational and occupational attainments (Ferguson & Ready, 2011).

Over the past two decades from 1990 to 2010, population demographics in the US have shifted. The proportion of Whites declined from 79.9% to 65.6%, and African American and American Indian populations remained stable at approximately 12% and 1%, respectively. In the same time frame, Latinos increased from 6% to 15%, and Asian Americans and Pacific Islanders increased from nearly 2% to 4% of the total U.S. population (NAEP, 2011). Because ethnic and racial minority populations in the latter two groups, especially for Latinos, tend to be younger, these population trends are expected to continue. At present, the proportions of children in U.S. schools from kindergarten through twelfth grades are 59.6% White, 21.8% Latino, 15.0% African American, 4.1% for Asian groups and 0.7% for American Indian/Alaskan Native. Examining patterns of immigration, 1.8% of White and 2.7% of Black children are foreign-born,

compared to 11.4% of Latino and 23.9% of Asian children. Patterns of language usage in the homes also vary across ethnic and racial groups. Approximately 67% to 72% of Asian and Latino children resided in a home in which a language other than English was the primary language compared to just under 7% for both White and African American children. Considering only foreign-born children, 49% and 19% were from Latin American and Asian origins, respectively (NAEP, 2010). By the middle of this century, the majority of U.S. population will be people of color. Indeed Americans of European descent will simply be the largest minority group, and African Americans and Latinos will become increasingly larger proportions of the U.S. labor force. Unless more ethnic and racial minority children and youth can succeed in the educational system, not just these communities in particular, but U.S. society in general will simply fail to cultivate important reservoirs of human talent, talent that will be even more important to the success of the nation in the years and decades ahead. Thus, the U.S. needs to eliminate educational disparities to maintain its standing in the world.

When U.S. students are compared with students from other nations on tests of achievement in reading, mathematics, and science, they fall in the middle of the distribution, suggesting much room for improvement for the U.S. educational system. For example, data from the Trends in International Mathematics and Science Study (TIMSS, 2003; Mullis et al, 2004) show that fourth and eighth grade students in the US have significantly lower math performance levels than students from nations such as Singapore, South Korea, Japan, Belgium, the Netherlands, Hungary, Russia, Slovenia, and the Slovak Republic. The clear implication is that the focus on closing achievement gaps needs to be broadened to encompass raising achievement for all students so that U.S. students are better equipped to compete with students across the globe. Historically underperforming students' achievement levels must be raised more steeply so that all U.S. students are performing at higher levels of academic functioning and these higher levels of academic functioning have to reflect the rigor required to be successful in the 21st century.

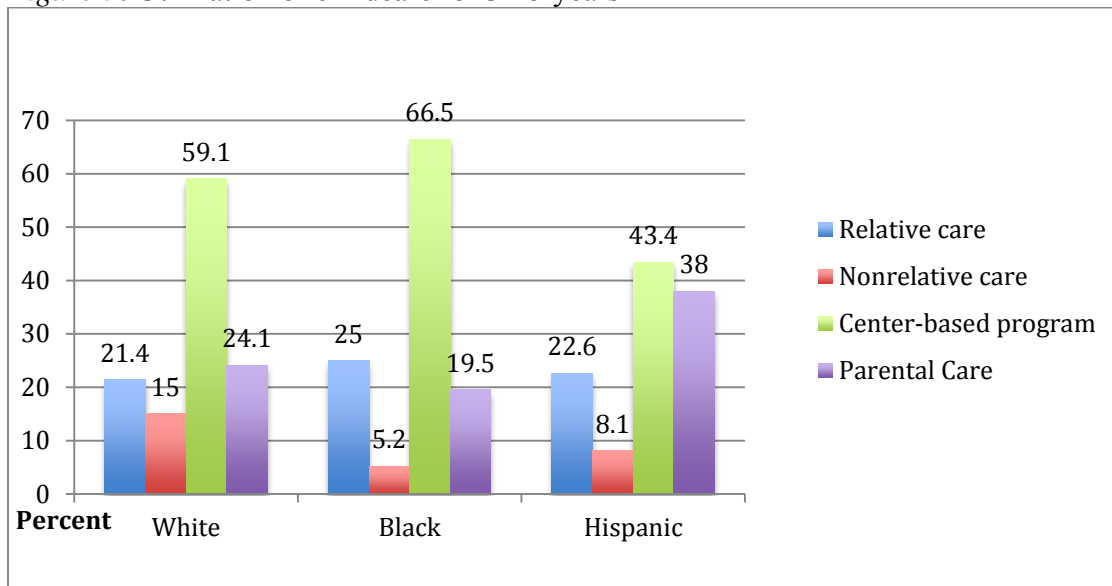
In short, there are two “achievement gaps” that must be confronted simultaneously: the one between those racial groups faring well and those who are underperforming in the U.S. educational system and the gap between U.S. students in general and students in other parts of the world.

Disparities in Early Childhood Education (ECE)

One of the important inputs into K-12 education is the early childhood education that children receive prior to entry into kindergarten. Head Start and other federal and state programs have attempted to redress educational disparities associated with income differences. Many of these programs are effective, at least in the short-run, in reducing the disparities due to social class, but access to ECE programs, especially quality ECE programs, is limited, and these early efforts require more follow-up in elementary school in order for the benefits of these programs to reduce educational disparities to be fully realized.

Early childhood education (ECE) is defined by the National Association for the Education of Young Children (NAEYC) as serving children from birth to 8 years, but for the purposes of this Task Force report, we focus on ECE that begins at birth and continues until kindergarten. Developmental psychologists have made important contributions to the understanding of the efficacy of ECE as well as understanding the proximal processes, such as nature of the student-teacher interactions, within various ECE programs that are associated with positive outcomes. For example, the NICHD Study of Early Child Care and Youth Development found that ethnic and racial disparities in school readiness associated with children’s experiences at home and in ECE were well-established by the time the children were 3 years old (Burchinal et al., 2011). However, examining ethnic and racial disparities in home experiences prior to formal school enrollment is a far broader topic than can be addressed here, and, thus, this report will focus on children’s out-of-home-experiences in early childhood education. Figure 3 below describes use of center-based relative to other forms of childcare for 3 – 5 year olds for the three major ethnic and racial groups for which national data are available. Center-based care is the most common form of care utilized across the three groups, followed by relative and parental care. Interestingly, center based care is utilized less often for Latinos, relative to Whites and Blacks, with reasons for these differences discussed below.

Figure 3: Utilization of childcare for 3 - 5 years



Source: Digest of Education Statistics, NCES, 2010

ECE programs, which include child care programs, vary in the goals for the services, including the goal of supporting and promoting optimal child development, which include child care programs. Other ECE programs have the goal of providing socialization or learning opportunities to compensate for limitations in the home environment associated with low-income families. These programs have a variety of names, including preschool, nursery school, school readiness, or prekindergarten programs (Pre-K). Despite these distinctions in intentions to provide services, most programs for children younger than kindergarten provide a mix of childcare and educational opportunities and will be referred to as ECE programs in this report.

Access to ECE

Disparities in access. There are ethnic and racial disparities in access to ECE programs due to administrative features of the programs, including funding mechanisms and the governmental authority assigned responsibility for the ECE programs. Disparities in access also occur when the ECE program is designed to provide an intervention into problems associated with poor and low income families, and when programs fail to consider maternal employment and need for child care. Unlike K-12 schooling, ECE services are not (a) entitlements for all families, (b) obligatory for children of a certain age, (c) always publicly funded, or (d) regulated by state education departments. ECE programs are administratively placed under the regulatory authority of the Department of Education and/or the Department of Social Service within states. Although most ECE programs are not part of the public school system and therefore not open to all children within the school district, some states offer Pre-K programs that are located within public school buildings. The quality of Pre-K programs is variable, but is often low, and there is debate within the field about whether or not the programs belong in the public schools (Clifford et al., 2005; Howes et al., 2008; Zigler, Gilliam, & Barnett, 2011). Children from low-income families are more likely than children in higher income families to be eligible for publicly-funded Pre-K programs (Clifford, et al., 2005). Furthermore, even when Pre-K programs are purported to be universal and open to all children regardless of family income, funding constraints often limit enrollment to children from low-income families. There is some research to suggest that when ECE programs are administered through a state's Social Service Department, access to ECE programs is often tied to the state's welfare system (Huston et al., 2001). Again, children from low-income families are more likely to receive these services; however, access to ECE programs does not guarantee access to high quality programs. ECE services administered through welfare departments are often funded with vouchers to parents and involvement in quality programs can depend on parent selection factors that are discussed below.

Finally, almost all ECE programs are administered under the licensing regulations of the state, usually by Departments of Social Services. Although most licensing regulations are focused on health and safety of participants, a portion of regulations (e.g., number of children in a room) influences educational aspects of the ECE program. Children from more affluent families and children who are White are more likely to be enrolled in these more general ECE programs and less likely to be involved in ECE programs that target child or family interventions, relative to ethnic and racial minority families (Barnett, 2011). Importantly, families on the extreme ends of the income continuum, very poor families and very affluent families, are most likely to enroll children in unregulated ECE programs, as in the case of nanny care for affluent families and kith and kin care for poor families (Shivers & Sanders, 2011).

ECE programs are disproportionately privately funded, either as not-for-profit or profit-making programs. Publicly funded ECE programs target poor children whereas privately funded ECE programs provide the majority of care to non-poor children (Barnett, 2011). Privately funded for-profit programs are often the only option available for ‘working-poor’ families who do not qualify for publicly funded programs.

When the intent of ECE is intervention. ECE programs designed as interventions to reduce educational disparities associated with socioeconomic status are primarily focused on differences in school readiness. These ECE programs prepare children for kindergarten and are almost always targeted to poor families and, in some cases, children whose home language is not English and ethnic minority children. Head Start (preschoolers) and Early Head Start (infants and toddlers) are perhaps the oldest and best known of these ECE intervention programs and the ones that have been brought to scale. Head Start is open only to families that meet income guidelines. As a result, the Head Start programs are always income-segregated and often racially segregated. There have been multiple studies of the effectiveness of Head Start programs, and in general, the results suggest that in the short term, children who attend Head Start are more ready for school than control group children (Ludwig & Phillips, 2007). The lasting effects of these benefits seem to depend on the context of further schooling. Early Head Start is a more recent program and has not been fully evaluated since being brought to scale. However, findings from an early evaluation of Early Head Start suggest that outcomes associated with children’s school-readiness depend on the form of the ECE intervention; center-based interventions have an advantage over home visitor programs, with African American children benefiting more than children from other groups (Love et al., 2002, 2003).

Less well known ECE programs are Family Literacy and other two-generation interventions that include ECE services as part of more general services available to families. Model intervention programs that offer comprehensive services, most notably the Child-Parent Centers of Chicago, report impressive short- and long-term effects on children’s school readiness and performance (Reynolds, Mavrogenes, Bezruczko, & Hagemann, 1996). Two-generation ECE programs are usually targeted to particular groups of children based on income and ethnicity. Many, but not all of the ECE-as-intervention programs include comprehensive services, including medical and nutritional services for the children and a broad range of family services. These comprehensive services often include psychological services and are consistent with the notion that school readiness is a broader construct than simple skills of counting and letter recognition.

Maternal employment and family need for childcare. Families, particularly working poor families, often must make choices between finding childcare that corresponds to their irregular and alternative employment hours and enrolling their children in more structured ECE programs (Howes, 2010). If publicly funded ECE programs have income guidelines that include working poor families, the programs are often part-day or part-week, requiring families to find alternative childcare around the program. Particularly for children from low-income families and for African American children, this instability of childcare can have a negative impact on child development (Tran & Winsler, 2011). Further disincentives for working poor families include requirements that parents participate in parent education or work within the program during normal working hours (Howes, 2010). Therefore, access to ECE can be undermined

when programs consider parents as targets of intervention but do not consider their needs to work around employment hours (Shivers, Howes, Wishard, & Ritchie, 2004). In these cases, children of working poor families have less access to ECE.

Quality of ECE

Perhaps the most extensively studied aspect of educational disparities in ECE involves the construct of quality. To examine factors associated with quality of ECE programs, structural aspects have been differentiated from process features of the programs (Helburn & Howes, 1996). Structural aspects include those features that are regulated most easily, such as teachers' educational backgrounds, group size, and adult-child ratios, as well as the number of bathrooms, or whether the room is an adequate size for children of a specific age. Process features are those activities which directly involve the child. These features include the type of instructional support provided, the emotional valence of a classroom, or the sensitivity provided to children by the teachers. Structural dimensions are associated with process dimensions, which in turn are connected to children's development. Later in this report when discussing reform for K-12 education, we characterize the structural versus process dimensions as technological reform versus reform in the transactional processes of education. Across ECE and K-12 education, the process dimensions or transactional processes represent the important proximal processes that influence students' experiences in education.

Ethnic and racial disparities in ECE quality. Is quality a universal construct or do children from different ethnic communities require different quality dimensions? One multi-dimensional analysis of quality from the point of view of developmental psychologists and from the point of view of communities of color concluded that basic respect for children and their families, warm and sensitive caregiving, and providing opportunities for cognitive and language development are universal across ethnic and racial minority communities, but that the practices used to achieve these quality standards vary by community (Howes, 2010). A further analysis, however, of a large and diverse study of low-income children in ECE programs suggested that classroom dimensions that support competent peer interaction are similar across ethnic, racial, and linguistic communities (Howes et al., 2011).

Children's experiences in ECE differ based on whether teachers speak their home language and whether their home language is used in the classroom. One nationally representative study examined the experiences and outcomes of Spanish-speaking pre-kindergartners who attended ECE programs that varied widely in how much Spanish was spoken in the classroom by the teacher (Chang et al., 2007). Children were reported to have better social skills and closer teacher-child relationships in classrooms where teachers spoke some Spanish. More Spanish language use in the classroom was also related to a decrease in children's likelihood of being victims of aggression as rated by independent observers. A second analysis found that school readiness skills in Spanish-speaking children in the spring of the ECE year were predicted by language proficiency in either Spanish or English at entry and by receiving more instruction in Spanish when in the program (Burchinal, Field, López, Howes, & Pianta, in press). There is recently increasing attention to the dimensions of ECE classrooms that facilitate the school readiness of children who are dual language learners (Howes, Downer, & Pianta, 2011). Importantly, the dimensions of classrooms that promote learning in English speaking

children are the same quality dimensions that support learning in Spanish-speaking children (Downer et al., in press).

Quality of ECE and school readiness. Extensive literature supports the notion that higher levels of quality in process variables within ECE programs are linked to children's development (Burchinal, Vandergrift, Pianta, & Mashburn, 2010). However, the level of quality must be fairly high, and higher than the current median level of care in the United States to produce an increase in children's outcomes (Burchinal et al., 2010). That there are U-shaped quality differences by family income is also well documented (Jones-Branch, Torquati, Raikes, & Edwards, 2004). That is, quality tends to be highest in ECE programs open to children of families at or below the poverty line and ECE programs with high tuition and thus affordable to more affluent parents. Children of the working-poor and of middle-class families tend to receive the lowest-quality ECE programs.

Unlike other schooling, families always select the ECE program for their children. There is an extensive literature on family selection of ECE programs that address educational disparities. Not surprisingly, families that face the biggest challenges in providing supportive home environments also tend to select poorer-quality childcare. For example, college-educated mothers tend to select ECE programs that place a greater emphasis on the academic components (Jones-Branch et al., 2004). In general, some of the same family characteristics associated with selecting better-quality ECE programs (i.e., mothers' education, two parents in the home, less traditional parenting values, and White rather than minority ethnicity) are also associated with more optimal child development (Dearing, McCartney, & Taylor, 2009; Johnson et al., 2003). However, in the NICHD Study of Early Child Care and Youth Development, quality of care still moderated children's developmental outcomes after controlling for family selection effects (Dearing et al., 2009).

Children who experience the double jeopardy of less than optimal home and child care environments are, again not surprisingly, most likely to have behavior problems (Watanabe, Phillips, Morrissey, T.W., McCartney, & Bub, 2011). In large data sets such as the NICHD Study of Early Child Care and Youth Development, there are sufficient numbers of children who experience difficult homes and good-quality child care environments to address the question of ECE quality compensating for home environments. For these families, higher-quality ECE tends to compensate for the poorer-quality home environments (Watanabe et al., 2011).

Family preferences of ECE. When low-income or poor families are provided subsidies to purchase ECE, families tend to select higher-quality ECE care than control group families, but only because subsidy recipients are more likely to use center-based care (Ryan, Johnson, Rigby, & Brooks-Gunn 2011). In general, but not always, center-based ECE programs include more educational components than home-based ECE programs (Fuligni, Howes, Huang, Hong, & Lara-Cinisomo, in press).

There are ethnic and racial differences in how early children begin ECE programs and in which forms of ECE are used (center- or home-based, see Figure 3), with African American families tending to begin care earlier and to use more center-based care and Latino families tending to begin care later and to use more home-based care (Howes, 2010). More nuanced

exploration of these selection disparities suggests that Latino families are less likely than African American families to have geographically accessible center-based care (Crosnoe, 2007; Fuller & Shih-Cheng Huang, 2003). One intensive interview study found that Latino families had similar beliefs and values around selection of ECE programs to other families, but lacked resources for finding acceptable care (Zucker, Howes, & Garza-Mourino, 2007).

Beyond Quality: Bridging Between Families and ECE Programs

Ethnic and language match in ECE. The ECE work force is increasingly composed of women of color (Bellm, Burton, Whitebook, Broatch, & Young, 2002; Howes, 2010). Furthermore, due to differential access by family income and residential segregation, many children attend ECE programs with teachers and children who are from their own cultural community (Howes & Shivers, 2006; Howes, Sanders, & Lee, 2008). Nevertheless, there are many children who, from a very young age, experience intimate caregiving and are expected to learn from teachers who are not from their ethnic or racial community and may not speak their home language. These differences in demographic characteristics raises concerns about the ability of these children to thrive in ECE programs (Johnson et al., 2003).

Preliminary analysis of a large representational study of community-based ECE programs concluded that having an ethnic and language match between teachers and children was not as predictive of children's outcomes as was the quality of the program as a whole (Burchinal & Cryer, 2003). Further exploration of the issue of child and teacher ethnic and language match suggests that (a) variations among teachers in their support and respect for children who are different in ethnicity and home language than themselves (Howes, 2010) and (b) perceptions of whether or not a child who is different in ethnicity than themselves is difficult (Howes & Shivers, 2006) are more important than a simple matching of ethnicity and home language. Research on bilingual education in elementary schools, where the goal is to promote understanding of academic concepts, finds that the linguistic competence of teachers and of instruction was critical (August & Shanahan, 2006). Linguistic match during ECE may be less important because the goal of ECE may be more social-emotional in nature, versus the importance of understanding complex academic concepts in elementary and secondary schools.

One recent study on bridging home and ECE further examined how synchronous belief systems between home and ECE program teachers, including child-rearing practices and cultural style of interacting with children, predict school readiness in kindergarten (Barbarin, Downer, Odom, & Head, 2010). One example of cultural differences in child-rearing goals is where Latino families emphasize social competence in defining intelligence or a well-educated person whereas intelligence is defined in more cognitive terms in many White families. Although there were ethnic and racial differences in terms of the patterns of beliefs, the findings suggest that pro-education belief systems that are parallel between home and school may be advantageous. When both home and ECE program adults held beliefs about children's learning consistent with school readiness and success, children had higher school readiness skills.

School Readiness—Beyond Knowing Names of Letters

Debates within the field of ECE include the definition of school readiness and the relative importance of early academic skills and socio-emotional skills for later school achievement. Duncan and colleagues (2007) re-analyzed multiple longitudinal data sets, controlling for

behavior problems and family factors, and concluded that early literacy and math skills are better predictors of school success than social and emotional development. Given the existence of educational disparities by family income and ethnic group in early literacy and math skills, this analysis provides compelling evidence in support of academically oriented ECE programs.

In addition to support for academic readiness, socio-emotional readiness may be particularly important for children from low-income and minority families. There is substantial evidence that children from low-income families, particularly minority children, experience high levels of economic and neighborhood stressors that put them at risk for not developing the ability to modulate their own emotions, behaviors, and social relationships with others (Garcia Coll et al., 1996). These social and emotional skills are fundamental for children to be able to learn and retain the literacy and academic concepts introduced in ECE classrooms. Evidence for the interconnectedness of socio-emotional and academic school readiness comes from another re-analysis of the NICHD Study of Early Child Care and Youth Development (Sektnana, McClelland, Acock, & Morrison, 2010). Children with higher behavioral regulation appear better able to attend to specific cues, remember instruction, stay on task, tune out irrelevant information, and process information necessary to complete tasks, all of which contribute to their ability to succeed in school settings and perform well academically. In a series of interventions within classrooms of low-income ethnic minority children, Raver and colleagues have demonstrated the effectiveness of teacher support of children's emotional and behavioral self-regulation for preschool children's socio-emotional and academic outcomes (Raver, 2004; Raver, Garner, & Smith-Donald, 2007; Raver et al., 2008).

Differential Experiences in ECE Programs Beyond Quality

Recognition of the importance of academic skill readiness, ethnic, racial, linguistic, and economic disparities in academic readiness, and the current debates over effective teaching and effective classrooms have moved ECE researchers towards a new focus on children's experiences in ECE classrooms. Although student-teacher interactions have always been central to definitions of quality in ECE, being warm and sensitive and/or having a BA degree do not necessarily signal effective teaching or growth in children's pre-academic and socio-emotional skills (Pianta, 2007). Current researchers are examining classroom experiences in terms of instructional support and instructional strategies around academic activities as well as emotional support.

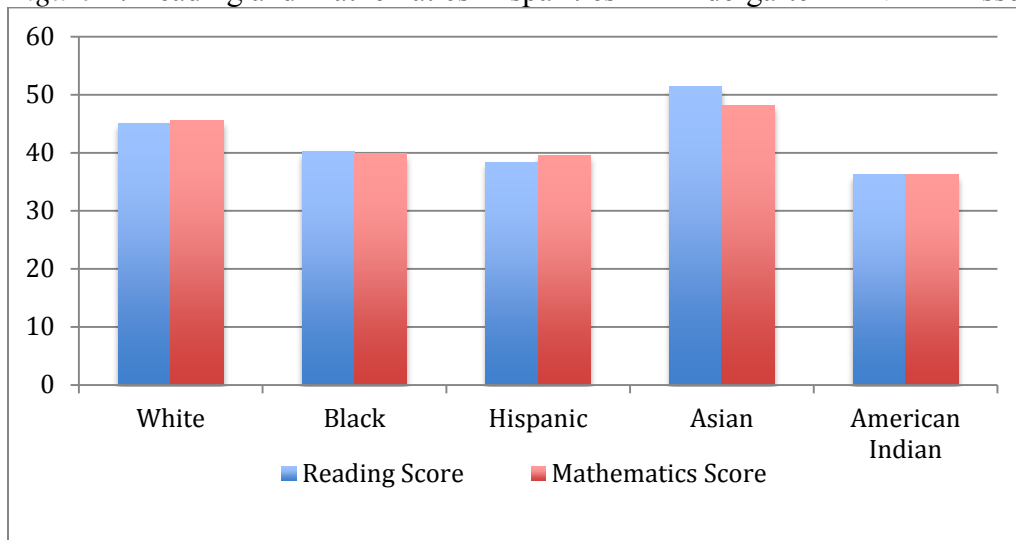
Classroom instructional climate captures the organization and behavior of teachers as they work in the classroom to enhance academic learning (Pianta, La Paro, & Hamre, 2008). The dimensions of instructional climate include productivity, concept development, learning formats, quality of feedback, and children's engagement. Instructional strategies refer to teacher behaviors with children focused on academic learning. Teacher instructional strategies in ECE classrooms are defined as scaffolding when teachers engage one-to-one with a child, building on the child's initiations and helping the child expand and elaborate his or her knowledge, and as didactic when teachers lecture or ask closed-ended questions to the individual child or the entire group of children (Chien et al., 2010).

Unfortunately, children from low-income homes and of minority status tend to be in ECE classrooms with lower ratings of instructional support and less facilitative teacher instruction

(Early et al., 2010). Using the same data set, Chien and colleagues (2010) classified individual children into profiles of classroom engagement. Four profiles of children’s classroom engagement were identified: a “free play” category of children who spent the highest proportion of time in free-choice and gross-motor activities and the lowest amount of time engaged in academic activities; “individual instruction” children who experienced high levels of teacher-assigned individual time and who also engaged in the most fine-motor and letter-sound activities; “group instruction” children who experienced the highest levels of both whole-group and small-group activity settings; and a “scaffolded learning” category in which children experienced high levels of teacher scaffolding and elaborated teacher-child interactions along with more time in academic activities. Children in classrooms with the free play profile exhibited smaller gains across the pre-kindergarten year on indicators of language, literacy, mathematics, and social competence compared to children in classrooms with other profiles. Children in the individual instruction classrooms showed greater gains in their scores on standardized early math assessments. Children from homes at or below the poverty level in the individual instruction classrooms fared better than non-poor children in those classrooms; in all other types of classes, poor children fared worse than non-poor children.

