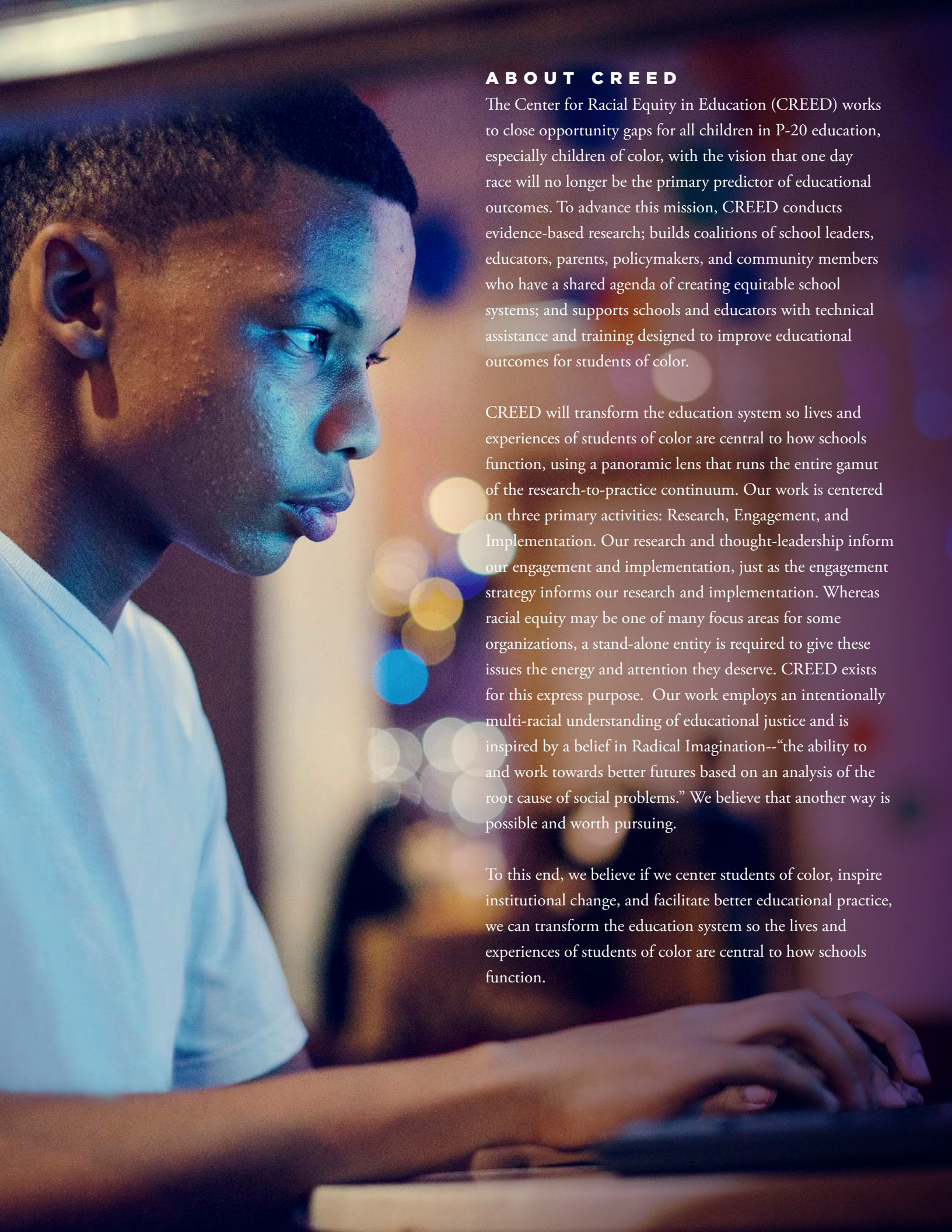**CREED**
Center for Racial Equity in Education

E(RACE)ING INEQUITIES

The State of Racial Equity in North Carolina Public Schools

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ABOUT CREED

The Center for Racial Equity in Education (CREED) works to close opportunity gaps for all children in P-20 education, especially children of color, with the vision that one day race will no longer be the primary predictor of educational outcomes. To advance this mission, CREED conducts evidence-based research; builds coalitions of school leaders, educators, parents, policymakers, and community members who have a shared agenda of creating equitable school systems; and supports schools and educators with technical assistance and training designed to improve educational outcomes for students of color.

CREED will transform the education system so lives and experiences of students of color are central to how schools function, using a panoramic lens that runs the entire gamut of the research-to-practice continuum. Our work is centered on three primary activities: Research, Engagement, and Implementation. Our research and thought-leadership inform our engagement and implementation, just as the engagement strategy informs our research and implementation. Whereas racial equity may be one of many focus areas for some organizations, a stand-alone entity is required to give these issues the energy and attention they deserve. CREED exists for this express purpose. Our work employs an intentionally multi-racial understanding of educational justice and is inspired by a belief in Radical Imagination--"the ability to and work towards better futures based on an analysis of the root cause of social problems." We believe that another way is possible and worth pursuing.

To this end, we believe if we center students of color, inspire institutional change, and facilitate better educational practice, we can transform the education system so the lives and experiences of students of color are central to how schools function.

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Racial inequity in education has a long history in North Carolina public schools. Race conditions students' access to educational resources and opportunities, and therefore has been and remains a persistent and powerful predictor of every measure of student success in school. Yet, it is difficult to find evidence that comprehensive assessment of, and sustained attention to, embedded racial inequities are a part of the ordinary operation of public education in the state.

Without comprehensive empirical analysis of the state of racial equity, it is difficult for stakeholders to fully understand where racial inequities exist, the magnitude of the opportunity gaps, how disparities are produced, and how they might be eliminated to ensure all children and youth have the same opportunity for educational success. **In the absence of purposeful reform that flows from a full understanding of racial inequities, business-as-usual approaches to public education serve to further the accumulation of educational disadvantage among children and youth of color in the state.**

The *E(race)ing Inequities: The State of Racial Equity in North Carolina Public Schools* report endeavors to provide comprehensive analysis of the condition of racial equity in North Carolina K-12 public schools. It does so through the examination of the relationship between race and over 30 indicators of educational access and outcomes using North Carolina student-level data from the 2016-2017 school year. Given the historical, embedded nature of racialized public education outlined in our companion report *Deep Rooted: A Brief History of Race and Education in North Carolina*, this report represents a first step in the process of addressing racial inequity. As such, these analyses focus on two rather straightforward questions:

1. *Does race influence educational access and outcomes?*
2. *Does race influence access and outcomes after accounting for other factors, such as gender, socioeconomic status, language status, (dis)ability status, and giftedness?*

Our intentional emphasis on race serves several purposes: to spark additional dialogue and inquiry, to indicate directions for more in-depth study, and to provide an empirical basis for the development of intervention(s) and reform(s) aimed at providing equitable access to the benefits of public education.

Without exception, we find that the influence of race functions to diminish both the access and the outcomes of non-Asian students of color. Our results confirm the existence of long-standing racial gaps in achievement, graduation/dropout, grade point average, SAT scores, and ACT scores. However, unlike many analyses related to race and educational success, we also examine how access to educational

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It is our hope that armed with the results of this report, and with continued study and dialogue, North Carolina can begin to move purposefully toward policies and practices that ensure that all students have an opportunity to succeed.

resources that facilitate success differ across racial groups. Here we consistently find that students of color have diminished access to the resources that affect success, including access to advanced coursework, experienced teachers, and racially/ethnically matched teachers.

Our analysis also identifies numerous instances of compounded, interconnected disadvantage for students of color. For instance, we find that the overexposure of non-Asian students of color to disciplinary suspension, which removes students from the learning environment, ripples through several other indicators, such as chronic absenteeism and graduation rates. Specifically, after controlling for the effect of other factors (race/ethnicity, gender, language status, special education status, and free/reduced lunch status), students who were suspended at least once were over three times more likely to be chronically absent and over twice as likely to drop out of high school than students who had never been suspended.

We believe our results bear upon longstanding biases in the discourse around race and education, which tends to focus on the annual reporting of racial achievement gaps with little mention of gaps in access and opportunity. This feeds a narrative suggesting that non-Asian students and communities of color place less value on education, and thus are less deserving of the benefits of public education. Our results across multiple indicators strongly contradict this view. We find that when controlling for other factors, like socioeconomic status and suspension patterns, several student groups of color (i.e. Black, Hispanic, Multiracial) are less likely or similarly likely to be chronically absent or to drop out of high school. We also find that White, Black, and Multiracial students have similar proportions of students that aspire to attend four-year colleges. Thus, while many factors (i.e. access to rigorous coursework and access to experienced teachers) appear beyond the control of students and communities of color, we affirm that they demonstrate a strong commitment to educational success. Given that public education is a social, political, and economic enterprise, we emphasize the importance of informing the discourse around race and education.

While our results suggest that reforms to policy and practice could ameliorate racial inequity across all the indicators we examined, we highlight several key actionable items. **First, equitable access to rigorous coursework would likely promote the explicitly stated college and career readiness goals of state and local educational agencies. Second, intervention to eliminate racialized patterns of school discipline would likely have a positive ripple effect across several key levers of educational success, including attendance, achievement, graduation, and college matriculation. Third, equitable deployment**

of experienced, effective, and committed teachers stands to promote racial equity across all measures of educational success as well.

E(race)ing Inequities provides a comprehensive empirical analysis of the state of racial equity in North Carolina public schools. Combined with the historically and socially informed perspective of our companion report, *Deep Rooted*, the persistent accumulation of educational disadvantage among students of color in the state is unacceptable. However, it is our hope that armed with the results of this report, and with continued study and dialogue, North Carolina can begin to move purposefully toward policies and practices that ensure that all students have an opportunity to succeed in North Carolina public schools. ◼

> *We share the concerns of a large and growing number of scholars and practitioners that recognize that racially inequitable access to the full benefit of public education persists today and presents one of the most pressing and stubborn problems facing the field*

Racial inequities have existed since the inception of the modern American public school system in the 1800s. Prior to the 1950s, students of color were largely relegated to separate, resource-deprived schools. The Brown v. Board Supreme Court decision of 1954, and federal legislation such as the Civil Rights Act of 1964 and the Elementary and Secondary Schools Act of 1965, held out hope of a racially integrated, increasingly equitable public school experience for students of color and students living in poverty. Despite the initial promise of these reforms, over the next three decades those who troubled to look promptly began documenting continued school segregation, along with racial differences in achievement, school resources, quality of teachers, school discipline, funding and school facilities (Coleman et al., 1966; Children's Defense Fund, 1975: Kozol, 1991). Race-based inequities in education remained a serious problem. Indeed, analyses prepared for school finance litigation in the 1990s revealed that schools serving greater numbers of students of color had significantly fewer resources than schools serving mostly white students on "every tangible measure" (Darling-Hammond, 1998, p. 2; Murray et al., 1998).

The federal No Child Left Behind Act of 2001 brought an explicit intention to close racial and socioeconomic achievement gaps through clear academic standards, more standardized assessments, increased accountability, and measures to increase teacher quality. Yet, within the decade, it was clear that NCLB was faltering on all fronts (Dee & Jacob, 2010; Reardon et al., 2013). NCLB's replacement and the current basis of federal education law, the Every Student Succeeds Act (ESSA), retains standardized testing mandates, but permits states to design their own plans for accountability. Under North Carolina's current ESSA plan, racial subgroups will be given performance grades (e.g. A-F) based on a composite score derived from End-of-Grade and End-of-Course testing (U.S. Department of Education, 2018). With such a strict focus on testing outcomes, differences in access and opportunity are neither measured nor accounted for in North Carolina's ESSA accountability framework.

North Carolina's accountability plans follow a familiar pattern with the discourse around education, where a tremendous amount of attention is paid to various "gaps" in student achievement outcomes, but rarely do we hear anything about attendant opportunity and access gaps. While virtually all analyses have found that non-Asian students of color are not achieving on par with their White counterparts, we are interested in whether they are expected to do so despite persistent racial differences in access to educational resources and opportunities. Differences in access and opportunity have been documented

across the educational landscape, from lower expectations from individual teachers to more structural factors like segregated, underfunded, and understaffed schools. However, the overemphasis on "achievement gaps" leaves questions about how large and diffuse racial differences in access may be.

In our companion report, *Deep Rooted: A Brief History of Race and Education in North Carolina*, we established a long historical pattern of unequal treatment on the basis of race. While many acknowledge the abject history of racial exclusion in American public education, many also assume that it is a vestige of an unfortunate, albeit bygone era. However, we share the concerns of a large and growing number of scholars and practitioners that recognize that racially inequitable access to the full benefit of public education persists today and presents one of the most pressing and stubborn problems facing the field. In many ways, *Deep Rooted* provides important context for the current inquiry, which attempts to provide a balanced and comprehensive view of the state of racial equity in North Carolina public schools across a variety of indicators of both access and outcomes.

Another important factor informing the present work is the observation that comprehensive analyses of the racial landscape in education are not conducted regularly by state, regional, or district agencies. While federal agencies require the collection and reporting of numerous metrics related to both access and outcomes as part of national accountability legislation, decades of well-documented racial inequities have not resulted in sustained efforts to critically examine the relationship between access, opportunity, and outcomes. As a result, discussions around racial differences in education often ignore the basic reality that equitable access to quality instruction and educational resources are powerful determinants of achievement outcomes. The constant reporting of racial differences in outcomes like test scores or graduation rates with no mention of underlying differences in access and opportunity has no doubt contributed to the general lack of clarity about where racial differences in education exist, the reasons they exist, and what reforms might produce more equitable systems. Furthermore, it contributes to the prevailing sense of inevitable "normalness" around racial inequities in education, in turn making them that much easier to ignore.

To further clarify what we mean by *outcome* vs. *access/opportunity* and the relationship between the two, we offer an example drawn from our data analysis. If one looks at student grade point average (GPA) in the state by race, it appears that overall White students earn higher grades than non-Asian students of color. How might stakeholders explain these differences? Simply reporting the educational *outcome* (GPA) by race may reinforce, or at the very least fail to qualify, deficit-minded explanations that appeal to racial differences in things like ability, intelligence, or the cultural value placed on education. However, if we look closely at the policies and procedures used to calculate GPA in North Carolina, we find that advanced coursework provides students a substantial boost to GPA. Grades in Advanced Placement (AP) courses, International Baccalaureate (IB), Honors, and certain advanced math and science courses are

granted additional points when calculating GPA, such that students with access to numerous advanced courses can attain GPA approaching 6.0 rather than the traditional 4.0 earned with "straight A's" in all courses.

To understand any racial differences in student GPA, we need to examine any potential racial differences in *access* to advanced coursework. It turns out that students of color in North Carolina attend schools that offer substantially fewer advanced courses such as AP and Honors courses. As such, we are forced to conclude that part of the explanation for racial differences in GPA is likely related to attendant racial differences in access to the courses that confer GPA bonuses. Does this mean that there are no differences between students that may be related to grades? Of course not. However, this brief example demonstrates how only looking at differences in outcomes serves to reinforce inequity and masks how racial differences in access and educational opportunity condition the experiences of all children in North Carolina public schools.

This report endeavors to provide a comprehensive analysis of the ways that systemic racial inequities in access and opportunity persist alongside difference in achievement outcomes and illuminate how those inequities serve to accumulate educational disadvantage among many students of color in our state.

RACE AND EQUITY AT THE CENTER

As the title of this report suggests, our analysis is *centered* on race as a construct and how it conditions the educational experiences of students. Centuries of denied access, decades of documented inequity across all known metrics, and the inability of massive, widespread reform efforts to adequately address racial equity should suffice to justify our focus on the role of race in the educational experiences of the children of North Carolina's public schools. We also note that the patterns of inequity present in education can be found in criminal justice, healthcare, employment, housing, and virtually all social, economic, and political institutions. In this context, racism is understood not only as the accumulated behaviors of individual actors, but as part of a system woven into the fabric of our social institutions. As such, we reject the notion that public education can proceed in a race-neutral or colorblind fashion. Rather, we position race as central to a full understanding of educational processes as they proceed on the individual, classroom, institutional, community, and structural level.

While we recognize that "race" is socially constructed (as opposed to scientifically constructed), its "modes of existence" are quite real and have innumerable material, social, and educational consequences (Leonardo 2005, pg. 409). That is, race is a fundamental axis upon which educational (dis)advantage is distributed, not merely an addendum to other supposedly more scientifically grounded relationships, such as social class or ability (Gilborne et al., 2018). Simply stated, race is an illusion, but it is a powerful illusion. Based on our framing of race, we also reject the notion that racial differences in education can be fully explained by attendant differences in class, locality, ability, or any other factor or set of factors. To empirically test this position, we include measurements of social class, ability, gender, and language into our data analysis. ▶

It is also important that we clarify what we mean by equity and racial equity in education. We define racial equity in education as a state in which educational access and outcomes are independent of students' social racial/ethnic backgrounds (Bloom, 1979; Hutmacher et al., 2002; Perry 2009). In other words, racial equity is when race alone does not predict access or outcomes. For some, this definition leaves room for notions of merit to explain differences between the performance of individual students (Rawls, 1992, 1993). As such, racial equity does not demand that all students have the exact same level of performance. However, in an equitable system we would continue to observe differences within racial categories based on individual and environmental factors, but we would not observe gross differences between similarly situated students from different racial groups (Benadusi, 2002). Therefore, our data analysis includes empirical tests of whether substantial differences exist between racial groups across numerous indicators and whether race is indeed independent from measurements of access and outcomes.

ANALYTICAL STRATEGY

The ways that we define race and racial equity prescribe a particular type of analysis. Because empirical research cannot adequately separate the influence of students' race from other background and environmental factors (class, gender, ability, school context, etc.), and because of the difficulty of generalizing individual cases of prejudice and racism to larger systems, we employ "big data" and the notion of "disparate impact" (U.S. Department of Justice & U.S. Department of Education, 2014) as key components of our approach to assessing racial equity at a systems level. That is, we ask whether the overall patterns of racial (in)equity can indicate where policies and practices have different consequences across racial lines regardless of the intent of the policies or educational actors involved. Ultimately, our goal is to show how race contributes to the accumulation of (dis)advantage within the present public education system through a comprehensive analysis of racial gaps in outcomes and the access and opportunity gaps that condition them. ▶

In the sections that follow, we provide disaggregated data by race for the following indicators to determine if gaps exist between different racial groups:

Access Indicators

Honors Courses
- Access
- Honors Courses Taken

Advanced Placement Courses
- Performance
- Advanced Placement Courses Access

Academically/Intellectually Gifted

Exceptional Children
- Designation
- Judgmental Designations
- Separate Settings

Discipline
- In-School Suspension
- Out-of-School Suspension
- Suspension for Subjective Offenses

Chronic Absenteeism

Teachers
- Experience
- Courses with Novice Teachers
- Schools with Novice Teachers
- Highly Qualified Teachers
- Unqualified Teachers
- Unknown Teacher Qualifications
- Teacher Turnover
- Vacancy
- Teacher-Student Ethnic Match

Outcome Indicators

Grade Point Average

Dropout/Graduation

Post-Secondary Intentions

End-of-Grade Tests
- Reading Grade 3
- Reading Grade 4
- Reading Grade 5
- Reading Grade 6
- Reading Grade 7
- Reading Grade 8
- Math Grade 3
- Math Grade 4
- Math Grade 5
- Math Grade 6
- Math Grade 7
- Math Grade 8
- Science Grades 5
- Science Grades 8

End-of-Course Tests
- Math 1
- English 2
- Biology

SAT

ACT

WorkKeys

These descriptive results represent full tallies of "what actually occurred" (as reported) during the 2016-2017 school year. While these descriptive results document what are often remarkable differences between racial groups, they do not indicate whether racial differences may (or may not) be due simply to chance. Nor do they account for the ways that race may interact with other factors (class, gender, ability, language status, giftedness, etc.) that may also be contributing to observed differences. In other words, simple descriptive results do not show whether race is actually moving the dial. Therefore, we also built prediction models for each indicator to show whether race has a significant influence (not due to chance) and whether race remains a strong predictor after statistically controlling for those other plausibly related factors. ▶

ORGANIZATION OF THE REPORT

E(race)ing Inequities is a comprehensive look from the state level across a series of education indicators that assesses the influence of race. The report is organized into 14 sections:

- Teachers,
- Advanced Placement (AP),
- Honors Courses,
- Academically and Intellectually Gifted (AIG),
- Exceptional Children/Students with Disabilities,
- Chronic Absenteeism,
- Suspension & School Discipline,
- ACT[1],
- SAT,
- Dropout,
- Grade Point Average (GPA),
- Postsecondary Intentions,
- WorkKeys, and
- End-of-Grade & End-of Course Testing (EOG/EOC)

The section covering each indicator provides a justification for study, a brief description of the metric under examination, a summary of what previous research has found, and any relevant policies and/or practices present in the state of North Carolina. We then present the results and interpretation of data analysis. Each section concludes with key takeaways that have implications for policymakers and education stakeholders.

POSITION STATEMENT

Given our recognition that numbers and statistics cannot speak for themselves but must be interpreted by people who occupy and have occupied specific social locations, we feel it is important to identify our social locations as necessary context for the results we present. We write from a perspective that highlights the need to think critically about how racial inequity is routinely embedded in every aspect of the education system. The social locations of the authors of this paper differ in some respects and overlap in others. Both of us identify as males. One of us is White from the southeastern United States. The other Black, originally from the Midwest, but a long-time resident of the American Southeast. We are both former teachers from working-class family backgrounds who now locate ourselves in the world of academia, public policy, and educational reform. We both have multiple children who attend North Carolina public schools. Some of our children attend charter schools, and others attend traditional public

1 ACT results are from 2015-2016, the most recent year available at the time of our analysis.

schools. As professionals, we have converged around our shared interest in race as a lens for approaching issues of education and equity. Our commitment to highlighting the importance of race in educational institutions derives from our experiences as public school students and our concerns as academics and educators.

HOPE FOR LASTING CHANGE

For anyone involved in public education, **the conclusions of this study should come as no surprise. What we hope is unique about our findings is the comprehensive nature of our approach across leading indicators and measuring the strength of race in relationship with other variables. However stark, the interpretation of these data alone do not initiate change.** Our hope is that this report draws attention to the need for sustained effort in measuring, analyzing, and addressing racial inequity from the educational entities tasked with ensuring our students' right to an opportunity to receive a sound public education. We suggest that North Carolina adopt racial equity as a stated goal for our public school system. Doing so will enhance the sustainability of equity related reforms and implies a careful consideration of the abject history of racial injustice and oppression in American public schools. Furthermore, we note that unlike the dominant modes of economic and political activity in our state and nation, we position education as a public institution with an explicit goal of producing the conditions necessary for all students to succeed.

This report, along with *Deep Rooted*, represent the first effort in what will culminate in the formation of the Center for Racial Equity in Education (CREED). **Through research, coalition building, and technical assistance, CREED will work to close opportunity gaps for all children in P-20 education, especially children of color, with the vision that one day race will no longer be the primary predictor of educational outcomes.**

The process of pursuing racial equity requires racial/ethnically diverse perspectives to be embedded within and valued across the power structures, policymaking processes, and cultural fabric of educational institutions (Museus, Ledesma, & Parker, 2015). Students and communities of color must be owners, planners, and decision-makers in the systems that govern their collective educational destiny.

To this end, we propose that racial equity is achieved when: educational outcomes are not predicted by the race/ethnicity of students; educational conditions are not predicted by the racial/ethnic composition of place (classrooms, schools, districts); the root causes of racial inequities are purposefully and continually (re)examined; and racial/ethnically diverse perspectives are fully embedded within and valued across the power structures of public education. Until these conditions are met, we hope that you will join us in our pursuit of e(race)ing inequities. ◼

This report analyzed data on 1,580,294[2] students in kindergarten through grade 13 during the 2016-1017 school year. Approximately 1% of students were American Indian, 3% were Asian, 26% were Black, 17% were Hispanic/Latinx, 4% were multiracial, 0.1% were Native Hawaiian/Pacific Islander, and 49% were White.[3] About 49% of students were identified as female. Roughly 6% of students were designated Limited English Proficient (LEP). Around 13% of students were designated as students with disabilities. About half of students were designated economically disadvantaged by the state of North Carolina while 58% were eligible for federal free or reduced lunch programs. Approximately 11% of students were considered academically or intellectually gifted (AIG). ◼

2 North Carolina does not collect data on all metrics for all students. Subsequent percentages represent the proportion for which data was available.

3 *A note on racial/ethnic designations.* We recognize that racial and ethnic diversity goes well beyond those groups designated by the United States Census Bureau.

In the sections that follow, we present an examination of over 75,000 teachers, roughly 1.5 million students, and approximately 8.5 million courses during the 2016-2017 school year.

Teacher quality has been consistently identified as the most important school-based factor in student achievement (McCaffrey, Lockwood, Koretz, & Hamilton, 2003; Rivkin, Hanushek, & Kain, 2000; Wright, Horn, & Sanders, 1997). Studies also show that teacher effects on student learning are cumulative and long-lasting (Kain, 1998; McCaffrey et al., 2003). For instance, Mendro (1998) found that students who have an outstanding teacher for just one year will remain ahead of their peers for approximately three years, while having an ineffective teacher for the same length of time has an equally negative long-term effect. Teacher effects also go beyond testing and achievement outcomes. Chetty, Friedman, & Rockoff (2011) showed that students assigned to high quality teachers are more likely to attend college and earn higher salaries and are less likely to have children as teenagers.

Given the clear relationship between teacher quality/effectiveness and a host of student outcomes, researchers have attempted to identify what defines and contributes to effective teaching practice. In this report, **we focus on four dimensions of teacher quality/effectiveness:**

1. **Qualifications (education, credentials, licensure),**
2. **Experience,**
3. **Turnover/retention, and**
4. **Student-teacher racial/ethnic match.**

TEACHER QUALIFICATIONS

We discuss teacher qualifications as they relate to degree attainment, certification/licensure, and subject-matter education. Research has shown that measures of teacher preparation and certification are among the strongest predictors of student achievement in reading and mathematics, both before and after controlling for other relevant factors like student poverty and language status (Carr, 2006; Darling-Hammond, 2000). Furthermore, the policies of state and local educational agencies influence the overall level of teacher qualifications and capacities (Darling-Hammond, 2000).

With regard to race/ethnicity, schools with higher proportions of students of color appear to be least likely to have qualified teachers (Clotfelter et al., 2005). Furthermore, studies have shown that highly qualified teachers were more likely to transfer out of schools with more students of color, leaving less qualified teachers concentrated in schools with higher proportions of students of color (Goldhaber, Gross,

& Player, 2009). Jerald (2002) found that core academic classes in high-poverty secondary schools with more students of color are twice as likely to be taught by a teacher without a major or certification in the subject area compared to low-poverty schools with more White students.

TEACHER EXPERIENCE & NOVICE TEACHERS

A substantial body of research shows that teaching experience is positively associated with student achievement gains (Kini & Podolsky, 2016). A longitudinal study from North Carolina covering a 10-year period found that a teacher's experience, test scores, and licensure all have strong positive effects on student achievement and that teacher effects exceed those of class size or the socio-economic characteristics of students (Clotfelter, Ladd, & Vigdor, 2007).

Students of more experienced teachers also appear to do better on other measures of success, such as school attendance, motivational factors, disciplinary outcomes, and outside of class reading behavior (Ladd & Sorenson, 2017; Balfanz, Herzog, & MacIver, 2007). Notably, more experienced teachers provided the greatest benefit to higher risk students, particularly in the area of attendance.

However, experienced teachers are not distributed equitably among schools, classrooms within schools, or student populations based on race/ethnicity and socio-economic status (Clotfelter, Ladd, & Vigdor, 2005; Kalogrides & Loeb, 2013). Clotfelter, Ladd, Vigdor, and Wheeler (2007) analyzed a number of measures of teacher (and principal) qualifications and concluded that students in high-poverty schools are served by school personnel with lower qualifications than those in the lower poverty schools.

Disparities have also been documented in the distribution of novice teachers with less than three years of experience, who are generally less effective at raising student achievement compared with their more experienced peers (Rockoff, 2004). Studies have confirmed that districts with high proportions of students of color had higher proportions of novice teachers (Clotfelter et al., 2005; Kalogrides & Loeb, 2013). Even more concerning is evidence that the assignment of experienced/novice teachers operates as a "sorting function," in which novice teachers are distributed among schools and among classrooms within schools in a way that disadvantages students of color and poor students and exposes them to lower quality teachers and less resourced classmates (Kalogrides & Loeb, 2013).

TEACHER TURNOVER/RETENTION

Teacher turnover rates tend to be particularly high in schools serving low-income, students of color and low-achieving student populations (Hanushek, Kain, & Rivkin, 1999). Nationally, around 30% of teachers leave the profession within five years, and the turnover rate is typically above 50% in high-poverty schools (Darling-Hammond & Sykes, 2003; Ingersoll, 2001, 2003). ▶

As might be expected, high turnover generally correlates negatively with student achievement outcomes (Guin, 2004; Ingersoll, 2001). Ronfeldt and colleagues (2013) found that students in grade levels with higher turnover score lower in both language arts and math. Effects were stronger in schools with more low-performing students and students of color. Moreover, research also suggests there is a "disruptive effect" to staff cohesion, community trust, and student engagement that extends far beyond individual classrooms (Ronfeldt, Loeb, & Wyckoff, 2013. p. 7).

The race/ethnicity of teachers also appears to play a role in turnover. Younger White teachers are more likely to leave schools when the proportion of teachers of color is larger. This pattern appears to diminish in older White teachers (older than 30) (Sohn, 2009). Given that roughly 80% of teachers are White, this poses a particular recruitment and retention challenge for schools with a diverse teaching staff.

RACIAL/ETHNIC MATCH

A growing number of studies show that having a teacher of the same race/ethnicity as the student has a positive effect on student achievement, teachers' behavioral assessments, graduation rates, and college enrollment (Bates & Glick, 2013; Dee, 2005; Egalite, Kisida, & Winters, 2015; Gershenson, Holt, & Papageorge, 2016). Research indicates that assignment to same-race/ethnicity teacher significantly increased the math and reading achievement of both Black and White students (Dee, 2005). In a study of the long-term effects of racial/ethnic matching, Gershenson, Hart, Hyman, Lindsay, and Papageorge (2018) found that Black students randomly assigned to a Black teacher in grades K-3 were five percentage points (7%) more likely to graduate from high school and four percentage points (13%) more likely to enroll in college than their peers in the same school who were not assigned a Black teacher.

To explain the effects of racial/ethnic matching, scholars often point to role-model effects for students of color, as well as substantial evidence of racial biases among White teachers (Dee, 2005; Gershenson, Hart, Hyman, Lindsay, & Papageorge, 2018). Bates and Glick (2013) studied behavioral assessments of an individual child by multiple teachers and found that Black children receive worse assessments of their externalizing behaviors (e.g. arguing in class and disrupting instruction) when they have a non-Hispanic White teacher than when they have a Black teacher even when controlling for the effects of school context and the teacher's own ratings of overall class behavior. Non-Black teachers also appear to have significantly lower academic expectations of Black students, particularly for Black males in math classes (Gershenson, Holt, & Papageorge, 2016).

METHODOLOGY

Given the profound effects that teachers have on virtually all educational outcomes, we position students' exposure to experienced, qualified teachers and same-race/ethnicity teachers as a powerful indicator of access and opportunity. In the sections that follow, we present an examination of over 75,000 teachers, roughly 1.5 million students, and approximately 8.5 million courses during the 2016-2017 school year. We report

teacher demographics,[4] experience, and qualifications. We also report the exposure of different racial/ethnic groups to different levels of teacher qualifications, experience, and turnover. In addition, we examine how the percentage of students of color in a school affects the distribution of those teacher traits. **We look at racial equity in the context of North Carolina teachers from two angles:**

1. **School-level means of teacher traits by the proportion of students of color, and**
2. **the racial/ethnic designations of students in courses taught by teachers.**

ANALYSIS

Figure 1.1 shows the gender and race/ethnicity of North Carolina teachers. Over 78% of teachers were female while only 49% of students were female. **Almost 80% of teachers were White, 13% were Black, and the remainder were split between American Indian (1%), Asian (0.8%), Hispanic (2.3%), and Other (0.5%).** When we compare the proportion of teachers belonging to a racial/ethnic group to the proportion of students belonging to the same group, **Whites are dramatically over-represented in the teaching force while the remaining racial groups are all under-represented.**

FIGURE 1.1 : Proportion of Teachers and Students by Race/Ethnicity and Gender
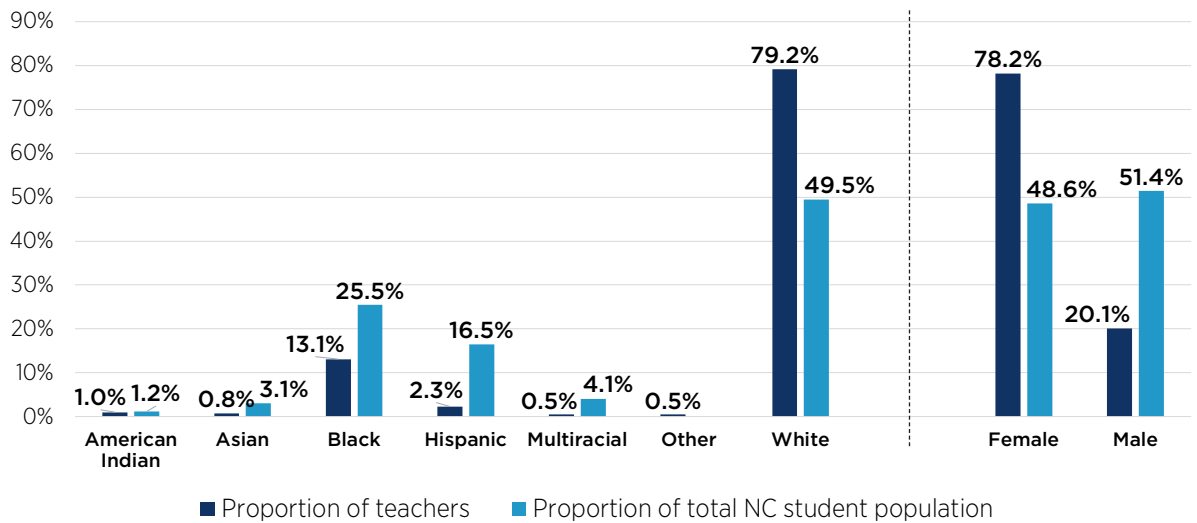
NOTE: Race/ethnicity categories were not coded the same for teachers and students. Teacher data included "Other," but student data did not. Student data included "Multiracial" or "Pacific Islander," but teacher data did not.

The difference in proportions between Hispanic teachers and students is notably large. **The proportion of students that are Hispanic is over 7 times the proportion of teachers that are Hispanic.** Asian students are roughly 3 times the proportion of Asian teachers, and Black students about double the proportion of Black teachers. ▶

4 Unlike students, teacher racial/ethnic categories included "Other," and did not include "Multiracial" or "Pacific Islander."

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Asian and Pacific Islander students have the highest exposure to unqualified teachers.

QUALIFICATIONS

Virtually all (> 99.8%) classroom teachers in North Carolina had a bachelor's degree (or higher) in 2016-2017. Years of experience ranged from 0-58 years with a mean of 13.6 years and a median of 13 years.

The majority of teachers were qualified as well. Over 80% of teachers were highly qualified, and only 0.5% (353 teachers) were not highly qualified. Approximately 18% of teachers had no determination of quality. A closer examination of teachers that were not highly qualified reveals that, in aggregate, they have higher levels of degree attainment and years of experience than highly qualified teachers. Only 38 of the 353 not highly qualified teachers were novice with three or fewer years of experience. This suggests that this small subset of not highly qualified teachers are well educated and experienced but are teaching outside of their degree area.

Nonetheless, we examined which types of schools and students were taught by teachers that were not highly qualified. Asian and Pacific Islander students have the highest exposure to unqualified teachers. Black, Hispanic, Multiracial, and White students are similarly exposed to unqualified teachers, and American Indian students have the lowest exposure to unqualified teachers. These differences were statistically significant. Approximately 305 schools (12%) contained at least one unqualified teacher. Schools with at least one unqualified teacher had a higher proportion of students of color than those without an unqualified teacher (~53% vs. ~51%).

Of course, the glaring issue with adequately examining teacher qualifications is the large number of teachers (over 14,000) for which there was no determination of quality. While the data give no clear answer as to why there is no information on quality for these teachers, examining the patterns of missing data suggests that a subset of schools and districts either failed to report the data, or the data from those agencies were not recorded.

Teachers with unknown qualifications have higher mean years of experience (15.6 vs. 13.6 years) but are more likely to be novice teachers (16.6% vs. 15.7%) and less likely to have a bachelor's degree or higher (95.8 vs. 98.9). Such mixed results leave it unclear as to whether teachers with unknown qualifications are more or less qualified in aggregate.

Despite the inherent limitations, we compared the racial/ethnic composition of schools with known vs. unknown teacher qualifications. The data show that schools in which teacher qualifications

are unknown tend to have higher proportions of students of color than schools in which teacher qualifications are known. We should reiterate that the vast majority (>99.9%) of teachers with known qualifications are highly qualified. Remaining mindful of the lack of clarity around teacher qualifications, these results may suggest that students of color are over-exposed to less qualified teachers.

N O V I C E   T E A C H E R S

Almost 12,000 teachers (~16%) fell into the category of "novice" in 2016-2017, defined as having three or fewer years of teaching experience. Novices taught just over 20% of student course sections. Black students had the highest proportion of course sections taught by novice teachers at approximately one in four (25%). About 22% of courses taken by Hispanic and American Indian students were taught by a novice compared to 20% of courses taken by Asian, Multiracial, and Pacific Island students. Just over 17% of courses taken by White students were taught by a novice.

We also built prediction models that predicted the likelihood of a student course section being taught by a novice teacher. Figure 1.2 presents the results of the prediction models. Model 1 represents the likelihood of being taught by a novice teacher for each racial/ethnic group as compared to White students. Model 2 shows the likelihood of being taught by a novice teacher for each racial/ethnic group while controlling for other relevant factors, including gender, free/reduced lunch status, language status, and special education status.

FIGURE 1.2 : Likelihood of taking a course taught by a novice teacher by race/ethnicity

■ Race as the only variable
■ Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)
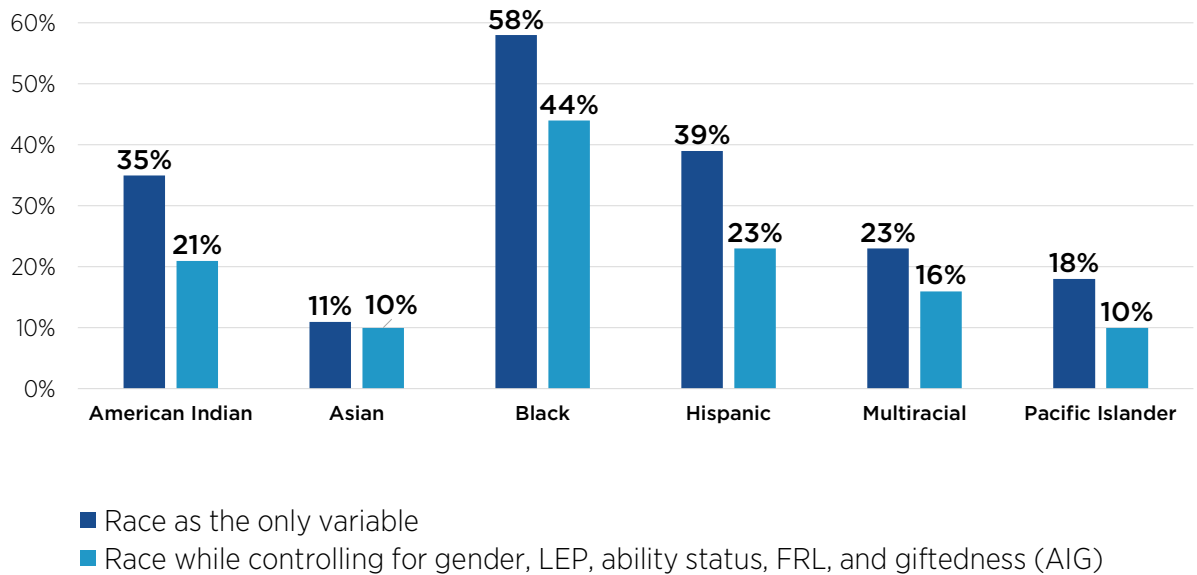
WHITES ARE THE COMPARISON GROUP

Race/ethnicity is a significant and substantial predictor of exposure to novice teachers after accounting for other factors. All student groups of color are more likely to be taught by a novice teacher than their White counterparts. The odds for Black students are almost double those of the next highest racial/ethnic group (Hispanic). **Of all variables in the model (race/ethnicity, gender, language status, special education status, free/reduced lunch status), being Black was by far the strongest predictor of exposure to a novice teacher.**

TABLE 1.1 : Percentage of novice teachers at a school by school racial composition

SOCs	0-25%	26-50%	51-75%	76-100%
% Novice Teachers	13.2%	10.6%	11.9%	10.2%

We also looked at the percentage of course sections taught by novice teachers at each school as a factor of the proportion of students of color in the school. We divided schools into quarters representing 0-25%, 26-50%, 51-75%, or 76-100% students of color. As seen in Table 1.1, schools with higher proportions of students of color do not generally have higher proportions of novice teachers.

Indeed, schools with the lowest percentage of students of color (0-25%, i.e. more White students) appear to have the highest percentage of novice teachers in aggregate. It should be noted, however, that the differences in novice teacher percentage between students of color percentage are not statistically significant, indicating that the observed differences shown in Table 1.1 may well be due simply to chance.

This finding is interesting given the above model predicting that students of color are more likely to take courses taught by novice teachers. **Taken together, these results suggest that the sorting of students from different racial/ethnic groups between novice and experienced teachers is conducted to a greater extent *within* schools rather than between them.**

We also examined overall teacher experience by racial composition. Schools had similar mean levels of teacher experience regardless of the proportion of students of color.

RACIAL/ETHNIC MATCH

TABLE 1.2 : Percentage of Ethnically Matched Courses by Race/Ethnicity

	Matched
American Indian	9.9%
Asian	0.2%
Black	31.6%
Hispanic	1.1%
White	90.5%

Across approximately five million student course sections, we identified substantial differences in teacher-student racial match. Almost nine out of 10 courses taken by White students were taught by a White teacher. About 1 in 3 course sections taken by Black students was taught by a Black teacher. American Indians were taught by same-race/ethnicity teacher in approximately 1 out of 10 course sections. About 1 in 100 Hispanic student course sections and approximately 2 in 1000 Asian student course sections were racial/ethnically matched. We were unable to analyze the ethnic match of Multiracial and Pacific Islander students because the state does not collect data on teachers from those race categories. ▶

TEACHER TURNOVER & VACANCY

TABLE 1.3 : Teacher Turnover and Vacancy

County	Proportion of students of color
LEAs with the highest turnover in the state	
Weldon City	97
Halifax	96
Northampton	89
Warren	81
Washington	78
LEAs with the lowest turnover in the state	
Elkin City	29
Dare County	22
Alleghany	22
Camden County	21
Avery	13
LEAs with the highest teacher vacancy rates	
Anson	67
Martin	62
Pasquotank	61
Craven	50
Hyde	41

As required by statute [NC General Statute § 115C-12 (22)], the North Carolina Department of Public Instruction submits a yearly report on teacher turnover and vacancy data to lawmakers. We present statistics from the *2016-2017 State of the Teaching Profession in North Carolina* (Public Schools of North Carolina State Board of Education Department of Public Instruction, 2018) report rather than results of our own analysis of raw data. Data was reported in tabular form by district or local educational agency (LEA) for teacher turnover. Only the counties with the highest vacancy rates were reported.

To assess the exposure to attrition and turnover rates, we compared the racial composition of the five counties/LEAs with the highest turnover rates to the five with the lowest rates. The counties/LEAs with the highest teacher attrition rates all had over 78% students of color, while those with the lowest attrition had under 30%. The mean proportion of students of color in the districts with the highest vacancy rate was 56.2%. The proportion of students of color statewide in 2016-2017 was 51.6%. ■

TAKEAWAYS

Research makes it clear that a highly qualified, experienced, stable, and diverse teaching corps is best positioned to meet the educational needs of North Carolina's diverse student population. Our analysis demonstrates that there are substantial differences in exposure to highly qualified, experienced, stable, and diverse teachers based on the race/ethnicity of students and the racial composition of classrooms, schools, districts and LEAs. While the vast majority of teachers for whom we have data are highly qualified, we found that students of color are overexposed to teachers that are not highly qualified and to teachers with unknown qualifications. While students from different racial/ethnic groups were taught by teachers with similar aggregate mean years of experience, all student groups of color took a higher percentage of courses from novice teachers than White students. Student groups of color also had a higher likelihood of being taught by a novice as compared to their White counterparts when controlling for gender, free/reduced lunch status, language status, and special education status. However, at the school level, those with the lowest percentage of students of color (0-25%) had the highest percentage of novice teachers. These results support previous literature (Clotfelter et al., 2005; Kalogrides & Loeb, 2013) in suggesting that schools and districts sort students into the classrooms of novice and experienced teachers based on race/ethnicity and socioeconomic status, and that this sorting proceeds to a greater extent within schools rather than between them. All student groups of color were also far less likely to be in classes with a teacher of the same race/ethnicity. Finally, students of color were strongly over-represented within the districts/LEAs with the highest teacher turnover and vacancy rates.

Given the powerful influence that teachers have on virtually all measures of educational success, our results provide evidence that students of color in North Carolina have less access to the highly qualified, experienced, stable, and diverse teachers that are likely to provide them with the best chance of school success.

ADVANCED PLACEMENT COURSES

Advanced Placement (AP) courses were originally developed in the 1950s to ensure that American high schools were adequately preparing students for college and postgraduate study. AP courses offer advanced coursework and often culminate in an AP exam. Students typically must pay between $60 and $100 to take AP exams depending on whether they qualify for financial aid. Students can earn a score between 1 and 5 on AP exams. A score of 3 or higher is required for students to receive college credit at most postsecondary institutions nationwide, and as of July 2018, the Board of Governors of the UNC System standardized a score of three or higher for college credit across the system's 16 universities.

A number of previous studies have found that race/ethnicity influences both the availability of advanced courses and the likelihood that students will take advanced courses (Theokas & Saaris, 2013; U.S. Department of Education Office for Civil Rights, 2014). Fewer AP courses are available to non-Asian students of color in aggregate, and even when courses are available, non-Asian students of color are less likely to take them (Quinton, 2014). Furthermore, research suggests that many students of color would have found success in AP coursework based on subsequent standardized test data (Barnard-Brak, McGaha-Garnett, & Burley, 2011). Thus, equitable access to AP course offerings is an important issue and is impacted by the informal pathways to AP related to identification criteria, teacher expectations, and counselling behavior (Theokas & Saaris, 2013).

AP course taking often affects GPA, class rank calculations, and access to specialized high school diploma credentials. While the actual rigor and college preparatory aspects of AP are contested, participation in AP courses is increasingly emphasized as an admissions criterion at postsecondary institutions (Klopfenstein & Thomas, 2009; Theokas & Saaris, 2013). Even though studies have found that AP provides no benefit beyond that provided by a non-AP curriculum strong in math and science, colleges and universities consistently cite rigorous high school coursework like AP as one of the most important criteria for college admissions (Clinedinst & Patel, 2019).

The number of schools and students participating in AP exams has risen steadily since their inception. Nationwide in 2017, approximately 2.7 million students took 5 million AP exams across 37 courses. While the NC State Board of Education "strongly endorses that all students enrolled in Advanced Placement courses take the corresponding Advanced Placement exams," (NC State Board of Education, Advanced Placement Course and AP Exam Endorsement, TEST-008) not all students that take AP courses end up taking AP exams.