Summary of disparities in ECE. There are substantial educational disparities prior to children attending ECE programs, but research demonstrates that ECE programs can narrow these gaps. ECE programs have been found to help narrow educational disparities associated with poverty. Figure 4 depicts the nature of educational disparities in math and reading scores for children entering kindergarten. As reflected in Figure 4, although there are disparities between (a) White and Asian American children compared to (b) African American, Latinos, and American Indian children, these disparities may have been more accentuated if ECE programs were not available to low income children.

Figure 4: Reading and Mathematics Disparities in Kindergarten in NAEP Assessments



Source: Digest of Education Statistics, NCES, 2010

Unfortunately, access to ECE programs is moderated primarily by family income and secondarily by availability of programs across different ethnic neighborhoods. Access to publicly-funded ECE programs are often limited to children in families below the poverty level, excluding many working poor and other low-income children who would benefit from these programs. Moreover, persistent inequalities exist in the nature of the experiences provided to children from different family backgrounds. There are disincentives to wider participation in available ECE programs primarily for the working poor families who may have access only to part-time programs or may require wider involvement of the family to meet prerequisites of the program.

Developmental psychologists have been instrumental in examining the psychological processes associated with various structural aspects of ECE programs. Programs attempting to redress disparities associated with school readiness are effective, but often only the poor and affluent families are able to access better quality programs. ECE programs and research evaluating them are beginning to focus on the linguistic and cultural competence of providers and of interpersonal transactions within ECE programs. Ethnic or racial match of the teachers to children is less important than the support, respect, and consistency in the belief systems in predicting successful programs. Teacher support has also been found to be associated with benefits to children's emotional and behavioral functioning in ECE programs. ECE programs for low income and ethnic or racial minority children tend to provide less instructional support for developing academic skills, even though poor children benefit most from individualized instruction by teachers. In short, ECE programs can contribute to reducing educational disparities, but many features of the ECE programs, including access and quality, can also widen the academic gaps.

Immigrants and Educational Disparities²

Much of the literature on educational disparities centers on ethnic groups with large numbers of immigrants or children of immigrants. Although some immigrants from Asian countries perform at or above the same level as Whites in the US, other immigrants fare less well in the U.S. educational system. A dramatic rise in immigration that began in the late 20th century has altered the landscape of the student population in U.S. schools. Given the numerous challenges presented by migrating to a new society, it is important to understand the unique educational issues for children from immigrant families. In addition, given that a large segment of the non-White population in the US are foreign-born, any discussion of educational disparities across ethnic groups must take into account the role of immigration and generational status.

Students from immigrant families face many potential barriers to their academic success (Suárez-Orozco, Gaytán, & Kim, 2011). Foreign-born parents often know little about the U.S. educational system and many of them did not complete a high school education in their native countries. Like other ethnic and racial minority groups, students from immigrant families attend schools that are segregated by ethnicity, poverty, and language. When in school, all-too-often they encounter inexperienced teachers with limited training to work with English language learners (see section below) and who must manage overcrowded classrooms in extremely large schools. Not surprisingly, these schools do not have conducive learning climates. The schools have high drop-out, suspension, and expulsion rates and the immigrant students who attend them are more likely to report fears of being attacked or harmed in their school, avoiding unsafe places, and the presence of gangs in their schools (Fuligni & Hardway, 2004).

These educational barriers, coupled with the more general social and psychological challenges of adapting to a new and different society, originally led to expectations that students from immigrant families were at risk and would inevitably do poorly in school. But a very different picture began to emerge with findings from large, non-clinical samples. In the 1990s, numerous studies suggested that students from immigrant families did surprisingly well in school, sometimes even better than those from U.S.-born families (Fuligni, 1997; Kao & Tienda, 1995). These findings converged with those from studies of physical health and risky behavior to give rise to discussion of the *paradox* of apparently better health and adjustment among children from immigrant families as compared to those from U.S.-born families (Harris, 1999).

As research on immigrant populations has increased over the last 15 years, the story of the educational adjustment of students from immigrant families has grown more complex.

² Note. Portions of this section were adapted from (a) Fuligni, A. J., & Fuligni, A. S. (2007). Immigrant families and the educational development of their children. In J. Lansford, K. Deater Deckard, & M. Bornstein (Eds.), *Immigrant families in contemporary society* (pp. #-#). Guilford Publications, Inc.; and (b) Fuligni, A. J. (2011). The intersection of aspirations and resources in the development of children from immigrant families. In C. García Coll & A. Marks (Eds.), *The immigrant paradox in children and adolescents: Is becoming American a developmental risk?* (pp. #-#) Washington, DC: American Psychological Association.

Appreciation has grown for the diversity in achievement levels of these students as well as for the sources of that diversity. As described in Fuligni (2011), the story of students from immigrant families has three main themes, each of which needs to be considered in order to best understand the complexity of their educational disparities: (a) immigration is a highly selective process in complex ways; (b) partially as a result of this selection, immigrant families come to the US with high aspirations for their children, high levels of family stability, and a strong work ethic; and (c) when immigrant families have access to information, resources, and opportunities, they succeed in education, but significant numbers of immigrant families do not have access to such resources and their children are unable to achieve their goals. This section of the report provides an overview of the educational status of immigrant students by adapting and integrating the discussion in Fuligni (2011) and Fuligni and Fuligni (2007) and summarizing existing research, followed by a brief discussion on implications for policy, both in terms of what we can learn from immigrant families and what they need in order to fulfill their aspirations.

The Selectivity of Immigration

Members of sending nations are not randomly chosen to emigrate and those who do leave their home societies are not randomly placed in receiving nations around the world. The settlement of immigrants in specific locations in the United States, whether they are specific regions in the country or large cities versus suburban or rural areas, is highly selective. Complicating things even further, the forces of selection operate differentially for immigrants from different sending nations, such as those from Asia as compared to those from Latin America (Portes & Rumbaut, 2006). The selection of immigrants from the same country even changes across time and history, resulting in qualitatively different pools and samples of immigrants that feed into the different generations that are often compared in research on immigrant adjustment.

Two key selection effects involved in contemporary immigration to the United States play a particularly important role in the educational adjustment of students from immigrant families. First, the system by which the government determines who can enter the country from specific sending nations gives first preference to reunifying applicants who have close family members already in the United States, followed by those who possess occupational skills deemed lacking and needed in the country. On average, those admitted under family reunification provisions tend to have lower levels of education and occupational skills than immigrants who enter under employment preferences (Fuligni & Yoshikawa, 2003). As a result, newer immigrant flows from countries with historically low numbers of immigrants in the United States have greater socioeconomic resources than flows from countries with large numbers of immigrants already in the country. At the time of the introduction of the family reunification and employment preference system in 1965, there were many more individuals from Latin America (particularly Mexico) than Asia who were already in the United States. This fact, combined with the cost and difficulty of coming from more distant nations, is one reason why immigrant parents from many Asian countries have higher socioeconomic standing than those from many Latin American countries. This is a critical point to consider when making comparisons involving students from immigrant families from Asia and suggests that children in Asian families start out with a socioeconomic advantage over both those from Latin American and even their counterparts in U.S.-born families. However, immigrants from Asia have increasingly entered

under family reunification preferences, suggesting that the socioeconomic advantage of the foreign born from these countries may attenuate over time (Portes & Rumbaut, 2006).

A second and perhaps equally important selection factor to consider is that immigration to the United States is largely voluntary. Except in some cases of asylee or refugee resettlement, most immigrants come willingly. In fact, given the arduous nature of entering and staying in the country both legally and illegally, current immigrants are likely selected for a high level of motivation, diligence, effort, and desire to succeed in U.S. society. As described in more detail below, it should not be surprising that immigrant parents should have very high aspirations for their and their children's success, as well as a belief in the value of hard work and the opportunity structure in U.S. society.

Aspirations, Family Stability, and Work Ethic

Numerous studies employing different methods across a variety of disciplines have noted the strong value placed upon education among immigrant families. Regardless of their countries of origin, foreign-born parents believe in the importance of doing well in school and attempt to instill such an attitude in their children. These parents believe that the best way for their children to succeed in U.S. society is to receive good grades, complete high school, and attend college. The emphasis upon education is so strong among some foreign-born parents, that the perceived cost of not doing well in school appears to be particularly high among many immigrant families. As newcomers, immigrant parents sometimes appear to be less secure about their status in the United States, thereby leading them to believe that more is riding upon the academic success of their children as compared to U.S.-born parents (Fuligni & Yoshikawa, 2003). Some observers have noted that immigrant parents often contrast the educational opportunities in the United States with those in their home countries in order to help their children deal with the challenges to their academic success that they may face in this country (Gibson & Bhachu, 1991).

In one study of adolescents from immigrant families with a variety of ethnic backgrounds, students with foreign-born parents consistently reported higher parental aspirations for college than did those with U.S.-born parents (Fuligni, 1997). This generational difference existed within each ethnic group (e.g., first-generation Latino students vs. second- and third-generation Latino students) and could not be explained by differences in socioeconomic background. At each level of parental education, immigrant parents were reported by their adolescents to have significantly higher educational aspirations than were U.S.-born parents. Among immigrant parents themselves, those from Asian countries such as China and India tend to have higher educational aspirations than those from countries such as Mexico and El Salvador. In contrast to the generational differences in educational aspirations within each ethnic group, the ethnic differences among immigrant groups were attributable to differences in parental education, occupation, and income that were discussed in the previous section.

Children from immigrant families appear to quickly internalize and endorse the value of education espoused by their parents. Like their parents, children whose families hail from regions of the world as diverse as Vietnam, India, and the Caribbean place great importance on doing well in school and attending college (Caplan, Choy, & Whitmore, 1991; Gibson & Bhachu, 1991; Waters, 1999). As compared to their peers from U.S.-born families, students from immigrant families spend more time studying, seeking extra help, and expending effort on

their studies. One way that adolescents from immigrant families maintain such a strong emphasis upon education, even during the teenage years when such values tend to decline in the United States, is through their peers. During the secondary school years, peer groups cleave such that foreign-born students tend not to be integrated into U.S.-born peer groups, even if they are of the same ethnic background (Matute-Bianchi, 1991). As a result, students from immigrant families tend to have peers from similar backgrounds, and they report higher levels of encouragement and support for academic achievement from their friends (Fuligni, 1997). This is particularly true for high achieving students from immigrant families, such as those from families with Asian and higher economic backgrounds.

The emphasis on education among immigrant families is buttressed by their belief in the school as particularly useful for getting a job later in life, consistent with a tendency for immigrants to emphasize the importance of obtaining stable and gainful employment (Fuligni & Yoshikawa, 2004). The focus on hard work is evident in the employment patterns of immigrant parents. Immigrant parents work at rates that are equal to or even higher than those of U.S.-born parents (Hernandez, Denton, Macartney, & Blanchard, 2011). There is great variability in the level of this employment and the financial returns for the family, but high rates of employment are generally linked to better educational development in children.

Immigrant families also have higher rates of dual-parent households and lower rates of divorce (Hernandez et al., 2011). Likely due to both selection effects from the country of origin and more traditional views about the stability of marriage, the family structure of immigrant families confers an advantage to their children. These findings on family structure are consistent with a large number of other studies that highlight the value immigrant families place upon family togetherness, stability, and support. Immigrant parents tend to emphasize the importance of all family members helping the family to make it in a new society, with children playing an important role. In addition to providing instrumental support to the family at times, children's obligation to the family is to stay out of trouble and try hard in school (Fuligni, Rivera, & Leininger, 2007). Most children from immigrant families share this sense of obligation to the family, which is an important source of good behavior and academic motivation.

Patterns of Educational Achievement for Immigrant Groups

The aspirations, family stability, and work ethic of immigrant families appear to be an important source of the tendency for their children to demonstrate lower levels of risky and problem behavior as compared to their peers from U.S.-born families (Harris, 1999). Yet as suggested by Crosnoe (2011b), developmental outcomes, such as education, that are more related to the social and economic stratification system in the United States are less likely to show a consistent immigrant advantage. More so than staying out of trouble, doing well in U.S. schools requires access to information, resources, and opportunities that are highly variable among the immigrant population. Hernandez and colleagues (2011) described the remarkable variability in resources available to immigrant families, with many possessing extremely low levels of income, education and school quality. As noted earlier, immigrant families from many countries in Latin America have lower socioeconomic resources than families who originate from other regions of the world. Great variation exists within these regions, as well. For example, Southeast Asian and Mexican immigrants have lower socioeconomic profiles than those from China and South America (Portes & Rumbaut, 2006). Therefore, immigrant families are highly variable in their

ability to translate their aspirations into success in the U.S. educational system. Those with higher levels of parental education, more financial resources, and greater information and access regarding educational opportunities show levels of academic success that are sometimes greater than that of their U.S.-born peers.

It is difficult to derive overall conclusions regarding the educational adjustment of students from immigrant families, but there do seem to be patterns that are contingent upon age and ethnic group. In terms of age, several studies have suggested an initial immigrant disadvantage or risk in some academic skills at kindergarten that goes away and even becomes an immigrant advantage over the early years of elementary education (Crosnoe, 2011a). Evidence for an immigrant advantage continues during high school. Several studies have suggested that adolescents from immigrant families receive grades, graduate from high school, and enroll in college at levels that are either similar to or even higher than their peers from U.S.-born families (Fuligni, 1997; Fuligni & Witkow, 2004; Glick & White, 2004; Kao & Tienda, 1995; Ma, 2011; Pong & Zeiser, 2011). Yet the educational advantage of students from immigrant families is most consistently found only among students from Asian backgrounds. These students evidence levels of success greater than their peers from U.S.-born families from the same ethnic background, and sometimes even better than students from U.S.-born, White families (Crosnoe, 2011a). The immigrant advantage has been less consistently observed among those from Latin American backgrounds, with some studies even suggesting a lower level of academic success among first and second generation students from Latin America when compared to their peers from U.S.-born families of the same ethnic background (Fuligni, 1997). Importantly, among those from immigrant families themselves, students from Latin American immigrant families consistently have more difficulty in school than their peers from Asian immigrant families (Crosnoe, 2011a). In addition, even when students from Latin American immigrant families show an advantage over their Latino peers from U.S.-born families, they still do not reach the levels of U.S.-born White students. Harris, Jamison, and Trujillo (2008) found that the academic achievement of Mexican and Puerto Rican immigrant children is largely predicted by their social class status, which is quite low, whereas the educational level of immigrants to the US from Asia is predicted by their immigrant status, suggesting that the benefits of immigrant attitudes are not able to overcome social class disadvantage for most Latino immigrants.

As discussed earlier, ethnic variability among students from immigrant families is partially due to the fact many immigrant parents from Asian countries have higher levels of education, occupational status, and income than many other immigrant and U.S.-born parents. Many immigrant Asian parents also have access to social capital and information in their communities that help them to navigate the often complex U.S. educational system (Zhou, 2008). Some Asian immigrant enclaves possess a socioeconomic mix such that parents with lower levels of education and income can more easily obtain information about pre-schools, school district policies, and college-planning strategies. In contrast, many Latin American immigrant enclaves consist of a more homogenous group of families with low socioeconomic resources.

Poorer communities of Latin American immigrants experience challenges throughout children's educational lives. In the pre-school years, Latinos often utilize informal, unlicensed child care arrangements that are more likely to be of poorer quality (see above and Waldfogel &

Laha, 2007). This pattern has led to the perception that Latinos are not interested in using formal child care or that they prefer informal, unlicensed care. It is unclear, however, the extent to which ethnicity or immigrant status *per se*, rather than socioeconomic status and supply issues actually account for these patterns of child care usage (Fuller & Kubuyama, 2000). Childcare and other preschool opportunities illustrate ethnic differences independent of social class. Within the state of California, the supply of center-based child care and preschool programs is inversely related to the population of Latinos in each area (Fuller & Kubuyama, 2000). Low-income White or African American communities in Los Angeles County have almost twice the supply of preschool spaces and three times the supply of spaces in licensed family child care programs than communities that are primarily Latino (Malaske-Samu & Muranaka, 2000). Figure 3 from the previous section demonstrated that across the U.S., Latinos make greater use of parental care and less use of center-based care facilities for their preschool-aged children, relative to their White and African American peers. Some reasons for the lower usage of licensed center-based child care among Latino families may include lack of information about resources; lack of awareness of the importance of quality child care; mismatch of linguistic, cultural and educational backgrounds between families and child care providers; and lack of affordability of child care options near parents' workplace (Howes & Zucker, 2003). Interestingly, mothers of young infants, across race and ethnic groups, tend to prefer relative care over center-based care (Buriel & Hurtado-Ortiz, 2000; Fram & Kim, 2008; Shlay, 2010)—Latina mothers' greater use of relative or parent care has been attributed to greater access to relative/parent care for children (Buriel & Hurtado-Ortiz, 2000; Fram & Kim, 2008). Relative care appears to be more available to domestic-born Latinos than Whites and foreign-born Latinos—the latter two groups reporting that they would prefer greater access to relatives to care for their young children (Buriel & Ortiz, 2000).

Disparities in the usage of educational resources are also evident at the other end of students' educational lives. Whereas students from Asian immigrant families attend college at higher rates than those from U.S.-born families of all ethnic backgrounds, students from many Latin American immigrant families, particularly those from Mexico, attend college at lower rates than their peers from other immigrant families (Fuligni & Witkow, 2004; Glick & White, 2004). Many variations in college enrollment among immigrant families follow the socioeconomic differences discussed earlier. Yet some immigrant families are unaware of the complexities of the U.S. postsecondary system, and parents cannot advise their children about the proper steps to take towards enrollment in college. Minority and immigrant parents who have relatively little educational experience beyond primary school have less intimate experience with and knowledge about the secondary and postsecondary educational system, and the means by which students are accepted into and graduate from college. The knowledge necessary for successful negotiation of U.S. schools is great, and includes whether and how parents can choose alternative public schools if their own school is undesirable, which secondary schools promise the highest chances of college acceptance, and the courses, achievement levels, standardized tests, financial aid forms, and entrance applications that must be completed in order to be eligible for college. Numerous studies have documented that many immigrant parents, particularly those with low levels of education themselves, have more difficulty obtaining appropriate information (Cooper, Azmitia, & Garcia, 2002; Tornatzky, Cutler, & Lee, 2002).

In their analyses of the National Educational Longitudinal Study, Berkner, Chavez, and Carroll (1998) demonstrated how differences between Asian American and Latino students in four-year college application and enrollment had a great deal to do with coursework and performance in high school. Yet even among those who were qualified for college on the basis of their high school coursework and academic performance, Latino students were less likely to take college entrance exams and submit applications to four-year colleges. The importance of assisting students with taking the necessary steps to attend college, including exams, applications, and seeking financial aid, was demonstrated by the study finding that among those who were college-qualified, ethnic differences in four-year college enrollment disappeared among those students who had taken the necessary exams and submitted applications. Differences between low-income and middle-income students also were eliminated.

An important segment of the immigrant population involves families in which one or more parents who are undocumented, lacking U.S. citizenship or proper resident or refugee status. However, 91% of young children for whom one or both parents are undocumented are themselves U.S. citizens, most often because the children were born in the U.S. to undocumented parents (Yoshikawa & Kalil, 2011). These children, however, live in high crime, high poverty communities and yet have lower utilization of center-based preschool care to which other racial minorities have greater access. A U.S. Supreme Court decision (*Plyler v. Doe*, 1982) ruled that children who are undocumented are entitled to K-12 education, but recent legislation in some states attempt to limit their access public services, such as K-12 education, by threats of and actual deportation of the parents of undocumented children. Nonetheless, even when the children attend public schools, they are most often in impoverished neighborhoods with schools that are among the lowest in resources across the nation (Abrego & Conzales, 2010; Yoshikawa & Kalil, 2011). The undocumented status of their parents and of some immigrant children limits the families' access to adequate health care. Finally, although some states allow undocumented children to attend universities at the 'in-state' tuition rates, these youth are not eligible for federally subsidized financial aid. Unfortunately, there is very little research on the educational experiences of undocumented students in part because of concern with identifying students who have undocumented members of their family.

Educational Disparities in Immigrant Groups: Summary

Several general conclusions about the educational experiences for immigrant groups can be made. There are important educational strengths that are evidenced in immigrants, primarily in Asian American families, but also in some Latino immigrant families. These strengths including high educational aspirations, strong work ethic and, for some immigrants, strong family stability as well as relatively high levels of mental health. Asian immigrants appear better able to benefit from these immigrant advantages in part because of their access to social and cultural capital, relative to Latino immigrants, for whom their low socioeconomic status has a particularly strong influence on their educational experiences. Many immigrant families, across ethnic and racial groups, often have relatively lower levels of awareness of how to access public resources as well as the steps necessary to prepare children for higher education. The available evidence about families with undocumented parents suggests these families are disproportionately clustered around high crime, high poverty, and low-performing schools—more research is needed into understanding the effect of recent state legislation on families with undocumented parents for children's educational experiences.

Policies and programs designed to assist the educational development of immigrant groups must be tailored to the specific ages, groups, and social and economic contexts of the immigrant groups. Yet the above review implicates several important directions for redressing educational disparities associated with immigrant students and their families. First, it is hard to imagine that the educational fortunes of the neediest segments of the immigrant population will be raised without improving access to quality educational programming at the early stages of schooling, including the preschool and elementary school levels. The section below focuses on language minority students, many of whom are immigrant students, indicate the importance of early education for downstream success in high school. Second, a number of studies suggest immigrant families often lack the necessary information about how to take advantage of educational resources that are indeed available to them, including availability of preschool programs, effective ways in which school teaching practices can be supported in the home, and their eligibility for college attendance and financial aid. Third, a key element of providing such information is to directly address the language difficulties of many immigrant parents by making publications, forms, and school events and meetings available in the parents' native languages. Finally, programs and policies should build upon the cultural traditions and strengths of immigrant families (Gonzales, Dumka, Mauricio, & Germán, 2007). In particular, the valuing of education that is buttressed by a strong sense of obligation to the family are strengths of children of immigrants, as long as they are provided with the proper resources and means to fulfill their high aspirations to succeed in the U.S. educational system.

Educational Disparities and English Learners

One of the more critical issues associated with immigrant groups is that many of them have a native language other than English. Additionally, there are nonimmigrant children within ethnic enclaves and some families who are exposed to a language other than English at home. These differences in language usage call for education that responds in developmentally appropriate ways to the learning needs of these language-minority students. Just as the research prescribes culturally competent teachers to meet the needs of racial, ethnic and cultural minority students, language-minority children require teachers that have sufficient linguistic competence and the requisite knowledge regarding effective instructional techniques and interventions to meet the children's learning needs. Indeed, one of the more conspicuous areas in which educational disparities are readily evident can be seen in the dramatic differences in outcomes between students who are English Learners (ELs) and their native English speaking (ESs) counterparts. At times, this important linguistic difference is masked by and takes a back seat to racial and ethnic differences, given the overlap between some ethnic groups and proportion of EL students. Moreover, because educational attainment is directly related to the manner and nature of academic instruction, in particular the language in which instruction is provided, it behooves us to examine educational disparities from the perspective of ELs as compared to ESs and as distinct from other ethnic, racial, and immigrant differences discussed elsewhere in this report.

Broadly defined, ELs are students for whom the primary home or heritage language is other than English and includes those who are born in the US or immigrate at some later point. Such students commonly begin their formal education in U.S. public schools in kindergarten, albeit they can enter at any grade level. Whatever the entry point, ELs bring with them a substantial amount of development in and exposure to a language other than English. It should be noted that the U.S. government has long used and continues to use the term Limited English Proficient (LEP) for this population despite some criticism regarding the negative connotations of the word "limited." Consequently, the term English Learners (ELs) is used for the purposes of this report. However, no distinction is implied between the use of either term and the reader should consider them equivalent within the context of this analysis.