The North Carolina Department of Public Instruction positions AP courses, along with International Baccalaureate (IB) programs and other advanced coursework, as part of their effort to ensure access

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Asian and White students earned scores (3, 4, or 5) that conferred college credit at approximately twice the rate as Black and American Indian students.

to and success in rigorous coursework. According to North Carolina State Board of Education Policy (SCOS-16; NC GS 115C-81), "(a)ll North Carolina public school students shall pursue a rigorous and relevant academic course of study as defined in the North Carolina Standard Course of Study," and "the North Carolina State Board of Education will (e)nsure that all students have access to and the support necessary to take Advanced Placement (AP) courses or be enrolled in an International Baccalaureate (IB) Program" (NC State Board of Education Policy, SCOS-16; NC GS 115C-81).

As of the freshman class of 2015-2016, student grades in AP courses receive one additional quality point [NC State Board of Education Policy GRAD-009, High Schools Transcript Standards; NC GS 116-11(10a)]. This represents a change from prior classes that received two additional quality points for AP courses. Under the old system, an A in an AP course garnered six quality points while an A in a regular course only awarded the student four quality points. In other words, the additional quality points for AP courses meant that a C in an AP course was the equivalent of an A in a regular course. Under the new rules, students only receive five quality points for an A in AP courses.[5]

Additionally, students enrolled in North Carolina high schools have the opportunity to earn Endorsements to their high school diploma that identify a particular area of advanced or focused study. At least three AP courses are required for the North Carolina Academic Scholars Endorsement [NC State Board of Education Policy GRAD-007, High Diploma Endorsements; NC GS 115C-81(b)].

METHODOLOGY

In this report, we position AP as an indicator of both achievement outcomes and access to rigorous coursework. We provide data on which students take AP courses, the results of students' AP exams, and the number of AP courses offered by secondary schools in North Carolina as a factor of racial composition.

In North Carolina, approximately 73,000 students took over 210,000 AP courses in 2016-2017, with about 54% attaining the necessary score to receive college credit (3 out of 5). There were substantial differences between racial groups in AP participation and results. ▶

5 https://www.newsobserver.com/news/local/education/wake-ed-blog/article10031036.html

ANALYSIS

Examining all AP courses taken in 2016-2017, the proportion of Asian and White students taking AP courses substantially exceeded the proportions of all high school students in the state that are Asian and White, respectively. Pacific Islanders and Multiracial students were proportionally represented, and Black, Hispanic, and American Indian students were substantially under-represented in AP course taking. The same pattern emerges when looking at students who took at least one AP course, with White and Asian students over-represented and American Indian, Black, and Hispanic students under-represented.

FIGURE 2.1: AP Course Participation by Race/Ethnicity

■ Proportion of total NC student population
■ Proportion of all AP courses taken
■ Proportion of students taking at least 1 AP Course
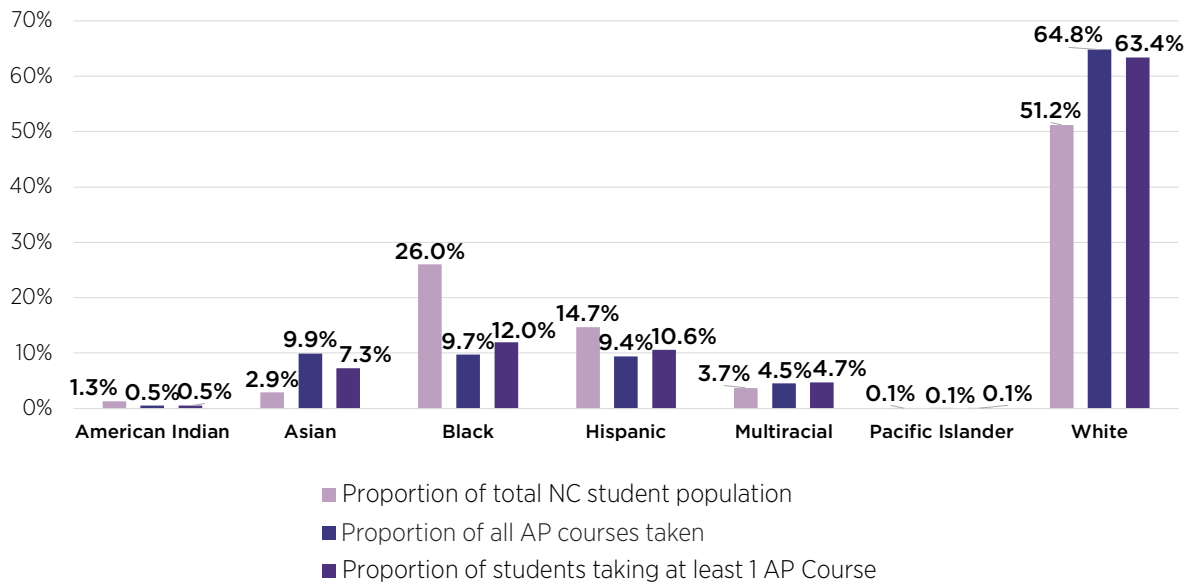
FIGURE 2.2: Mean AP score by Race/Ethnicity
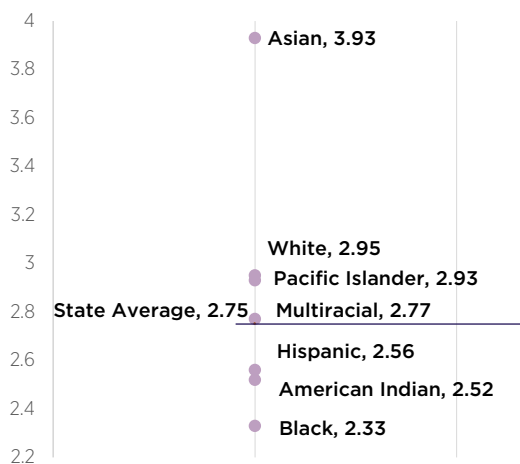
Asians attained dramatically higher mean AP exam scores, while Black students attained the lowest scores. Furthermore, **Asian and White students earned scores (3, 4, or 5) that conferred college credit at approximately twice the rate as Black and American Indian students.**

Statewide, North Carolina schools offered 38 AP courses. We analyzed the three most taken AP courses (English Language, United States History, and Environmental Science) to predict the net effect of race/ethnicity

FIGURE 2.3 : Mean Number of AP Courses where Students Earned College Credit by Race/Ethnicity

- Asian, 3.55
- Pacific Islander, 2.89
- State Average, 2.7
- White, 2.66
- Multiracial, 2.55
- American Indian, 2.24
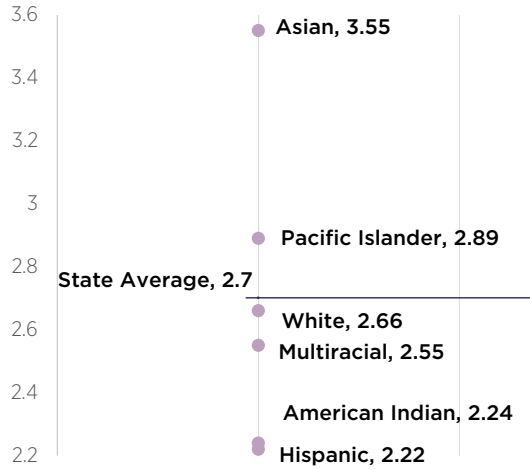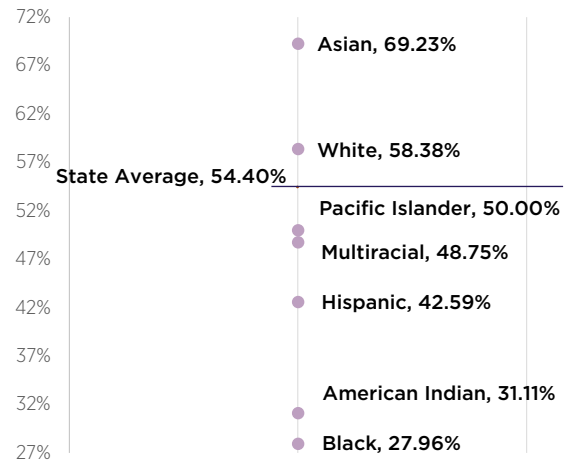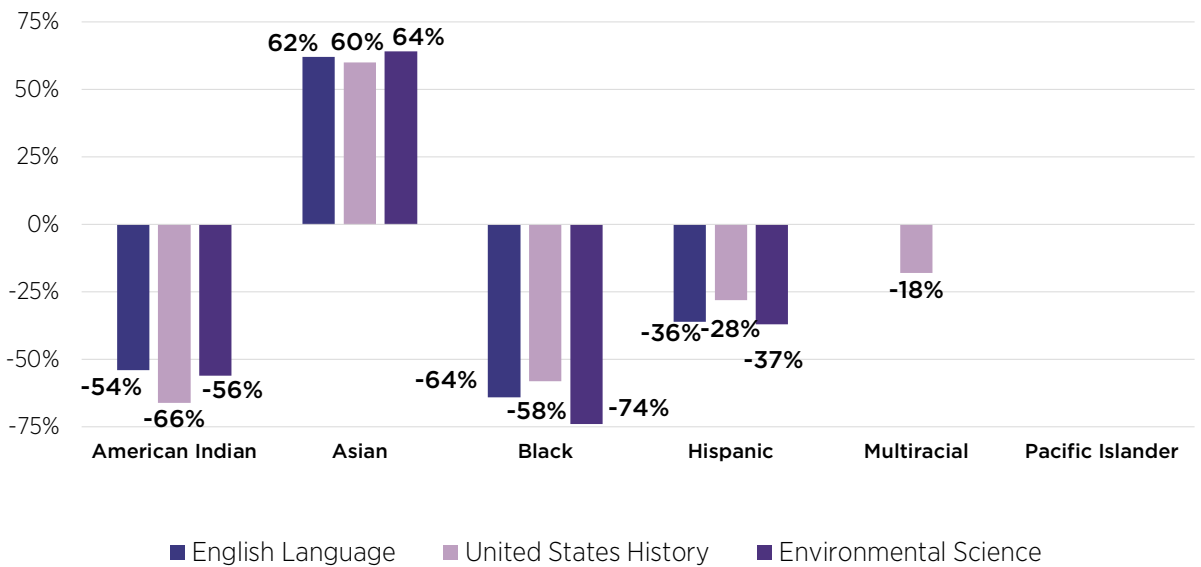- Hispanic, 2.22

FIGURE 2.4 : Proportion of AP Courses Taken in which Students Earned College Credit by Race/Ethnicity

- Asian, 69.23%
- White, 58.38%
- State Average, 54.40%
- Pacific Islander, 50.00%
- Multiracial, 48.75%
- Hispanic, 42.59%
- American Indian, 31.11%
- Black, 27.96%

on whether students scored three or better on the course exams while controlling for other potentially relevant factors, including gender, special education status, Limited English proficiency, free/reduced lunch eligibility, and giftedness (AIG). As has been the case throughout this report, White students served as the comparison group.

Over 20,000 students took the AP exam for each of the courses analyzed. In all three courses, race/ethnicity remained a significant predictor of scoring three or better after controlling for the effect of all other variables. Figure 2.5 shows the predicted net effect of race/ethnicity as compared to Whites across the three AP exams.

FIGURE 2.5 : Likelihood of Scoring 3+ on Selected AP Exams by Race/Ethnicity

American Indian: -54%, -66%, -56%
Asian: 62%, 60%, 64%
Black: -64%, -58%, -74%
Hispanic: -36%, -28%, -37%
Multiracial: -18%

■ English Language   ■ United States History   ■ Environmental Science

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Any).

Asian students were predicted to be over 60% more likely than Whites to earn three or better across all three AP exams. American Indian and Black students were roughly 60% less likely to earn three or better compared to their White counterparts across the three exams. Hispanics were around 30% less likely as compared to Whites. Multiracial students were 18% less likely to earn a three or better in U.S. History but had a similar likelihood in English Language and Environmental Science. Pacific Islanders and Whites had similar likelihoods across all three exams.

Our analysis of English Language, United States History, and Environmental Science AP exams revealed a dramatic disparity in AP exam-taking as a factor of language status. Only a miniscule number of Limited English Proficient (LEP) students took the AP exam for English Language, United States History, and Environmental Science. Specifically, **only 12 LEP students out of almost 29,000 took the U.S. History exam, only four LEP students out of over 26,000 took the English Language exam, and only 11 LEP students out of almost 21,000 took the Environmental Science exam.** While some differences based on language status might be expected given the language demands of AP exams, disparities of this magnitude call attention to the ways that language can present a barrier to AP exam-taking for non-native English speakers. Furthermore, **given that Asian, Hispanic, and Pacific Islander students are overrepresented among LEP populations, language-related barriers to AP exam participation may reduce their access to rigorous coursework and college credit.**

At the school level, 433 schools offered at least one AP course in North Carolina during 2016-2017. The number of courses offered by schools ranged between 1 and 36. The mean number of AP courses offered across all schools was 11.5.

The number of AP courses offered varied by the racial composition of the school. Schools were divided into four groups (quartiles) based on the proportion of students of color (SOCs), and a mean number of AP courses offered was calculated for each group. Figure 2.6 shows the results.

Schools with the most SOCs (76-100%) averaged the fewest AP courses (~8), while schools with more balanced racial/ethnic composition offered significantly more. For instance, schools with 26-50% SOCs offered an average of 13+ AP courses. In aggregate, the differences in AP courses offered by racial composition were statistically significant (p<.05). Additional analysis showed that schools with the most SOCs (76-100%) were statistically different (offering fewer AP courses) from all other quartiles, but that the other quartiles were not statistically different from each other. ▶

FIGURE 2.6 : Mean Number of AP Courses Offered by the Percentage of Students of Color
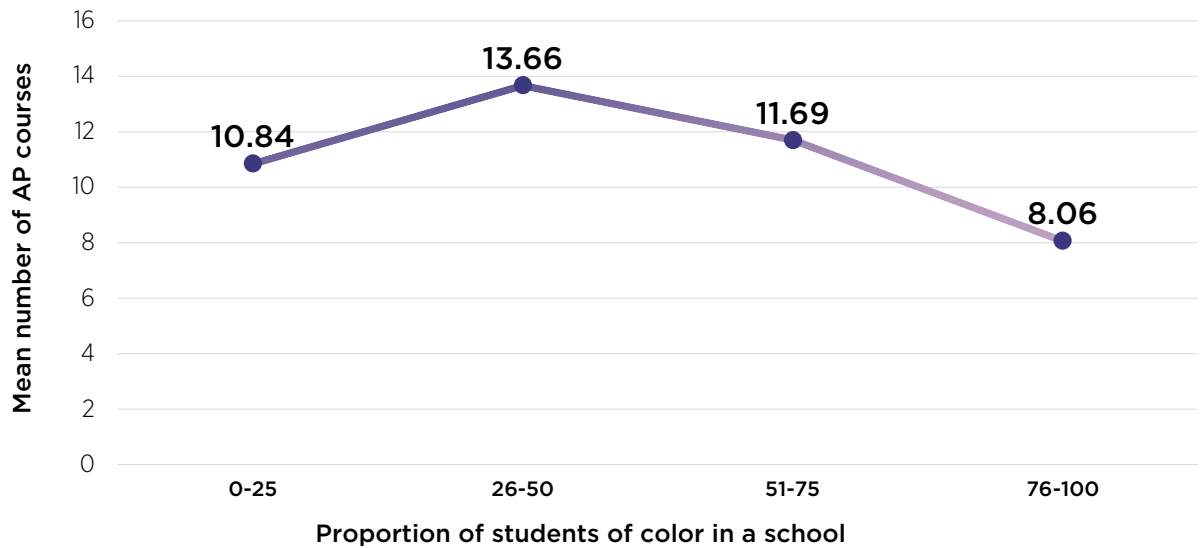
We analyzed which schools offer fewer than three AP courses as another way to look at access to AP and rigorous coursework by race/ethnicity. Recall that at least three AP courses are required to attain the North Carolina Academic Scholars Endorsement. Approximately 10% (42 out of 433) schools offered too few AP courses for students to attain the Academic Scholars Endorsement. The mean percentage of SOCs in all schools offering any AP courses was 48%, while the mean percentage of SOCs for schools offering less than three AP courses was substantially higher at 60%. To give an idea of the magnitude of this disparity, **more than 13,000 (or approximately 6%) students of color in the state that could earn the North Carolina Academic Scholars Endorsement attend schools that do not offer enough AP courses for them to do so.** This compares with approximately 8200 (3.7%) of White students who attend such schools. ■

TAKEAWAYS

To the extent that AP curricula represent college preparatory coursework, non-Asian students of color in aggregate are not finishing high school with the same level of preparedness as their White and Asian counterparts. Nor are they attaining the same amount of college credit from advanced coursework in secondary schools. While we do not examine the link directly in this report, the data suggests that non-Asian students of color would not be viewed as favorably when being considered for admission to competitive colleges and universities as a result of their participation and achievement in AP courses. In addition, if one accepts North Carolina's assertion that AP coursework is synonymous with rigorous coursework, non-Asian students of color in aggregate attend schools with substantially less rigor. Thus, our analysis of AP courses in the state suggests that students of color experience lower exposure to rigorous coursework, less opportunity to take AP courses, and less opportunity to attain the Academic Scholars high school diploma endorsement, particularly those at schools with high proportions of students of color.

Several additional points bear mentioning with regard to equitable access to AP courses and rigorous coursework. First, the cost of participation in AP exams means that only those who can afford to take multiple AP exams can gain the various benefits of AP coursework. Given that higher proportions of non-Asian students of color tend to be economically disadvantaged (as measured by eligibility for free/reduced lunch), the ability of non-Asian students of color to pay for AP exams may be a constraint on their participation in AP classes. Secondly, beginning in 2016, some AP teachers could qualify for bonus pay depending on their students' scores from the prior year's AP exams (Session Law 2016-94). Schools that serve wealthier students and fewer students of color tend to offer more AP courses. Thus, tying teacher bonus pay to student performance on AP exams may provide an incentive for highly qualified teachers to seek positions in wealthier, Whiter school contexts. Finally, the reduction in the access of students of color to AP courses has likely been an unconsidered side effect of the school re-segregation observed in many of NC's largest school districts over the last two decades (Clotfelter, Ladd, & Vigdor, 2002).

> Approximately 285,000 students took roughly 747,000 honors courses in North Carolina public schools in 2016-2017. Students took between 1 and 11 honors courses, with a mean number of courses taken of 2.78.

Honors courses, as distinguished from standard level courses, are intended to provide students with more rigorous and challenging coursework. According to the NC State Board of Education [GRAD-009, High Schools Transcript Standard; NC GS 116-11(10a)], "(c)ourse content, pace and academic rigor place high expectations on the student, demanding greater independence and responsibility. Such courses are more challenging than standard level courses and are distinguished by a difference in the depth and scope of work required to address the NC Standard Course of Study."

In 2004, the North Carolina State Board of Education approved the Honors Implementation Framework (HIF) for the development and implementation of honors courses in the state. A revised framework was approved in 2013. The goal of the framework was to guide the development and evaluation of honors courses and to ensure fidelity of implementation across the state. Honors level courses may be developed in any content and subject area. There are currently over 500 honors level courses offered in public schools across the state. While the HIF requires periodic reviews by local administrators, honors courses are developed, implemented, and evaluated on the local level, with little oversight from state officials.

Along with Advanced Placement, International Baccalaureate, and some advanced math and foreign language courses, honors courses are positioned by the State Board as an indicator of greater curricular rigor. Effective with the freshman class of 2015-16, an additional one-half (.5) of a quality point is added to the grade earned in honors courses. Before the 2015-2016 freshman class, an A in an honors course garnered five quality points while an A in a regular course only awarded the student four quality points. In other words, the additional quality point for honors courses meant that a B in an honors course was the equivalent of an A in a regular course. Under the new rules, students only receive four and a half quality points for an A in an honors course.[6] The weighting of honors course grades affects grade point average calculations and class rankings. Therefore, like other advanced courses, performance in and exposure to honors courses influences students' favorability when being considered for admission to competitive colleges and universities.

METHODOLOGY

In this report, we analyze honors level courses as an indicator of both achievement outcomes and access to rigorous coursework. We report descriptive statistics on the total number of honors courses taken and the number of students that took at least one honors course as a factor of race/ethnicity as well as the average number of honors courses taken by racial/ethnic group. We also assess whether race/

6 https://www.newsobserver.com/news/local/education/wake-ed-blog/article10031036.html

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Black students in North Carolina would have taken over 2,700 additional honors courses if they were proportionally represented in honors course taking.

ethnicity is a significant predictor of honors course-taking, and whether any detected effect of race/ethnicity remains significant after controlling for gender, socioeconomic status, language status, special education status, and giftedness. Finally, as an indication of differential exposure to rigorous advanced coursework, we assess the relationship between the number of honors courses offered and the proportion of students of color at the school level.

Approximately 285,000 students took roughly 747,000 honors courses in North Carolina public schools in 2016-2017. Students took between 1 and 11 honors courses, with a mean number of courses taken of 2.78.

ANALYSIS

Figure 3.1 shows the proportion of students that took at least one honors course as a factor of race/ethnicity and how that compares to each racial/ethnic groups' proportion of the statewide student population. **Asian and White students are over-represented in honors course-taking, while Black, Hispanic, American Indian, and Multiracial students are under-represented. Pacific Islanders are proportionally represented.** These racial/ethnic differences are statistically significant and thus unlikely to be due to chance. Furthermore, they allow us to consider what proportional representation would look like in practical terms for each racial/ethnic group. For instance, Black students in North Carolina would have taken over 2,700 additional honors courses if they were proportionally represented in honors course taking. ▶

FIGURE 3.1 : Proportion of Honors Courses Taken by Race/Ethnicity

- ■ Proportion of students taking at least one honors course
- ■ Proportion of total NC student population
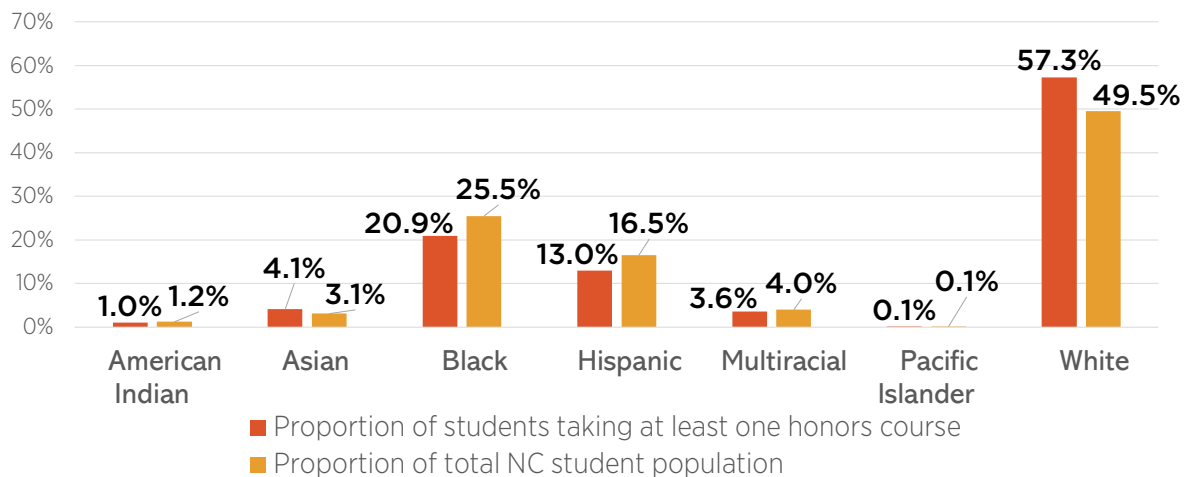
A similar pattern is present when we examine the mean number of honors courses taken by race/ethnicity. Among students who took at least one honors course, Asians and Whites averaged 3.1 and 2.9 courses respectively. The remaining racial/ethnic groups averaged between 2.3 and 2.8 honors courses (See Figure 3.2). These differences were also statistically significant.

FIGURE 3.2 : Mean Number of Honors Courses Taken by Race/Ethnicity

3.2
3.1   ● Asian, 3.1
3
2.9   ● White, 2.9
2.8   ● Pacific Islander, 2.8
2.7   ● Multiracial, 2.7
2.6   ● Hispanic, 2.6
2.5   ● Black, 2.5
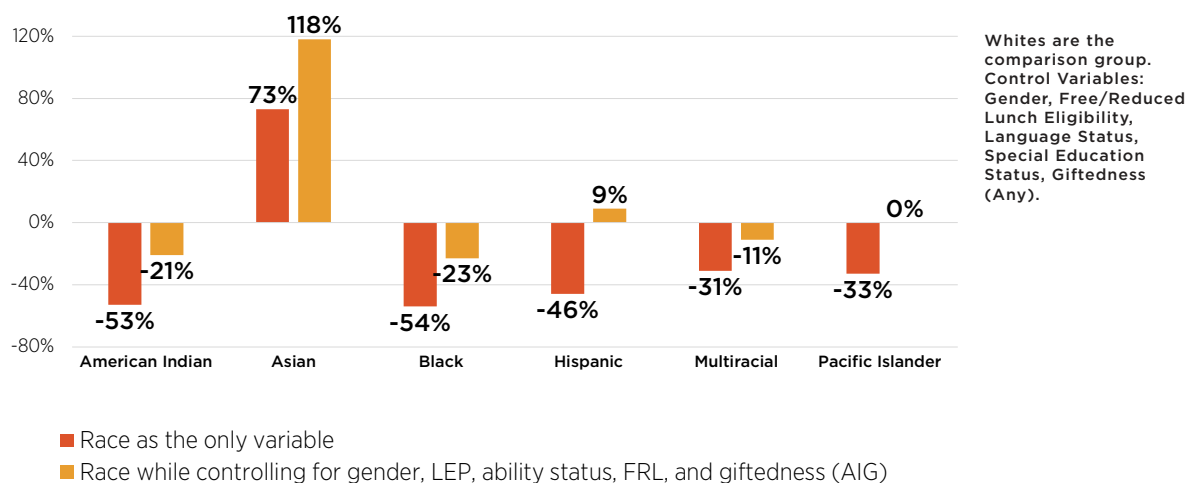2.4
2.3   ● American Indian, 2.3
2.2
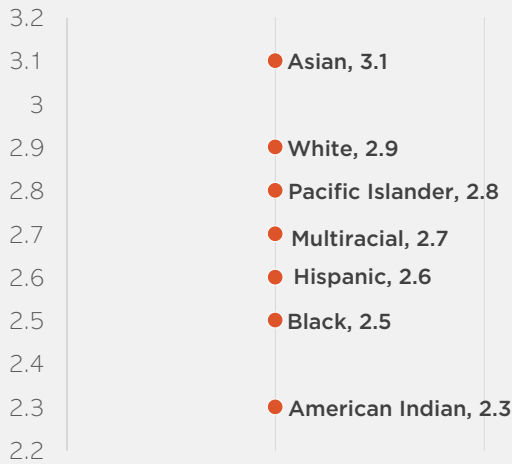
We also analyzed all North Carolina students in grades 9-12 to determine whether race/ethnicity had a unique effect on taking at least one honors course when controlling for other potentially relevant factors.

Model 1 represents the likelihood of taking at least one honors course for each racial/ethnic group as compared to White students. Model 2 shows the likelihood for each group while controlling for gender, free/reduced lunch status, language status, and giftedness (AIG).

Race/ethnicity was a significant predictor for all racial groups (as compared to Whites) in Model 1, such that Asians were more likely than Whites to take honors courses while other student groups of color were less likely. In Model 2, the likelihood of Asians taking at least one honors course compared to Whites increased even further. Pacific Islanders were no longer significantly different than Whites. Interestingly, the likelihood of Hispanics taking at least one honors course compared to Whites changed both direction and magnitude once control variables were added. Net of other factors, Hispanics were slightly more likely than Whites to take at least one honors course. American Indian, Black, and Multiracial students remained substantially less likely than Whites to take at least one honors course. The disparity was largest for Black students, **such that Black students were 23% less likely than White students to take an honors course after controlling for other factors. Approximately 20,000 more Black students would have taken at least one honors course if they participated in honors courses at rates similar to White students.** ▶

FIGURE 3.3 : Likelihood of Taking at Least One Honors Course (Grades 9-12) by Race/Ethnicity

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Any).

- American Indian: -53%, -21%
- Asian: 73%, 118%
- Black: -54%, -23%
- Hispanic: -46%, 9%
- Multiracial: -31%, -11%
- Pacific Islander: -33%, 0%

■ Race as the only variable
■ Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)
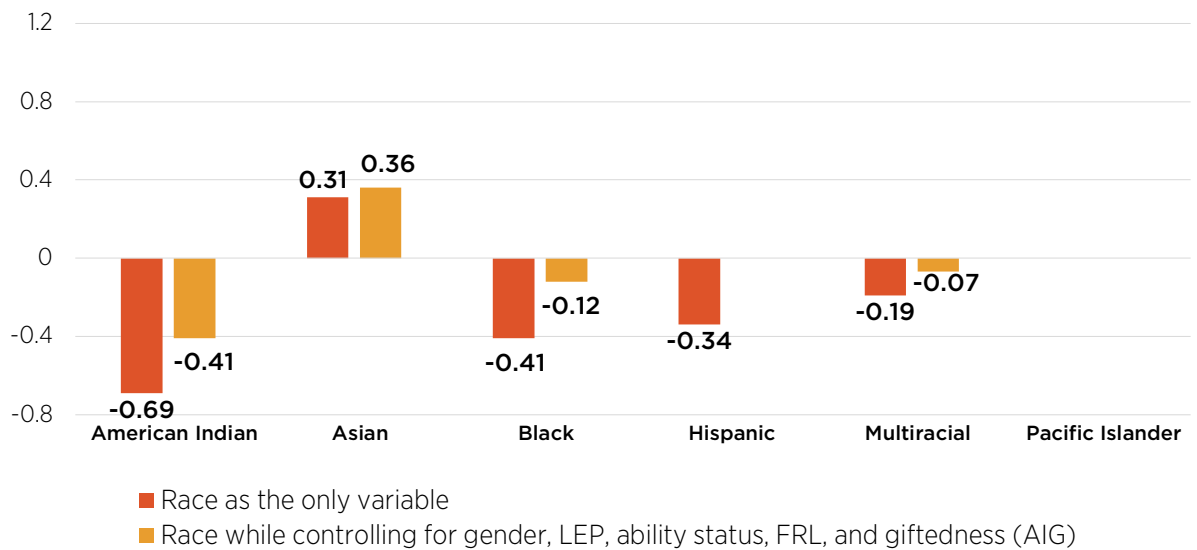
Do schools with higher concentrations of students of color (SOCs) offer fewer honors courses? The answer is a resounding yes.

We conducted a similar analysis for the average number of honors courses taken. With White students as a comparison group, we predicted the number of honors courses taken for each student group of color while controlling for gender, language status, special education status, socioeconomic status, and giftedness (AIG). Race/ethnicity was a significant predictor of the number of honors courses taken for all student groups of color (compared to Whites) except for Pacific Islanders. **Holding other factors constant, our model predicted that Asian students would average 0.36 more honors courses, Multiracial students would average 0.07 fewer, Black students would average 0.12 fewer, and American Indian students would average 0.41 fewer honors courses than White students in the state. Hispanics and Pacific Islanders had predicted averages similar to those for Whites when controlling for other factors.**

FIGURE 3.4 : Predicted Number of Honors Courses Taken by Race/Ethnicity (Grades 9-12)

Race as the only variable

Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Any).

Our analysis also included comparisons of the number of honors courses offered by schools as a factor of racial/ethnic composition. In other words, do schools with higher concentrations of students of color (SOCs) offer fewer honors courses? The answer is a resounding yes. If we split all the schools that offered at least one honors course into quartiles by the proportion of SOCs, we find that schools in quartiles 1 (0-25% SOCs) and 2 (26-50%) offer an average of 36 honors courses. Schools with 51-75% SOCs average 34 honors courses, and schools with the highest number of SOCs (76-100%) offer an average of 27 honors courses. ▶

Furthermore, while the aggregated differences between schools based on the proportion of SOCs was statistically significant (p < .05), all of the substantial difference was accounted for by differences between high SOC schools (76-100%) and those with lower proportions of SOCs. In other words, the observed differences between the average number of honors courses offered by schools in the first three quartiles (0-25%, 26-50%, and 51-75% SOCs) were no different than what might be expected from chance, while **schools with the highest proportion of students of color (76-100%) offered significantly and substantially fewer honors courses than their White counterparts.** ■

FIGURE 3.5 : Mean Number of Honors Courses Offered by Schools by Percentage of Students of Color
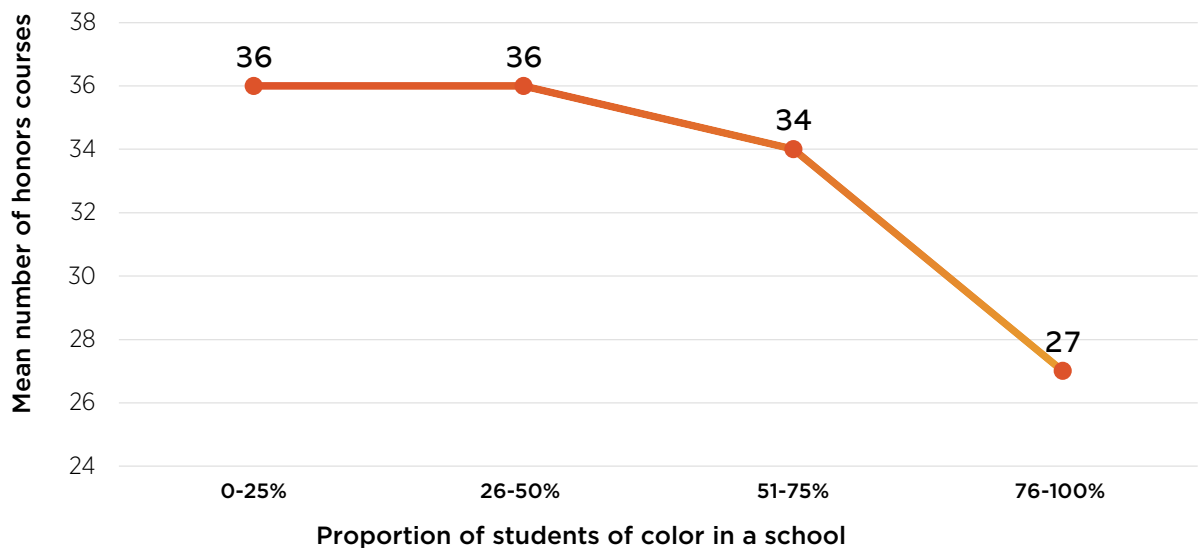
TAKEAWAYS

This analysis demonstrates that non-Asian students of color in aggregate do not have equitable access to or achievement in honors courses in North Carolina public schools. To the extent that honors courses represent rigorous, college preparatory coursework, non-Asian students of color may be unlikely to finish high school with the same level of preparedness as their White and Asian counterparts. A similar pattern was observed for Advanced Placement courses. As is the case with AP courses, the rigor and fidelity of honors coursework is debated by scholars (Adelman, 2006; Camara & Michaelides, 2005; Geiser & Santelices, 2006; Gonzalez, O'Connor, & Miles, 2001). However, North Carolina schools are required to give additional weight to honors courses when calculating grade point averages (GPA). Postsecondary institutions also look favorably upon honors course taking. Thus, honors course taking remains an important component of the admissions criteria for colleges and universities. It is also worth noting that the patterns of honors course offerings found in this analysis suggest that a reduction in the access of students of color to honors courses has likely been an underappreciated side effect of the school re-segregation observed in many of NC's largest school districts over the last two decades (Clotfelter, Ladd, & Vigdor, 2002).

ACADEMICALLY OR INTELLECTUALLY GIFTED (AIG)

E(RACE)ING INEQUITIES

G ifted and talented programs like North Carolina's Academically or Intellectually Gifted (AIG) are intended to serve students with higher abilities. The AIG program challenges students in regular classroom settings and provides enrichment and an accelerated curriculum. Research has found that gifted and talented programming can positively influence students' postsecondary plans, future advanced degree attainment, and the likelihood of noteworthy professional accomplishments. Programs like AIG are also part of schools' attempts to address stakeholder concerns about whether advanced students are being adequately challenged in general education classes. They are also designed to calm concerns that the pressures of helping struggling students combined with a lack of training in gifted education may constrain teachers' ability to address the needs of gifted students. Studies have documented inequitable access to gifted programs for Black and Hispanic students along with disparities based on gender, language status, and special education status (U.S. Department of Education, 2016a; U.S. Department of Education, 2016b).

In North Carolina, students can be designated AIG in math, reading, and/or other and can hold multiple designations. The AIG Other designation means students have been evaluated and selected as intellectually or academically gifted in ways that fall outside the traditional math or reading designations. State legislation [N.C.G.S. § 115C-150.5-.8 (Article 9B) Academically or Intellectually Gifted Students] mandates that local educational agencies (LEAs) identify and serve academically or intellectually gifted (AIG) K-12 students.[7] Each LEA determines how to identify and serve its own AIG student population. LEAs must adhere to state legislation as well as the NC AIG Program Standards, which act as a statewide framework and the official guidelines for the development of local AIG plans. LEAs also submit AIG plans to the Department of Instruction annually for review and comment.

What oversight exists beyond review of AIG plans is unclear. While the NC AIG Program Standards do not position racial equity in AIG as an explicit goal, they do affirm that: "[o]utstanding abilities are present in students from all cultural groups…" and charge LEAs with ensuring that "AIG screening, referral, and identification procedures respond to under-represented populations of the gifted…" (NC State Board of Education, 2018, p. 1, 2).

Given the potential benefits of AIG programs on attainment and future professional outcomes, we position AIG as an indicator of access to rigorous and advanced curricula. Specifically, we view differential exposure to advanced curricula, such as those envisioned for AIG students, based on race/

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7 North Carolina state law defines academically or intellectually gifted students as those who "perform or show the potential to perform at substantially high levels of accomplishment when compared with others of their age, experience, or environment. Academically or intellectually gifted students exhibit high performance capability in intellectual areas, specific academic fields, or in both the intellectual areas and specific academic fields. Academically or intellectually gifted students require differentiated educational services beyond those ordinarily provided by the regular educational program. Outstanding abilities are present in students from all cultural groups, across all economic strata, and in all areas of human endeavor." (N.C.G.S. § 115C-150.5)

ethnicity as a potential constraint on the educational attainment and life chances for under-represented populations.

METHODOLOGY

We examined racial/ethnic differences in the proportion of students across all grade levels and each of the three AIG designations. We also built prediction models to assess the likelihood that a student would be designated AIG based on race/ethnicity while controlling for gender, language status, free/reduced lunch eligibility, and special education status. This allowed us to isolate the effect of race/ethnicity on AIG designation to the greatest extent possible with the available data.

Statewide in 2016-2017, approximately 3.9% (~45,000 students) were designated AIG Math, 2.9% (~34,000 students) were designated AIG reading, and 0.2% (~3000 students) were designated AIG Other.

ANALYSIS

AIG MATH

Approximately 45,000 students were classified as AIG Math in 2016-2017. Figure 4.1 shows the number of AIG Math students by race/ethnicity.

FIGURE 4.1: Percentage of AIG Math Students by Race/Ethnicity
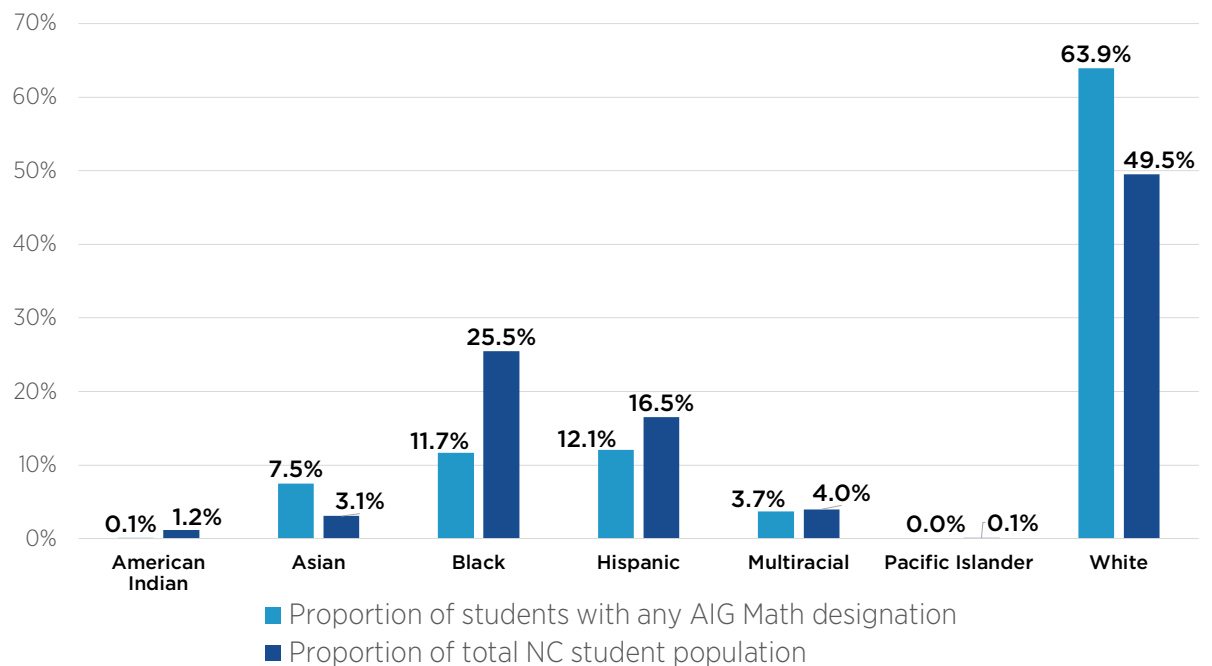
Asian and White students are over-represented in AIG Math, and American Indian, Black, Hispanic, Multiracial, and Pacific Islanders are under-represented. American Indian and Black students have the highest degree of under-representation. **The number of American Indian students designated AIG Math is less than one-tenth of what we would expect given their share of the overall state student population. If Black students were selected for AIG Math in proportion to their share of the student population, over 6200 additional Black students would be classified AIG Math.**

We also built prediction models to further parse the effect of race/ethnicity on giftedness in math. Using White students as a comparison group, we predicted the likelihood that students from different racial/ethnic groups would be designated AIG Math while controlling for gender, free/reduced lunch eligibility, language status, and special education status. The results are presented in Figure 4.2. Model 1 shows the effect of race/ethnicity alone on the likelihood of an AIG Math designation. Model 2 shows the effect of race/ethnicity while controlling for other factors.

FIGURE 4.2 : Likelihood of Being Designated AIG Math by Race/Ethnicity
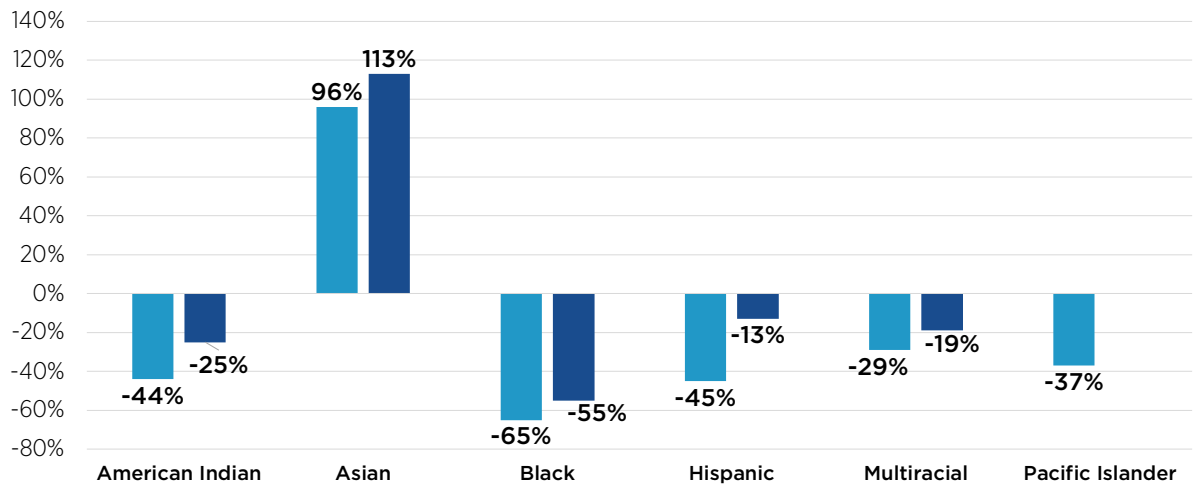
■ Race as the only variable
■ Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status.

Race/ethnicity remains a significant and substantial predictor after controlling for other predictors in the model. **Asians are designated AIG Math at more than double the rate of their White counterparts. American Indian, Black, Hispanic, and Multiracial students are under-selected for AIG Math after controlling other factors. Net of other factors, the magnitude of under-selection for Black students (as compared to Whites) is more than double that of any other group.** ▶

"

The proportion of AIG Reading students that are American Indian, Black, and Hispanic is less than half of what we would expect based on their proportion of the total North Carolina student population.

AIG READING

Approximately 34,000 students were classified as AIG Reading in 2016-2017. Figure 4.3 shows the percentage of AIG Reading students by race/ethnicity.

FIGURE 4.3 : Percentage of AIG Reading Students by Race/Ethnicity

■ Proportion of students with AIG Math designation by race/ethnicity
■ Proportion of total NC student population by race/ethnicity

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status.

Asian, White, and Multiracial students are overrepresented among those designated AIG Reading as compared to their percentage of the overall state student population. American Indian, Black, and Hispanic are under-represented. The proportion of AIG Reading students that are Black and Hispanic is less than half of what we would expect based on their proportion of the total North Carolina student population. **If the proportion of Black students designated AIG Reading was the same as their proportion of the overall student population, over 4300 additional Black students would be designated AIG Reading.** ▶

We also built prediction models to further parse the effect of race/ethnicity on giftedness in reading.

FIGURE 4.4 : Likelihood of Being Designated AIG Reading by Race/Ethnicity
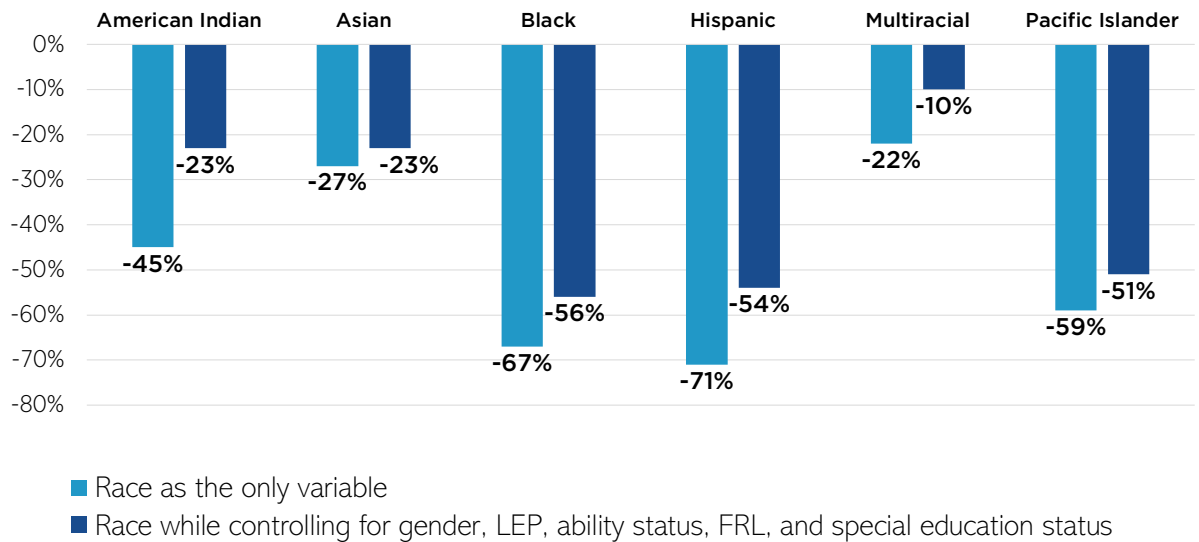
Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status.