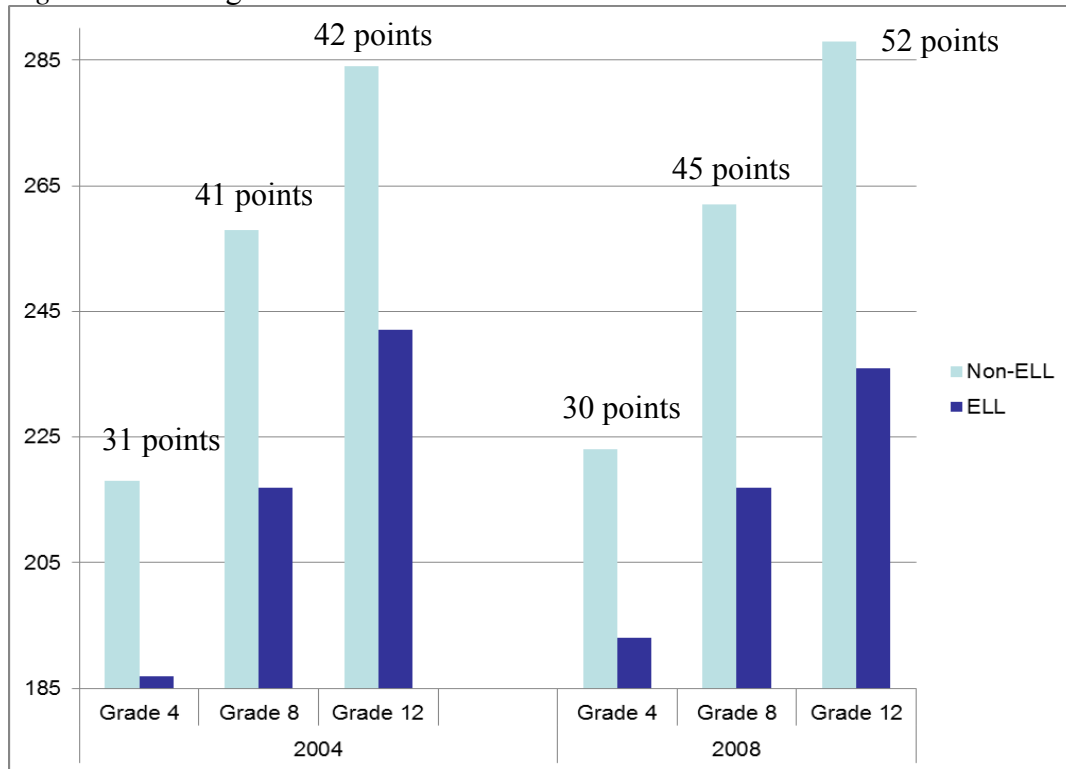
By mandate of the U.S. Supreme Court (*Lau v. Nichols*, 1974), ELs in public schools are commonly identified via informal means, such as by a questionnaire or survey filled out by students' parents, and these responses are used to help identify the presence of a language other than English in the home. If the home survey so indicates, children are then evaluated further (typically with a standardized test of English proficiency), and if found to be LEP, they become entitled to receive some special linguistic program to assist in learning English so they may then comprehend instruction. Special linguistic programs are loosely defined as those that are intended to support the development of proficiency in the English language to the point where the student is capable of comprehending instruction delivered only in English. These programs range from traditional, pullout English as a Second Language (ESL) or content-based ESL services, to various types of transitional (K-3 only) and maintenance (K-6) bilingual programs, and even dual-language or dual-immersion programs. Between 1992 and 2002, the percentage of ELs who received ESL services all in English or English only without any ESL services

increased substantially from 37.2 percent to 59.6 percent (Zehler et al., 2003). Recent factors, including increased anti-immigration sentiment, pressure to comply with Federal educational standards in English, and politically driven English-only regulations at the State level result in ELs receiving instruction only in English at levels much higher than 60% (Crawford, 2007; Goldenberg, 2008).

Achievement Gap between ELs and ESs

Examination of current data on ELs and ESs reveals perhaps the largest gap in educational attainment between any two groups. Data on the academic achievement of ELs as compared to their native English speaking peers are stark in demonstrating that even after exiting from ESL services (when it is presumed that they are sufficiently proficient in speaking and understanding English to benefit fully from general classroom instruction), ELs do not reach the same levels of academic attainment in English Language Arts or mathematics as their monolingual, English-speaking peers. According to statistics from the National Assessment of Educational Progress (NAEP), in 2004 fourth-grade ELs scored 31 points below ESs in reading (see Figure 5). What is perhaps even more alarming is that ELs do not close this gap in later grades. Rather, the gap increases to the point where ELs in eighth-grade scored 41 points lower than ESs in reading and were 42 points lower than ESs by the 12th grade. In spite of all the efforts to address these differences, the results from 2008, the latest data available, provide a similarly bleak picture. Figure 5 also shows that in 2008 NAEP data, fourth grade ELs were 30 points lower than ESs in reading, 45 points lower when in eighth grade, and 52 points lower than ESs in 12th grade. The gaps for mathematics achievement are very similar in both the degree of the difference in scores as well as the pattern of increase with additional schooling.

Figure 5. Reading Achievement for EL and non-EL Students 2004 and 2008



Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2004 and 2008 Long-Term Trend Reading Assessments

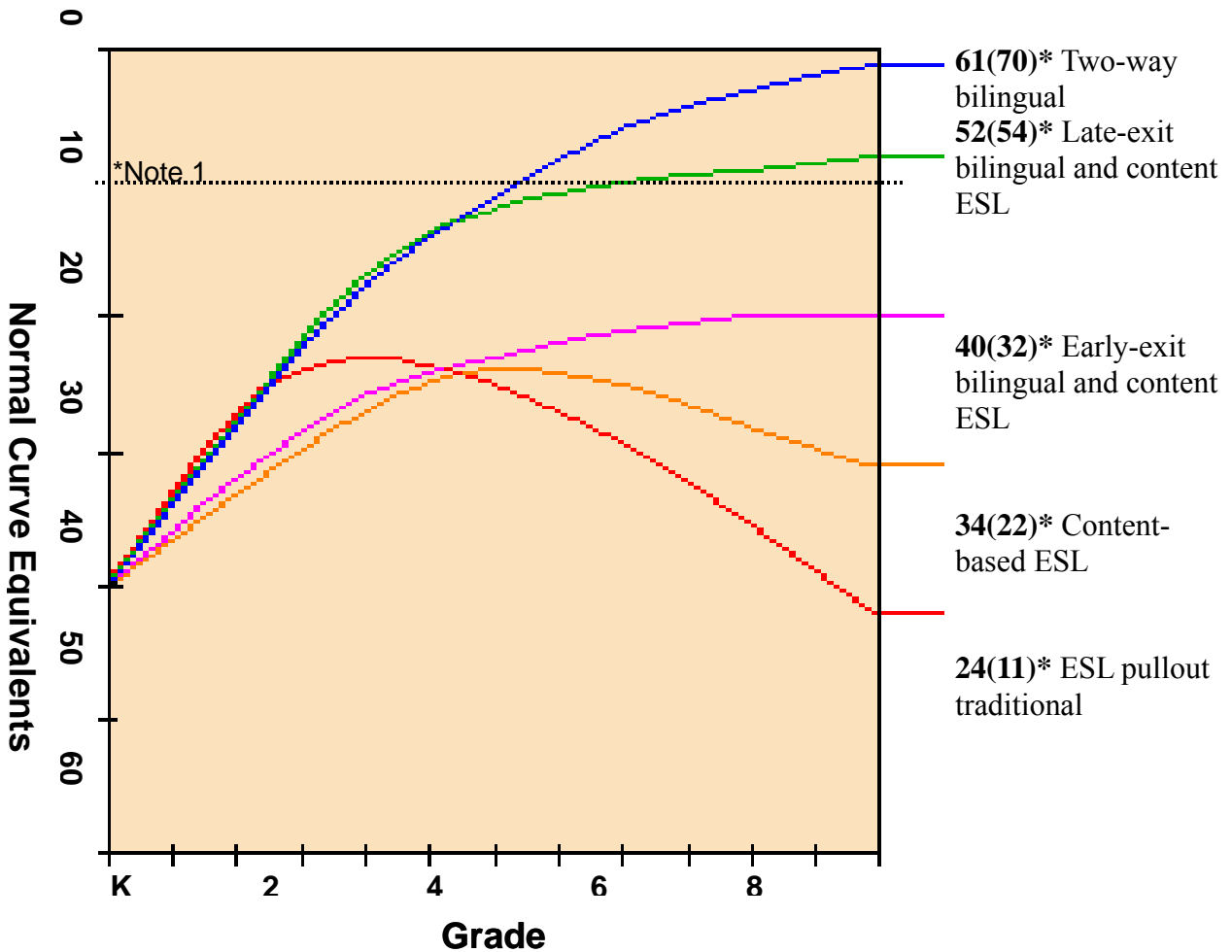
Although alarming, that scores for ELs decline over the entire grade spectrum should not be considered unexpected when viewed from a developmental perspective. For example, in evaluating the longitudinal data collected by Thomas and Collier (1997, 2002; see Figure 3), the academic trajectories of ELs in various types of bilingual education and ESL only programs reveal progressively poorer performance as a function of a decrease in native language instruction (or conversely, as a function of an increase in English only instruction). But what is also important is that ELs receiving traditional ESL services improve in their academic performance (relative to ESs) only up to the fourth grade. After that point, the longer ELs stay in school, the worse their academic achievement becomes, so that by the 12th grade, they reach only the 11th percentile (24th NCE) in reading as compared to the 50th percentile (50th NCE) for ESs. Thomas and Collier estimated that to reach grade level performance, an EL has to master a minimum of 15 months worth of curriculum in a 10-month period for six straight years (Thomas & Collier, 2002). In other words, to simply be *average*, an EL must learn 50% more each year than his or her native English speaking peers from kindergarten through the 5th grade.

These data speak to several important issues related to differences in academic achievement:

- (a) by the fourth grade ELs reach their academic peak, relative to their non-EL peers, yet remain significantly behind their monolingual English speaking peers in reading and mathematics;

- (b) the longer ELs remain in school, the larger the gap in achievement becomes; and
- (c) all other things being equal, the reasons for the gap are likely rooted in the interaction between 1st and 2nd language development and academic programming.

Figure 6. General Pattern of EL Student Performance on Standardized Test in English



*Note 1: Average performance of native-English speakers making one year's worth of progress in each grade. Scores in parentheses are percentile ranks converted from NCE's.

Figure adapted from Thomas, W. & Collier, V. (1997). *Language minority student achievement and program effectiveness*. Washington, DC: National Clearinghouse for Bilingual Education.

Factors Affecting the Achievement Gap between ELs and ESs

Why some EL groups achieve. As discussed in the section on immigration, some groups succeed while other groups experience less success, despite having similar immigration or non-English linguistic status. Although many Spanish-speaking Latinos struggle in school, other linguistic groups (e.g., several Asian language groups) succeed despite their language minority

status. As discussed in the section on immigration, some immigrant groups have more economic and social capital resources and their success in the U.S. is furthered by these resources. Individuals of Chinese and Japanese descent, for example, are typically more likely to fall into the upper ends of this SES stratification whereas individuals from other countries such as Vietnam, Cambodia, or Laos, are more likely to make up the majority of Asian Americans at the lower end of this spectrum. In comparison, Latinos in the US tend to have SES levels and status that is at best similar to but more often worse than that of African Americans and compare very unfavorably to Whites and Asian Americans (Chong & Kim, 2006). Given that Latinos comprise the single largest ethnic or racial minority group in the US, the consequences of low SES have disproportionate and more significantly adverse effects on ELs who are Spanish speakers.

There are also important linguistic resources that differentiate those groups with more educational success. Some immigrant/linguistic groups have come to the U.S. and fiercely maintained cultural and religious traditions including an emphasis on education in the native or traditional cultural language. In some cases, where immigrant portal communities have been established (e.g., Chinatown, Little Italy), they have been accompanied by schooling and education provided as part of the cultural tradition or through a parochial heritage (Rothstein, 1998). In New York City, for example, Polish and Ukrainian immigrants often attend church-sponsored Saturday school programs. Children from Chinese and Japanese backgrounds regularly attend after school programs and Saturday school where literacy in their native languages is enhanced by out of school language instruction. Irrespective of the purpose or intent, all of these cultural/linguistic practices provide a *de facto* "bilingual education" for their children that results in achievement levels comparable to that found for ELs who receive native language instruction through at least 5th-6th grade (Thomas & Collier, 1997; 2002). Students fortunate enough to live in and receive such types of ancillary education in addition to a public school program have academic outcomes comparable to monolingual English speakers. Unfortunately, such practices are not common among Spanish-speaking groups or other communities comprised of various racial and ethnic minority groups. Where no such resources or opportunities are available, ELs remain at high risk for poor achievement and low educational outcomes (Rhodes, Ochoa, & Ortiz, 2005).

ELs early language development. The degree to which socioeconomic factors and parental level of education affect educational attainment can be seen in studies of the impact of early language development on children. Research indicates that by the age of three, children have already learned to communicate effectively (Cummins, 1984; Fromkin & Rodman, 2010), and their later academic achievement is dramatically influenced by the degree to which they have been previously exposed to language at this early point in their lives. Consider that the typical EL arrives in kindergarten at the age of 5 years having heard significantly less English than children in the lowest of the low SES group, and the implications regarding the degree to which they will likely become academically at-risk are evident and staggering. In some cases, ELs may arrive and enter the school system at a much later age and grade than Kindergarten without any appreciable prior exposure to or experience with English, and many times without any formal education in their own native language as well. Late school entry EL students who enter the U.S. public school system with inconsistent, limited, or no educational experiences are at the highest

risk for failure among all ELs (August & Shanahan, 2006; Cummins, 1984; Goldenberg, 2008; Rhodes et al., 2005).

Prior educational experiences in the native language, and the amount of opportunities for gaining experience in English are all powerful factors in mediating the academic trajectory of ELs in U.S. public schools. Therefore, any examination of variability in the academic outcomes between language minority groups (e.g., Asian groups vs. Latino groups) will lack substantial validity unless there is careful scrutiny and proper consideration of differences. Although some language minority groups may well possess such advantages, the reality is that the vast majority of EL students come from low SES backgrounds, have limited formal educational experiences in their heritage language, and do not have any significant opportunity for learning or maintaining academically appropriate language models of academic English in the home (Chong & Kim, 2006). Consequently, most EL students remain at very high risk for academic failure especially in comparison to their native ES peers.

Psychological Science and Achievement of EL and ES Students

Perhaps because we all learned to speak before we were even aware of the process or its significance in our lives, many of us believe we have an intuitive understanding of how language develops and interacts with learning. The typical understanding usually revolves around the idea that children just naturally pick up language and that if we want them to succeed in school, we need to teach them in English (either primarily or exclusively). If we assume that success in school for ELs means speaking English with no accent, then teaching in English only is quite sufficient. However, if success for ELs means reaching levels of academic achievement comparable to that of ESs, then research already informs us that in general, it will not and cannot be attained if we teach ELs in English only.

One of the main difficulties in understanding why the gap between ELs and ESs occurs is that educators and public policy tend to focus on short-term outcomes of various educational practices. It is only when patterns of achievement are examined at the very end of the educational experience, not at an arbitrary midpoint, that we can understand the sequelae of educational practices for EL students. If there is any finding at the intersection of psychology and education that could be construed as essentially incontrovertible, it is one aptly summarized by Goldenberg (2008): "**Teaching students to read in their first language promotes higher levels of reading achievement in English**" (p. 14; emphasis added). On the surface, such a statement seems wholly counterintuitive—teaching children in a language *other* than English results in better achievement in *English*? The answer is and remains an unequivocal *yes*.

In 2006, the National Literacy Panel (August & Shanahan, 2006) provided the latest of five independent meta-analyses examining the relationship between native language educational programming (i.e., bilingual and ESL services) and academic achievement in English. Their findings mirrored all four of the previous meta-analyses in concluding that teaching children to read in their home language promotes better reading achievement in English (Goldenberg, 2008). It is critical to note that this finding reflects not one or two, but five separate meta-analyses, all of which came to the same conclusion. These include the studies conducted by Greene (1997), Rolstad, Mahoney, and Glass (2005), Slavin and Cheung (2005), and Willig (1985). It is not always the case that two meta-analyses arrive at the same conclusion, but with regard to ELs,

five meta-analyses conducted over two decades have all yielded the same conclusion, providing a compelling demonstration of the robustness of the finding. The accumulation of research findings needs to drive academic policy designed to address the educational disparities between ELs and ESs.

Thomas and Collier's (1997, 2002) longitudinal data provide additional insight into the finding and how teaching in one's native language affects development over the course of a student's academic career. As was previously discussed, the academic trajectory of ELs reaches its zenith in fourth grade and declines precipitously every year after that, creating an ever-widening achievement gap between ELs and ESs. Efforts to comply with Title III of NCLB, which requires U.S. states to demonstrate that ELs are making adequate progress toward achieving English language proficiency, means that ELs who are getting ESL services will likely have reached sufficient proficiency by fourth grade to permit (by State regulations) the withdrawal of ESL services. This appears to make sense because the trajectory of ELs from kindergarten to fourth grade is steep and shows significant improvement in academic performance. By the fourth grade, if progress remained linear, ELs would be expected to "catch up" academically to their monolingual English speaking peers in just one or two more years. Clearly, this is not what happens, as ELs plateau in fourth grade and then begin to drop relative to ESs each year thereafter. Such is the danger in looking at only a cross-section of the entire academic record. English learners getting ESL services appear to be making rapid progress—even greater than that of ELs getting instruction in the native language—but that advantage ceases in fourth grade and from that point forward it is the amount of native language instruction received that dictates the final academic outcome for ELs.

In Figure 6 above, we see that the trajectory for ELs receiving traditional ESL services crosses the trajectory for ELs receiving transitional bilingual education services precisely at the 5th grade mark. The intersection of these two trajectories clearly indicates that there is no difference in reading achievement between the two groups in 5th grade. Conversely, educational researchers must examine the effects of bilingual education as the effects unfold throughout the course of children's schooling. And in doing just this, we know that the EL students in transitional bilingual education programs continue to improve after 5th grade, and do not even reach their peak until about 8th or 9th grade. More importantly, these students do not lose ground academically relative to their monolingual English-speaking peers. Conversely, EL students receiving ESL services follow the well-known pattern that shows a plateau in reading achievement in fourth grade and a significant decline relative to native English speakers in every grade thereafter. By the 12th grade, students in transitional bilingual education programs are expected to reach the 32nd percentile rank, about 18 percentile ranks below native English speakers. On the other hand, ELs receiving ESL services only are expected to reach the 11th percentile rank, or 39 percentile ranks lower than native English speakers.

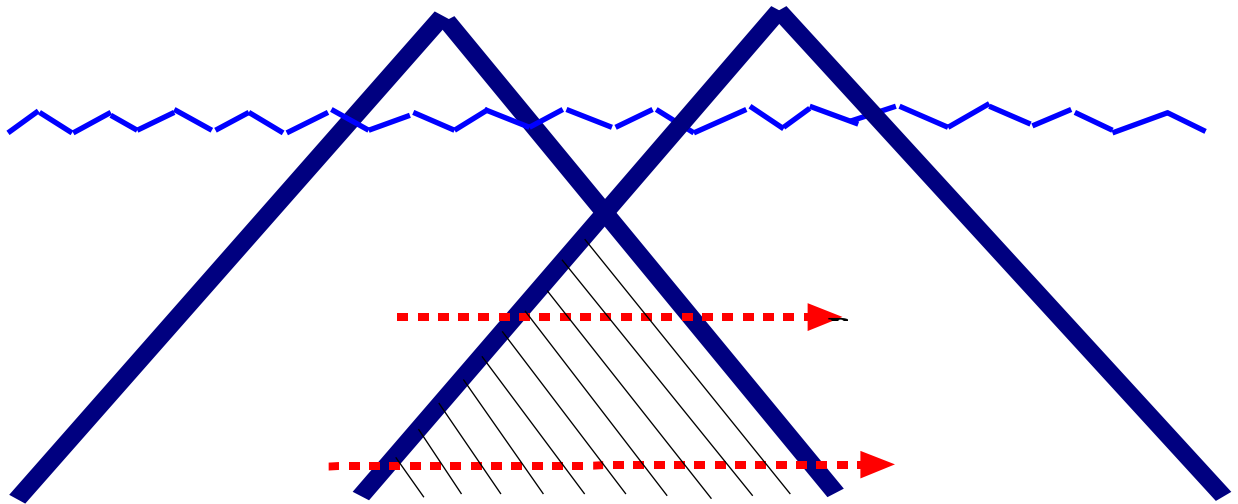
That native language instruction provides significant academic benefits to ELs is simply not debatable when examining the evidence across the entire range of schooling. One of the more elegant explanations of the mechanism that binds language development and academic achievement comes from the work of Jim Cummins (1984) who originally conceptualized a difference between various levels of language development and proficiency. Cummins (1984) described two levels of language development: basic interpersonal communication skills (BICS) and cognitive-academic language proficiency (CALP). The aspects of language that characterize

BICS include primarily the ability to use spoken language for general conversational purposes and to get one's basic needs met. This level of proficiency can be attained in 1 to 3 years regardless of when the language is learned. It is the level of proficiency that all children bring with them when they enter Kindergarten at about the age of 5. In contrast, CALP is a higher level of proficiency that requires formal education for at least 5-7 years (and possibly more) and is characterized by the ability to engage in advanced cognitive and metalinguistic processes in the language, including induction and deduction, as well as being able to communicate thoughts and ideas with clarity and efficiency. CALP is the type of proficiency that results from formal instruction and is required for academic success beyond the 4th grade, and it is the reason that the academic curriculum generally shifts from "learning to read" to "reading to learn" at around this grade level.

By focusing on reading to learn in language proficiency, Cummins (1984) was able to demonstrate his developmental interdependence hypothesis (also known as the "Iceberg Model") where BICS is the small, visible part of language development and CALP is the larger and deeper structure that is hidden and less obvious than BICS (see Figure 7). Cummins explained the relationship between first and second language acquisition by postulating that when one language is well developed (to the CALP level), it facilitates the development of the second language either by a process he calls common underlying proficiency or by linguistic transfer of existing knowledge. As is evident in Figure 7, Cummins' conceptualization explains why teaching reading in the native language promotes success in reading and learning in the second language—the more the first language is developed (ideally at least until CALP begins to emerge), the more there is to transfer to the second language. In other words, having successfully learned to read in the native language is a skill that transfers easily into learning to read in the second language (English).

Likewise, content and knowledge acquired through instruction in the native language that was fully comprehensible from the beginning is content and knowledge that is applicable and easily transferable into the second language (e.g., that there are seven continents, or 50 states in the U.S., or the rules for long division). When native language instruction is provided at less than optimal levels, such as that which would occur in transitional bilingual education programs where English becomes mandatory after 3rd grade or when no native language instruction at all is given (ESL services or English-only immersion), academic achievement declines accordingly as there is less and less development to facilitate transfer and greater limitations in acquired content due to comprehension problems from the outset of schooling. To reiterate an important point, in the absence of native language instruction, ELs are asked to master the academic content of the curriculum while, at the same time, learning to comprehend and speak the very language in which the content is being delivered (Goldenberg, 2008). By contrast, native English speakers are only required to do the former given that they already have sufficient English proficiency that permits them to comprehend instruction.

Figure 7. Cummins' Developmental Interdependence Hypothesis ("Iceberg Model")



Source: Cummins, J. (1984). *Bilingual and Special Education: Issues in Assessment and Pedagogy*. Austin, TX: PRO-ED.

In essence, the BICS-CALP distinction is the principal reason why ELs are unable to close the gap in achievement. ELs begin school with similar levels of language exposure and proficiency in their native tongue as their English speaking peers possess in English. But then schools tragically force ELs to begin acquiring a new language while effectively ignoring the native language development they brought in with them. This sets ELs back about five years relative to ESs and suggests that as ESs are developing CALP by the 5th grade, ELs have only recently acquired BICS, a level of proficiency inadequate for subsequent academic success. Thus, this artificially induced gap in language development begun at the age of five creates a divide that English-only instruction cannot overcome (Rhodes et al., 2005).

Redressing Educational Disparities for ELs

Despite the importance and significance of what the science tells us, there are no simple solutions to the problem of disparate academic outcomes for ELs. Although the research offers a direction—increase instruction in the native language—there are admittedly many obstacles that would need to be overcome before such efforts could become reality. There is no denying that teaching to students in their native language through at least the 5th grade is the only manner in which truly equitable outcomes are likely to be achieved. But many argue that with the hundreds of languages spoken by children in the schools, how is it even possible to provide such instruction to all of them? How could we even find enough teachers who could speak and instruct in languages other than English? Although the objection is certainly reasonable and it may well be impractical to provide a linguistically equitable education to all EL students at once,

this should not deter efforts to provide instruction that leads to better academic outcomes to as many as is practical. As noted previously, by far the largest language minority group are Spanish speakers and any steps toward providing empirically validated instruction for this group to promote better academic achievement and reduce existing educational disparities can only be seen as a step in the right direction, even if it does not yet assist speakers of other languages. Another practical challenge to implementing empirically supported forms of bilingual education is the shortage of teachers who have been trained to provide competent bilingual education.

Attempts to establish equitable outcomes and reduce educational disparities among ELs cannot be inhibited by reasons that are not rooted in sound psychological and educational principles and the prevailing scientific knowledge. Few issues are as divisive and emotionally laden as bilingual education, perhaps because it is not well understood and more so because it seems somewhat anti-patriotic on the surface. To this end, an anti-bilingual education stance has been a longtime staple in national politics. Yet, the political side of this issue was ostensibly settled in the 1974 *Lau v. Nichols* ruling in which the U.S. Supreme Court opined,

Under these state-imposed standards there is no equality of treatment merely by providing students with the same facilities, textbooks, teachers, and curriculum; for students who do not understand English are effectively foreclosed from any meaningful education. Basic English skills are at the very core of what these public schools teach. Imposition of a requirement that, before a child can effectively participate in the educational program, he must already have acquired those basic skills is to make a mockery of public education. We know that those who do not understand English are certain to find their classroom experiences wholly incomprehensible and in no way meaningful.