Race/ethnicity remains a significant and substantial predictor after controlling for other predictors. **Black, Hispanic, and Pacific Islander students were less than half as likely to be considered gifted in reading in comparison to Whites.**

AIG OTHER

The AIG Other designation means students have been evaluated and selected by their LEA as intellectually or academically gifted in ways that fall outside the traditional math or reading designations. Figure 4.5 shows the percentage of students designated AIG Other by race/ethnicity.

Asian, White, and Multiracial students are overrepresented among those designated AIG Other as compared to their proportion of the overall state student population. American Indian, 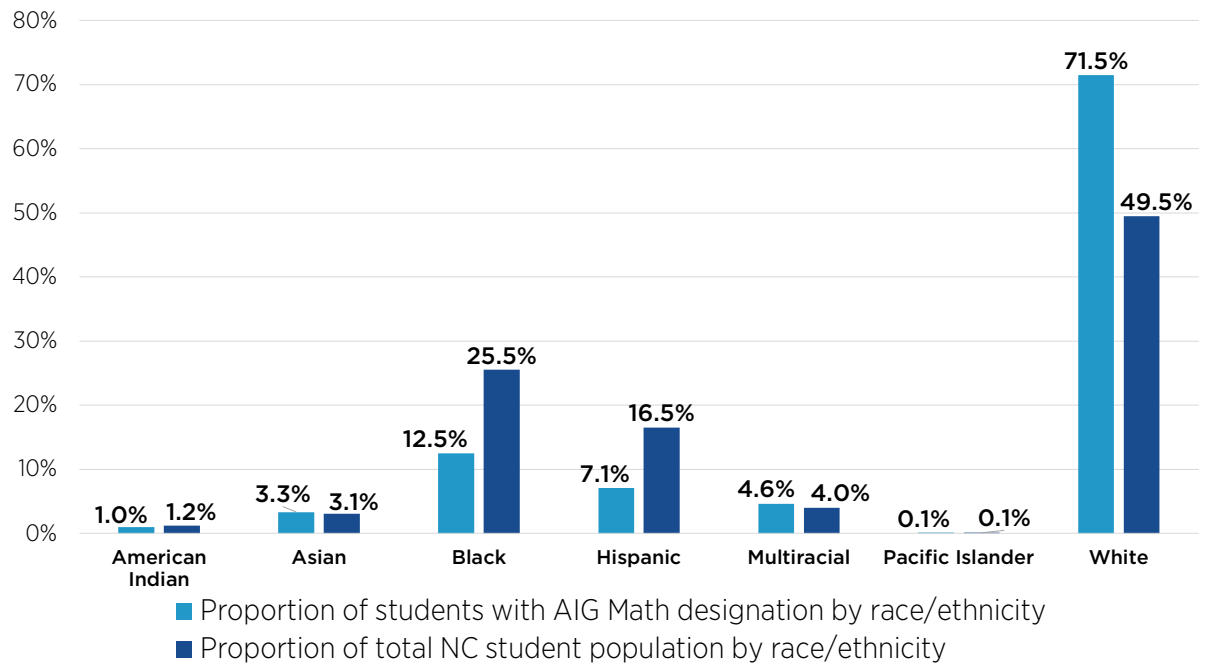Black, Hispanic, and Pacific Islanders are under-represented. The proportion of AIG Other students that are American Indian, Black, and Hispanic is less than half of what we would expect based on their proportion of the total NC student population. The number of Black students designated AIG Other would more than triple if they were proportionally represented among those designated AIG Other. ▶

FIGURE 4.5 : Proportion of AIG Other Students by Race/Ethnicity

- Proportion of students with AIG Other designation by race/ethnicity
- Proportion of total NC student population by race/ethnicity

The result of the prediction model for AIG Other follows the same pattern as those for Math and Reading as shown in Figure 4.6.

FIGURE 4.6 : Likelihood of Being Designated AIG Other by Race/Ethnicity
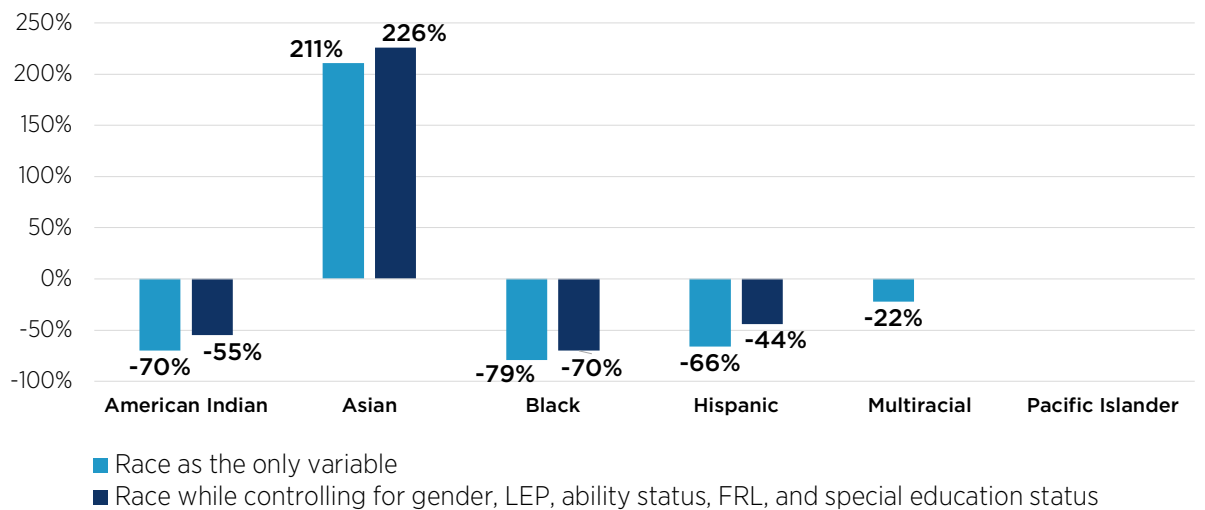
- Race as the only variable
- Race while controlling for gender, LEP, ability status, FRL, and special education status

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status.
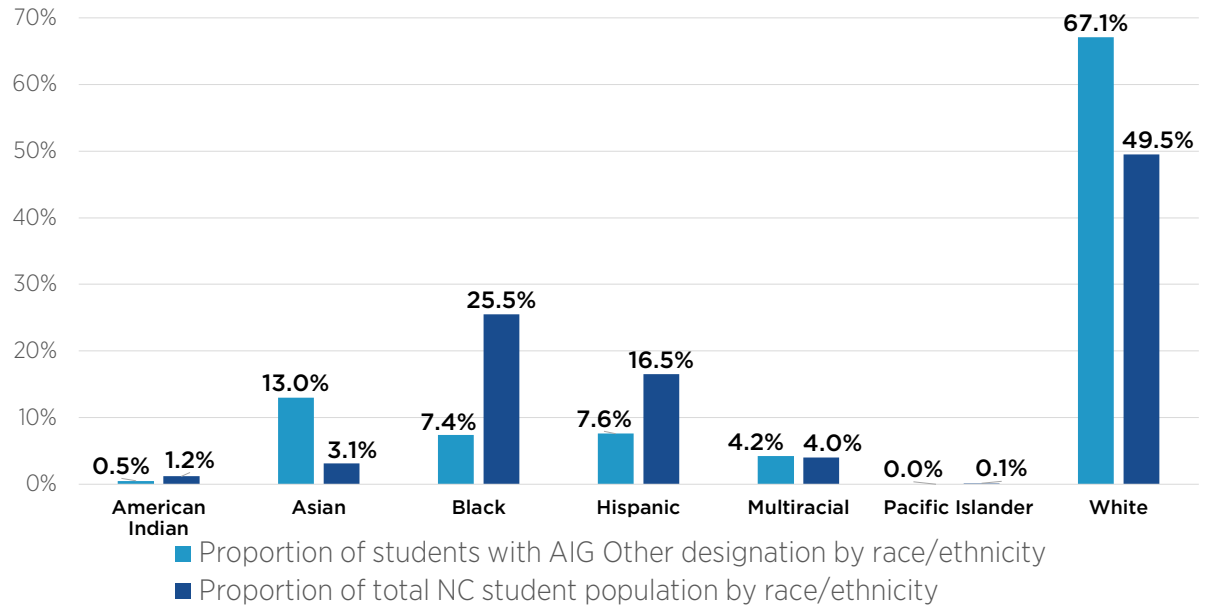
As in the previous models for Math and Reading, race/ethnicity remained a significant predictor of AIG Other after controlling for other factors, with the exception of Multiracial and Pacific Islander students. The likelihood of Asian students being designated AIG Other was dramatically higher than their White counterparts after controlling for other factors while American Indian, Black, and Hispanic students were less likely to be designated AIG Other net of other factors.

AIG ANY

Figure 4.7 shows the percentage of students with any AIG designation by race/ethnicity. Students may have a single (i.e. AIG Math) or multiple designations (any combination of AIG Math, AIG Reading, AIG Other).

FIGURE 4.7 : Proportion of AIG Any Students by Race/Ethnicity
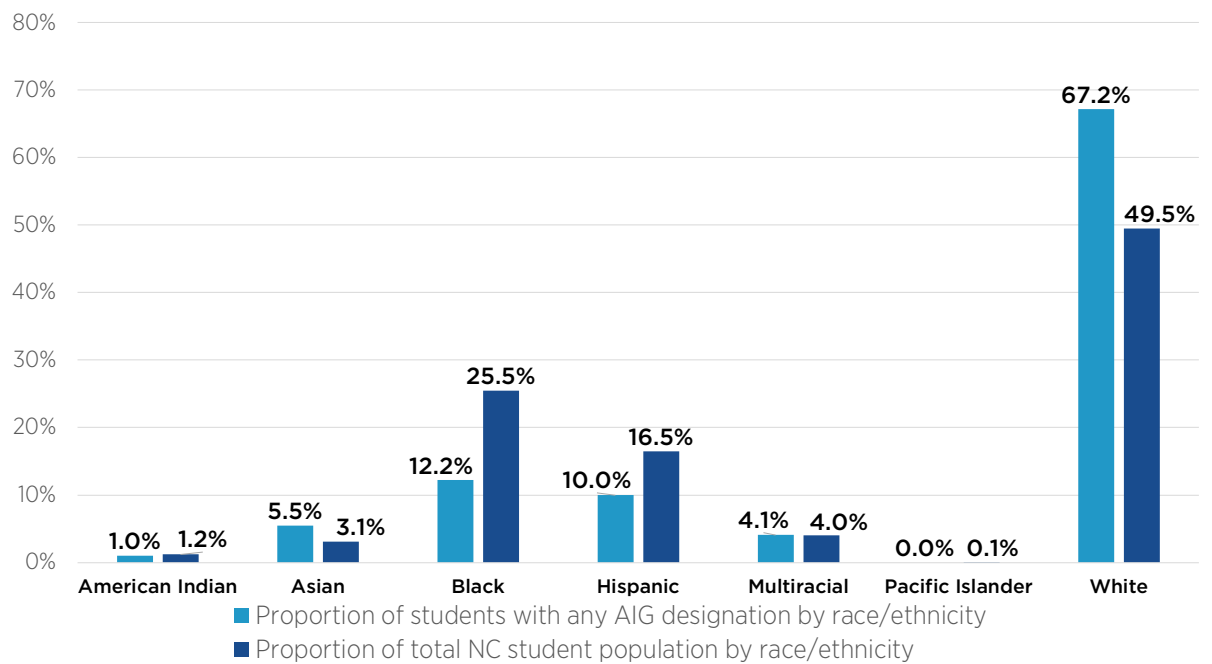


Asian, White, and Multiracial students are overrepresented among those designated AIG Any as compared to their proportion of the overall state student population. **American Indian, Black, Hispanic, and Pacific Islanders are under-represented. The proportion of AIG Any students that are Black is less than half of what we would expect based on their proportion of the total NC student population.** Hispanics also have a large disparity. Were Black students proportionally represented in AIG Any almost 10,000 additional Black students would benefit from an AIG designation.

The result of the prediction model for AIG Any follows a now familiar pattern. Figure 4.8 presents the predicted results. ▶

> "The under-exposure of student groups of color in gifted and talented programs has the potential to diminish their long-term educational attainment, postsecondary participation, and professional achievements.

FIGURE 4.8 : Likelihood of AIG Any Designation by Race/Ethnicity
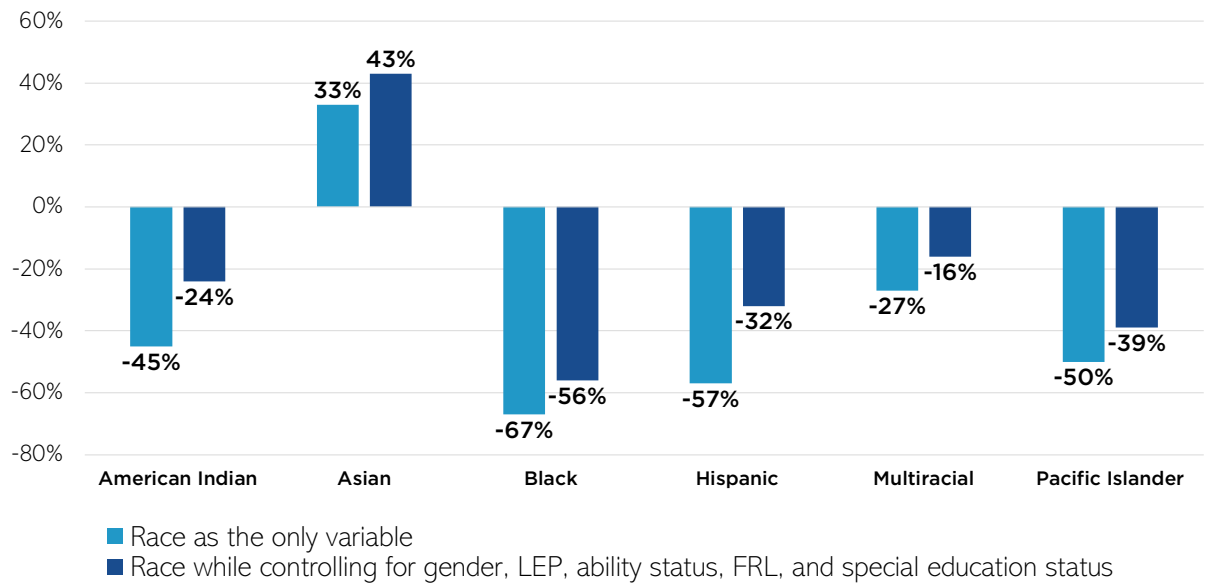
Race as the only variable
Race while controlling for gender, LEP, ability status, FRL, and special education status

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status.

Race/ethnicity remained a significant predictor of AIG Any for all student groups of color as compared to their White counterparts after controlling for other factors. The likelihood of Asian students being designated AIG Any was substantially higher than their White counterparts after controlling for other factors while all other student groups of color were less likely to be designated AIG Any net of other factors. ■

TAKEAWAYS

There are clear patterns of racial disparity across all three AIG designations. In both AIG Math and AIG Other, Asian and White students are over-represented in comparison to their percentage of the state student population. American Indian, Black, and Hispanic students are under-represented in both AIG Math and AIG Other. In AIG Reading, Asian, White, and Multiracial students are over-represented, and all other groups are under-represented in comparison to their proportion of the total state student population. The degree of negative disparity for American Indian and Black students holds across all AIG designations. Furthermore, race/ethnicity is a significant and substantial predictor of differential AIG designations net of all other relevant factors. The under-exposure of student groups of color in gifted and talented programs has the potential to diminish their long-term educational attainment, postsecondary participation, and professional achievements.

Exceptional children (EC) are those receiving special education and related services. EC students are covered under the federal Individuals with Disabilities Education Act (IDEA), which mandates a free and appropriate public education for eligible students ages 3–21. Several other federal provisions and numerous state statutes, including NC 1500-1508, also cover EC students. Eligible students are those identified by a team of professionals as having a defined disability that adversely affects academic performance and as being in need of special education and related services. At the school and LEA level, the education of EC students is guided by an Individual Educational Program (IEP), which is developed, reviewed, and revised by a team typically consisting of an LEA representative, a parent of the child with a disability, a regular education teacher of the child, a special education teacher of the child, and others as required by state or federal law (NC 1503-4.2).

Exceptionality is difficult and complex to research because of the amount of federal and state legislation involved, the number of and wide variation among legally defined disabilities, the challenges of quantifying differential representation within populations often characterized by small sample sizes, and the difficulty of avoiding positioning those traditionally considered "able" as the standard to which the full variation in human ability is implicitly compared (Albrecht, Skiba, Losen, Chung, & Middleburg, 2012). Furthermore, research on the intersection of exceptionality and race/ethnicity is in a state of flux. For decades, much of the research focused on the over-representation of students of color among exceptional children; the historical, racial, and cultural factors embedded in conceptions of (dis)abilty; and the ways that exceptionality designations can be used to deny historically disadvantaged students the full benefit of public education (Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005; Sullivan & Bal, 2013; U.S. Department of Education Office of Civil Rights, 2016; Zhang Katsiyannis, Ju, & Roberts, 2014.)

However, recent research using different methodological approaches has suggested that students of color are under-represented among exceptional children when appropriate statistical controls are applied (Morgan, Farkas, Hillemeier, & Maczuga, 2017; Morgan Farkas, Hillemeier, Maczuga, Li, & Cook, 2015). Both sides have vigorously defended their methods and conclusions while others have called for a broader paradigm shift in (dis)ability research that reexamines the meaning of (dis)ability and pays more attention to the voices and lived experiences of those labelled as "disabled" (Cavendish, Connor, Gonzalez, Jean-Pierre, & Card, 2018).

In this report, we position exceptionality as an indicator of access and opportunity. While the question of whether or not students of color are over- or under-represented in special education on an aggregate level remains disputed, the literature provides ample evidence of a strong relationship

between student race/ethnicity, special education, and educational outcomes (Donovan & Cross, 2002; Hosp & Reschly, 2004; Lazarus, Albus, & Thurlow, 2016). Research has found that participation in special education programs significantly boosts the academic achievement of special education students (Hanushek, Kain, & Rivkin, 2002). Separate analysis in this report indicates that both race/ethnicity and exceptionality have significant and substantial effects on graduation and dropout. Studies in public health and education have suggested that race/ethnicity affects identification and treatment for disabilities even among children presenting similar clinical needs (Flores & The Committee for Pediatric Research, 2010; Gillborn, Rollack, Vincent, & Ball, 2016).

Research has also documented relationships between special education designations and factors like service provider bias, cultural or language factor barriers, racial/ethnic prejudice and stigma, broader social inequities in health care access and insurance, and racially segregated and under-resourced schools (Flores & Tomany-Korman, 2008; Hall et al., 2015; Inkelas, Raghavan, Larson, Kuo, & Ortega, 2007; Zuckerman, Mattox, Sinche, Blaschke, & Bethell, 2014). This body of literature makes it clear that racial inequities in health and health care are likely to be reflected in special education designation patterns within public schools. Furthermore, it illuminates how racial prejudice, discrimination, and stigma contribute to the observed inequities in health, health care, and special education services.

There is also substantial evidence of racial differences within disability classifications, particularly among more subjective classifications, i.e. learning disabled, behavioral/emotional disability, developmental delay, and intellectual disability (Hibel, Farkas, & Morgan, 2010). Racial disparities have been detected in the level of segregation from non-disabled peers as well (National Council on Disability, 2018).

METHODOLOGY

Approximately 6.4 million students (13%) were served under IDEA in the United States in 2015-2016 (National Center for Educational Statistics, 2017; U.S. Department of Education, 2017). Nationally, the percentage of students served under IDEA was highest for those who were American Indian/Alaska Native (17%), followed by those who were Black (16%), White (14%), Multiracial (13%), Hispanic and Pacific Islander (both at 12%), and Asian (7%) (National Center for Educational Statistics, 2017; U.S. Department of Education, 2017).

We analyzed data from over 200,000 K-12 North Carolina public school students receiving special education services in 2016-2017. EC accounted for just over 13% of all K-12 students statewide, mirroring the national percentages noted above. ▶

FIGURE 5.1 : Exceptional Children by Race/Ethnicity

- American Indian, 17.0%
- Black, 15.9%
- State Average, 13.2%
- Multiracial, 13.7%
- White, 12.8%
- Hispanic, 11.4%
- Pacific Islander, 8.7%
- Asian, 5.3%
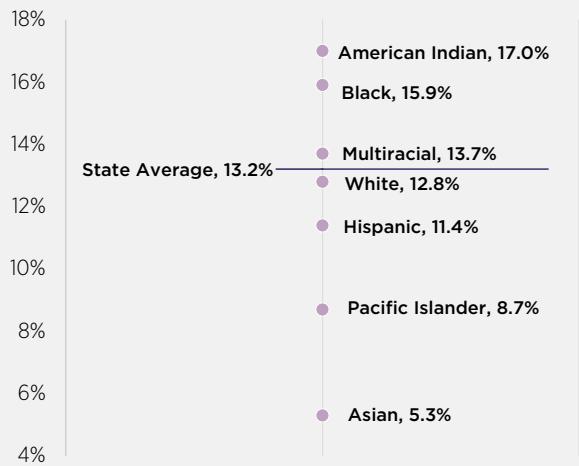
ANALYSIS

Figures 5.1 and 5.2 show the percentage of each racial group that was designated EC, the proportion of all EC students represented by each racial group, and the proportion of all North Carolina students represented by each racial group.

American Indians had the highest rate of EC (17%). The proportion of Black (15.9%) and Multiracial (13.7%) EC students also exceeded the state average of 13.2%. Asian (5.3%) and Pacific Islander (8.7%) students were well below the state average of EC students. Hispanic (11.4%) and White (12.8%) students were also below the state average.

American Indian, Black, and Multiracial students were over-represented in EC as compared to their proportion of all North Carolina students, while Asian, Hispanic and White students were under-represented. Pacific Islander students were proportionally represented as compared to their proportion of all North Carolina students.

To further test the association of race/ethnicity with EC designation, we built prediction models that indicated the effect of race/ethnicity after controlling for gender, free/reduced lunch eligibility, language status, and giftedness. In Figure 5.3, Model 1 shows the likelihood of being designated EC for each racial/ethnic group as compared to White students in the state as a factor of race/ethnicity only, and Model 2 shows the net effect of race/ethnicity when controlling for other factors.

FIGURE 5.2 : Proportion of Racial/Ethnic Group that is Designated EC
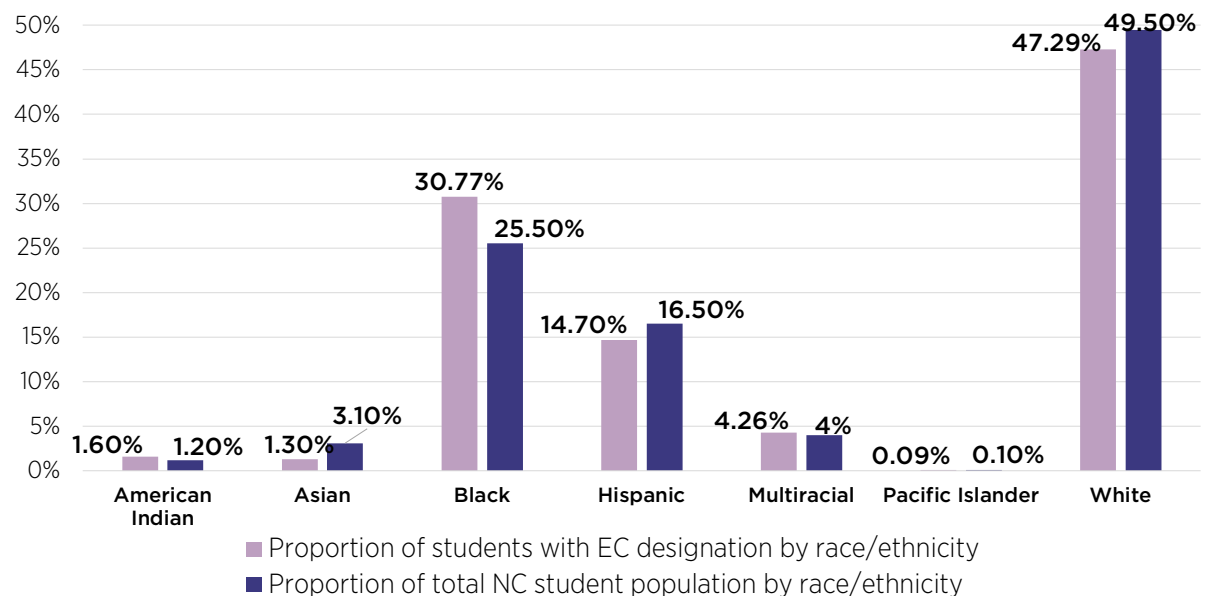
- American Indian: 1.60% / 1.20%
- Asian: 1.30% / 3.10%
- Black: 30.77% / 25.50%
- Hispanic: 14.70% / 16.50%
- Multiracial: 4.26% / 4%
- Pacific Islander: 0.09% / 0.10%
- White: 47.29% / 49.50%

■ Proportion of students with EC designation by race/ethnicity
■ Proportion of total NC student population by race/ethnicity

Overall, the analysis indicates that, net of other factors, students of color were generally less likely to be designated EC than White students in the state.

FIGURE 5.3 : Likelihood of Being Designated EC by Race/Ethnicity
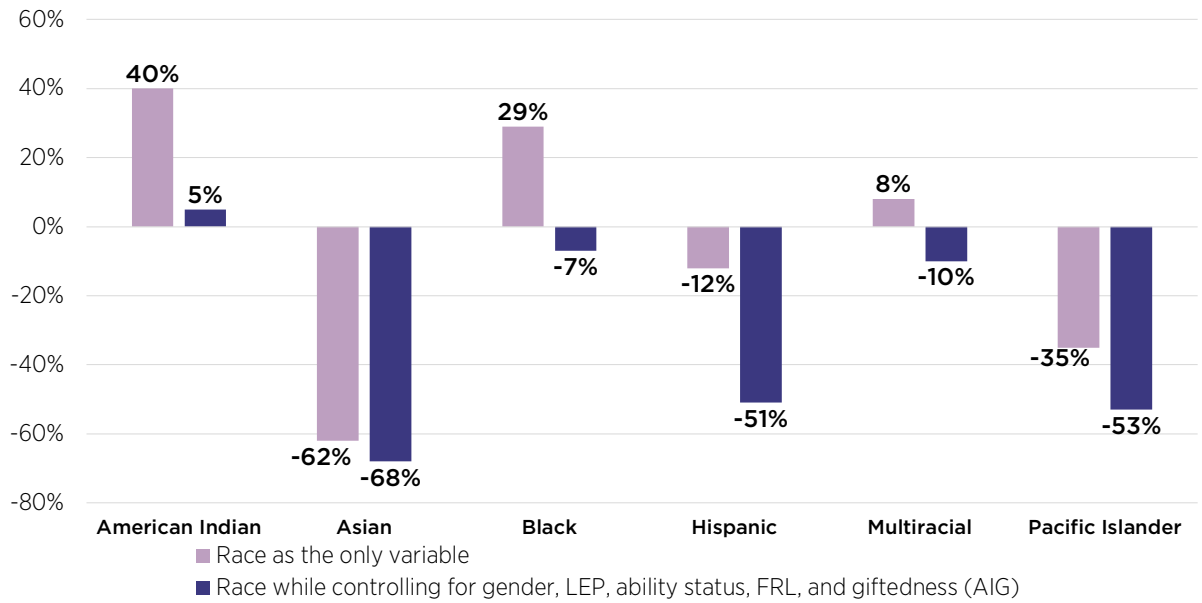
Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Giftedness (Any).

With race/ethnicity as the only predictor, American Indian, Black, and Multiracial students had a significantly higher likelihood of carrying an EC designation as compared to White students. The likelihood of being EC for Asians, Hispanics, and Pacific Islanders was significantly lower as compared to Whites with race/ethnicity as the sole factor.

However, controlling for gender, free/reduced lunch eligibility, language status, and giftedness changes the results dramatically. Net of those factors, the model (Model 2) predicted that only American Indian students are more likely than Whites to be classified as EC. While the result for American Indian students is statistically significant (p<.05), the magnitude is quite small, suggesting that the difference in EC designation between American Indian and White students may be of little substantive significance. The change in direction and/or magnitude for Black and Hispanic students was particularly large. This was likely related to the considerable strength of language status and free/reduced lunch eligibility in the model. **Limited English Proficient (LEP) students were 106% more likely to be classified as EC than non-LEP students, and students eligible for free/reduced lunch were 68% more likely to be classified as EC than non-free/reduced lunch eligible students.** Given that Hispanic students tend to be over-represented among Limited English Proficient and both Black and Hispanic students tend to be over-represented among free/reduced lunch eligible students, it makes sense that controlling for the influence

of those factors would reduce the likelihood of EC designation for both racial/ethnic groups. Overall, the analysis indicates that, net of other factors, students of color were generally less likely to be designated EC than White students in the state.

To further parse the relationship between student race/ethnicity and EC, we analyzed the 18 exceptionality classifications[8] used in coding special education in North Carolina. Special education research classifies certain EC designations as judgmental (i.e. developmentally delayed, behaviorally/emotionally disabled, intellectual disability, learning disabled) and others as medically-defined (i.e. blindness, visual impairment, hearing impaired) (Hibel et al., 2010). See Appendix A, Table 4 for a complete listing of judgmental and medically-defined designations. Physicians rarely diagnose judgmental disabilities. Instead, teachers typically refer students for evaluation based on classroom behavior and/or academic performance. The referral process often leads to teacher and administrator consultation, psychological evaluation, examination of student records, and committee meetings that include parents (Donovan & Cross, 2002). Over half of special education referrals are thought to follow this pattern (Fugate, Clarizio, & Phillips, 1993, Gottlieb, Alter, Gottlieb, & Wishner, 1994). Teachers' normative judgments of what constitutes acceptable achievement and/or behavior figure prominently in this process as does the school climate, which presumably influences the standards used in teachers' judgments.

Figure 5.4 shows the proportion of students from each racial group that are considered to have the judgmental disabilities: developmentally delayed (DD), behaviorally/emotionally disabled (BED), intellectual disability (ID), or learning disabled (LD).

American Indian, Black, Hispanic, and Pacific Islander students have the highest proportions of judgmental EC classifications, all of which are above the state average (54.1%). Asian, Multiracial, and White students have proportions falling well below the state average.

FIGURE 5.4 : Proportion of Judgmental Disabilities by Race/Ethnicity

- 64% — Hispanic, 64.8%
- 59% — Black, 59.7%
- American Indian, 56.2%
- Pacific Islander, 55.6%
- 54% — State Average, 54.1%
- Multiracial, 51.8%
- 49% — White, 47.4%
- 44% — Asian, 44.7%

As a final way to assess the relationship between race/ethnicity and exceptionality, we examined the settings of EC students. Schools report a setting for each student with a disability. While there are numerous settings, we were interested in whether the degree to which students are separated from non-disabled peers varied across racial groups. Table 5.1 shows the number of EC students in "regular" settings vs. "separate settings" and the percentage of students in a separate setting by racial group. A regular setting is one in which students spend over 80% of the school day with non-disabled peers. We considered separate settings to be those in which students spent less than or equal to 79% of the school

8 Autistic, Deaf-Blind, Developmentally Delayed (DD), Behaviorally/Emotionally Disabled (BED), Educable Mentally Disabled, Hearing Impaired, Intellectual Disability (ID) – Mild, Moderate, Severe, Specific Learning Disabled (LD), Multi-Handicapped, Other Health Impaired, Orthopedically Impaired, Speech-Language Impaired, Severely/Profoundly Mentally Disabled, Traumatic Brain Injured, Trainable Mentally Disabled, Visually Impaired.

Students of color, particularly American Indian, Black, and Hispanic students, were over-represented in a subset of more subjectively defined judgmental disabilities and were separated from non-disabled peers at higher rates than White and Asian students.

day with non-disabled peers or attended separate residential facilities or schools.

The average proportion of students in a separate setting statewide was 48.8%. Among the racial groups that exceeded the state average, **Black students had the highest proportion of EC students in separate settings (61.7%), followed by Asian (58.2%), American Indian (57.0%), and Hispanic** students (50.9%). Multiracial (45.6%), Pacific Islander (46.3%), and White students had separation rates below the state average, with Whites having the lowest overall rate of separation at 40.2%. ■

TABLE 5.1: Number and Percentage of Exceptional Children in Separate Settings by Race/Ethnicity

	# of EC Students in Regular Setting	# of EC Students in Separate Setting	% in Separate Setting
American Indian	1,729	986	57.0%
Asian	1,409	820	58.2%
Black	34,516	21,303	61.7%
Hispanic	11,795	6,005	50.9%
Multiracial	5,139	2,344	45.6%
Pacific Islander	108	50	46.3%
White	58,468	23,483	40.2%
NC State Average	114,140	55,688	48.8%

TAKEAWAYS

Our results show that substantial differences exist between racial groups in the context of special education in North Carolina. Race/ethnicity is a strong predictor of EC designation across all models. While American Indian, Black, and Multiracial students were over-represented among students designated EC overall, after controlling for potentially confounding factors, only American Indian students were slightly more likely to be designated EC than their White counterparts. These results support the more recent literature that suggests an under-representation of student groups of color in special education. However, students of color, particularly American Indian, Black, and Hispanic students, were over-represented in a subset of more subjectively defined judgmental disabilities and were separated from non-disabled peers at higher rates than White and Asian students.

The nuanced nature of our findings reflects the contested nature of the broader exceptionality literature. Our results and the theoretical framing of this report prioritize the need for a "both/and" rather than an "either/or" orientation in the context of exceptionality. Specifically, our findings suggest that where special education programming serves to benefit students (i.e. inclusion with non-disabled peers, programming to address medically diagnosed disabilities, and the support of higher achievement/attainment), White students are over-represented. Meanwhile, students of color tend to be over-represented where an exceptionality designation may represent an overexposure to educational risk factors (i.e. segregation from non-disabled peers, subjectively defined disability designations, and attendant constraints on achievement/attainment).

We examined the attendance records of over 1.1 million public school students in North Carolina during the 2016-2017 school year. Over 90,000 students, approximately 8%, were considered chronically absent.

Attendance affects numerous educational outcomes. Absences are negatively associated with academic achievement, high school graduation, and standardized test performance (Ginsburg, Jordan, & Chang, 2014; Gottfried, 2009; Lehr, Hansen, Sinclair, & Christenson, 2003; Steward, Steward, Blair, Jo, & Hill, 2008). North Carolina defines chronic absenteeism as having missed more than 10% of school days enrolled in a given school year. National data based on similar definitions indicates that between 10-15% of K-12 students are chronically absent (U.S. Department of Education, 2016). Percentages are often much higher in districts that serve large proportions of students of color and students from lower socioeconomic backgrounds (Nauer, Mader, Robinson, & Jacobs, 2014). Researchers have warned of the devastating effect of chronic absenteeism on the life chances of individual students while noting reform efforts on the district, state, and national level to reduce chronic absenteeism (Balfanz & Byrnes, 2012; Ginsburg, Jordan, & Chang, 2014).

Addressing problems with student attendance has been a particularly vexing problem for researchers across numerous fields due to the many factors that impact attendance (Kearney & Graczyk, 2013). However, a growing body of literature explores the role that schools can play in preventing chronic absenteeism through early identification, intervention and progress monitoring, behavioral approaches, procedures to reduce academic obstacles, and team-based approaches for intervention (Sailor, Doolittle, Bradley, & Danielson, 2009).

METHODOLOGY

Considering the documented negative effects and the role schools can play in its production and prevention, this report positions chronic absenteeism as an indicator of access and opportunity. Given its documented concentration in schools serving large proportions of students of color and students from lower socioeconomic backgrounds, chronic absenteeism may differentially expose these groups to the risk of school failure.

We examined the attendance records of over 1.1 million public school students in North Carolina during the 2016-2017 school year. Over 90,000 students, approximately 8%, were considered chronically absent. Unlike many previous studies, our data allowed us to separate out-of-school suspension (OSS) days from other absences, which may explain the difference between the lower percentage of chronically absent students in North Carolina (8%) as compared to the national averages (10-15%). While we did not include OSS days in our counts of chronic absenteeism, we do examine the relationship between race/ethnicity and OSS as a predictor of attendance below. ▶

ANALYSIS

Figure 6.1 displays the percentage of chronically absent students by race/ethnicity. American Indian, Black, Hispanic, and Multiracial students are over-represented in chronic absenteeism, while Asian, Pacific Islander, and White students are under-represented.

We also built statistical models to predict the likelihood that a student would be chronically absent. In order to isolate the effect of different predictors, we used three models.

FIGURE 6.1 : Proportion of Chronically Absent Students by Race/Ethnicity

■ Proportion of chronically absent students by race/ethnicity
■ Proportion of total NC student population by race/ethnicity
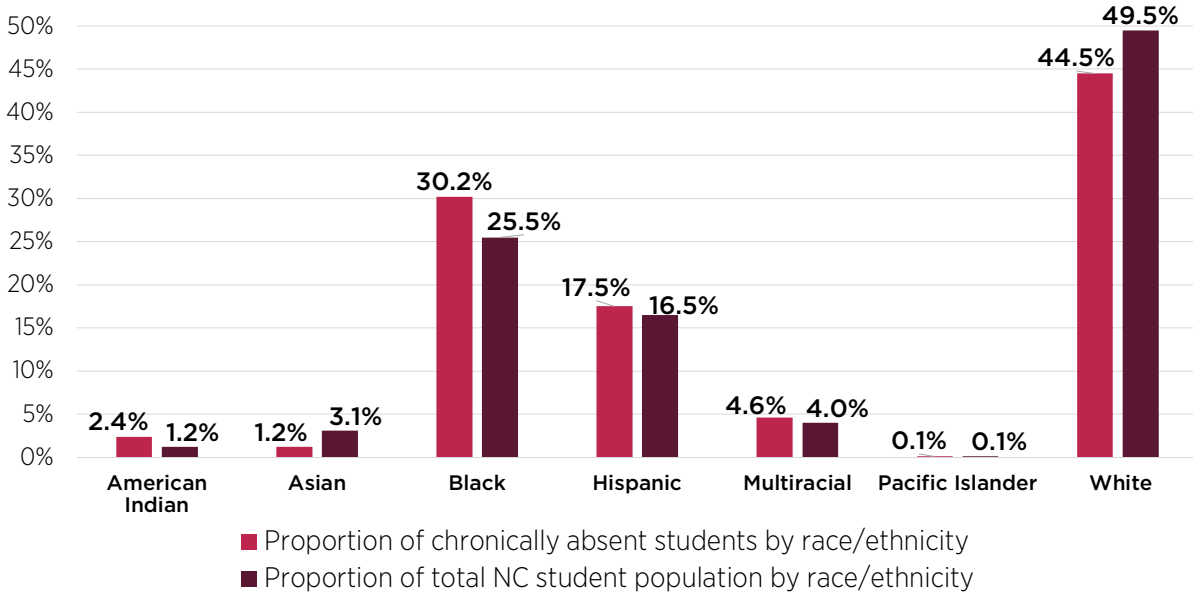
Model 1 included only race/ethnicity with Whites as a reference group. Model 2 included gender, language status, special education status, free/reduced lunch (FRL) eligibility, and giftedness. In the final model (Model 3), we included a variable indicating whether a student had received an out-of-school suspension at least once during the school year.

In Model 1, Asian students were approximately 60% less likely to be chronically absent compared to White students. Pacific Islanders were similarly likely as White students to be chronically absent. Black students were 38% more likely, Multiracial students were 34% more likely, Hispanics were 21% more likely, and American Indian students were 142% more likely than White students to be chronically absent.

The inclusion of additional predictors in Model 2 substantially changed the magnitude and direction of the effect of race/ethnicity for Black, Multiracial, Hispanic, and American Indian students. When

Regardless of race/ethnicity and other factors, receiving at least one suspension made students 3.5 times more likely to be chronically absent (not including the out-of-school suspension days) during the 2016-2017 school year.

controlling for gender, language status, special education status, free/reduced lunch eligibility, and giftedness, American Indian and Multiracial students were still more likely to be chronically absent than White students at 58% and 6%, respectively, although the magnitude of the effect was much smaller than Model 1. However, Black and Hispanic students switched from being more likely to be chronically absent than White students to being less likely to be chronically absent (by 8% and 14% respectively).

With the inclusion of a variable for whether a student had been suspended at least once in the final model, only American Indians were more likely than White students to be chronically absent (by 40%). Controlling for out-of-school suspension further reduced the likelihood of chronic absenteeism for Blacks in comparison to Whites.

FIGURE 6.2 : Likelihood of Chronic Absenteeism by Race/Ethnicity

Legend:
- Race as the only variable
- Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)
- Race while controlling for gender, LEP, ability status, FRL, giftedness (AIG), and Suspension

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Any).

The strength of suspension as a predictor of the likelihood of being chronically absent is also noteworthy. Recall that our counts of days missed in determining chronic absenteeism did not include out-of-school suspension days. Yet, after controlling for the effect of all other predictors (race/ethnicity, gender, language status, special education status, FRL status, and giftedness), receiving an out-of-school suspension increased the l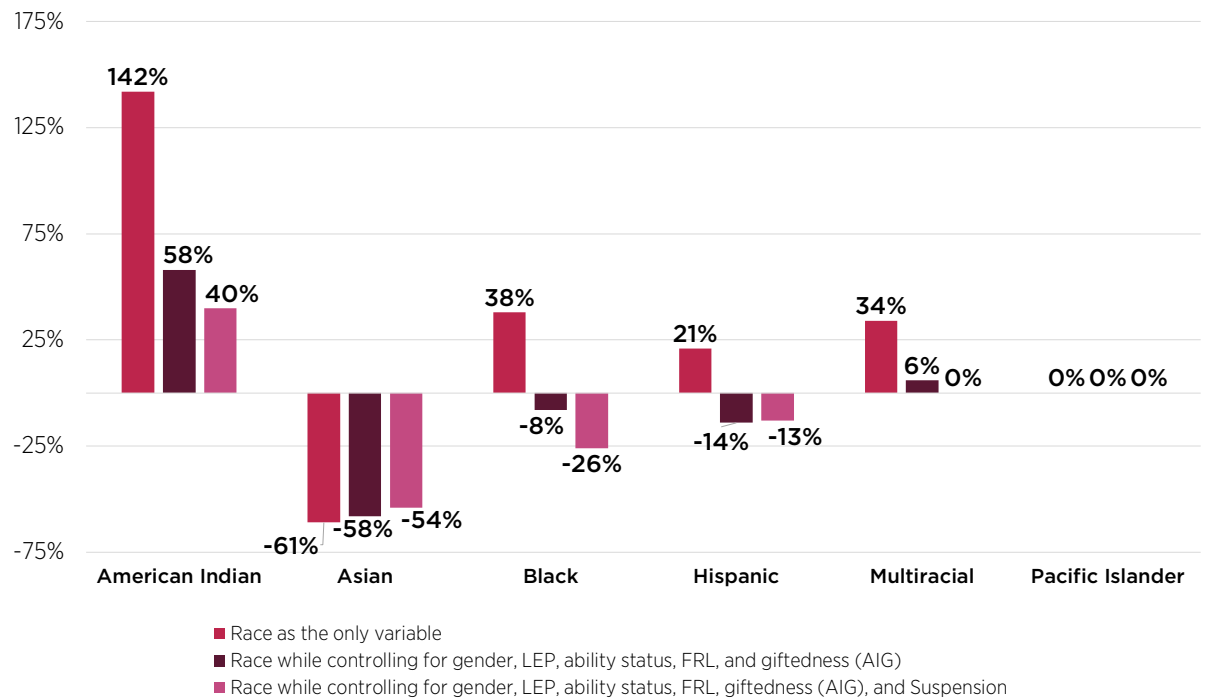ikelihood of chronic absenteeism by over 350%. That is, regardless of race/ethnicity and other factors, receiving at least one suspension made students 3.5 times more likely to be chronically absent (not including the out-of-school suspension days) during the 2016-2017 school year. Further, the effect of suspension was approximately double that of any other significant predictor in the model. ∎

TAKEAWAYS

In the context of racial/ethnic equity, chronic absenteeism is something of an outlier. For the other access and opportunity metrics in this report, results tend to position Asians the best situated, with American Indian, Black, Hispanic, and Multiracial students less well-situated and Pacific Islanders similarly situated to their White counterparts. While this pattern holds for American Indians, Asians and Pacific Islanders in the context of chronic absenteeism, it is inverted for Black, Hispanic, and Multiracial students.

Overall, several conclusions flow from our analysis of chronic absenteeism. First, given their consistently higher odds, American Indian students appear to be uniquely exposed to a higher incidence of chronic absenteeism in comparison to other racial/ethnic groups. Secondly, White students as a racial/ethnic group appear to face significant challenges with chronic absenteeism. Third, although Black, Hispanic, and Multiracial students are over-represented in chronic absenteeism in comparison to their percentage of total student population, race/ethnicity does not appear to increase their odds of chronic absenteeism after controlling for other factors, particularly FRL status and special education status. Finally, our results suggest a powerful relationship between out-of-school suspension and chronic absenteeism across all student groups that warrants further empirical investigation. However, it suggests that policies and procedures intended to reduce the incidence of exclusionary discipline might also help diminish chronic absenteeism and the compounded effect of both on students' educational outcomes.

Decades of research has found that students of color are disciplined more often and more harshly than their White counterparts, often for the same infractions, even after controlling for other relevant factors, such as (mis)behavior rates and socioeconomic status (Children's Defense Fund, 1975; Skiba et al., 2014). Concurrent scholarship has demonstrated repeatedly that different racial/ethnic groups have similar misbehavior rates (Finn, Fish, & Scott, 2008; McCarthy & Hoge, 1987; Gregory & Weinstein, 2008). When racial/ethnic differences in (mis)behavior have been detected, those differences have been insufficient to explain the magnitude of racial/ethnic discipline disparities (Eitle & Eitle, 2004; Peguero & Shekarkhar, 2011; Skiba & Williams, 2014; Wallace, Goodkind, Wallace, & Bachman, 2008). Racialized patterns of school discipline have been found to contribute to disproportionate losses in instructional time, diminished academic achievement, school dropout, social and emotional harm, and increased interactions with criminal and juvenile justice systems (Fabelo et al., 2011; Wallace et al., 2008). Furthermore, studies have shown that racial/ethnic disparities in school discipline are larger in subjective offense categories (i.e. disruption, disobedience, insubordination) as opposed to more objectively defined behaviors (i.e. fighting, drugs, alcohol, weapons) (Gregory, Bell & Pollock, 2014; Skiba, Michael, Nardo & Peterson, 2002).

The rate of suspension nationally has increased dramatically since the 1980s (Losen & Martinez, 2013; Skiba 2000). Only recently have schools and districts begun to acknowledge the harmful and inequitable application of punitive discipline and to turn to less punitive policies and practices (U.S. Department of Education, 2014). However, this report documents the continued widespread use of suspension in North Carolina schools as well as persistent racial/ethnic disparities in the application of school discipline.

School discipline is a complex phenomenon influenced by multiple, interrelated factors such as federal/state/district discipline policies, school culture and behavioral norms, administrators' beliefs, teachers' dispositions, classroom dynamics, student traits and behaviors, etc. While we recognize that discipline outcomes are often contingent upon the actions and decisions of individual school-based actors (i.e. students, teachers, principals), we analyzed aggregated statewide school discipline patterns to assess whether students with different racial/ethnic backgrounds had different levels of exposure to the harmful effects of exclusionary discipline. Therefore, in the context of this report, we position school discipline primarily as an indicator of students' access and opportunity to fully participate in North Carolina public schools.

North Carolina collects data on all office referrals given in the state. We analyzed all instances of in-school suspension (ISS) and out of school suspension[9] (OSS) reported to the North Carolina

9 North Carolina does not require reporting for some instances of ISS, so it is likely that ISS is under-reported in our data.

Department of Public Instruction for the 2016-2017 school year. We report the statewide incidence of ISS and OSS and the racial/ethnic demographics of students who were suspended. We also assess whether race/ethnicity is a significant predictor of suspension and whether any detected effect of race/ethnicity remains significant after controlling for gender, free/reduced lunch eligibility, language status, special education status, and giftedness. Because some students were suspended more than once over the school year, we report results on all incidences of suspension and all students suspended at least once separately.