Researchers continue to provide evidence that bilingualism has positive benefits, not only for ELs but for ESs as well. Consider the Thomas and Collier (1997, 2002) longitudinal data as illustrated in Figure 6. The educational program that promotes the very best outcomes for ELs (dual-language or dual-immersion) also produces the same outcomes for ESs who form the other "side" of such programs where both groups are taught academic content in both languages through the 5th or 6th grade. Students in this type of educational program reach the 70th percentile rank (61 NCE) as compared to the 50th percentile rank for monolingual English speakers. Thus, dual-language or dual-immersion programs are, in essence, enhancement programs—ones that deserve greater attention and increased funding. Bilingualism has other benefits that are only beginning to be understood, including a protection factor against the development of Alzheimer's Disease, better than average ability in working memory, increased ability to multitask, and greater metalinguistic awareness that may facilitate reasoning and problem solving abilities (Bialystok, 2010; Dreyfus, 2011). Rather than being associated with anti-immigrant attitudes or political viewpoints, psychological and educational science are clear in establishing bilingualism as an extremely desirable trait with positive psychological, academic, and physical health benefits. To deny such gifts to our nation's children, whether they be ELs or not, seems unforgivable. And if the desire to reduce educational disparities for ELs is earnest and sincere, it will need to adhere closely to the current scientific evidence that points unequivocally toward the value and importance of children's heritage language or there will be little hope of success in eliminating educational disparities for ELs.

Intersection of Gender and Race in Educational Disparities

As mentioned in the introduction, boys' academic achievement lags behind that of girls in nearly every category. Gender disparities have been noted at the start of kindergarten and continue through high school and into college. Interestingly, these disparities in the US are reflected in similar gender disparities in other parts of the world (Eurydice, 2010; van Langen, Bosker & Dekkers, 2006; Worrell, 2006).

Historically, males have scored higher than females on mathematics achievement but recent trends suggest that overall disparities in mathematics in grades K through 12 are declining and may have disappeared (Hyde et al., 2008; Robinson & Lubienski, 2011). However, closer examination finds small differences at the highest levels of achievement, with boys tending to outperform girls. Importantly, researchers have found males express stronger interest in mathematics than females (Else-Quest et al., 2010), which may be related to why gender disparities continue in careers associated with mathematics and science domains.

Conversely, females have outperformed males on reading achievement throughout K – 12 education for five decades. There are some recent signs that the magnitude of the gender gap in reading is shrinking compared to 1990s, but the gap continues to remain significant (i.e., between .2 and .3 sd; Robinson & Lubienski, 2011). Importantly, the gender gap in reading persists or even grows across K-12 education (Robinson & Lubienski, 2011).

The academic disparities in reading achievement mirror gender disparities in behavioral indices of academic adjustment: boys are rated by teachers as being at greater risk for behavioral problems, including disciplinary referrals, suspensions, and expulsions. More generally, girls are perceived and expected to be better behaved in school, to be more on-task than boys, and to have greater motivation for academic activities (Klein, 2004). Koeke and Harkins (2008) found that teachers and students have a more distant and conflictual relationship when the student is male. Boys are more often overrepresented in referrals for special education, particularly for emotional disorder (ED), and Oswald, Best, Coutinho and Nagle (2003) found a 3.5 odds ratio favoring boys for ED classification. Placement in special and alternative education settings can group together those with behavioral problems that may lead to 'deviancy training' for those referred for special and alternative education (Dishion, McCord, & Poulin, 1999; Dodge, Lansford, & Dishion, 2006). In short, although segregating the youth with delinquency problems may effectively reduce the contact these youth have on the general education population, the segregation can lead to exacerbation of problem behavior. Additionally, placement in alternative education settings does not require quarterly review of individualized educational programs, as is required under IDEA for students placed in special education. Consequently, placement in alternative education for students color effectively removes them from general education without the quality assurances provided by students placed in special education.

Taken together, lower functioning in reading and higher rates of behavioral problems combine to undermine boys' ability to close the gender gap for two reasons. First, because reading skills are fundamental for developing mastery in other academic domains—including writing, social studies, and science—boys' functioning at lower levels of reading literacy can set the stage for a lower trajectory of academic achievement. Second, higher rates of behavioral

disruptions can undermine boys' ability to function in classrooms as well as their relationships with teachers, who prefer girls' gender-typed behavior over that of boys. Orr (2011) found that girls are more likely to have positive academic attitudes and social behavior, compared to boys.

Current research investigating teachers' expectations and relationships with students suggests teacher-student interactions may have a role in maintaining or expanding these educational disparities between boys and girls, as teachers have been shown to reinforce stereotypes about males and females related to math and reading abilities. Moreover, girls who manifested more sex-typed behavior associated with girls and femininity were rated more favorably by teachers, relative to boys who manifested more sex-typed behavior associated with boys and masculinity. On the other hand, boys' attitudes toward school had negative relationships on their grades, even after controlling for cognitive abilities (Orr, 2011). Robinson and Lubienski (2011) proposed and found evidence to support a halo effect in teachers' ratings of girls' achievement: teachers rated girls' mathematical and reading achievement higher than boys at comparable levels of ability at kindergarten and first grade. Alternatively, McKown and Weinstein (2002) found that females' scores were more affected by teachers underestimating their abilities in mathematics compared to males. Research also suggests that the gender gap may be influenced by boys' greater difficulty coping with stress at home. That is, young boys' school behavior was found to be more sensitive to disruptions in the home than girls (Cooper, Osborne, Beck & McLanahan, 2011). Some research suggests that African American boys are disadvantaged by their mothers' academic stereotypes favoring African American girls, even after controlling for actual academic achievement (Wood, Kurtz-Costes, Rowley & Okeke-Adeyanju, 2010). In short, myriad factors are associated with the gender gap disadvantaging boys in their achievement ranging from their sensitivity to stress in the home, greater behavioral difficulties, sex-typed socialization that associates masculine-type behavior with disruptions and lower achievement, and teachers appearing to disadvantage boys in perceptions of academic ability. These behavioral, social, and interpersonal challenges in school and at home appear to compound the achievement gap between boys and girls, which is present early in childhood. On the other hand, there is evidence for some disparities in math achievement disadvantaging girls, which may result from gender socialization patterns.

In an important study, Matthews, Kizzie, Rowley and Cortina (2010) examined the progression of academic skills longitudinally and found that although behavior problems and social factors predicted problems in reading and academic achievement for African and White American boys, literacy skills accounted for lower academic trajectories over and above the social and behavioral problems. Matthews et al. argued that these basic literacy skills were more proximal explanations of the gender gaps than were the social and behavioral risk factors (see also Duncan et al., 2007), with externalizing behavioral factors playing a relative minor role in academic achievement. Matthews et al. challenged the current emphasis on behavioral problems in attempts to reduce the gender gap in achievement and suggested that more focus is needed on the academic skills that underlie literacy and reading achievement.

Discipline gap. There are significant racial disparities in the disciplining of students, with ethnic and racial minority students—Latino, African American, and Native Americans—being disciplined in schools more often and more harshly relative to White and Asian American students, with the greatest risk for African Americans and with boys of color (see review by

Gregory, Skiba & Noguera, 2010). As mentioned above, boys enter elementary school with higher rates of behavioral problems, relative to girls. Do these racial and gender disparities in discipline, therefore, reflect reflexive reactions to different rates of problem behaviors in the classroom? Most teachers, when asked, report that their disciplinary practices are justified by student behavior and any differences across gender and race reflect actual differences in classroom and peer discipline (Gregory & Thompson, 2010). Alternatively, do these rates in disciplinary practices reflect racial and gender bias against boys and ethnic and racial minority children? There is clear evidence supporting the role of racial bias and discrimination in disciplinary practices and evidence challenging the hypothesis that the discipline gap only reflects proportional responses to different behavioral patterns (Skiba, Michael, Nardo & Peterson, 2002; Skiba et al., 2006).

Teachers' responses to students have resulted in racial disparities, with ethnic and racial minority students receiving behavioral sanctions at higher rates (Skiba, Michael, Nardo & Peterson, 2002). Racial disparities persist even after controlling for socioeconomic class, neighborhood features, and severity of the offense (Wallace, Goodkind, Wallace, & Bachman, 2008). Racial disparities are most pronounced in referrals requiring subjective interpretation of student behavior, such as deviance and disrespect, but disparities disappear for the more serious behavioral disruptions that are detected more objectively, such as smoking or physical altercations (APA Zero Tolerance Task Force, 2008; Gregory & Weinstein, 2008; KewelRamani, Gilbertson, Fox & Provasnki, 2007, Skiba et al., 2002). Racial disparities persist when teachers are able to exercise their discretion in making referrals and when school policies (e.g., Zero Tolerance) require teachers to refer automatically for specific behavioral disruptions (see APA Task Force, 2008). Disciplinary referrals have been shown to be devastating to the educational achievement of targeted students (APA Zero Tolerance Task Force, 2008). Consequently, racial disparities in disciplinary practices play a critical role in the racial disparities in educational achievement, particularly for African American students (Gregory & Weinstein, 2008).

Recent research demonstrates that individual variation is critical to understanding and reducing the disciplinary gap. Teachers frustrated by a student for whom they make repeated referrals perceive a problem student. What these teachers may not realize is that most of these students (e.g., 86% in Gregory & Weinstein, 2008) are not referred in all of their classrooms, suggesting that many of these referrals are specific to particular teachers' interactions. Gregory and Weinstein found more between classroom variability than within student variability, suggesting that student discipline reflects student-classroom interactions. Situations that teachers attribute problem students should be viewed as problems in the student-teacher relationship (Luiselli, Putnam, Handler & Feinberg, 2005; Pane, 2010). Students are more defiant and act out more often in classrooms in which the teachers are perceived by the target student (and other students) as being uncaring and having low achievement expectations, but these same students cooperate with other teachers whom they perceived as caring and as having high expectations (Gregory & Weinstein, 2008).

Consequently, one explanation for the racial disparities in discipline appears to be differential selection (Piquero, 2008; Gregory et al., 2010) in which ethnic and racial minority youth are more likely to be selected as violating school or community policies even when rates and severity of rule violations are not different than those of Whites. In support of the

differential selection hypothesis is that racial disparities in behavioral referrals, school suspensions and expulsions reflect teachers differentially selecting to punish ethnic and racial minority youth for infractions associated with more subjective criteria, such as defiance to challenges to teachers' authority, rather than behavior that is more objectively evaluated, such as physical fights and possession of weapon (Gregory & Weinstein, 2008; Skiba et al, 2008; Vavrus & Cole, 2002). Gregory et al. attributed teachers' discriminatory use of discipline practices to racial bias, cultural mismatch, and stereotypes of academic behavior of minority youth. The cultural mismatch hypothesis suggests a mismatch between student and teacher cultural expectations for behavior in which behavior that may be considered normative by students is interpreted as hostile, threatening, and defiant by teachers. This differential selection of ethnic and racial minority boys, along with disparities in reading, set the stage for higher rates of educational underachievement for boys of color.

Social Identities and Ethnic/Racial Self-Consciousness

In the sociohistorical context of the US, the construct of identity is intricately linked to educational disparities, and includes not only the question, “Who am I,” but also “Who am I in this social context” and “To what groups do I belong?” Not surprisingly, many of the major theoretical formulations explaining the achievement gap are identity-based theories (Aronson, 2002; Aronson & Steele, 2005; Fordham & Ogbu, 1986; Ogbu, 1978, 1989, 1992, 2003, 2004; Ogbu & Simons, 1998; Steele, 1997, 2003, 2010; Steele & Aronson, 1995, 1998). Additionally, there have been studies elucidating a range of cultural constructs (e.g., awareness of bias), some of which have implications for educational achievement outcomes. Before discussing the research in this area, we discuss awareness of bias and then provide a brief overview of ethnic identity and racial identity. In addition to being two of the most salient cultural identity constructs in this literature, ethnic and racial identity often frame how individuals respond more generally (Chavez-Korell & Vandiver, in press; Whittaker & Neville, 2010).

Awareness of Bias

A critical component of ethnic and racial minority children’s development is growing awareness of their status as a member of a stigmatized group (McKown & Weinstein, 2003), and nearly all ethnic and racial minority children report knowing that others—family or peers—have been the target of discrimination (Quintana, 1998; Brown, 2008). Children often report blatant forms of discrimination as the most common form of discrimination, in part because blatant forms are most easily detected by children (see Brown & Bigler, 2005). Blatant forms of discrimination, which may involve, for example, racial epithets and other verbal assaults are the most commonly reported experience with discrimination and are reported by the majority of children by middle childhood (Simons et al., 2002). More subtle expressions of bias (e.g., microaggressions) may be more pernicious and may occur outside children’s awareness. Adolescents, compared to children, report a greater frequency of more subtle expressions of bias (Fisher, Wallace, & Fenton, 2000).

Ethnic and Racial Identity

Ethnic identity and racial identity are similar constructs and have similar definitions (Worrell & Gardner-Kitt, 2006), although racial identity is most frequently discussed in relationship to African and European Americans whereas ethnic identity is discussed with regard to all ethnic groups. In 1990, Helms (p. 3) defined racial identity as “a sense of group or collective identity based on one’s *perception* that he or she shares a common racial heritage with a particular racial group” [emphasis in the original]. A few years later, Phinney, DuPont, Espinosa, Revill, and Sanders (1994) defined ethnic identity as the “feeling of belonging to one’s group, a clear understanding of the meaning of one’s [group] membership, positive attitudes towards the group, familiarity with its history and culture, and involvement in its practices” (Phinney et al., 1994, p. 169). The similarities in these definitions—a sense of belonging to or shared heritage with a group—are clear, and there is a growing body of literature on the relationship of these constructs to other important constructs, including academic achievement.

In a more recent study, Worrell, Mendoza-Denton, Telesford, Simmons, and Martin (2011, p. 637) defined Black racial identity as “a set of attitudes held by individuals of African descent [that] includes how these individuals view (a) themselves as Blacks, (b) other individuals

of African descent, and (c) individuals from other racial and ethnic groups.” This definition is in keeping with the shift from a stage model to an attitudinal model in the racial identity literature (see Cross & Vandiver, 2001; Sellers, Smith, Shelton, Rowley, & Chavous, 1998). We now consider how these constructs are related to academic achievement.

Ethnic identity and achievement. Much of the research on ethnic identity has used the Multigroup Ethnic Identity Measure (Phinney, 1992), which has two subscales, an ethnic identity subscale (i.e., feelings of belonging to and engagement with the ethnic group you belong to) and other group orientation subscale (a willingness to engage with ethnic groups other than one’s own). Findings on the relationship between ethnic identity and academic achievement have been mixed. Several studies have indicated that GPA and ethnic identity scores are not meaningfully related (Guzman, 2002; Ivory, 2003; Meyer, 2004; Shermack, 1996; Sobansky, 2004; Velez-Yelin, 2002); however, other group orientation scores were correlated with GPA in two of these studies (Guzman, 2002; Shermack, 1996). In another study, Smith, Levine, Smith, Dumas, and Prinz (2009) reported positive correlations between ethnic identity and reading and listening comprehension with a medium effect size ($\approx .30$) in a sample of third graders. In contrast, Worrell (2007) found that ethnic identity had a meaningful *negative* relationship ($-.41$) with school GPA and other group orientation a meaningful *positive* relationship ($.38$) with school GPA for academically talented, African American middle and high school students, but these relationships were not present for Asian Americans, European Americans, and Latinos ($.00 \leq r \leq .04$). Worrell and White (2009) replicated the findings with African Americans in a sample of students from an urban high school, and in the latter study, they also reported an inverse pattern of relationships for Asian American students—that is, ethnic identity was positively related to academic achievement and other group orientation was negatively related to academic achievement. Worrell (2007) suggested that the relationship between ethnic identity and achievement is probably related to the messages received in different academic contexts.

Other research suggests that ethnic identity’s relationship with academic achievement may be mediated by other constructs that are more proximal. For example, ethnic identity’s relationship to achievement was mediated by self-esteem in a sample of African American college students (Cokley & Chapman, 2008) and in a sample of Hispanic adolescents (Schwartz, Zamboanga & Jarvis, 2007). However, although ethnic identity is associated with well-being and self-esteem in *some* studies (Smith & Silva, 2010), the strength of this relationship is inconsistent across studies and ethnic groups (e.g., Phinney, 1992; Phinney, Cantu, & Kurtz, 1997; Worrell, 2007). Thus, there is little evidence that ethnic identity is consistently related to academic achievement.

Racial identity and academic achievement. Despite vigorous contestation (see Ogbu, 2008), both theory (e.g., Fordham & Ogbu, 1986; Ogbu, 1989) and empirical research (e.g., Farkas, 2008; Ford, Grantham, & Whiting, 2008) suggest that *some* African American students associate being academically successful with “acting White,” and adopt attitudes and behaviors that are incompatible with academic achievement. Students with anti-White sentiments may have ambivalence in acting in ways that would be rewarded in school and these attitudes reflect ambivalence about conforming to the more general expectations and values of the broader society. This claim has been bolstered by studies that document a positive relationship between racelessness and academic achievement (e.g., Arroyo & Zigler, 1995). Conversely, Downey

(2008) has challenged Ogbu's (1984) notion that African Americans, and other minorities in similar ethnic-racial contexts, develop an oppositional cultural orientation to school. Ogbu suggested that doing well in school would be seen as selling out or 'acting White' and stigmatized by African American peers. However, research indicates that African Americans have positive views toward school and the potential for schooling to advance their life conditions (see review Downey, 2008). Instead, Downey attributes racial disparities in education to the more burdensome route to educational success related to disparities in social capital as well as barriers to earning good grades and navigating the academic climate in a successful manner. Additionally, much of the problem with recent investigations into African American and other racial minority identities is premised on identity as a singular construct rather than a set of different identity attitudes as is generally accepted (see Cross & Vandiver, 2001; Nasir, McLaughlin & Jones, 2009; Sellers et al., 1998; Worrell et al., 2011). Thus, contemporary research in this area has focused on the relationship between achievement and several different racial identity attitudes (e.g., Assimilation, Multiculturalist, Nationalist, Anti-White) of African American students.

In most cases, racial identity attitudes are not directly related to academic achievement (Awad, 2007; Byrd & Chavous, 2009; Lockett & Harrell, 2003), but there are a few relatively consistent findings in the literature. For example, anti-White racial identity attitudes have modest to moderate inverse relationships with academic achievement and other school-related behaviors and attitudes, both directly (Cokley & Chapman, 2008; Witherspoon, Speight, & Thomas), and mediated by other variables such as engaging in problem behaviors (Gardner-Kitt, 2005). Other researchers have shown that different profiles of racial identity attitudes are associated with different levels of academic performance.

Other ethnic and racial constructs. The relationship of several other cultural attitudes to academic performance has also been investigated. Positive views toward outgroups appear to be associated with academic achievement. Openness to outgroups relations was positively associated with academic achievement (Guzman, Santiago-Rivera & Haase, 2005). Gloria and Hird (1999) also found that openness to outgroups was associated with adjustment in a predominately White university. These trends suggest, in part, that acculturating to cultural norms in the school community, whereas those who resist acculturation may be perceived as not being academically competent. It is also likely that those who are not academically successful may feel alienated from the academic culture in their schools. Students who report high levels of discrimination also report low levels of adjustment in schools (Altschul, Oyserman, & Bybee, 2008).

It may be unsurprising that anti-White sentiments are inversely predictive of academic achievement and positive outgroups attitudes are positively predictive of academic achievement, but many have expected that strong ingroup attachment would be a consistent predictor of achievement. Indeed, in some contexts ingroup allegiance is positively associated with academic achievement (Altschul, Oyserman & Bybee, 2006; Byrd & Chavous, 2009; Fuligni, Witkow, & Garcia, 2005; Oyeshike Smith, Levine, Smith, Dumas & Prinz, 2009). However, there are, however, other contexts in which positive ingroup affiliation or racial centrality is inversely associated with academic achievement (Altschul, Oyserman & Bybee, 2008; Byrd & Chavous, 2009; Cole, Matheson & Anisman, 2007; Devos & Cruz Torres, 2007; Guzman, Santiago-Rivera, & Haase, 2005). A closer examination of these studies helps reconcile this apparent

inconsistency. Byrd and Chavous identified differences in contexts in which the connection between in group affiliation and achievement was reversed: strong racial pride in higher SES contexts was inversely related to academic grades whereas racial pride in lower SES contexts was associated positively with grades. In another study, Chavous et al. (2003) used cluster analysis to classify students into four groups. A cluster that involved centrality of ingroup affiliation, positive orientation toward the ingroup (positive private regard), and awareness of the ingroup being stigmatized in society (negative public regard) was associated prospectively with higher participation in higher education. This set of studies makes clear that there is not a simple relationship between ethnic or racial identities and academic achievement. The forms of identity that promotes academic success need to reflect the complex sociocultural context of ethnic and racial minority students in their schools (Nasir, 2012).

Devos and Cruz Torres (2007) found that when Latinos had implicit stereotypes that their ingroup was not academically successful, those who identified closely with their ingroup were less academically successful; conversely, for those who did not stereotype their ingroup as being academically unsuccessful, being closely identified with their ingroup was associated with higher levels of academic achievement. Hence, ingroup affiliation may be counterproductive if students have internalized negative stereotypes about their ingroup, but ingroup affiliation is associated with academic success in the absence of these negative ingroup stereotypes. In Study 2 of their paper, Devos and Cruz Torres (2007) found that Latino students who identified closely with an academically successful significant other were more academically successful than those who identified closely with significant other who was not academically successful. Similarly, Cole et al. (2007) found that for both Latinos and Whites, accessing an academic network of support was associated with academic performance, but for Latinos, having a strong ingroup identity was negatively associated with a network of academic support. Consequently, Latinos who had a strong ingroup identity tended not to have access to a network of academic support, leading to lower levels of academic achievement. Taken together, the results indicate that strong ingroup identification alone may not be sufficient to promote academic achievement. Identifying with an ingroup or significant other may promote academic achievement when the students are identifying with role models who are academically successful (Dasgupta, 2011).

Importantly, the above discussion of cultural identities focused on either ingroup connections or orientation toward an outgroup, but not the combination of ingroup and outgroup orientations. Oyserman and colleagues (Altschul et al., 2008; Oyserman, 2008; Oyserman et al., 2003) addressed this gap in the literature. They classified African American and Latino adolescents on the basis of interviews into four groups: (a) no racial schema, (b) an ingroup only racial schema, (c) a minority racial schema, and (d) a dual racial schema. Both the minority and dual schemas integrate orientations toward the ingroup and the larger society. The *dual* schema describes an orientation in which adolescents see themselves as members of their ethnic group as well as the larger society and the *minority* schema couples an ingroup orientation with an awareness of discrimination toward their group and a belief that they can prevent or avoid the consequences of the obstacles put in the way of their group in the broader society. At the end of the semester, adolescents with the two integrated schemas—minority and dual—had higher GPAs than the aschematic and ingroup only students with medium effect sizes. This finding was replicated in a second study with American Indian students, with adolescents with dual schemas persisting longer on an academic task than the ingroup only ($d = -1.21$) and aschematic ($d = -.80$)

groups, and the dual group was also less vulnerable to stereotype threat. These findings are in keeping with other research showing that dual identities are related to lower psychological distress and higher psychological well-being (Whittaker & Neville, 2010).

Stereotype threat. A recent line of research has connected ethnic and racial identifications to performance on academic tests through stereotype threat. Experimental research on stereotype threat suggests that subtle triggers of stereotypes may impair performance on academic tests (Steele, 1997; Steele & Aronson, 1995), academic identification and school belonging (Mallet et al., 2011; Mello, Mallet, Andretta, & Worrell, in press) for those who are stigmatized. The triggers of stereotypes have included situations in which participants have been being told that a test is reflective of their ability or have been asked to record their racial group before engaging in a task. The impaired performance on general academic tests associated with stereotype threat has been illustrated primarily for Latino and African American participants. In an interesting recent study, Taylor and Walton (2011) demonstrated that impaired performance associated with stereotype threat was not limited to impaired retrieval of information during an exam-like context, such as a test that included challenging SAT questions. Stereotype threat effects also impaired performance when academic material was being learned. That is, when challenging words were learned in a high threat context, retrieval was more impaired than when the words were learned in low threat context, creating what the authors termed as double jeopardy related to stereotype threat (Taylor & Walton, 2011). Similarly, Devos and Cruz Torres (2007) found a negative relationship between ingroup affiliation and academic achievement for those participants who had negative implicit stereotypes about their group. However, there have been contestations of several of the claims made about this phenomenon (see Sackett, 2003; Sackett, Hardison, & Cullen, 2004; Sackett & Ryan, 2012), especially with regard to its generalizability to real-world settings.

Some types of racial identity attitudes have long been considered a potential buffer against discrimination (Cross, 1971). Davis, Aronson, and Salinas (2007) found that stereotype threat effects were related to internalization of racial identity attitudes, considered to be reflective of strong Black self-acceptance. Davis et al. reported that high scores on internalization were most adaptive in the condition where stereotype threat was low, but provided no significant advantage, over those low on internalization, in the high threat condition. The phenomenon of stereotype threat reinforces the notion that ingroup affiliation in the context of negative academic stereotypes about the ingroup may undermine academic performance on tests.

It is important to note, however, that stereotype threat has focused on effects associated with test performance primarily in laboratory-based contexts, and evidence has not linked stereotype threat to educational disparities in academic achievement over time. Indeed, a recent meta-analysis demonstrated the significant effects were only obtained after controlling for ethnic and racial disparities on test performance (Walton & Spencer, 2009), suggesting that stereotype threat effects *may* exacerbate extant educational disparities in situation-specific contexts (see also Sackett, Borneman & Connelly, 2008).

In the last few years, several interventions have been designed to raise the academic achievement of ethnic minority students, including (a) teaching students that intelligence is malleable rather than fixed (Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck,

2007; Good, Aronson, & Inzlicht, 2003) (b) having students affirm important values (Cohen, Garcia, Apfel, & Master, 2006; Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009), and (c) providing exposure to ingroup role models who serve as “social vaccines,” inoculating stigmatized individuals against stereotype threat effects (Dasgupta, 2011). In a recent paper, Yeager and Walton (2011) provided a summary of many of these social psychological interventions. For example, when African American students have been asked to write self-reflective essays in which positive values or personal characteristics are described or when students are exposed to the personal narratives of successful others who have overcome academic challenges, they have demonstrated better academic achievement than peers in control groups (Devos & Cruz Torres, 2007; Taylor & Walton, 2011). Although these interventions presumed to work by countering stereotype threat, there was no test of this hypothesis in the studies. Recently, Taylor and Walton (2011, p. 1064) showed that “a value affirmation eliminated the negative effect of stereotype threat on learning among Black students.”

A common theme among these programs buffering against stereotype threat is exposure to idiographic narratives or sense of self that reduces the connection between the self-concept and negative stereotypes (Steele, 2011). Steele argued that stereotype threat creates a narrative associated with ingroup failure or underperformance, with these interventions purporting to inoculate students against stereotype threat conditions by providing alternative narratives that decentralizes racial identity and focuses on more idiographic, personal characteristics or the nature of the academic environment. The research on these interventions is preliminary. In a recent study with substantially at-risk African American students attending urban high schools, the value-affirmation intervention did not have any effect on academic performance or psychological engagement. Clearly, much more empirical research is required—especially in real-world contexts—before we can make substantive claims about the relationship between academic achievement and the theoretical principles outlined in the stereotype threat model.

Conclusion: Social Identities and Disparities

Clearly, more research is needed to tease out how various components of ethnic/racial self-constructs encourage and undermine academic achievement. It seems apparent, however, that fostering ethnic or racial pride may not, alone, have positive outcomes on academic achievement. Instead, examining how racial identity orientations that include both ingroup and outgroup orientations develop may be a more productive line of research. Similarly, the apparently powerful role of exposing students to their own or others’ idiographic narratives reflecting success is another promising area for future research. In sum, it is clear that the relationship between academic performance and racial identity depends on contextual variables (Byrd & Chavous, 2009, 2011) and is neither straightforward nor fully understood (Nasir, 2012). More research is needed to sort out the nature of the interactions among ethnic and racial identities, stereotypes, and contexts and how they contribute to academic success and alienation from school.

Racial and Ethnic Composition of Schools and Educational Disparities

In its landmark 1954 decision (*Brown v Board of Education*), the Supreme Court tackled the racial achievement gap head on. In that decision, much of the achievement disparities between Black and White students were attributed to segregated schooling. Achieving racially balanced schools therefore became a moral and legal imperative – a crucial step toward narrowing the achievement gap. Acknowledging that *Brown* and the school desegregation initiatives shaped the debate about achievement disparities, it is appropriate for this Task Force Report to consider the broader issue of the ethnic and racial composition of schools and its impact on the achievement gap.

It is beyond the scope of this Task Force report to delve into all of the complex historical, empirical, and political issues surrounding research on the ethnic and racial composition of the school propelled by *Brown* (see the September 2004 issue of *American Psychologist* for an excellent overview). Rather, we focus on a few critical themes in this section of the Report as we cover three issues. First, we briefly review what is known (and for which there is some consensus) about the relation between school racial/ethnic diversity and achievement disparities. Next we consider some of the psychological processes or mechanisms that can partly explain how or under what conditions racially diverse schools can help narrow the achievement gap. Third, we consider some of the challenges of school diversity – that is, some of the factors that can exacerbate achievement disparities even in the most racially and ethnically diverse school settings.

Is School Racial/Ethnic Composition Related to the Achievement Gap?

There are at least two ways to answer this question. First, we can take a historical approach and ask whether the efforts toward school desegregation following *Brown* yielded any improvements in outcomes of ethnic minority children who previously attended racially segregated schools. Here the focus is almost exclusively on educational disparities between African American/Black youth and European American/White youth. Second, since school desegregation research declined dramatically by the 1990s – along with court-ordered desegregation (see Schofield & Hausmann, 2004) – we can ask whether in contemporary American schooling there is any relationship between racial/ethnic composition of schools and the achievement gap.

Regarding the first question, many excellent reviews of the school desegregation literature are available (e.g., Clotfelter, 2004; Linn & Welner, 2007; Pettigrew, 2004; Schofield, 2004). Based on our understanding of that literature, a few conclusions can be drawn about the effects on the achievement gap of attending a desegregated school in the decades following *Brown* (i.e., between 1965 and 1985, the most intense period of court-ordered desegregation). First, desegregation did not harm the achievement of either Black or White students and in more cases than not, there were improvements in the academic achievement of Black youth. Second, the most positive effects appear to occur in earlier grades and for reading more so than mathematics. Third, although the magnitude of school desegregation impact varied in different studies, results of several meta-analyses reviewed by Schofield (1995) document achievement gains of African American students that ranged on average between .06 and .25 of a standard deviation. If one thinks about progress over one school year (few desegregation studies covered

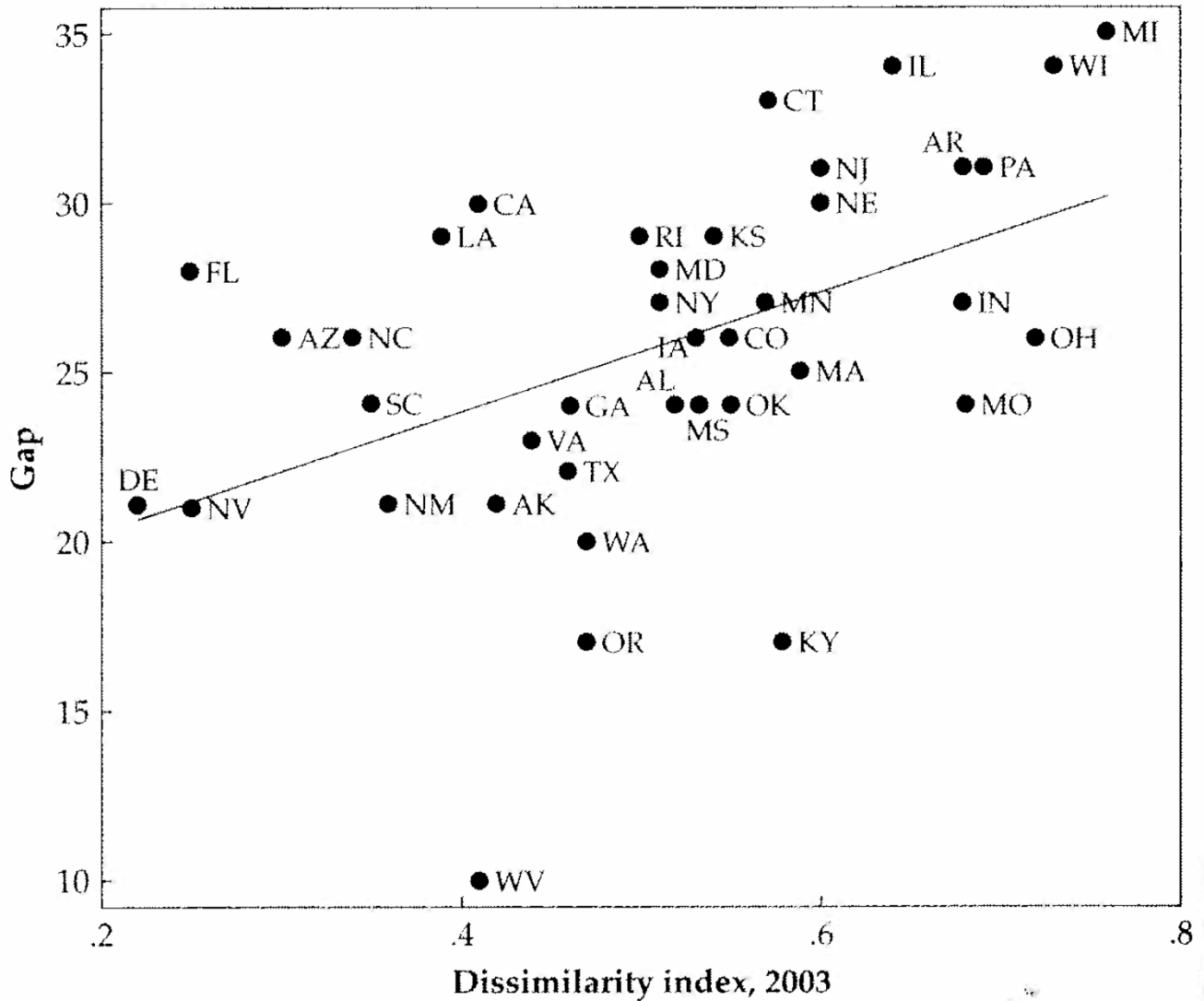
more than one year), these effects sizes translate roughly into a 2-to 6-week gain (Schofield, 1995). Although modest at face value, such positive effects can be cumulative. Small effects for a given year or grade level can translate into much larger meaningful effects across several years.

Even though achievement gains (test scores) for Black youth were most evident in the early elementary grades, there are other indicators that attending desegregated schools was beneficial for secondary school students as well. For example, school desegregation is correlated with lower high school dropout rates. Guryan (2004) examined census data between 1970 and 1980 in 125 of the largest school districts in the country. Controlling for regional trends and background characteristics such as family income and parent education, Guryan found that as school integration increased in response to court mandates, Black dropout rates decreased – on average about 2-to-3 percentage points, but with larger decreases in districts that reported the most integration. Research on postsecondary outcomes has also documented positive effects. Controlling for family background characteristics and individual academic qualifications, students were more likely to enroll in and graduate from four-year colleges when they attended desegregated elementary and secondary schools, especially in the North (Braddock & McPartland, 1982; Crain & Mahard, 1978).

Studies of school desegregation waned in the 1980s, co-occurring with a series of Supreme Court decisions that reversed most of the accomplishments of the previous two decades (Orfield & Lee, 2007; Pettigrew, 2004; Schofield & Hausmann, 2004). Since the 1980's, what can we safely conclude about the relationships between the ethnic and diversity of the school and the achievement gap? The answer is simple. Diversity still matters. Figure 8 shows why.

Plotted in Figure 8 are regression lines showing the effect of school district segregation in 40 states on the gap between Black and White students' 4th grade NAEP math achievement in 2003. On the x-axis is a dissimilarity index, which measures the proportion of Black students in a district that would need to move to a different school district for perfect school integration to occur. The larger the index, the more school districts are segregated by race (a greater proportion of students would need to move). On the Y-axis is the magnitude of the racial achievement gap. The linear pattern in Figure 8 shows that as the dissimilarity index increases (i.e., greater segregation) the gap between Black and White students on 4th grade math achievement widens. Vigdor and Ludwig (2008) estimated that the test score gap is almost 50% larger in states with the highest dissimilarity index compared to those with the lowest levels.

Figure 8: District-level segregation and Black-White test score gap, 2003



Source: Vigdor and Ludwig (2003), p. 192.

There are numerous other examples in the education literature documenting positive achievement gains for ethnic minority youth in racially diverse schools. In one recent analysis, for example, Ready and Silander (2011) examined early achievement as a function of racial composition of schools in a subsample from the Early Childhood Longitudinal Study (ECLS-K). The multi-ethnic subsample included 9,000 children attending almost 700 schools nationwide and the analysis covered the first four data waves, including when children were in kindergarten and first grade. After controlling for background characteristics, including SES, and correlated school factors, the authors found that Black and Latino children were gaining fewer literacy skills and fewer math skills when they attended high minority enrollment schools (greater than 70% minority). In other words, these young children were learning at a lower rate than counterparts in more racially diverse schools. Generalizing their finding beyond the first years of schooling, the authors concluded,

In the case of mathematics skill development, holding other student and school-level characteristics constant, a student attending a high minority school from kindergarten through sixth grade would be over five months behind a similar child who attended a non-minority school. Black students who attend high minority enrollment schools – as the majority in this nationally representative sample do – are doubly disadvantaged. Again controlling for student and school characteristics, a Black student in a high minority school would gain over 12 months fewer mathematical skills than her White peer in a non-high minority school – the equivalent of 1.25 academic years less cognitive development. (Ready & Silander, 2011, p. 107)

The continuing significance of school racial/ethnic composition to understanding the achievement gap is especially troubling because K-12 schools are more racially segregated now than they have been in the last 30 years (Orfield & Lee, 2007). Despite the growing racial/ethnic diversity of the K-12 population, the typical White student attends school where almost 80% of the students are White, and the typical African American or Latino student attends school where at least two-thirds of the students are from their own racial/ethnic group (Orfield & Lee, 2007). Moreover, the great majority of highly segregated ethnic minority schools are located in urban pockets of concentrated poverty, which puts their students at greater risk for poor academic outcomes. High minority, low-income schools have fewer resources, fewer credentialed teachers, higher student-teacher ratios, and larger class sizes, to name just a few factors that contribute to the achievement gap. By some estimations, the increases in high minority schools over the past 30 years accounts for as much as a 60% increase in the Black-White mathematics achievement gap (Berends & Peñaloza, 2008).

Effect of School Racial Composition on Achievement?

Resource differences between segregated and racially diverse schools are certainly a (the) key factor that explains why attending a diverse school has the potential to reduce the achievement gap. In this next section, we consider some of the psychological mechanisms that might also partly explain the benefits of diverse schools.

Interracial friendships and intergroup attitudes. Beginning with the school desegregation literature of the 1970s, researchers have been studying the conditions under which children become receptive to interracial friendships, and what, if any, are the benefits of crossing racial and ethnic boundaries in friendship choices. These questions were central early on because school desegregation researchers argued that greater interracial friendliness could be considered one indicator of successful school integration (e.g., St. John & Lewis, 1975). Interracial friendships, it was assumed, would achieve two important functions. First it was thought that if Black students in desegregated schools formed friendships with Whites, the greater social connectedness those close ties afford would contribute to achievement gains. Second, it was reasoned that close contact between members of different races would promote more positive racial attitudes, also a necessary condition for improved achievement among students in previously segregated schools.

In part stimulated by hypotheses emerging from *Brown*, a substantial literature on interracial friendships in K-12 settings now exists (see review in Graham, Taylor, & Ho, 2009).

Two types of studies characterize that literature. An older literature studies interracial friendships in individual classrooms that vary in racial/ethnic diversity. The research in elementary schools by Hallinan and her colleagues during the 1980s is best illustrative of this approach (e.g., Hallinan & Smith, 1985; Hallinan & Teixeira, 1987). A more contemporary literature has capitalized on the much larger and ethnically diverse samples available in the national panel studies such as the National Longitudinal Study of Adolescent Health (Add Health; e.g., Joyner & Kao, 2004; Moody, 2001; Mouw & Entwisle, 2006). With about 100,000 7th to 12th graders from multiple ethnic groups, the Add Health sample was drawn from more than 100 U. S. middle schools and high schools that represent a full range of ethnic diversity (from ethnically homogeneous to heterogeneous).

The interracial friendship literature provides insights into the achievement gap in three ways. First, children of all age groups are more likely to have friends of different racial/ethnic groups as more other-race classmates become available (i.e., classrooms and schools become more racially and ethnically diverse). However, the rate of increase in interracial friendships does not keep pace with the opportunity for such friendships based on the ethnic composition of schools. Second, it is not clear whether having an interracial friendship is related to (predictive of) improved academic achievement. We located only one early study that systematically linked interracial friendships (popularity) to achievement gains (Lewis & St. John, 1974). In that study, as Black 6th graders became more popular with their White classmates in desegregated schools, their grade point average increased.

Third, there is some evidence that interracial friendships are related to improved intergroup attitudes. Beginning with the classic work of the social psychologist, Gordon Allport (1954), researchers have been testing the so-called contact hypothesis. Interactions between different racial/ethnic groups will lead to improved intergroup attitudes if certain conditions are present: interaction partners are of equal status; they are working toward common goals; they are cooperating with one another; and the interaction receives support from authority figures. Because interracial friendships promote more extended, voluntary, and intimate contact between partners, they fulfill many of the conditions of the initial contact hypothesis (see Pettigrew, 1998). Meta-analyses that include studies with children in school contexts document a reliable relationship between contact and reduced prejudice (Pettigrew & Tropp, 2006), with even stronger relationships when the contact involves interracial friendships (Davies, Tropp, Aron, Pettigrew, & Wright, 2011). In another line of research, there are a few studies that link a positive interracial climate to academic performance of ethnic minority youth in diverse contexts (e.g., Benner & Graham, 2011). Youth of color who attend diverse schools do better when they perceive that students of different racial/ethnic groups get along well. However, we located only one empirical study that systematically linked perceptions of the racial climate to achievement disparities. In their study of Black and White 9th -12th grade students from two urban high schools, Mattison and Aber (2007) reported that Black students' perception of a negative racial climate partly explained the racial achievement gap in those settings. To the degree that students perceive the racial climate as warm and supportive, they were able to reduce the achievement gap.

Cooperative learning. For the purposes of this Task Force Report, the strongest evidence for the importance of intergroup contact and interracial friendships would be research

showing that intergroup attitudes are related to the achievement gap. We have indirect evidence of that link in research on cooperative learning in interracial contexts. Cooperative learning involves small groups of students of varying achievement levels (and different racial/ethnic groups) working together on various learning activities that promote academic success for each team member (Slavin, 2011). Some of the best known cooperative learning programs are those developed at Johns Hopkins University by Slavin and colleagues, including the Student Team-Achievement Divisions (STAD; Slavin, 1994), the jigsaw learning program (Aronson, Blaney, Stephan, Sikes, & Snapp, 1978), and Learning Together developed at the University of Minnesota (Johnson & Johnson, 1998). There is quite a bit of evidence that cooperative learning improves academic achievement (Slavin 2011). More importantly for our purposes, cooperative learning results in closer interracial friendships and better intergroup attitudes (Stephan, Slavin & Cooper, 1999). Because students are working together toward a common goal in a learning context supported by the teacher, cooperative learning satisfies some of the important conditions of Allport's contact hypothesis. Missing, however, are studies that systematically link academic gains among racial/ethnic minority groups to improved intergroup relations. For example, does cooperative learning in ethnically diverse contexts result in better learning for minority youth because of improved interactions with and acceptance by members of the majority group? At present, these links are more assumed than empirically tested.

Greater critical thinking. Ethnically diverse schools also stimulate students to develop critical thinking skills. This finding has been demonstrated experimentally in laboratory research by Antonio and colleagues (2004). College students in that study displayed more critical thinking (integrative complexity) about social issues when they discussed them with a racially diverse small group whose members held differing opinions on the topic. In this case, critical thinking was defined as the ability to entertain multiple dimensions and multiple perspectives on a topic. The findings are rooted in basic Piagetian notions about how cognitive growth occurs when individuals encounter new experiences that they must work to comprehend and master (Piaget, 1975/1985). Other correlational studies suggest that as students develop more critical thinking skills in ethnically diverse settings, they display more intellectual engagement and academic motivation (Gurin, Nagda, & Lopez, 2004; Milem, 2003). Although these findings and interpretations are based on college samples, we suggest as a working hypothesis that in the K-12 setting, attending school with classmates from different racial/ethnic backgrounds will foster critical thinking skills that can transfer to academic tasks.

Increased access to social and professional networks. In considering the transition to postsecondary education, one well-documented benefit for ethnic minority youth of attending racially diverse schools is greater access to social and professional networks. According to Clotfelter (2004), networks are “vital sources of information about the world beyond high school, information about what kinds of jobs exist, what skills those jobs require, and how one goes about finding a job, as well as similar information about opportunities for post-secondary education” (p. 192). Thus, the focus in this research is away from the short-term or immediate effects on achievement of attending racially diverse schools and toward the long-term effects on status attainment.

Several education scholars have documented how ethnic minority youth attending racially diverse high schools have acquired and made good use of social networks. In some of

the earliest work guided by perpetuation theory, Braddock and McPartland (1982, 1989) argued that attending a racially diverse school early in life sets in motion a process whereby racially diverse environments become the norm later in life. Thus, graduating from an integrated high school is related to (predictive of) attending a racially diverse college, living as an adult in an integrated neighborhood, having more friends and co-workers from different racial/ethnic groups, and gaining access to white collar jobs. In other words, early experience with racially diverse contexts and the social capital it affords breaks the cycle of racial segregation that is often perpetuated across the life course. Building on perpetuation theory, Wells and Crain (1994) reviewed 21 studies conducted during the 1970s and 1980s and found, for example, that Black high school students who attended integrated high schools had higher educational aspirations, were more likely to enroll in prestigious White colleges, and more likely to major in science and technology fields. Because these studies control to the extent possible for family background and high school achievement, they are not overly contaminated by self-selection bias. Black students in racially diverse schools raised their levels of aspiration because of the knowledge gained about multiple educational opportunities, the requirements needed to take advantage of those opportunities, and the confidence they gained to pursue them. Some of that knowledge and confidence emerged from the social networks they established in integrated schools (see Wells et al., 2008 for a more contemporary analysis of adult outcomes among students who graduated from racially diverse high schools in 1980).

Reduced feelings of vulnerability. A growing literature documents the social, emotional, and academic consequences of peer harassment at school. When students feel vulnerable at school – that they have no safe haven, that they are easy targets for victims of peer harassment, and that they have few friends who can help ward off peer abuse - they often lack the cognitive and emotional resources needed to do well in school. Juvonen, Nishina, and Graham (2006) tested the hypothesis that in racially diverse schools, students would feel less vulnerable because they belong to one of many ethnic groups that share a balance of power (i.e., there is no numerical majority group). The researchers based this hypothesis on findings from the peer victimization literature suggesting that a numerical imbalance of power is an antecedent of peer-directed hostility (Olweus, 1994). Juvonen et al. (2006) measured self-reported victimization, perceptions of safety, and loneliness as three indicators of vulnerability in a large sample of African American and Latino sixth grade students who were selected from 99 classrooms in 11 middle schools that ranged in ethnic diversity. Consistent with their hypothesis, Juvonen et al. (2006) found that 6th grade students reported less vulnerability as classroom and school ethnic diversity increased. In ethnically diverse classrooms, students are also less likely to blame themselves for experiences with harassment; lower self-blame, in turn, is related to higher achievement (Graham, Bellmore & Mize, 2006; Graham, Bellmore, Nishina, & Juvonen, 2009).

A caveat about self-esteem. One of the strongest psychological arguments for *Brown* in 1954 was that attending segregated schools damaged the self-esteem of Black children. The doll studies of Kenneth and Mamie Clark (Clark & Clark, 1939) provided much of the empirical grist for that argument. In truth, however, there is very little evidence that school racial diversity in and of itself affects the self-esteem of African American youth. Two meta-analyses report consistently high self-esteem in African Americans compared to Whites (Gray-Little & Hafdahl, 2000; Twenge & Crocker, 2002). In specific analyses of school racial composition effects,

Gray-Little and Hafdahl (2002) found higher Black self-esteem in racially segregated compared to integrated schools (comparable reviews have not been carried out with other racial/ethnic groups). We point out this literature to underscore that it would probably be misguided to focus on self-esteem if one's goal is to shed light on the psychological processes that mediate the relationship between school racial/ethnic diversity and reductions in the achievement gap. In general, the research literature suggests weak relations between self-esteem and achievement in African American populations (see Crocker & Major, 1988; Graham, 1994).

Some Challenges for School Racial/Ethnic Diversity

Our take-home message in this section of the Task Force Report is that school racial/ethnic diversity can contribute to reducing the achievement gap. In this final section, we highlight three challenges to that argument when viewed through a psychological lens.