METHODOLOGY

The proportion of all incidences of suspension for each racial/ethnic student group and the proportion of all North Carolina students represented by each racial group are reported in Figure 7.1.

ANALYSIS

FIGURE 7.1 : Proportion of All Incidences Resulting in Suspension by Race/Ethnicity

Proporation of all instances of In-School Suspension (ISS) by race/ethnicity
Proportion of all instances of Out-of-School Suspension (OSS) by race/ethnicity
Proportion of Total NC Student Population by Race/Ethnicity
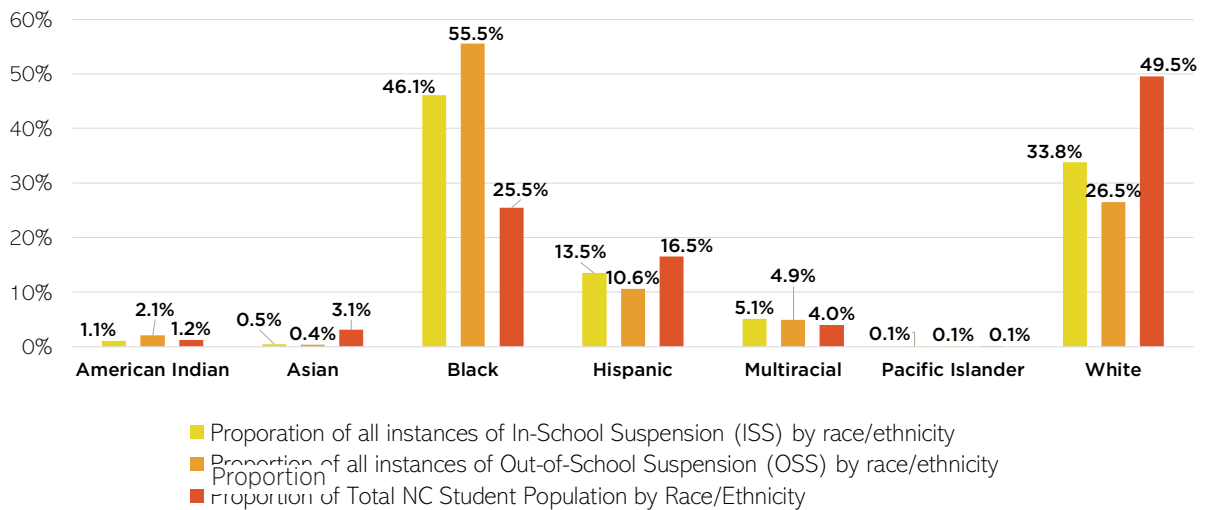
American Indian, Asian, Hispanic, and White students are under-selected for ISS, Pacific Islanders are proportionately selected, and Black and Multiracial students are over-selected. For OSS, Asian, Hispanic, and White students were under-selected, Pacific Islanders are proportionately selected, and American Indian, Black, and Multiracial students are over-selected. The magnitude of disparity between Black students and those from other racial/ethnic groups in both ISS and OSS is particularly noteworthy.

Figure 7.2 presents the proportion of each racial/ethnic student group that received ISS and OSS at least once in 2016-17. ▶

E(RACE)ING INEQUITIES

FIGURE 7.2 : Proportion of Racial/Ethnic Student Group that Received ISS and OSS at Least Once
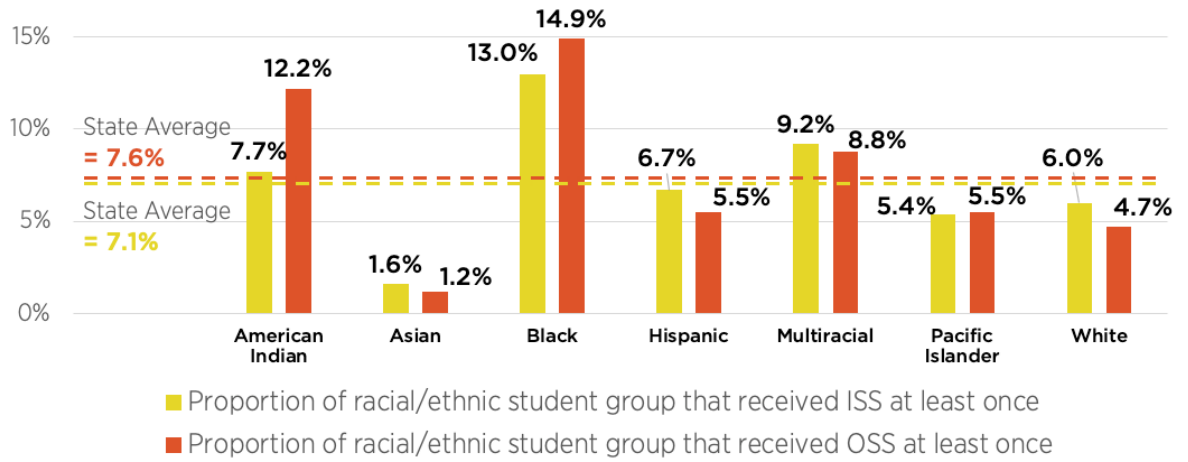
Black students (14.9%) received out-of-school suspensions at least once at almost twice the state average of 7.6%. American Indian (12.2.%) and Multiracial (8.8%) also had rates substantially above the state average. Asian, Hispanic, Pacific Islander, and White students received OSS at least once at rates well below the state average.

To give a sense of the magnitude of the racial discipline gap in the state, if Black students had been given OSS at least once at the state average rate, almost 30,000 fewer Black students would have experienced OSS during the 2016-2017 school year. The average length of OSS for Black students was 1.94 days. Thus, those 30,000 fewer suspensions translate into approximately 58,000 fewer days suspended out of school for Black students.

As we observed with OSS, Black students (13.0%) received in-school suspension at least once at almost twice the state average (7.1%). ISS rates for American Indian (7.7%) and Multiracial (9.2%) students also exceeded the state average. The remaining racial/ethnic groups received ISS at rates below the state average, with Asian ISS rate (1.6%) coming in at less than a quarter of the state average.

In comparing the in-school and out-of-school suspension rates for students from different racial/ ethnic groups, we see that, relative to other groups, American Indian and Black students have higher rates for out-of-school suspension than in-school suspension. Given that students remain in school and remain supervised by school staff, we view ISS as a less punitive form of punishment. To the extent that NC conforms to substantial literature suggesting little difference in misbehavior rates among racial/ethnic groups, this may further suggest that American Indian, Black, and potentially Multiracial students are targeted for more punitive discipline (OSS) while less punitive forms of discipline (ISS) are rationed for other racial/ethnic groups (Payne & Welch, 2010; Welch & Payne, 2010). ▶

If Black students had been suspended for incidents involving subjective offenses at the average rate for all students, it would represent approximately 8000 fewer suspensions.

We also compared the length of suspension as a factor of race/ethnicity by comparing the proportion of ISS and OSS incidents to the proportion of ISS and OSS days served within each racial/ethnic group. The proportion of days served was similar or smaller than the proportion of suspension incidents for all groups except Black students. **For both ISS and OSS, Black students represented a higher proportion of the total days served then they did the total incidents. This suggests that in addition to being the group with the highest discipline rates, Black students also tend to be given longer suspensions than all other groups.**

The results in Figures 7.1 and 7.2 largely mirror the existence and magnitude of suspension disparities found in the literature over the last five decades (Triplett, 2018). While the tables above clearly demonstrate numerical disparities in suspension between racial/ethnic groups, discipline outcomes are influenced by a number of factors. For instance, males have much higher suspension rates than females regardless of race/ethnicity or school context. Males also have substantially higher misbehavior rates (Finn et al., 2008). Students in poverty, non-native English speakers, and students labeled as disabled traditionally have higher rates of suspension as well. Therefore, it is plausible (though unlikely) that the differences in suspension rates for racial/ethnic groups shown in Figures 7.1 and 7.2 might be explained by differences in other factors like gender, socioeconomic status, language status, and special education status.

PREDICTION MODELS

In order to isolate the effect of race/ethnicity to the greatest extent possible given the available data, we created statistical models predicting the likelihood of a student being suspended at least once based on race/ethnicity as compared to White students, while controlling for the effect of gender, free/reduced lunch eligibility, language status, special education status, and giftedness. In both the ISS and OSS models, race/ethnicity was a significant and substantial predictor of being suspended after controlling for other factors.

While controlling for other factors in the model, American Indians were no more likely to be given ISS and 109% more likely to be given OSS than White students. Asians were approximately 70% less likely to be suspended (both ISS and OSS) than White students, and Hispanics were approximately 8% less likely to be suspended (both ISS and OSS) than White students. Black students were 160% more likely to receive ISS and 84% more likely to receive OSS than White students, and Multiracial

students were 75% more likely to receive ISS and 48% more likely to receive OSS than White students. The likelihood of suspension (both ISS and OSS) for Pacific Islanders was similar to that of their White counterparts.

FIGURE 7.3 : Likelihood of Being Suspended In-School (ISS) at Least Once by Race/Ethnicity

- Race as the only variable
- Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)
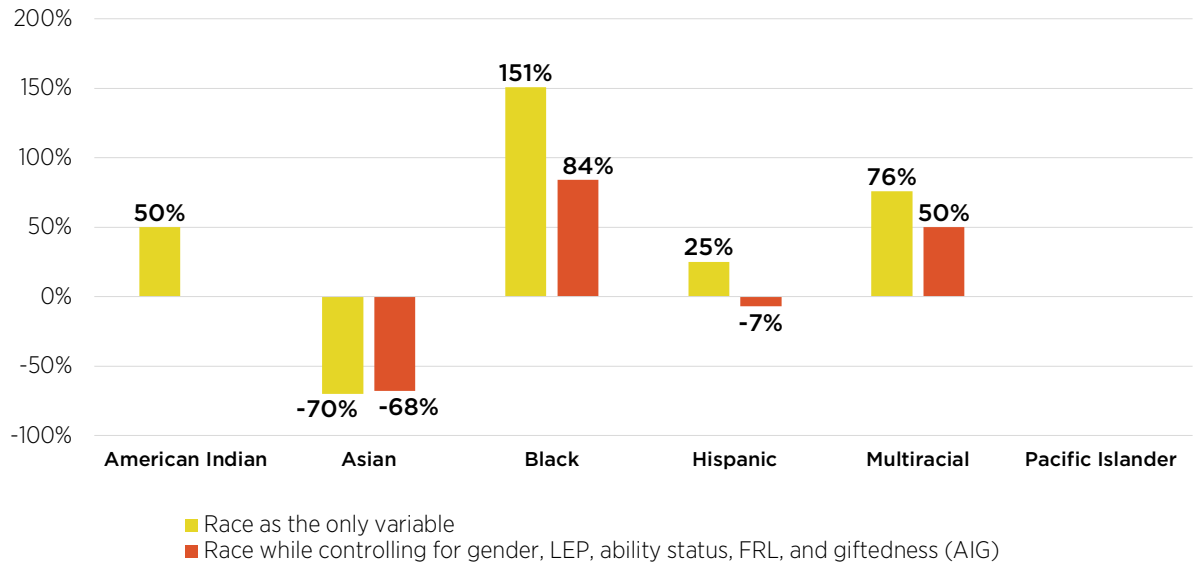
Whites are the comparison group. Control Variables: Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Any).

FIGURE 7.4 : Likelihood of Being Suspended Out-of-School (OSS) at Least Once by Race/Ethnicity

- Race as the only variable
- Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)

While controlling for other factors in the model, American Indians were no more likely to be given ISS and 99% more likely to be given OSS than White students. Asians were approximately 70% less likely to be suspended (both ISS and OSS) than White students, and Hispanics were approximately 8-10% less likely to be suspended (both ISS and OSS) than White students. Black students were 81% more likely to receive ISS and 158% more likely to receive OSS than White students, 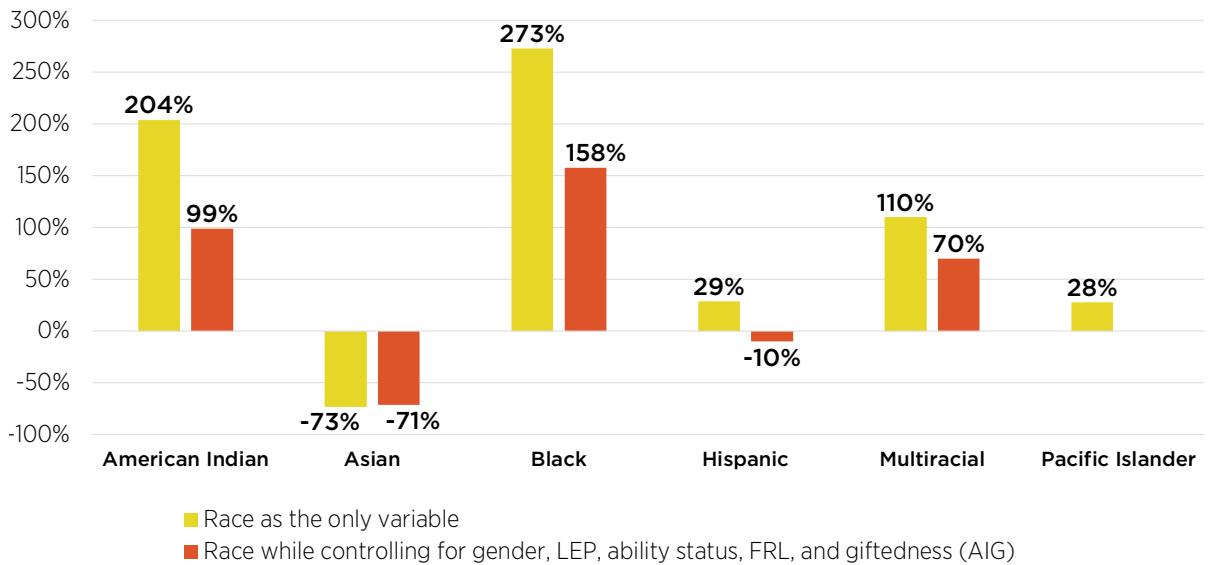and Multiracial students were 43% more likely to receive ISS and 70% more likely to receive OSS than White students. The likelihood of suspension (both ISS and OSS) for Pacific Islanders was similar to that of their White counterparts.

TABLE 7.1 : Rate of Suspension (ISS or OSS) for Incidents Involving Subjective Offenses

American Indian	46%
Asian	30%
Black	51%
Hispanic	42%
Multiracial	50%
Pacific Islander	45%
White	46%
State Average	**46%**

As a final test of the ways that race/ethnicity might influence discipline outcomes, we split the offense descriptions provided by schools into subjective and objective offenses. Recall that racial/ethnic disparities in school discipline tend to be larger in subjective offense categories as opposed to more objectively defined behaviors (Gregory, Bell & Pollock, 2014; Skiba, Michael, Nardo & Peterson, 2002). Traditional school discipline offenses such as fighting, smoking, drug violations, and weapons violations were labelled objective. Offenses that are more open to interpretation, such as disobedience, insubordination, disrespect, and disruption, were labelled as subjective offenses.[10] We then calculated the number of incidents resulting in suspension (ISS or OSS) that involved subjective offenses. Table 7.1 presents the results.

Black students were suspended for incidents involving subjective offenses at the highest rate (51%), followed by Multiracial students (50%), American Indian students (46%), Whites (46%), Pacific Islanders (45%), Hispanics (42%), and Asians (30%). If Black students had been suspended for incidents involving subjective offenses at the average rate for all students, it would represent approximately 8000 fewer suspensions. Given that these figures align well with differences in overall suspension rates, the data suggest that the interpretation of student behavior by school authorities may contribute to racial/ethnic discipline disparities in the state, particularly for American Indian, Black, and Multiracial students. ◼

10 See Appendix A, Table 3 for a complete list of offenses defined subjective and objective.

TAKEAWAYS

The findings of this report are remarkably similar to the collected findings of discipline research since the 1970s. It is worth reiterating that research using large, nationally representative samples have repeatedly found little to no difference in (mis)behavior rates between racial/ethnic groups (Finn et al., 2008; Skiba & Williams, 2014). To the extent that North Carolina conforms to this finding, the results of this report suggest that American Indian, Black, and Multiracial students are disproportionately exposed to the negative effects of school discipline. Not only are American Indian, Black, and Multiracial students over-represented generally in the incidence of both in-school and out-of-school suspensions, they appear to be the disproportionate recipients of suspensions involving subjective offenses and receive harsher forms of discipline (OSS vs. ISS) at higher rates. Furthermore, Black students receive longer suspensions on average than any other student group.

Our results for Black students are highly disturbing given that almost 50 years of documented discipline disparities appear to have done nothing to reduce the over-selection of Black students for school discipline. As such, the magnitude and persistence of the discipline gap and the harm accumulated by Black, American Indian, and most likely, Multiracial students in terms of lost instructional time, achievement, graduation rates, and social/emotional well-being provides a powerful lens through which to understand racial/ethnic gaps in other educational outcomes.

Suspension also provides a powerful conceptual example of how educational stakeholders can begin to understand racial differences in educational achievement and attainment as a factor of differential access to full participation in school. While the data do not allow us to make causal claims about the relationship between discipline and achievement/attainment, one can easily trace a conceptual path from racial disparities in discipline to less time in school to lower grades and higher dropout rates.

The suggestion that discipline outcomes influence academic outcomes is borne out elsewhere in this report. Our analysis of high school dropout data indicates that while controlling for other factors, including race/ethnicity, students that were suspended at least once during the year they dropped out were 230% more likely to drop out than those not suspended.

In addition, in depth analysis of EOC/EOG scores showed that having been suspended at least once was a powerful predictor of a lower mean scale score and lower achievement level across a sample of assessments, including 8th grade math, 8th grade reading, Math I, English II, and Biology. On all assessments tested, suspended students scored roughly five points lower than students who were not suspended. In all cases, a single suspension had a stronger negative effect on EOC/EOG scores than free/reduced lunch status.

It is worth reiterating here that unless North Carolina represents some kind of aberration in the area of race/ethnicity and student behavior, it is reasonable to assume that students from different racial groups in the state have minimal, if any, differences in misbehavior rates based on the strength of past literature on the subject.

The only studies that have successfully reduced students' race/ethnicity to statistical non-significance have included metrics related to school climate and the disciplinary dispositions of school administrators (Skiba, R. J., Chung, C. G., Trachok, M., Baker, T. L., Sheya, A., & Hughes, R. L.; 2014). Therefore, it is likely that to fully account for the effect of race/ethnicity on student discipline outcomes, North Carolina will need to begin collecting more robust data on school climate, school authorities, and their relationship to racial discipline gaps.

The ACT is a college admissions test that measures student learning in high school and readiness for college coursework. The ACT is administered in a multiple-choice format and covers four subjects: English, math, reading, and science. There is an optional writing section that asks students to respond to an open-ended question in short essay format. Scores range from 1-36 in each subject area. An average of the four subject scores is reported as a composite score for each student.

In North Carolina, the ACT is given to all students in the 11th grade, and the ACT WorkKeys assessment is administered to students who are in Career and Technical Education (CTE) tracks. The WorkKeys assessment is analyzed elsewhere in this report. North Carolina tracks the percentage of students meeting the UNC system admissions minimum ACT composite score of 17.

METHODOLOGY

In this report, we position the ACT as an indicator of secondary educational attainment and student readiness for postsecondary coursework. We provide descriptive data on the students that took the ACT and ACT composite scores as a factor of race/ethnicity. We also assess whether race/ethnicity is a significant predictor of ACT composite scores, the magnitude of predicted differences for student groups of color as opposed to White students, and whether any detected effect of race/ethnicity remains significant after controlling for gender, socioeconomic status, language status, special education status, and previous achievement.

ANALYSIS

Figure 8.1 shows the mean ACT composite scale score by racial group.

Asian (21.9) and White students (20.5) had the highest mean ACT score, both achieving above the state average (19.0) and the UNC system minimum (17.0). Average scores for American Indian (16.9), Black (16.0), Hispanic (17.4), Multiracial (18.9) and Pacific Islander (18.2) students were all below the

FIGURE 8.1 : Mean ACT Scores by Race/Ethnicity
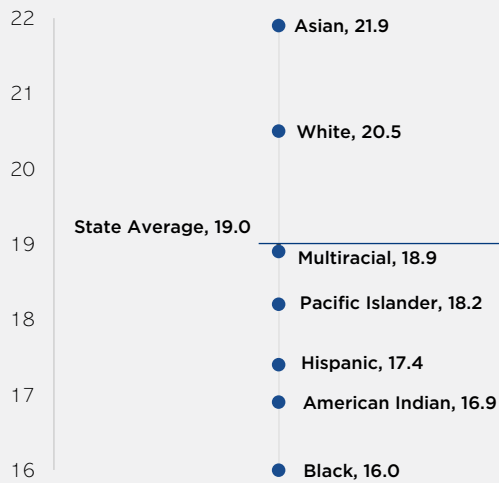
state average, with average scores for American Indian and Black students falling below the UNC system minimum.

We also built statistical models to predict the influence of race/ethnicity on composite scale scores while controlling for other potentially relevant factors.[12] In Model 1, scores were predicted based on race/ethnicity alone. Model 2 controls for gender, socioeconomic status, language status, special education status, and previous achievement. White students were the comparison group for all other racial/ethnic groups.

Figure 8.2 shows the results of the prediction models. The effect of race/ethnicity (as compared to Whites) was statistically significant ($p < .001$) for all racial/ethnic groups in both models. The numbers in the table indicate the predicted point differences in ACT composite scores as compared to White students.

FIGURE 8.2 : Predicted difference in ACT score by race/ethnicity
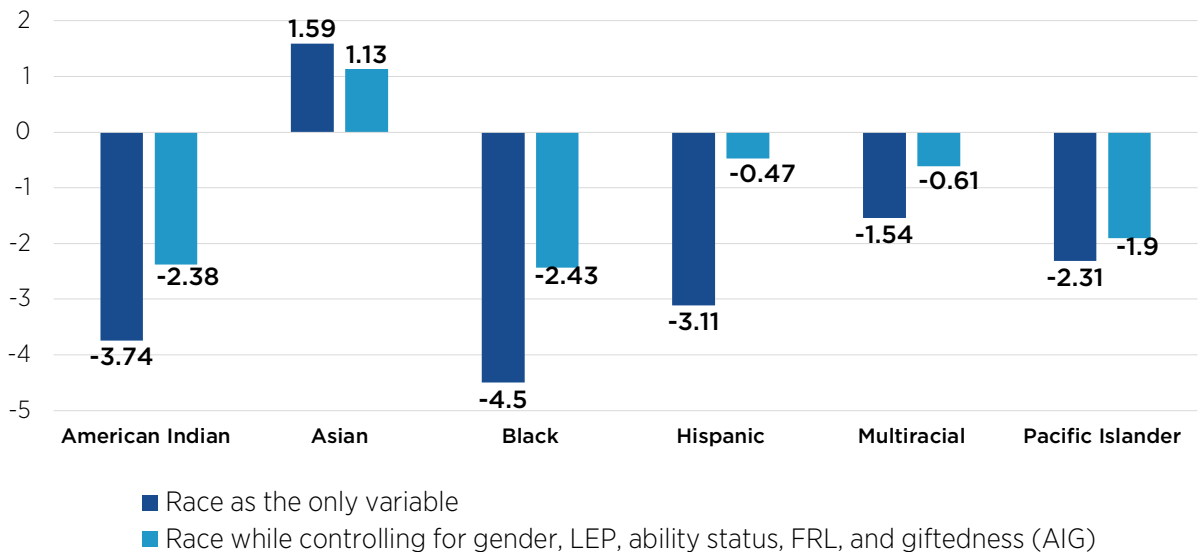
Whites are the comparison group. Control Variables: Gender, Socioeconomic Status, Language Status, Special Education Status, and Previous Achievement.