De facto segregation. Imagine a multiethnic school with African American, White, Asian, and Latino students all about equally represented. This level of racial/ethnic balance theoretically should maximize the positive outcomes (including reducing the achievement gap) that we have discussed in this section of the Task Force report. However, if schools adopt organizational practices, such as academic tracking, that limit the mixing opportunities of students, then the possible benefits of exposure to multiple ethnic groups will be compromised. Because African American and Latino students are more likely to be placed in lower ability tracks, whereas White and Asian students are more likely to be placed in higher ability tracks, tracking can re-segregate students by limiting cross-ethnic exposure and opportunities for enriched instruction even in ethnically diverse schools. There is a large literature too extensive to review here documenting how tracking undermines the achievement of Latino and Black youth and, in fact, contributes to the achievement gap (e.g., Mickelson, 2001; Oakes, 1995). Perhaps less known are the many studies that document the negative effects of academic tracking on cross-ethnic friendships (e.g., Damico & Sparks, 1986; Kubitschek & Hallinan, 1998; Moody, 2001; Schofield & Sagar, 1977; Stearns, 2004). Furthermore, tracking appears to particularly inhibit the willingness of White students to form friendships with African American students (Damico, Bell-Nathaniel, & Green, 1981; Hallinan & Teixeira, 1987) and for Asian students to befriend anyone else but Whites (Hamm, Brown, & Heck, 2005). Clearly, the opportunities for cross-ethnic interaction that are facilitated by numerical balance among racial/ethnic groups in diverse schools can be superseded by the numerical imbalance among racial/ethnic groups that academic tracking brings.

The critical mass issue. Few American public schools will ever reach the threshold of full racial/ethnic diversity – multiple racial/ethnic groups equally represented. Instead, the reality is that some racial/ethnic groups are relatively small (true numerical minorities) even in diverse school contexts. Does relative group size affect the extent to which students can experience the benefits of school racial/ethnic diversity? One approach to this question can be found in recent research on changing numerical representation of one's racial/ethnic group across a critical school transition. Benner and Graham (2009) reported that when the representation of their group declined significantly across the transition from middle school to high school (e.g., they went from being a member of the majority group member to a small minority), African American and Latino students experienced declines in both feelings of belonging and academic achievement that continued across the first two years of high school. The interracial friendship

literature also documents that small numerical minorities in diverse schools are less likely to form cross-ethnic friendships despite the greater availability of those outgroup peers (Moody, 2001). The phenomenon of ethnic groups turning inward rather embracing diversity opportunities has been described as “hunkering down” (Putnam, 2007).

These examples underscore the importance of a *critical mass* of same-ethnicity peers in any school context to ease the challenges of finding one’s niche and fitting in. What that critical mass might be was of interest to developmental researchers in the early school desegregation literature, and it continues to be part of the public discourse on both affirmative action in higher education and race-conscious policies in the assignment of K-12 students to schools (Linn & Welner, 2007). In the legal discourse on diversity on college campuses, the notion of critical mass is discussed as “meaningful numbers” or “meaningful representation” of ethnic minorities to insure an ethnically diverse educational environment, while at the same time encouraging underrepresented students to participate in college life and not feel isolated or marginalized (*Grutter v Bollinger*, 2003). No ethnic group is likely to benefit from an ethnically diverse college campus or K-12 campus if their numbers are too small to combat feelings of isolation or marginalization. It has been suggested that any ethnic group should be at least 15% of the school population to mitigate the isolation vulnerability to out-group hostility (Linn & Welner, 2007). The Benner and Graham (2009) study cited above suggests that it is not only absolute levels of ethnic group representation that need to be considered, but also *changes* in those levels across critical school transitions.

Ethnic diversity and perceived discrimination. School racial/ethnic diversity is associated with one of the most troubling challenges confronting students of color today. That challenge is experiences with discrimination, or perceived unfair treatment because of one’s race/ethnicity. Many studies now document that racial/ethnic discrimination is quite common among ethnic minority youth in schools and in other public spaces (e.g., Rosenbloom & Way, 2004). Among the most prevalent kinds of unfair treatment reported by ethnic minority youth are receiving a lower grade than deserved from teachers, being the recipient of unusually harsh discipline from authority figures and being accused of behaving suspiciously in public places (Fisher, Wallace, & Fenton, 2000). Such experiences can take their toll on the mental, physical, and academic well being of youth. In the academic domain, several studies have now documented that as reports of unfair race-based treatment by teachers increase, adolescents’ grades decline (Berkel et al., 2010; Degarmo & Martinez, 2006; Neblett, Philip, Cogburn, & Sellers, 2006). Studies of mediating mechanisms suggest that chronic discrimination undermines the motivation to do well in school (Wong, Eccles, & Sameroff, 2003) and it promotes the perception of a school climate that is unresponsive to the needs of ethnic minority youth (Benner & Graham, 2011). The growing literature on racial disparities in the use of punishment in schools (Losen, 2011) suggests that perceived unfair treatment by teachers is likely to be increasing among ethnic minority youth and contributing to academic disengagement.

Most of the school based discrimination literature has not examined school racial/ethnic context. Yet in studies with large enough samples from multiple schools, it appears that African American and Latino adolescents report more perceived discrimination as school racial/ethnic diversity increases and the relative size of their own ethnic group declines (Benner & Graham, 2011; Hagan, Shedd, & Payne, 2005; Seaton & Yip, 2009). Greater racial disparity in school

discipline as diversity increases has also been documented (Eitle & Eitle, 2004). Cumulative experiences with perceived discrimination and numerical minority status in diverse schools have been shown to affect African American and Latino adolescents' general worldviews about the legitimacy of school authority figures, a worldview that partly accounts for the achievement gap (Graham & Benner, 2012). These analyses tell us that being an ethnic minority in a racially diverse context has challenges as well as benefits that bear on the achievement gap. There are times when tension, fear, miscommunication, and racial stereotypes may override the benefits of having access to greater resources available in racially and ethnically diverse schools.

Summary of school diversity and disparities. In this section of the Task Force Report, we reviewed research suggesting that school racial/ethnic composition is an important school structural variable for understanding factors that contribute to a widening or narrowing of the racial achievement gap. The school desegregation literature from the 1970s and 1980s and the more contemporary research on racial composition suggest that schools with high concentrations of ethnic minority students tend to maintain or widen the achievement gap. In part this is because high minority schools tend to be located in urban areas of concentrated poverty, although the benefits of racially and ethnically diverse schools remain in some analyses even when controlling background characteristics of students. From a psychological perspective, we proposed that having opportunities to form interracial friendships, improvements in intergroup attitudes, exposure to cooperative learning activities, developing critical thinking skills, increased access to social networks, and reduced feelings of vulnerability might be some of the mechanisms that partly explain school racial diversity effects. However, school racial diversity is not a panacea for narrowing the achievement gap for it, too, has unique challenges. Here we highlighted de facto segregation fostered by academic tracking, the critical mass issue, and the relationship between school diversity and perceived discrimination. We acknowledge that studying school racial/ethnic diversity is a complex topic that we have tended to simplify in this report. We also recognize that there are many high minority schools throughout the country that are doing an excellent job of educating their students. To the extent that any school engages in some of the processes we described as mediating mechanisms (e.g., fostering critical thinking skills, using cooperative learning, protecting students from feeling vulnerable), it is making choices that can reduce the achievement gap.

Disparities in Gifted Education

As noted in the first section of this report, educational disparities are reflected not only in the overrepresentation of some ethnic and racial groups at the lower end of the achievement gap, but also in the underrepresentation of these groups in programs for gifted and talented youth (Baldwin, 1985; Ford, 1995; Kitano & DiJiosia, 2002; Worrell, 2003, 2010). Ford (1998) reported that in 1992, African American, American Indian, and Latino students were underrepresented by more than 40% in programs for the gifted and Asian Americans were overrepresented by over 40%, relative to their representation in the school population. These figures have not changed substantially in the 2000s (Graham, 2009; U.S. Department of Education, Office for Civil Rights, 2006; Erwin & Worrell, 2012). In this section of the report, we focus on what we can learn from the psychological literature on giftedness and gifted education in addressing the problem of educational disparities. In brief, the lesson from this literature is that outstanding achievement is based on a multiplicity of factors (Haensly, Reynolds, & Nash, 1986; Subotnik, Olszewski-Kubilius, & Worrell, 2011; Worrell, 2009a, 2009b), including psychological (e.g., ability, task commitment, motivation, self-regulation) and environmental (e.g., effective teaching, enrichment experiences).

A major reason for including a focus on gifted and talented education in discussing educational disparities is to correct a fundamental misunderstanding. Many authors who write about the disproportionate representation of racial and ethnic groups in programs for the gifted treat this phenomenon as if it is independent of the broader discourse on educational disparities, operating under the assumption that high achieving ethnic minority students are not being identified primarily due to biased assessment practices and/or structural inequities. This perspective fails to recognize that the distribution of scores on cognitive and achievement measures that results in the *overrepresentation* of certain groups in remedial programs and dropout statistics is the *same* distribution that results in the *underrepresentation* of these groups in gifted programs and tertiary education. Thus, the overrepresentation in the underachievement statistics and underrepresentation in gifted and talented education are, in fact, aspects of the same phenomenon of educational disparities, and eliminating educational disparities in the longer term will require raising the achievement floor and, indeed, the entire achievement distribution, such that the distributions for currently underrepresented groups in programs for the gifted comes into alignment with the distribution for students who are not underrepresented. We now present a brief overview of the major variables implicated in identification of students for gifted programs, including ability, academic achievement, the role of the teacher, and opportunity structures. In all of these discussions, we draw from the limited empirical research on these issues in the extant literature.

Identification of Gifted and Talented Students

At the most basic level, the label, *gifted and talented*, is given to individuals whose performance is at the upper end of the distribution in a domain relative to same-aged peers, with the selectivity of the program determining the cut score that is used in assigning the label. Moreover, the peer group against which individuals are compared also becomes more selective the longer a person is in a domain, with concomitant increases in the levels of performance required to obtain the gifted categorization and decreases in the number of individuals who actually earn the label. For example, an adolescent who is considered gifted in Grade 9 may be

an average student in a selective undergraduate institution, and may not get into a selective doctoral program. Similarly, a very small number of elite college basketball players are drafted into the National Basketball Association. Finally, although potential is often used to classify children as gifted, typically, adults are labeled gifted on the basis of documented performance.

The National Association for Gifted Children (NAGC, n.d.) suggests that gifted children have at least one of three distinguishing characteristics: (a) “outstanding levels of aptitude” or potential, (b), superior “competence” or “documented performance...in one or more domains,” or (c) the ability to “progress in learning at a significantly faster pace than do other children of the same age.” In simple terms, students are classified as gifted if they demonstrate evidence of cognitive ability, academic achievement, or a rate of learning at the upper end of the distributions of these variables. Thus, these constructs—scores on tests of cognitive ability, current academic achievement, and rate of learning—play an important role in who is selected for gifted programs and in the ensuing educational disparities in these programs.

Cognitive ability. Intellectual or cognitive ability, often operationalized as *g* or the general intelligence factor on IQ tests has a long association with classification as gifted (e.g., Terman, 1925), and historically, educational disparities among racial/ethnic and SES groups have been attributed solely to differences in intellectual ability. In K-12 educational settings, cognitive ability is frequently operationalized with a score on an IQ test, and 41 states have intellectually gifted as part of their definition of giftedness (The Council of State Directors of Programs for the Gifted & NAGC [CSDPG/NAGC], 2009). Although only 15 states *mandate* the use of IQ scores for identifying gifted students (CSDPG/NAGC, 2009), in many states, IQ scores of 130 or higher (approximately 2.2% of the population) are among the criteria used for classifying students as gifted and talented. Over the past few decades, many of the criticisms of gifted and talented identification have been aimed at the use of IQ scores (e.g., Edwards & Mumford, 2005; Ford, 1995; Ryser, 2011). For example, Ford (1998, p. 8) made the following observations in regard to underrepresentation in programs for the gifted:

The heavy or exclusive reliance on tests poses major problems for African American, American Indian, and Latino students, all of whom have a history of performing poorly on standardized tests. More recently, educators have begun to question and reconsider the validity and reliability of the tests themselves....Arguments against using standardized tests with minority students have proliferated in recent years on the grounds that these tests are culturally biased.

Given the differences in IQ scores among racial/ethnic groups (Jencks & Phillips, 1998; Neisser et al., 1996), using IQ scores as part of the criteria for identification of gifted students will definitely result in underrepresentation of low-income and certain minority groups, as Ford (1998) observed. However, the claims with regard to reliability, validity, and bias are less accurate.

A thorough psychometric review of IQ scores is beyond the scope of this report, but there are several points that have implications for recommendations. First, in large part due to its ubiquitous use in classifying students for exceptional designations (e.g., gifted, learning disabilities, mental retardation), IQ has been among the most frequently investigated constructs

in psychology. Scores on IQ tests typically have internal consistency estimates in the .90 and higher range and stability estimates in the .70 to .80 range (Sattler, 2008). Moreover, numerous investigations of IQ scores have not supported the claims of bias, generally (DeShon, Smith, Chan & Schmitt, 1998; Edwards & Oakland, 2006; Frisby & Braden, 1999; Keith, Quirk, Schartzler & Elliott, 1999; Kush & Watkins, 2007; Kush et al., 2001; Naglieri & Ronning, 2000; Saccuzzo & Johnson, 1995; Shields, Konold, & Glutting, 2004), and in most cases where bias is found, IQ overpredicts the academic performance of underrepresented groups (e.g., Glutting, Oh, Ward, & Ward, 2000; Olívarez, Palmer, & Guillemard, 1992; Weiss, Prifitera & Roid, 1993).

Additionally, the predictive validity of ability and aptitude test scores such as the SAT with academic achievement is well established with general populations (Brody, 1997; Neisser et al., 1996; Watkins, Lei, & Canivez, 2007), as well as with gifted and talented students (Kuncel & Hezlett, 2007; Kuncel, Wee, Serafin, & Hezlett, 2010; Park, Lubinski, & Benbow, 2008) and with students from groups that are underrepresented in gifted education (Frisby & Braden, 1999). For example, longitudinal studies of children who were identified as profoundly gifted—defined as 1 in 10,000—before age 13 reveal that these individuals are achieving at much higher rates than their peers in their early 20s, including pursuing doctorates at a rate 50 times higher than the population rate and twice as high as individuals in the top 1% of ability (e.g., Lubinski, Webb, Morelock, & Benbow, 2001). However, the predictive validity is markedly lower when standardized achievement scores are used to predict college grades for linguistic minority students (Mattern, Patterson, Shaw, Korbin & Barbuti, 2008).

Some researchers have recommended using nonverbal IQ tests to identify underrepresented racial/ethnic groups, as scores on these tests may not differ as much among demographic subgroups. In keeping with this hypothesis, Naglieri and Ford (2003, 2005) claimed that similar percentages of African, European, Latino students in the normative sample on the Naglieri NonVerbal Ability Test (NNAT) had scores above the 95th percentile. Lohman (2005b) re-analyzed the NNAT normative sample's data and pointed out that the sample was not representative of the population, especially the African and Latino subgroups, who were disproportionately from higher SES and from non-urban schools. In a more recent study, Manos (2008) found that African American obtained average NNAT scores that were nine standard score points lower than White students—six points when controlling for free and reduced lunch—and concluded that Naglieri and Ford's claim is not supported. Moreover, even if the claims about nonverbal IQ tests were substantiated, Frisby (2003) reminded us that a substantial amount of schooling involves using written and spoken language, and nonverbal tests have lower predictive validity for reading and other language related academic constructs (e.g., Lohman, 2005a, 2005c; see Worrell, in press, for a review of using nonverbal intelligence tests for gifted identification).

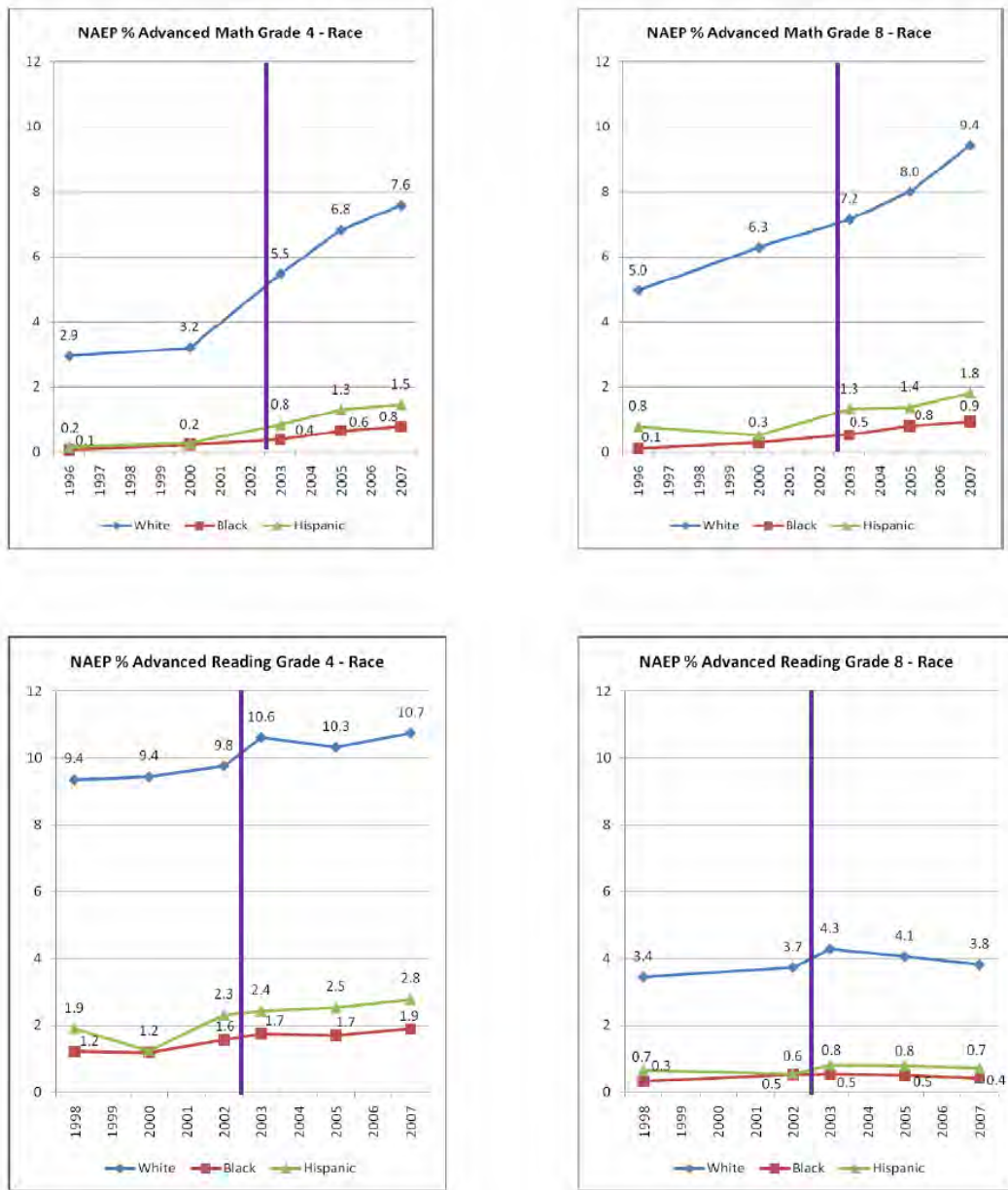
In sum, although consensus is now growing in the literature about the heritability of IQ (Nisbett et al., 2012; Turkheimer, Haley, Waldron, D'Onofrio, & Gottesman, 2003) and how much the IQ gap has closed (Nisbett et al., 2012), there is little debate about the relationship of IQ to academic achievement and other positive correlates of schooling (Brody, 1997; Ceci & Papierno, 1997; Gottfredson, 1997; Neisser et al., 1996; Subotnik et al., 2011). Prior cognitive ability has one of the largest effect sizes on student learning (Hattie, 2009). Unfortunately, there is also no debate about the fact that the use of IQ test scores will contribute, in part, to the

underrepresentation of some groups of students in gifted education programs. Thus, an important question is, are there viable alternatives for gifted identification that have comparable predictive validity for academic performance without the adverse impact?

Academic achievement. Previous academic achievement is the other variable that is frequently used to identify students for gifted programs, and within a particular domain (e.g., mathematics, history), previous achievement is a stronger predictor of subsequent performance than IQ (Busch, 1980; Hemmings & Kay, 2009; Pursell, 2007), even at the highest levels of academic performance (Lubinski & Benbow, 2006; Lubinski, Benbow, Webb, Bleske-Rechek, 2006; Park, Lubinski, & Benbow, 2007). For those who believe that IQ tests are culturally biased, academic achievement is often put forward as a viable alternative for gifted identification. However, gifted identification based on academic performance results in the same racial/ethnic disparities, as the patterns of performance on reading, writing, mathematics, and other academic subjects are the same as the patterns of performance on IQ tests (Aud et al., 2010; NAEP, 2011), regardless of the type of achievement measure that is used, and the disparities in achievement are present from as early as the preschool years (Aud et al., 2010; KewalRamani, Gilbertson, Fox, & Provasnik, 2007). As can be seen in Figure 9, educational disparities are clearly reflected in the percentages of African Americans, European Americans, and Latinos who are performing at the advanced level (i.e., at the upper end of the distributions) on national assessments.

Erwin and Worrell (2012) showed that even in a gifted education program that uses academic achievement scores as the primary indicators for identification, there are clear differences among groups, with African and Latinos having not only lower standardized reading scores in mathematics and language arts (means ranging from 250 to 400) than their Asian American and White peers (means ranging from 425 to 475), but also lower GPAs (African American and Latino GPAs in the 3.5 range and Asian American and White students' GPAs in the 3.7 to 3.8 range).

Figure 9: Disparities in advanced reading and math skills for 4th and 8th grade



Source: NAEP (2008). Trends in Academic Progress. US Department of Education.

Erwin and Worrell (2012, p. 11) drew the following conclusion:

The achievement gap continues to play an important role in whether students qualify for GATE [gifted and talented education] programs, whether one looks at standardized

achievement test scores, GPAs, or variables related to socioeconomic status such as parental education and income levels. Although assessment instruments are convenient targets to vilify, there is no compelling evidence that they play a major role in underrepresentation in GATE programs.

Erwin and Worrell argued that researchers need to pay attention to variables related to educational disparities that can be changed rather than devoting extraordinary attention to variables that describe the status quo but do not contribute to its solution.

Other Factors Influencing Identification and Placement of Gifted Students

As noted in the previous sections, existing disparities in cognitive ability and academic achievement are the primary proximal factors in this area. There are several other variables related to gifted identification and placement that are not discussed in other sections of this report and are worth mentioning. These include (a) teachers, (b) academic environments, (c) task commitment, and (d) chance. In this section, we briefly review the literature on these factors in relation to their contribution to disparities in gifted education.

Teachers. Teachers see first hand the evidence of students' academic functioning and often may be the referral source for an assessment to determine placement in a gifted program. Additionally, some of the largest effect sizes from meta-analyses on contributors to students' learning include the teacher, teaching, and the curriculum (Hattie, 2009), emphasizing the important role of instructional quality in academic achievement. Bloom's (1982; Bloom & Sosniak, 1981; Sosniak, 1985a, 1985b, 1985d) work on the types of teachers that outstanding adults had at different stages of their development provides a critical perspective in relation to the role of the teacher on academic performance. Based on a retrospective study of eminent individuals in six domains—concert pianists, sculptors, tennis champions, Olympic swimmers, mathematicians, and research neurologists—Bloom and colleagues classified teachers into three groups (Subotnik et al., 2011). Stage 1 teachers were the first teachers of these adults who achieved eminence. Stage 1 teachers were chosen primarily for proximity to the family and were not typically outstanding talents in the domain. The expertise of these teachers lay in their efficacy in working with young children and “the initial encouragement and motivation they gave students to explore the field in a playful way” (Bloom, 1982, p. 664). The important role of these first teachers, then, was to make the student fall in love with learning in the domain.

Stage 2 teachers provided students with their first formal introduction into the talent domain, and these teachers taught for technique. Stage 3 teachers were the ones teaching for a personalized niche who helped to launch outstanding adults into their careers. Both Stage 2 and 3 teachers are selective in the students that they take and these teachers are often outside of the regular context of schooling. As underrepresented students are disproportionately from low-SES backgrounds and schools where the quality of teaching is low (Darling Hammond, 2001), it is unlikely that they experience many of the types of teachers that Bloom was talking about, including the critical first set of teachers who help students develop and maintain an interest in a subject as the difficulty level increases.

Additionally, teachers are also frequently indicted as gatekeepers who do not refer students from underrepresented groups for gifted assessment (e.g., Bonner, 2000; Ford &

Grantham, 2003; Ford & Webb, 1994). The empirical literature on this point is mixed. Research suggests that although self-fulfilling prophecies based on teacher expectations occur in the classroom, these effects are typically based on student performance and are generally small (Jussim & Harber, 2005). However, “there is evidence that, in certain contexts and among certain groups [i.e., low-SES and African American students], they [i.e., teacher expectations] are indeed consistently powerful and pervasive” (Jussim & Harber, 2005, p. 153). There are two types of studies that contribute to our understanding of teachers’ perceptions of students from underrepresented groups and giftedness, teacher rating studies and teacher referral studies.

Teacher ratings. Early reviews of the literature on teacher ratings of students found no evidence of bias (Hoge & Cudmore, 1986). In 1983, Elliot and Argulewicz compared teacher ratings of low- and mid to high-SES European and Latino students on the Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS; Renzulli, Hartman, & Callahan, 1971). They reported that White students received higher ratings that were statistically, but not practically significant. In a subsequent study, Elliot, Argulewicz, and Turco (1986) reported that correlations between SRBCSS score were higher for low-SES Latino students. Several years later, Plata, Masten, and Trusty (1999) examined teachers’ SRBCSS ratings of nominated and non-nominated European and Latino students; they reported that ratings did not differ between nominated students from different ethnic groups, but did differ for non-nominated students.

However, other studies have indicated differences in ratings among groups. Masten, Plata, Wenglar and Thedford (1999) found SRBCSS rating differences in favor of Whites over Latinos, a finding driven by level of acculturation of the student and replicated in other research (Masten & Plata, 2000). Fernández, Gay, Lucky, and Gavilán (1998) reported similar findings in a document-based study, with a group labeled “gifted” receiving higher scores on a survey than a group labeled “gifted Hispanic LEP.” Plata and Masten (1998) also found that White students received higher SRBCSS ratings from teachers than Latino students, but the smallest differences were between the students who were nominated in both groups, suggesting that ratings of more capable students are less subject to bias.

Teacher referrals. Researchers have also investigated nominations for gifted programs, and findings in this area are also mixed. Plata and Masten (1998) examined frequency of nominations of Latino and White students and found that White students (at 40%) were nominated at twice the rate of the Latino students (20%). In 2005, Elhoweris, Mutua, Alsheikh, and Holloway randomly assigned 207 teachers to three conditions in a vignette study. Participants received the same description of a child with ethnicity manipulated (African American, White, no ethnicity provided) and were asked if the child should be (a) referred for a gifted assessment and (b) placed in gifted program. Although most of the analyses were not significant, individuals receiving the African American vignette gave lower ratings than those in the White and No Ethnicity conditions, respectively, for both referral for assessment ($d = .39$ and $.44$) and placement in a program ($d = .30$ and $.31$).

Barber and Torney-Purta (2008) used the Educational Longitudinal Study of 2002 to examine the effects of motivation (intrinsic motivation, domain-specific self-efficacy), demographic factors (e.g., gender, ethnicity, SES), and relationships with peers and teachers on the probability of being nominated for advanced English and mathematics classes. Participants

were students in the top decile of achievement in a sample of 1,110, and 633 students had been nominated. Significant positive effects in the final model for English with odds ratios greater than 1.3 were intrinsic motivation for reading, being female, having taken prior advanced placement courses, and having received academic honors. For mathematics, the positive contributors with odds ratios greater than 1.3 were friends' academic orientation, math self-efficacy, intrinsic motivation in math, being female, having taken prior advanced placement courses, and having received academic honors. SES did not contribute to either model but minority status was a significant negative predictor for English (odds ratio = .32). Although the authors used a broad definition of high achievers (i.e., top decile), they noted that there were few Latino students in the top deciles in English and mathematics (54 and 50, respectively) and even fewer African Americans (24 and 15, respectively).

In one of the more comprehensive studies of this topic, McBee (2006) conducted analyses on referral and placement rates using 2004 data from all students in Grades 1 to 5 in the state of Georgia ($N = 705,074$). He was interested in a comparison of referral sources in terms of the percentage of students referred who were actually classified as gifted as well as the percentage of all gifted students, and he reported this information by race/ethnicity and SES. He compared six referral sources: automatic (i.e., students who received 90th percentile or higher on a standardized achievement test), teacher, parent, self, peer, and other. McBee (2006) found that automatic referrals were the most common (5.2%), followed by teacher referrals (4%). Other referral sources were rare (< 1%) and parent referrals (.4%), although rare, were more frequent for high-SES students. The highest classification rates as gifted were from automatic (72.5% to 88.7%) and teacher (50.6% to 90.3%) referrals. Teacher nominations were more accurate for high- than low-SES students, and for Asian American, White, and Native American students than for African American and Latino students, but substantially more accurate than all other sources other than automatic referrals.

As McBee (2006, p. 109) pointed out,

There are at least two plausible explanations for this pattern, depending on one's beliefs regarding the distribution of ability across race and class lines. If one adopts the position that ability is evenly distributed across these lines, then these results can only indicate severe bias in the nomination and testing procedure....Alternatively, if one believes that ability is not even distributed, then one can interpret these results in a different light. The low rate of automatic referrals for certain groups reflects lesser ability. When students from these groups are nominated, they are able to pass through the screening less frequently.

McBee assumed that referral rates of 4-5% are low, but given that gifted education is predicated on serving the top of the educational distribution (and often the top 2%), automatic and teacher referrals that identify more than 9% suggest a substantial pool. Moreover, students were identified on the basis of *academic performance*—not ability—as McBee seems to imply, which is at the heart of educational disparities. Additionally, the fact that percentages from underrepresented groups are lower than their peers is in keeping with the lowered distribution of academic performance for these groups (e.g., Aud et al., 2010; Barber & Torney-Purta, 2008; Erwin & Worrell, 2012).

McBee's (2006) study also provides answers to many of the criticisms that are directed toward teachers. Consider the data in Table 1 compiled from McBee's study. As can be seen, teachers are making referrals in ranges from 33% to 59%, and their referrals for the low-SES underrepresented groups are more than 10 percentage points higher than for high-SES underrepresented groups. The students who are being referred by teachers are ones who did *not* make the cut for automatic referrals, suggesting that the teachers are looking beyond test scores. In this light, it is not surprising that their nominees from the low-SES groups are less likely to be classified gifted. Indeed, these data suggest that contrary to the negative claims about teachers' views of minority students, that even fewer underrepresented students would be classified as gifted without teacher referrals.

Table 1: Percentage of Referrals to Gifted Programs by Source of Referral, SES, and Race/Ethnicity

	Automatic	Teacher	Other
LOW SES			
African American	44.8	49.1	6.1
Asian American	53.0	40.0	7.0
European American	46.3	46.3	7.4
Hispanic American	50.6	44.8	4.6
Native American	33.3	59.3	7.4
HIGH SES			
African American	55.9	36.2	7.9
Asian American	51.9	42.6	5.5
European American	54.7	39.0	6.3
Hispanic American	60.0	34.6	5.4
Native American	53.2	33.0	13.8

Note. Compiled from Table 5 in McBee (2006).

Academic environments. In addition to the teacher, the role of the academic environment is critical in supporting student achievement. Gifted education has much to contribute in this arena, as gifted programs often have academic environments that are the most supportive of learning, innovation, and creativity, and are sometimes seen as the only option for a high quality education in a school district (Subotnik et al., 2011). There are several strategies

used in the education of talented individuals. Two of the more frequent programming options include acceleration and enrichment (Worrell, 2007). Enrichment strategies “extend and supplement the regular curriculum” and acceleration strategies “allow students *earlier* access to courses and content than their same age peers” (Subotnik et al., 2011, pp. 23-24). Other programming options include specialized high schools and out of school programming (e.g., after-school and summer school programming at universities, museums, or other venues), options that are often not available to individuals from low-income households (Sosniak, 2005; VanTassel-Baska, 2007). One other aspect of education of talented youth that is often used with those identified as gifted in sports and the visual and performing arts is psychosocial coaching, that is preparing individuals for key transitions and for handling the challenges and failures (Subotnik et al., 2011) that come with striving for excellence.

It is also important to point out that academic environments are not always in schools, and many students who are gifted and talented spend their summers attending programs at universities and other venues, a phenomenon described as the summer educational divide (Sosniak, 2005). Not surprisingly, students who can attend these out-of-school academic environments typically come from more affluent families that have not only the resources to support attendance, but also are not dependent on the student taking a summer job to help manage expenses, a point reflected in the higher work hours reported by Latino and African American adolescents in comparison to their peers (Aud et al., 2010).

Task commitment. After ability, the role of effort is perhaps the most important factor in the success of students who are identified as gifted and talented. As David Lubinski (personal communication, May 19, 2008) noted, one of the reasons for identifying students for gifted and talented programs is for them to “work harder.” Gifted students are expected to do more work in less time than their peers. Renzulli (1986, p. 69) argued that

task commitment represents energy brought to bear on a particular problem (task) or specific performance area. The terms that are most frequently used to describe task commitment are perseverance, endurance, hard work, dedicated practice, self-confidence, and a belief in one’s ability to carry out important work.

Subotnik et al. (2011) contended that task commitment is the process by which potential is translated into outstanding performance, and this notion has become the signature characteristic of giftedness identified by writers in the popular press (e.g., Colvin, 2008; Coyle, 2009; Gladwell, 2008; Mighton, 2003; Moretti, 2009; Shenk, 2010; Syed, 2010). As Gladwell (2008, p. 39) put it, “The people at the very top don’t just work harder or even much harder than everyone else. They work much, *much* harder.”

However, outstanding performance requires more than just effort—it requires considerable years of effort. There are many studies which highlight the importance of committed, long-term effort in the development of talent across domains and grade levels (e.g., Benbow & Arjmand, 1990; Curby, Rudasill, Rimm-Kaufman, & Konold, 2008; Ericsson, 1996a, 1996b; Ericsson et al., 1993; Ericsson, Nandagopal, & Roring, 2005), leading to Gladwell’s popularization of the notion that “at least 10,000 hours of practice is required to achieve the level of mastery associated with being a world-class expert—in anything” (p. 40). Studies of effort

related to academic achievement indicate that Asian American and European American students, who are overrepresented in gifted and talented education programs spend more time on schoolwork outside of school and less time watching television, and are employed for fewer hours when in high school (Aud et al., 2010; Worrell, 2005). Thus, one important intervention will be to convince students in underrepresented groups, who may have less faith in the American dream and the utility of their academic endeavors, that devoting more time to academic outcomes will actually result in greater academic benefits.

Chance and gifted education. Chance also plays a role in outstanding achievement. Here, we are not just talking about luck, or Type 1 chance (Austin, 1978). Rather, we are talking about the willingness to accept and pursue opportunities that may come one's way (e.g., accepting the assignment to a magnet school or placement in an enrichment program).

Practically every man or woman who triumphs against the odds is, on closer inspection, a beneficiary of unusual circumstances. The delusion lies in focusing on the individuality of their triumph without perceiving – or bothering to look for – the powerful opportunities stacked in their favor. (Syed, 2010, p. 9)

Accepting opportunities that come your way—Type 2 chance according to Austin (1978) may be within an individual's control, although the willingness to accept the opportunity is often dependent on many of the cultural factors discussed in the previous section, including the belief that the outcomes derived from pursuing these opportunities will not compromise one's authenticity as a member of one's ethnic group and will also yield equivalent outcomes to individuals from non-marginalized ethnic/racial groups and higher socioeconomic circumstances. Providing these opportunities requires deliberate efforts on the part of educators and school systems (Sosniak & Gabelko, 2008).

Summary of disparities in gifted education. Outstanding achievement that results in the classification as gifted is based on a multiplicity of factors. Key individual and psychological factors predicting outstanding levels of achievement include effort, motivation, and the devotion of sufficient time to developing academic skills. Key environmental factors include *supportive* family environments, *effective* teaching, and *appropriate* educational opportunities. The capacity to take advantage of both types of factors typically requires social, cultural, and fiscal capital, which are distributed in alignment with the educational disparity divide.

Re-envisioning Teaching and Learning

Drawing from the various factors associated with educational disparities—including immigrant, linguistic, gender, and racial status as well as the nature of early childhood education, selection/eligibility for gifted education and level of racial segregation of schools—and how these factors are translated into psychological processes, we now consider ways to reform educational practices that are informed by psychological principles associated with academic learning, motivation, and achievement in inter-racial contexts. Most school improvement efforts have been driven by good intentions, good ideas, and reasonable face validity on what should work. However the psychological research into such factors as learning, thinking, motivation, social perceptions, interpersonal relationships, and cultural concerns that promote enhanced academic outcomes, has yet to be sufficiently converted into generalizable educational practices.

At present, the state of the psychological science is unable to implicate specific educational processes to guide reform in the practices between and among educators and students. We believe that as evidence accumulates and best practices are being developed, the education field needs to implement practices that *go deeper* into teaching and learning practices to discern the underlying concepts and processes that when well implemented, hold promise for closing the achievement gap. In short, the reform in educational practices that we envision are informed by extant research and best practices for closing the achievement gap, but we recognize that the sufficient research has not yet been produced to validate the educational practices needed to reduce ethnic and racial disparities in academic achievement. Consequently, below we identify promising approaches to reforming educational practices in part to direct future research as well as provide psychological principles to inform educators in their attempts to develop practices that reduce educational disparities.

Transactional vs. Technocratic Reform

In addressing the achievement gap, it is important to distinguish between two categories of reform: technocratic and transactional. The more pervasive and popular solutions in education fall in the technocratic category. For one, *transactional* solutions in general, appear to be more compellingly effective than *technocratic* solutions (Griffith, 2002; McDermott, Mordell, & Stoltzfus, 2001). Yet technocratic solutions for school improvement are more likely to be enacted among those who pursue school reform (Tyack & Cuban, 1997). Technocratic solutions involve changes in school procedures, regulatory practices, and structural factors around which schooling is organized. Examples of these reforms include extending the school day or the school year, reducing class size, reconstituting the school by dismissing all teachers and having them reapply for their jobs, having the state or city take over a school, mandating school uniforms for students, alterations in the sequencing of the curriculum, adopting a new textbook series, changing from a junior high to a middle school format, or implementing block scheduling. With such solutions, it is simply easier for administrators to see that something has been done, that some changes have been made to educational system. Moreover, technocratic approaches are relatively easy to implement. They do not require ongoing monitoring and oversight given that the changes are apparent to students, parents, educators, administrators, and the general public. Clearly, many of these technocratic changes are noteworthy, admired by many adherents, widely implemented, and clearly evident of school reform and restructuring. Despite

their adherents, many have identified the limitations of technocratic reform, including Bruner (1996) who suggested:

Of course we need standards and resources to make our schools work well in solving the myriad tasks they face. But resources and standards alone will not work. We need a surer sense of what to teach to whom and how to go about teaching it in such a way that it will make those taught more effective, less alienated, and better human beings. (pp. 117-118)

On the other hand there are transactional solutions. To explain, transactional solutions are concerned with implementing practices that directly transform the practices and procedures which optimize student-student and teacher-student relationships that support teaching and learning activities inside the classroom. These interactions form the fundamental bases of every day teaching and learning and are manifested in cognitive, cultural, social and motivational processes within classrooms. Mounting evidence supports that such transactional factors function to maximize increased student opportunities to learn, and explain a sizable portion of the variation in student achievement outcomes (Cohen et al., 2003; Marzano et al., 2001; Wang, Haertel, & Walberg, 1993). Such classroom dynamics engage students' academic efforts, prior experiences, attitudes, knowledge bases, values, goals, and agendas; as well as attendant interpersonal interactions, and the imputed and extrapolated voices and interests of other concerned stakeholders in the educational enterprise not physically present in the classroom (Ellison, Boykin et al., 2000; Cohen et al., 2003).

Transactional considerations are distinguished from technocratic solutions also in how the public typically construes what is meant by an "education." Often, a child is seen as acquiring an education to use for commercial purposes – that is for getting a job or some other similar benefit. In contrast, from a transactional perspective, education is viewed as a dynamic process tied up with exchanges occurring in real time as a child negotiates the formal learning environment. Knowledge and skills are thus byproducts of this dynamic, ongoing process.

A transactional conception also holds that the knowledge and skills acquired may be relatively adaptive or maladaptive in terms of how well students negotiate the educational system. With the present transactional processes in schools, students are achieving failure and avoiding doing well in school as opposed to learning approach strategies, becoming skillful at appearing to be learning when they are not, gaining attention and recognition among peers for resisting the officially sanctioned outcomes of education.

Transactional solutions seek learning exchanges that are bidirectional – indeed multi-directional. As Brown et al. (1996) emphasized, classroom interactions involve explaining, but also modeling, coaching, collaboration, dialogue, scaffolding, elaboration, and multiple perspective taking transpiring. As Turner et al. (1998) observed, in classical teaching, the preponderance of instructional time is spent in the structure of initiation-response and evaluation (IRE). In this typical arrangement, the teacher *initiates* the learning event through some form of explanation, and requires from students some form of *response*, either oral or in writing. The teacher then *evaluates* that response and the pattern continues. Transactions imply exchanges. They imply reciprocal relationships and influences. Indeed teachers and students mutually influence each other in a cyclical, recursive way, where each response to the other can be an

escalation, amplification, or compensation with respect to the previous response (Sutherland & Oswald (2005). Children are shaped by the classroom environment, help to shape the environment, and are affected by what these changes bring back to them. Additionally, classroom transactions are construed as microcosms of human development, with development essentially arising from ongoing, dynamic, bi-directional (and multidirectional) interactions between children and their environmental contexts.

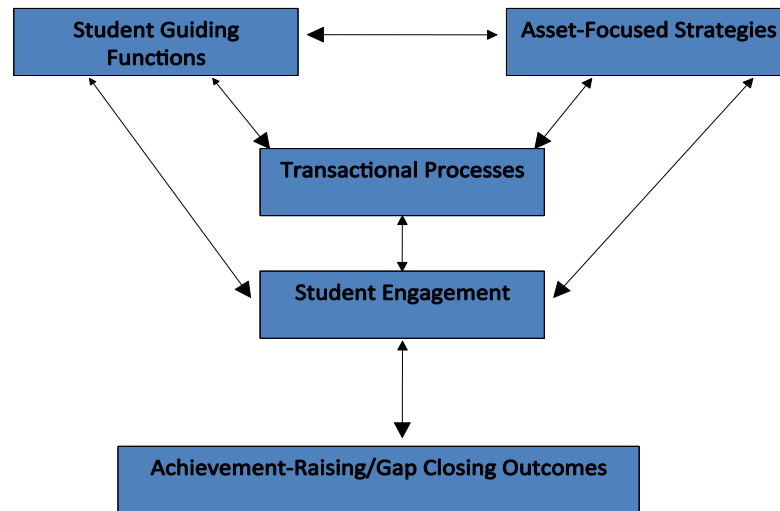
Optimizing transactional processes in classrooms requires acknowledging that learning exchanges are multidirectional, that is, between students and teachers, and between and among students themselves. Such processes connote that there are multiple opportunities for learning in a variety of forms. Learning is multidirectional in the sense that teachers themselves are learners. At the least, teachers are learning (a) about their students as people, about their interests, assets, prior experiences, and knowledge; (b) how best to involve their students in the learning process and how best to teach them; (c) their own subject matter more thoroughly, so they can best represent it to their students; and (d) they are learning strategies for effective delivery of the learning material. Moreover, teachers are providing feedback to their students for evaluation purposes, but also to provide constructive feedback, supportive feedback, and to expand on what their students offer, and to challenge students' responses to go further and deeper into their thinking. Teachers should also imbue the learning context with a positive affective tone. These optimal exchanges would be meaningful and couched in prosocial communications. To prepare for such transactions requires professional development among educators to be more than just acquiring some fad-driven new strategy to try out on students.

In transactional conceptualizations, students are not construed as passive recipients of knowledge. Students are not only knowledge consumers, but also knowledge producers as well. They are learning the subject matter, but they are also learning about themselves, their classmates, their teacher, their family, and community. They will grow intellectually, but socially and emotionally as well. Optimally, students take ownership over their learning and come to see mistakes not as cause to pull back, but as opportunities to learn new ways of approaching problems. Students should hold high expectations for themselves and for others in the classroom setting. Students need to believe that they can succeed and that which stands between them and success is primarily their own effort.

Strategies to Promote Teaching and Learning

The extant literature provides some guidance on what makes transactional processes particularly effective in raising achievement and closing performance gaps. A framework can be constructed which identifies and links in a reasonably coherent fashion these various key elements, constructs, and dynamics that combine to flesh out multi-directional pathways of influences, if not causes that eventuate in higher academic outcomes. These various factors, how they are seemingly organized, and how they are apparently related are all presented in the framework that is depicted in Figure 10.

Figure 10: Research-Based Scheme for Promoting Enhanced Teaching and Learning



Note: Although arrows between boxes are bidirectional, the larger arrowheads indicate the more typical direction of influence.

Student Engagement. The key in this scheme is to focus on the promotion and enhancement of student engagement. Engagement itself is three-dimensional, entailing the behavioral, affective, and cognitive realms (Fredericks, Blumenfeld & Paris, 2004). In the behavioral domain, engagement involves task persistence, consistency in on-task activity, and focused sustained attention. In the affective domain, engagement entails positive emotional tone, positive attitudes towards learning, and motivation to learn. The cognitive domain embodies connecting with the subject matter in intellectually engaging ways, to include critical thinking.

The weight of research evidence supports the notion that increases in academic learning and measurable academic achievement are preponderantly preceded by the promotion and sustained enhancement of behavioral, affective and/or cognitive engagement of students (Bodovski & Farkas, 2007; Borman & Overman, 2004; Li & Lerner, 2011; Lutz, Guthrie, & Davis, 2006; Skinner & Belmont, 1993). Engagement is thus a precursor to achievement outcomes that close achievement gaps between ethnic and racial minority and majority students, as well as between U.S. students and those from other nations of the world, and equip students with the basic and higher order knowledge and skills that will be required of them in the 21st century.

One research example of note is provided by DiPerna, Lei, and Reid (2007). They examined behavioral factors related to *growth* in math performance from kindergarten through the third grade. Data were taken from an ethnically diverse national sample, the Early Childhood Longitudinal Study, and included externalizing behaviors (aggression, hyperactivity, behavioral regulation); internalizing behaviors (anxiousness, worry, distress and withdrawal); and approaches to learning (task persistence, attentiveness, and eagerness to learn). The outcome measure was performance on an individually administered standardized math achievement test. Results revealed that the most substantial behavioral predictor was approaches to learning. This factor is akin to student engagement.

Student Guiding Functions. Moreover, engagement that is informed by certain learning attitudes or *guiding functions*, and by certain classroom dynamics, themes, arrangements and processes, that we refer to overall as *asset-focused factors*, are particularly instrumental in promoting the requisite levels of engagement that lead to the desired outcomes, and may even impact these outcomes in a more direct fashion. Prominent among the student guiding functions or learning attitudes are *self-efficacy*, *self-regulated learning*, and *incremental beliefs* about intelligence or ability (Bandura, 1997; Schunk & Zimmerman, 2007; Yeager & Walton, 2011). Self-efficacy entails the confidence that one has what it takes to accomplish the desired outcomes (Bandura, 1989; Linnenbrink & Pintrich, 2003). Navarro et al., (2007), and refers to a student's belief that if he puts forth the requisite time and effort on a given task in a given domain, the desired outcome will occur. Self-regulated learning entails the propensity for planning, monitoring, and assessing one's own learning. Incremental beliefs (as opposed to fixed beliefs) are beliefs that one's ability or competence is malleable and thus modifiable. Recent evidence indicates that positive outcomes for struggling minority group learners accrue when self-efficacy (Borman & Overman, 2004; Byrnes & Miller, 2007; Kitsantas, Cheema, & Ware, 2011); self-regulated learning (Horner & O'Connor, 2007; Mason, 2004; Zito et al., 2007), and malleable beliefs about ability (Blackwell, Trzesniewski, & Dweck, 2007; Yeager & Walton, 2011) are manifested.

Stevens et al. (2004, 2006) and Byrnes (2003) found that self efficacy has significant predictive value for the achievement performance of Black and Latino students. Evidence shows that interventions which enhance students' self efficacy lead to higher academic performance outcomes (Linnenbrink & Pintrich, 2003). A study by Mason (2004) speaks to the potency of self regulated learning. Participants in this investigation were 5th grade students with low reading achievement test scores (falling in the 10th to 40th percentile range). Over 90% of the participants in the sample were African American children from low income backgrounds. Half of the sample received explicit training in self-regulated learning related to reading comprehension. The other half received standard reading instruction. Reading performance was superior for those in the intervention group who were taught to deploy goal setting, self-monitoring, and self-reinforcement (for making progress) while engaged in reading.

Aronson et al. (2002) addressed the implicit beliefs that students have about intelligence in an effort to improve the academic performance of African American college students. Decades of research have shown that students who think of intellectual ability as a fixed trait (entity theory) rather than as a potential that can be developed (incremental theory) are at risk of negative academic outcomes-decreased confidence, loss of enjoyment, and performance

impairment-when faced with difficulties or setbacks (Bandura & Jourden, 1991; Dweck & Sorich, 1999; Henderson & Dweck, 1990; Martocchio, 1994; Taberero & Wood, 1999; Wood & Bandura, 1989). Research shows that African American students are more likely to blame their own shortcomings for academic difficulties or failures (Good, Aronson, & Inzlicht, 2003). That is, they make internal, stable attributions for negative outcomes. Yet when they adopt an incremental theory, they are much less likely to attribute their current struggles to their own fixed intellectual shortcomings. Instead, they view mistakes as an indicator that they did not try hard enough or did not approach the problem appropriately. Having African American students come to believe that competence and ability are changeable and not fixed can have a positive impact on their achievement strivings. Moreover, students' self efficacy, self regulated learning and incremental beliefs positively impact engagement. Researchers have shown behavioral, cognitive, and emotional engagement to be directly and indirectly related to academic achievement and performance for African American students (Chen, 2005; Finn & Cox, 1992; Miller-Cribbs et al., 2002; Schunk & Zimmerman, 2007; Valiente et al., 2008; Zimmer-Gembeck et al., 2006).

Asset-focused Strategies. Among the identified asset focused factors are positive teacher-student relationship quality (marked by caring, support, and high expectations); collaborative learning (marked by collaborative intellectual exchanges among group members); mastery classroom goal structures (marked by a focus on student understanding, effort, and improvement); meaningful learning (marked by a focus on personal relevance and links to prior knowledge and experiences); cultural significance (marked by links to family socialization and traditions, fundamental core values, and popular culture); and a host of information processing elements such as automaticity, cognitive elaboration, mental representations, and strategic and schema-based learning. There is ample evidence in the extant research literature that asset-focused factors when incorporated into classroom teaching and learning can be particularly beneficial for ethnic minority students across K-12. As the term implies, this approach seeks to build on the assets students (and other learners) bring with them into the learning setting, or to create assets for them.

The research evidence reveals that although teachers generally hold lower expectations for Black and Latino students than their White counterparts, even when controlling for SES, positive *teacher student relationship quality* has achievement enhancing, gap-closing consequences for low-income ethnic minority students (Hamre & Pianta, 2001; Stewart, 2006; Tennenbaum & Ruck, 2007). The promoting of *mastery goal structures* leads to enhanced engagement, achievement, and perceived climate for ethnic minority students (Kaplan & Maehr, 1999). A recent meta-analysis indicates that *collaborative learning* more positively impacts achievement outcomes for Black and Latino than White students (Rohrbeck, Ginsburg-Block, & Fantuzzo, 2003). *Meaningful learning* has gap-closing consequences at both the elementary (Anand & Ross, 1987) and secondary level (Cohen et al., 2006). The deployment of culturally relevant strategies in the form of promoting such themes as communalism (Hurley, Allen & Boykin, 2009) or incorporating popular culture (Crompton & Gregory, 2011; Lee, Tynes, & Mendenhall, 2000; Waddell, 2010) has enhancing impact on achievement outcomes for many African American students. Moreover, directly teaching ethnic minority students efficient and effective information processing skills has positive achievement consequences as well (Jitendra

et al, 2007; Mason, 2004; Ramani & Siegler, 2011; Williams et al., 2005). A few representative research examples are called for here.

A recent study by Gutman (2006) showed a linkage not only between mastery goals and academic performance, but also between mastery and a key guiding function as well. She found that exposure to mastery goals in the classroom lead to increased math self-efficacy as well as to higher grades in math classes for a sample of African American high school students. Similarly, students who themselves espoused mastery goals had higher math self efficacy and higher mathematics course grades. Moreover, parents' mastery goals are associated with higher high grades in mathematics courses for their children.

The potential gap-closing potency of learning via collaboration has been documented in a meta-analytic review by Rohrbeck, Ginsburg-Block, and Fantuzzo (2003). All studies reviewed were at the elementary school level. In general, peer assisted learning contexts yielded greater mathematics achievement than did contexts marked by individualistic or competitive learning. Yet more particularly, the differences favoring peer-assisted learning were greater in urban over rural and suburban settings, low-SES over mid- and high-SES levels, and for ethnic minority status (Black and Latino) compared to majority (White) status. In fact, this ethnic minority status difference favoring collaborative learning was the largest of all comparisons.

One study that speaks to the cultural relevance of *communalism* was conducted by Hurley, Allen and Boykin (2009). Black and White 5th grade children from low-income backgrounds learned strategies to aid in solving mathematics estimation problems. They were then tested on the relevant material. First, they were given a pretest on grade-appropriate estimation problems. Then they were placed in one of three learning conditions: *interpersonal competition*, *group competition*, and *communal*. Communalism is a cultural notion said to be embraced in many African American communities and defined as placing transcending importance on identity linked to group membership and adhering to the fundamental importance of mutuality in sharing and of social bonds (Hurley et al., 2009). In the interpersonal competition study condition, groups of three students were told that the one that did the best on the posttest would receive a reward. In the group competition condition, the three students were told that if their average score on the posttest was among the highest in the project, all three of them would receive a reward. Students in the communal condition were told that the three of them should work together for the good of the group so that every one of them can succeed on the posttest. No reward was offered. Each grouping of three students was race homogenous. It was found that the Black students did significantly better than their White counterparts under the communal condition, whereas the opposite was true under the interpersonal competition condition. The performance of both ethnic groups was on par in the group competition condition. Although this is but one experimental investigation done under controlled rather than actual classroom conditions, an important point should still be raised. When key cultural considerations are brought to bear in learning contexts, the achievement gap can not only be closed, it can actually be reversed.

Transactional Strategies for Teaching and Learning (TSTL)

It is also crucial to understand at an even finer grain the transactional processes that undergird the ongoing learning exchanges between teachers and students and among students

themselves. The approach to teaching and learning to be described presently draws on the literature on Transactional Strategies Instruction (Brown, 2008) and Discourse Oriented Teaching (Leonard & Hill, 2008). But it also takes greater heed of what is required to promote guiding functions and learning attitudes of students, and the incorporation of asset-focused strategies (Boykin & Noguera, 2011).

As stated previously, TSTL is premised on the belief that high quality teaching and learning are **not** just about what teachers say to and do with their students, but also about the *responses* of teachers to what students say and do in return. As Crockett (2007, p. 612) asserted, “productive instructional moves can occur only when teachers observe, listen, and question to gather evidence of their students’ learning *as they teach*.” Crockett (2007) has argued that teaching and learning are not bifurcated and independent entities, but they are co-constituted. Teaching and learning are bidirectional processes here. Students are learning from teachers to be sure, but teachers are in turn learning from students. They are learning about students’ current understandings, learning opportunities, and assets, and needs, as well as the effectiveness of their previous teaching episodes, and they are expected to be responsive to that which they are learning in real time exchanges with their students. Seen in this way, it is postulated that both teachers and students shape and are shaped by their ongoing classroom encounters. TSTL also gives attention to optimizing the responsiveness of teachers to students’ statements, actions, and affective displays, to further maximize student three-dimensional engagement. TSTL can be reasonably captured in terms of three transactional processes: *student elaboration*, *student discourse* and *teacher responsiveness*.

Promoting student elaboration. The notion of elaboration here speaks to the need for teachers to encourage or even require students to provide elaborated responses in their learning displays. Although simple one-word answers and short, declarative responses may be called for at times, teachers should also prompt students to go beyond yes/no and other close-ended or literal responses to extended responses where they display the quality, extent, or firmness of their current understanding. Students are expected to provide explanations in response to teacher inquiries, or to demonstrate how well they grasp what has been presented. This should be the case when teaching simple multiplication facts as well as higher order thinking, such as predicting what the next step would be in a progressive chain of events that the teacher is depicting. Teachers should prompt students with questions such as, “Is what I said clear to you,” “Why or why not,” “Help me to see that you understand what I am saying,” Or “How does this differ from what we talked about yesterday?” Alternatively, they may have students provide their own examples of what was presented.

This approach is referred to as “accountable talk” by some researchers (e.g., Bitter et al., 2009; Michaels, O’Connor & Resnick, 2008), and involved teachers requiring their students to justify their responses. When students are required to justify their answers via logical, experiential, or empirical means, they are accountable for proving that their response is correct or defensible. Accountable talk does not have to be a solo venture for a student. Students can be prompted to reach a consensus for an appropriate or acceptable answer (Turner & Meyer, 2004). Of course there are several goals that inhere in the promotion of accountable talk. Such accountable talk helps students to articulate effectively their reasoning behind their answers and in turn leads them to think deeply and securely about what they are learning. These teacher-

student dialogues in which students support their answers also sharpens their skills at listening to the teacher and other students with a learning purpose. Such talk also promotes them to not just learn the subject matter at hand, but to focus on the ideas in the content that transcend the present lesson. There is evidence linking student elaboration and accountable talk to increased student engagement and gap-closing academic performance (Bitter et al., 2009; Michaels, O'Connor, & Resnick, 2008; Richardson, 2010; Wolf, Crosson, & Resnick, 2005).

Promoting classroom discourse. Classroom discourse is distinct but related to student elaboration. The promotion of elaborated responses and accountable talk can likely precipitate discussion and dialog among teachers and students (Michaels et al., 2008). Such discussion and dialog is the "stuff" of classroom discourse, and can lead to a deeper and more secure understanding of the lesson content. The give and take of classroom discussion is another lynchpin of transactional teaching and learning. Discourse is posed in contrast to a transmission model of teaching and learning whereby class time is dominated by teacher talk. Classroom discourse can be *directed* or *negotiated*. Directed discourse is generally controlled by the teacher in so far as it is focused or structured to insure that the lesson material is initially understood by the students. There are certain boundaries placed on the dialog, so that it will not stray too far from the goals of the lesson and the learning objectives that are to be met. For example, students have to learn their multiplication tables or students are to master schema-based comprehension or problem solving as this knowledge is foundational to learning more advanced concepts or the application of academic material to students' lives.

Negotiated discourse occurs when the teacher allows the discussion to go where the students want to take it or need to take it. There should be an exploratory flavor to such discussion. Here, the teacher wants to discern if her intentions for the lesson match those of the students, or if the students grasp the intent of the lesson. In essence, the teacher is attempting to determine what meaning students attach to the lesson, and what modifications need to be made to take these meanings into consideration in moving forward. Relatedly, through negotiated discourse, teachers seek to determine what students need to know and what they already know that can be capitalized upon in the course of further explicating the topic more clearly or thoroughly. In support of promoting negotiated discourse, teachers may encourage students to challenge what has been presented or may even purposely make mistakes to determine if these mistakes are caught and then to have the mistakes corrected by the students. Certainly one crucial aim of such discourse is to help create greater student ownership of learning. Students are encouraged to share personal experiences or other narratives pertinent to the topic at hand or to discuss concepts that they believe are relevant to the lesson material that the teacher has not introduced. The intent is to have students extract meaning from the lesson and the learning activity. As with student elaboration, evidence is accumulating supporting the beneficial role that student discourse plays in fostering engagement and potentially gap-closing academic achievement (Bitter et al., 2009; Kelly, 2007; Kelly & Turner, 2009).

Teacher Responsiveness. Notions of student elaboration and discourse focus more so on the teacher's efforts to draw students into extended and penetrating consideration of the lesson material, and to solicit feedback from the students on how the material has been received by them. Another factor is *teacher responsiveness*. This has to do with how a teacher reacts to students' responses to the lesson presentation, activity, or materials.

As mentioned above, the quality of learning opportunities depends not only on what a teacher initially presents in the lesson, but on how the teacher replies to what students say or do in their responses to that presentation; or reacts to how students answer what the teacher has posed to them. This then becomes an ongoing interactional dynamic where teachers and students take turns in responding to each other. As the authority figure and prime source of lesson knowledge, the teacher's responsiveness will largely dictate the ultimate academic consequences for the students.

Educator responsiveness should serve one major set of goals. The fundamental aim of high quality responsiveness is to make sure that students are authentically engaged, and once they are engaged, to insure that the engagement is sustained, pervasive, and deepened across time. The literature has offered useful terms to capture the quality of teacher responsiveness: *magnification* and *compensation* (Skinner & Belmont, 1993; Sutherland & Oswald, 2005). As the term implies, a magnification response serves to further accentuate the student(s)'s learning display. This could lead to subsequent enhancement of student engagement or its further reduction. When the teacher responds with praise, encouragement, elaboration, and the like to a positive learning display, this would typically beget sustained or increased student engagement.

Positive magnification responses are aimed at securing, enhancing and sustaining students' behavioral, affective, and cognitive engagement. Magnification involves (a) provoking and sustaining students to stay on task to develop understanding and mastery of the material, (b) being consistently attentive, to manifest positive feeling and attitudes toward learning and task accomplishment, and (c) probing deeply into the material, rather than understand it in shallow, rote, or literal ways. Educators display magnification responsiveness through promoting and honoring the contributions of students to the discussion, or validating the questions they ask (Sutherland et al, 2010; Sutherland & Oswald, 2005). Magnification also involves acknowledging that students are grasping the material, or providing them with optimal challenges, validating their opinions, connecting their experiences to the topics at hand, amplifying the points students raise, respectfully disagreeing with their comments, but always showing that the students' effort had merit, and even modulating any disappointments while building on the positive displays of emotion (Decker, Dona & Christenson, 2007). All of this magnification then is in the service of generating more positive student responses, which, in return, beget more positive teacher responsiveness, and ideally leading to an upward spiral of student engagement.

A downward spiraling of negative or inadequate teacher responsiveness and student disengagement is also possible. If teacher responds negatively, via scolding, coercion, put down, or even is unresponsive to a student, this could lead likely to magnification of problematic learning displays, increased inattentiveness, or lessened engagement (Skinner & Belmont, 1993). When this in turn is met with continued reprimands, negative sanctions, or avoidance responses from the teacher, this further escalates the problematic transactions. Ultimately then there would be fewer invitations for involvement (Greenwood, 1996; Greenwood, Delquardi, & Hall, 1984; Gunter & Coutinho, 1997; Sutherland & Morgan, 2003).

On the other hand, a downward spiraling could be interrupted when the teacher tries to adjust to learning displays by addressing students' needs, and get them back on task (Skinner & Belmont, 1993; Sutherland et al, 2008). Effective compensatory responses should result in

greater student engagement with respect to the lesson content. Compensation can include, correcting errors in a non-demeaning ways, or simply probing to discern why errors occurred in the first place. Or compensation may be simplification of the presentation, breaking it into smaller steps; pulling back temporarily in the demands made; or providing more time for the information to be digested. Compensation might also involve redirecting the students' responses to get them on track with the lesson's focal point and objectives. While the results have been promising with respect to engagement and academic achievement, further confirmation awaits research with general student populations, and with greater focus on ethnic minority students. Research is also needed that looks more systematically at the specific magnification and compensation responses that are most effective.

Reducing Educational Disparities: Going Broader

The weight of systematic, empirical evidence seems to implicate the fundamental importance of daily classroom transactions in determining achievement outcomes in general and in promoting achievement raising, gap closing outcomes in particular. Yet this is not the entire story. There are other activity sectors of the schooling enterprise that impact achievement outcomes and therefore must be taken into consideration for several reasons. For one, they do account for variance in schooling outcomes. That is, their positive manifestations are related to higher student achievement outcomes, and when they are insufficiently present or when they are problematically manifested, they can undermine the prospect of attaining positive results. It has also been argued (Boykin & Ellison, 2009) that when evidence-based activities are concurrently happening across different realms of schooling, the chances that students will fall through the cracks of failure, are greatly reduced. Among the most notable of these other domains of schooling are *teacher professional development; school leadership; academic support programs; and student, family, and community partnerships.*

Professional development implications. It stands to reason that the dynamics of classroom practices that were depicted in the previous sections would not lend themselves to business as usual with respect to teacher professional development. The standard workshop model is typically a one shot affair (Darling-Hammond & Richardson, 2009; Guskey & Yoon, 2009;) it covers a topic that should be of practical value to the participating teachers. Most often, the teachers will not have further contact with the workshop leader. As many enlightened observers of teacher professional development in the United States have rightfully asserted, this standard "drive by" approach to professional development is woefully insufficient (Darling-Hammond & Richardson, 2009; Stigler & Hiebert, 2009). Certainly as typically constituted, it will not provide the kinds of teacher capacity building opportunities called for in this section. There are many reasons why this is the case.

Teachers are also left then to their own devices to take the new "knowledge" and translate it into practices in their own classrooms. It stands to reason that effective professional development needs to be more job-embedded, and most certainly this would be the case for the approach to teaching and learning called for in this report. It has been argued earlier that students profit greatly in their endeavors from constructive and ongoing feedback as they are learning the material and as they practice what they have learned. We should expect no less from how the teacher professional development process should be conducted. Indeed, as Stigler and Hiebert (2009) have argued, it may shed greater light on what is required here if we refer to it as teacher

learning, rather than professional development. Seen in this light, the processes of teacher learning should parallel student learning. Indeed high quality learning opportunities as exercises in capacity-building should hold for all learners. Research toward this end needs to be conducted.

Moreover, it could be reasonably argued that the principles undergirding high quality classroom learning could work for any schooling-relevant learning context. This would hold then for school leadership, student, family, and community partnerships, and academic support programs as well. In presenting these other schooling sectors, we highlight what the literature generally proposes are effective approaches.

School Leadership. In order for positive changes to happen and/or be sustained inside classrooms, as well as in corresponding professional development activities, the organizational capacity of the school may also need to be altered. The essential responsibility for insuring that this happens falls on the school leadership. . The school must be run well; students must be taught well; and school stake holders must get along well, interact well (Boykin & Ellison, 2009). In other words, in turn there must be administrative leadership, instructional leadership, and human relations leadership. *Administrative leadership* would involve providing appropriate professional and administrative support and supervision to school staff, and implementing a school wide accountability, incentive and recognition system, that insures fidelity of and commitment to the evidence-based activities. *Instructional leadership* concerns the guiding, monitoring and evaluating of instructional practices and student learning, as well as the providing of opportunities for follow up support for teachers. *Human relations leadership* encompasses promoting relationship- and team-building activities among all school stakeholders, to include both those who work in the school and reside those who in the community. It also entails keeping all stakeholders sufficiently apprised of school-based activities and relevant implications for various stakeholders. Additionally, such leadership includes encouraging and rewarding collegiality and respectful relationships among all stakeholders (including among school staff). Research is needed here to determine if the processes and factors that promote student engagement and learning would also prove effective in the promotion of three-dimensional school leadership, that is for "administrator learning."

Academic Support Programs. The need has been identified for offering supplemental academic opportunities for students to catch up in the areas where they are behind or need to have their skills reinforced; but also for students to engage in activities that accelerate their learning so that they can catch up to more academically advanced peers in a timely fashion while meeting the high standards that the school should expect from them (Fashola, 2001). While the primary goal of such a program is to promote greater academic learning, these efforts often include a focus on the development of the "whole student" throughout K-12 education. Thus, activities are planned that extend and enrich students' academic experiences and further expand their social and cultural horizons. As there is a paucity of evidence on what makes for effective academic support programs, it is worth pursuing whether highly effective academic support activities would be akin to the recommended teaching and learning strategies reviewed earlier in this section, and therefore parallel the activities occurring during the regular school day.

School, Family, Community Partnerships. Research shows positive outcomes accrue when schools and students are supportive of family and community well-being, while families

and communities are involved in activities that promote student and school success, and particularly for low-income ethnic minority students (Henderson & Mapp, 2002; 2011; Epstein et al, 2011; Marshall, 2006; Abdul-Adil & Farmer, 2006; Manz, Fantuzzo, & Power, 2004). A useful framework for categorizing research-based parent involvement activities has been provided by Joyce Epstein of Johns Hopkins University (Epstein et al, 1997). Six such involvement types are:

- **Parenting** – which entails providing a home environment that is favorable for academic learning to transpire;
- **Communicating** – when there is contact between parents and school personnel relevant to promoting student academic performance
- **Volunteering** – volunteering at school-based events that are relevant to academic learning;
- **Learning at Home** – participation in academically relevant activities in the home, to include extracurricular projects
- **Decision Making** –taking part in school-relevant decision making or governance activities; and
- **Collaborating with community** – Engaging in community-based activities that are supportive of student learning.

Much of the work in the domain of school, family, and community partnerships has been conducted through a lens of sociology-based variables, and valuable insights have been generated. The finer grain of psychological research and analysis would provide additional depth and specificity as to what would be the most effective transpersonal and intrapersonal factors and practices for undergirding successful school family community collaborative partnerships.

Task Force Recommendations

Recommendations for Research

Research Recommendation 1: In guiding their research, psychologists should adopt a broad definition of educational disparities to include those differences that (a) overlap with social class, (b) reflect bias and differential treatment in the educational system, and (c) are based on different responses to the educational system. Psychologists should investigate how each of these forms of educational disparities adversely impact ethnic and racial minority students.

Research Recommendation 2: Very little research has addressed the significant challenges faced by children of parents who hold undocumented immigrant status in the US. Many of these children are U.S. citizens, but because one or more members of their family are undocumented, the children face significant barriers to accessing educational and psychological services to which they are entitled and that they require for their educational and socioemotional development. This research is particularly important to document the psychological sequelae of recent state legislation attempting to reduce the numbers of undocumented immigrants.

Research Recommendation 3: Further research should identify psychological factors associated with immigrant status that have contributed to academic success across immigrant groups, as well as those unique to each group as well as identifying educational factors associated with school environments that have been highly successful at cultivating academic achievement on the part of immigrant children and youth.

Research Recommendation 4: More psychological research is needed to examine ethnic and racial minority students who participate in selective academic programs and identify the factors that contribute to their success. Those academically selective programs that are successful with ethnic and racial minority children should be examined to understand how and why they are successful with these groups of students.

Research Recommendation 5: Psychologists should further investigate the transactional processes within school that redress teacher-student dynamics that are associated with discipline and academic achievement gaps. This psychological research should address the nature of teacher responsiveness, with particular attention to strategies that enhance students' engagement in their education. Further research is needed to examine the long-term efficacy of interventions based on stereotype threat principles.

Research Recommendation 6: Greater emphasis should be given to pursuing evidence-based interventions that implement multiple pathways (e.g. academic support programs; leadership development; and family, school and community partnerships) that can each lead to higher achievement for ethnic minority students in order to increase the odds of these students' attaining academic success. In particular, considering issues of cultural sensitivity and important role that religious organizations have had in ethnic and racial minority communities, further research is needed into the effectiveness of programs from these community organizations in augmenting the formal education received in schools. School, Counseling and Educational Psychology specialties seem particularly well-suited to conducting this research.

Research Recommendation 7: More research is needed to supplement extant knowledge of how multiple identities (e.g., sexual orientation, social class, gender, disability, and gifted) intersect with race, ethnicity, and linguistic status in ways that may exacerbate educational disparities and/or require alternative strategies to redress disparities in academic achievement.

Recommendations for Educational Practice

Practice Recommendation 1: Identify and promote the cultural competencies of service providers in Early Childhood Education (ECE) that include linguistic, cultural, and interpersonal skills necessary to provide appropriate services to ethnic and racial minority children. Psychological research demonstrating the efficacy of ECE programs could inform educational practices promoting the school readiness of low-income and ethnic minority children that includes socio-emotional as well as academic skills necessary to be successful in K-12 schooling.

Practice Recommendation 2: Immigrant students bring important academic strengths to their education, but there are barriers that limit, in particular, Latino and Southeast Asian immigrant populations from realizing their potential in U.S. educational schools. Psychologists can help train and consult with educators in order to take advantage of the generally high educational aspirations and valuing of education immigrant students tend to bring with them to school.

Practice Recommendation 3: Additional supports need to be offered to ethnic and racial minority boys who start kindergarten with lower levels of literacy and higher levels of behavioral problems. Psychologists can further educate prospective and in-service educators about employing these supports as well as gender stereotyping and ways to inoculate children against stereotyping.

Practice Recommendation 4: Ethnic and racial minority students are exposed to differential treatment through the educational system. Psychologists can make important contributions by introducing prospective teachers and in-service teachers to theories and models explaining how culture, identity, and context interact and to social psychological interventions that have been demonstrated to increase achievement in ethnic and racial minority students.

Practice Recommendation 5: More attention should be given in teaching and learning to discerning and building on the social, cultural, linguistic, experiential, and intellectual assets that students from diverse backgrounds bring with them into classrooms. This emphasis reflects the purpose of schooling as promoting human capital development, rather than to function as a selecting and sorting mechanism.

Recommendations for Advocacy

Advocacy Recommendation 1: Psychologists should advocate for wider access to high quality ECE programs, which have been shown to help redress disparities associated with poverty in early childhood. There are large segments of the population, particularly working poor and low-income families, who need but do not have access to ECE services in order to begin K-12 schooling on a more even footing with their more affluent peers.

Advocacy Recommendation 2: Empower immigrant families to be informed consumers of the U.S. educational system by providing information about how their children can be successful in U.S. schools, including prerequisite skills for elementary, middle, and high schools, as well as in higher education. Many immigrant families have high aspirations for the educational attainment of their children. Many immigrant families lack critical knowledge about succeeding in U.S. school, services available to their children, as well as preparing and applying to universities in the U.S.

Advocacy Recommendation 3: Expand access to high quality bilingual education that provides linguistically competent education to children. The evidence of the effectiveness of more intensive bilingual education, as well as the problematic nature some ESL programs, is well established. Short-changing linguistic minority children of access to quality bilingual education creates inequities that have profound impact on their education for a decade, and more, perhaps for their lifetimes.

Advocacy Recommendation 4: The resegregation of schools appears to be a step backward in terms of schools being able to close the ethnic and racial gaps in academic achievement. Further resegregation of schools may lead to a widening of the ethnic and racial disparities. The American Psychological Association and psychologists should educate the public and policy makers about the consequences of increasing ethnic and racial segregation to the educational experiences of ethnic and racial minority children.

Advocacy Recommendation 5: More educational resources should be allocated for the subsidizing of job-embedded, continuous improvement, professional development in order to increase the capacity of teachers to deliver evidence-based, gap-closing instructional and learning strategies.

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