Net of other factors in the model, Asian students were predicted to score 1.13 points higher than their White counterparts. All other student groups of color were predicted to have lower ACT scores compared to Whites. The magnitude of racial disparity was highest for Black students, who were predicted to score 2.43 points lower than Whites, followed by American Indians (2.38 points lower), Pacific Islanders (1.90 points lower), Multiracial students (0.61 points lower), and Hispanics (0.47 points

lower). Of all the predictors in the model (race/ethnicity, gender, socioeconomic status, language status, special education status, and previous achievement), only previous achievement, as measured by overall GPA in 11th grade, was a stronger predictor of ACT score than race/ethnicity after controlling for other factors. ■

TAKEAWAYS

There are clear differences in ACT performance as a factor of race/ethnicity. On average, Asian and White students scored above the state average, and all other student groups of color scored below the state average. Results are particularly concerning for American Indian and Black students, who on average scored below the UNC System minimum score of 17. Furthermore, race/ethnicity has a significant and substantial effect on ACT composite scale scores for all student groups of color after controlling for other potentially confounding factors.

To the extent that ACT scores reflect college readiness and given the widespread use of ACT as a factor in college admissions, our results suggest that non-Asian student groups of color may be differentially exposed to educational conditions and contexts that may limit their ability to attain a postsecondary degree. This, in turn, reflects on the relationship of student race/ethnicity and the state's explicit goals around college and career readiness.

The SAT is a standardized test intended to assess students' readiness for college. The test measures mathematics, reading, and writing, and combined scores range between 400-1600. The SAT (along with the ACT) is widely used in college admissions and is required for freshman entry to many colleges and universities. Only high school grades were considered more important by more postsecondary institutions in admissions decisions in 2018 (Clinedinst & Patel, 2019). Over 2.1 million students nationwide took the SAT in 2018 and earned a mean score of 1068 (College Board, 2018).

Non-Asian student groups of color have historically had lower SAT scores than their White and Asian counterparts (Geiser & Studley, 2001; Jencks, 1998; Thernstrom & Thernstrom, 2004). An analysis from 1976 by the College Board revealed that the average score for Black students was 240 points lower than White students. In 2018, the gap was 177 points. This trend continues in the most recent administration of the test (College Board, 2018). Given the persistence of racial differences in scores, and the inability of socioeconomic differences to explain those differences, scholarship has positioned the SAT as racially (and statistically) biased (Freedle, 2003; Santelices & Wilson, 2010). Not surprisingly, the makers of the SAT have vigorously defended the validity of the test (Dorans & Zeller, 2004).

SAT score, particularly in combination with high school grades, has been found to be a substantial predictor of college success (Camara & Echternacht, 2000). However, the SAT is not as useful in predicting the college success of students of color as it is for White students (Fleming, 2013). While the relationship of race/ethnicity and SAT is complex and contested, for the purposes of this report it is worth noting that scholarship often cites unequal K-12 educational environments as a key factor in the persistent presence of racial/ethnic differences in SAT performance (Fleming, 2013; Thomas, 2004).

In North Carolina, recent decades have seen the SAT supplanted by the ACT as the most widely taken test of college readiness. As mentioned elsewhere in this report, North Carolina administers the ACT to all students (free of charge) in the 11th grade. This effectively makes the SAT an optional assessment for students with college aspirations. As such, there is likely self-selection bias in the sample of students that choose to take the SAT in the state. A minimum score of 880 on the SAT (or 17 on the ACT) is required for admission to UNC System colleges and universities.

METHODOLOGY

For the purposes of this study, we position SAT (alongside ACT) as an outcome indicator of secondary school academic preparation and college readiness. In the sections that follow, we report

"

Asians were predicted to score 72 points higher than Whites while Black students were predicted to score 104 points lower than Whites net of other factors in the model. Being Black was the strongest predictor of SAT score outside of giftedness.

cumulative SAT score as a factor of race/ethnicity in a sample of approximately 61,000 students who took the test during the 2016-2017 academic year. We also modeled the predicted SAT score for students based on race/ethnicity while controlling for gender, free/reduced lunch status, language status, special education status, and giftedness.

ANALYSIS

Figure 9.1 shows the mean SAT score by racial/ethnic group. Asian students have the highest mean SAT scores. All non-Asian student groups of color have mean scores below those of Asian and White students and below the state average of 1099. Differences between all student groups of color and their White counterparts are statistically significant (p <.001) with the exception of Pacific Islanders. All student groups score above the UNC System admissions minimum of 880.

FIGURE 9.1 : Mean SAT Scores by Race/Ethnicity

1,250	
1,200	Asian, 1,216
1,150	White, 1,148
1,100	State Average, 1099 —— Pacific Islander, 1,088
	Multiracial, 1,085
1,050	Hispanic, 1,043
1,000	American Indian, 1007
	Black, 966
950	

In order to isolate the effect of race/ethnicity to the greatest extent possible with the available data, we also built statistical models to predict the influence of race/ethnicity on SAT scores while controlling for other potentially relevant factors. In Model 1, scores were predicted based on race/ethnicity alone. Model 2 controlled for gender, socioeconomic status, language status, special education status, and previous achievement. White students were the comparison group for all other racial/ethnic groups. Figure 9.2 presents the results of both prediction models. ▶

FIGURE 9.2 : Predicted difference in SAT score by race/ethnicity
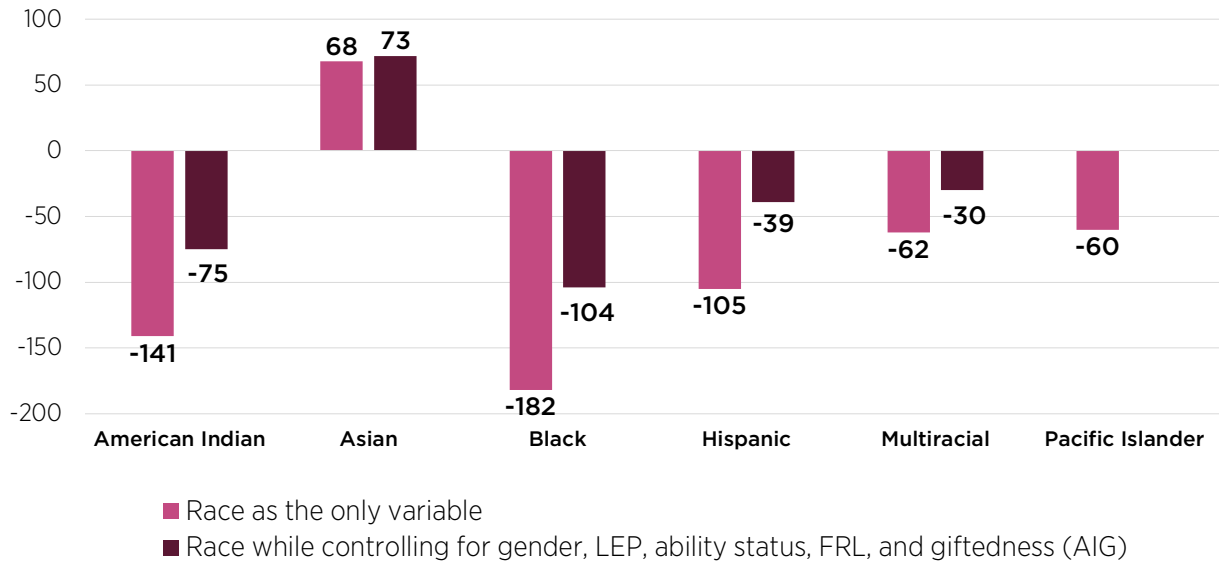
Bar chart values:
- American Indian: -141 (Race as the only variable), -75 (Race while controlling)
- Asian: 68 (Race as the only variable), 73 (Race while controlling)
- Black: -182 (Race as the only variable), -104 (Race while controlling)
- Hispanic: -105 (Race as the only variable), -39 (Race while controlling)
- Multiracial: -62 (Race as the only variable), -30 (Race while controlling)
- Pacific Islander: -60 (Race as the only variable)

■ Race as the only variable
■ Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness.

Race/ethnicity remains a significant and substantial predictor for all student groups of color except Pacific Islanders, even after accounting for other factors. Asians were predicted to score 72 points higher than Whites while Black students were predicted to score 104 points lower than Whites net of other factors in the model. Being Black was the strongest predictor of SAT score outside of giftedness. ■

TAKEAWAYS

As was the case with the ACT, we identify clear differences in SAT performance as a factor of race/ethnicity. On average, Asian and White students scored above the state average, and all other student groups of color scored below the state average. Furthermore, race/ethnicity has a significant and substantial effect on SAT scores for student groups of color as compared to Whites after controlling for other potentially confounding factors. Once again, the results are particularly concerning for American Indian and Black students, who on average score well below other student groups.

To the extent that SAT scores reflect college readiness and given the use of SAT scores in admissions decisions to elite postsecondary institutions, our results suggest that non-Asian students of color may be differentially exposed to educational conditions and contexts that may limit the ability of students to be competitive in the college admissions process. This, in turn, reflects on the relationship between student race/ethnicity and the state's explicit goals around college and career readiness.

WorkKeys is an alternative ACT test that is intended for high school students who plan to pursue career and technical diplomas. According to ACT, WorkKeys scores are intended to help students and employers compare potential employees on necessary skills (ACT, 2018). Over 23,000 employers, including over 3600 in North Carolina, recognize and/or recommend a WorkKeys National Career Readiness Certificate as a measure of foundational workplace skills (ACT, 2019).

WorkKeys measures applied mathematics, locating information, and reading for information. Students earn tiered certificates: Platinum, Gold, Silver, Bronze, and No Certificate. According to ACT, Inc., a Gold certificate indicates that a student possesses skills for approximately 85% of jobs that have been profiled by WorkKeys, a Silver certificate indicates that a student possesses skills for approximately 65% of jobs that have been profiled by WorkKeys, and Bronze indicates that a student possesses skills for approximately 30% of jobs that have been profiled by WorkKeys.

In 2012-13, WorkKeys became part of North Carolina's school accountability program. The state administers the ACT WorkKeys assessment to all students pursuing a Career and Technical Education (CTE) diploma who complete CTE course sequence prior to graduation. The NC Department of Public Instruction positions WorkKeys as a gauge of career readiness and is widely recognized as an industry credential (http://www.dpi.state.nc.us/cte/directory/). As part of the CTE program, state and local educational agencies maintain partnerships with business and industry[13] as a means of providing students with clear pathways to jobs in their chosen career. Approximately 44,000 students took the WorkKeys assessment in North Carolina in 2016-2017. ▶

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13 State and local educational agencies maintain partnerships with businesses in the following career clusters:
http://www.ncpublicschools.org/advancedlearning/ccp/cte-pathway/
- Agriculture, Food, and Natural Resources
- Education and Training
- Hospitality and Tourism
- Manufacturing
- Architecture and Construction
- Finance
- Human Services
- Marketing, Sales and Service
- Arts, Audio/Visual Technology and Communications
- Government and Public Administration
- Information Technology
- Science, Technology, Engineering and Mathematics
- Business, Management and Administration
- Health Science
- Law, Public Safety, Corrections and Security
- Transportation, Distribution and Logistics

ANALYSIS

Figure 10.1 shows the proportion of WorkKeys test-takers and the proportion of total North Carolina student population by racial/ethnic group.

FIGURE 10.1 : Proportion of WorkKeys Test-takers by Race/Ethnicity

Legend:
- ■ Proporation of WorkKeys test-takers by race/ethnicity
- ■ Proportion of total NC student population by race/ethnicity
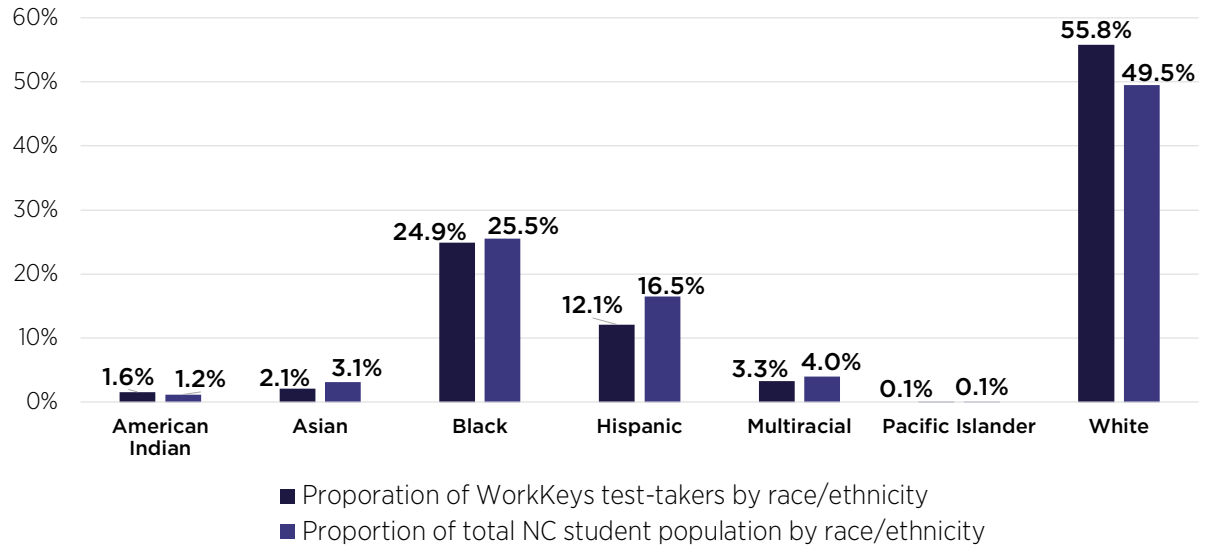
White and American Indian students took WorkKeys at higher rates than their proportion of all North Carolina students. Asian, Black, Hispanic, and Multiracial students took WorkKeys at lower rates. The difference between the proportion of WorkKeys participation and proportion of total student population is highest for White students.

Figure 10.2 shows the percentage of students attaining a Silver certificate or higher by race/ethnicity. See Appendix A, Table 6 for data on all WorkKeys certificate levels.

FIGURE 10.2 : Percentage of Students Attaining Silver Certificate or Higher on WorkKeys Assessment by Race/Ethnicity

Approximately 71% of students who took the WorkKeys assessment received at least a Silver certificate (Silver+). Asian and White students attain Silver+ certificates at the highest rates, followed by Multiracial, Hispanic, and Pacific Islander students. American Indian and Black students are least likely to attain Silver+ certificates. If Black students had achieved at the state average for WorkKeys, approximately 2000 more Black students would have attained Silver+ certificates. ▶

We also built statistical models to predict the likelihood of attaining Silver+ while controlling for other potentially relevant factors. In Model 1, scores were predicted based on race/ethnicity alone. Model 2 controlled for gender, socioeconomic status, language status, special education status, and previous achievement. White students were the comparison group for all other racial/ethnic groups.

FIGURE 10.3 : Likelihood of Attaining Silver+ Certificate on WorkKeys by Race/Ethnicity
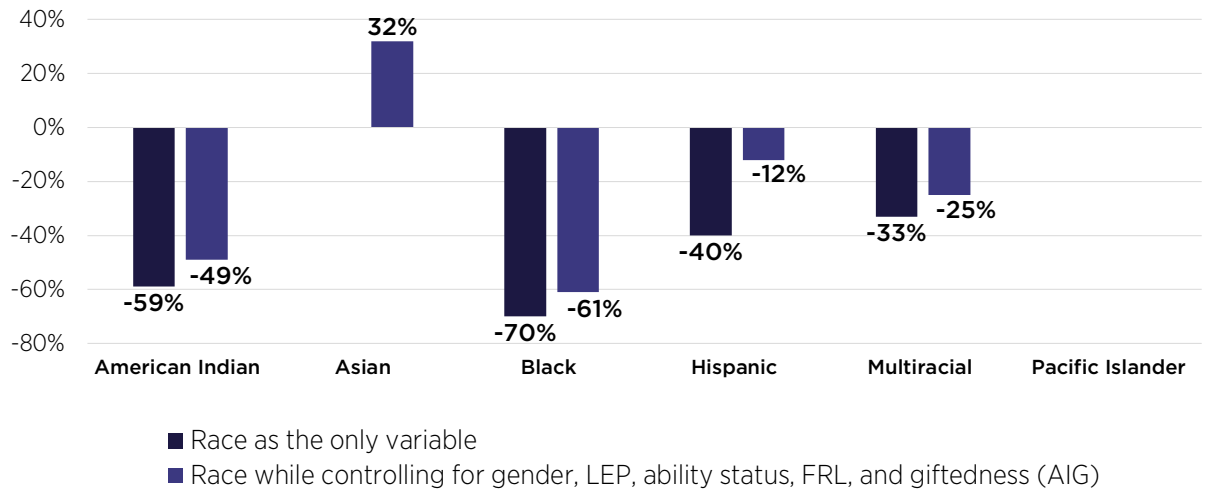
■ Race as the only variable
■ Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness

Race/ethnicity remained a significant and substantial predictor of attaining a Silver+ WorkKeys certificate for all student groups of color after accounting for other factors, except in the case of Pacific Islanders. The largest racial disparity existed between Black and White students, such that Black students were 61% less likely than White students to attain a Silver+ certificate net of other factors. Furthermore, the effect of being Black was approximately twice that of free/reduced lunch eligibility. Giftedness was the strongest predictor overall, such that AIG students are 8.3 times more likely to attain a Silver+ certificate than their non-AIG counterparts after controlling for race/ethnicity, gender, SES, language, and special education status. ■

TAKEAWAYS

With the exception of Hispanic students, race/ethnicity does not appear to exert a strong influence on which students take the WorkKeys assessment. However, there are substantial racial disparities in WorkKeys performance, with Asian and White students scoring well above the state average and American Indian and Black students scoring far below the state average. Furthermore, in comparison to White students, American Indian, Black, and Multiracial students were predicted to have dramatically lower rates of Silver+ certificate attainment after controlling for potentially relevant factors.

The observed racial disparities in WorkKeys performance suggest that among students working toward CTE diplomas, non-Asian students of color, particularly American Indian and Black students, are over-exposed to the risk of graduating without the necessary skills to transition into jobs across numerous career pathways. When viewed in concert with our analysis of ACT scores, our analysis of WorkKeys further suggests that non-Asian students of color are at increased risk of failing to meet the state's explicitly stated goal of college and career readiness for all students.

Leaving school before graduation has dramatic effects on the future employment, earnings, health, and overall well-being. According to the U.S. Department of Labor (2018), high school dropouts are over three times more likely to be unemployed than college graduates. Even when employed, high school dropouts earn about $10,500 a year less than high school graduates and approximately $35,000 a year less than college graduates (U.S. Department of Labor, 2017). Decades of research have also linked lower educational attainment to negative physical, mental, and cognitive health outcomes (Hahn & Truman, 2015). Scholarship has also examined the relationship between race/ethnicity, dropout, and educational attainment (Balfanz, Bridgeland, Fox, DePaoli, Ingram, & Maushard, 2014; Hahn, Truman, & Williams, 2018) leading researchers to call for reforms intended to close "gaps" in educational attainment between students of color and their White and Asian counterparts (Hahn & Truman, 2015).

Students can legally drop out from almost all North Carolina schools when they reach the age of 16. They are not required to obtain parent permission or meet any other requirements for leaving school (N.C. Gen. Stat. § 115C-378). In 2015, the State Board of Education gave Hickory Public Schools and Newton-Conover Schools permission to raise the minimum school dropout age from 16 to 18 as part of a study intended to determine if increasing the dropout age would help keep kids in school (SB 402, sec. 8.49). State reports have correlated the pilot program with small decreases in dropout rates but have also reported difficulty enforcing the raised dropout age. Twenty-five states and the District of Columbia do not allow students to drop out before turning 18, and 11 states have set the permissible dropout age at 17.

North Carolina General Statute 115C-12(27) requires an annual report on dropout data in the state. Each LEA and charter school reports an "event dropout rate," which is the number of students in a particular grade range dropping out in one year divided by total students in that same grade range. LEAs and charter schools are also responsible for compiling a list of dropouts for each school and transmitting dropout files to North Carolina Department of Public Instruction (NCDPI) on a designated date each year.

NCDPI defines a dropout as an individual who:
- was enrolled in school at some time during the reporting year;
- was not enrolled on day 20 of the current year;
- has not graduated from high school or completed a state or district approved educational program; and does not meet any of the following reporting exclusions:
    1. transferred to another public school district, private school, home school or state/district approved educational program (not including programs at community colleges),
    2. temporarily absent due to suspension or school approved illness, or
    3. death. ▶

Between 2007-2008 and 2015-2016, the published statewide dropout rate has seen year-over-year decreases from approximately 5% to 2.3%.

METHODOLOGY

Over 12,000 students were identified as dropouts in North Carolina in 2016-2017. The data from North Carolina included dropouts from grades as early as first grade. In order to ensure that we captured dropout rates consistent with the traditional perception of dropouts, we only considered students in grades 9-13, which corresponds to the grades when most students reach the legal dropout age. We examined data on approximately 475,000 students attending roughly 550 schools in grades 9-13[14] to identify dropout patterns. There were approximately 10,700 dropouts that met this criterion in the 2016-2017 data.

ANALYSIS

FIGURE 11.1 : Proportion of Dropouts by Race/Ethnicity, Grades 9-13
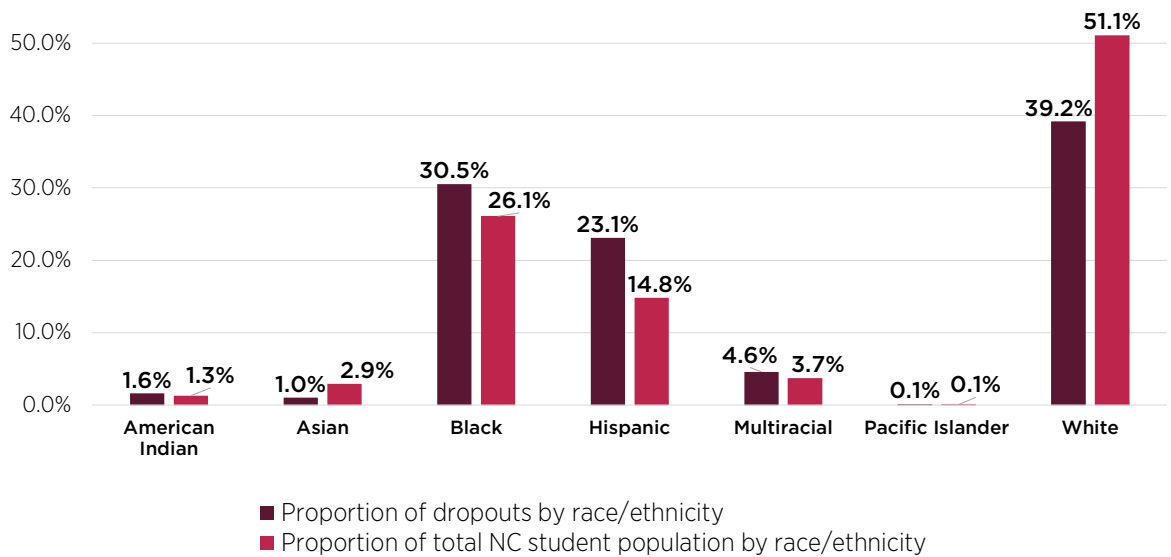
Asians and Whites are under-represented among dropouts in comparison to what would be expected if racial groups' proportion of dropouts was similar to their proportion of the population. Pacific Islanders are proportionately represented. Black, Hispanic, American Indian, and Multiracial students are over-represented. Hispanic students have the highest dropout rates (3.5%), followed by Multiracial (2.8%), American Indian (2.8%), Black (2.6%), Pacific Islanders (2.1%), White (1.7%), and Asian (0.7%) students. ▶

14 Several early college high schools in North Carolina allow students to attend a fifth year of high school (Grade 13) in order to attain tuition-free college credits.

PREDICTING DROPOUT

We also built statistical models to predict the likelihood of a student dropping out based on race/ethnicity after controlling for gender, socioeconomic status, language status, special education status, giftedness, and suspension with Whites as the comparison group. Model 1 included only race/ethnicity. Model 2 included gender, language status, special education status, giftedness, and eligibility for free/reduced lunch. In the final model, Model 3, we entered a dichotomous variable indicating if a student had been suspended at least once during the year of dropout. Figure 11.2 presents the results of the prediction models.

FIGURE 11.2 : Likelihood of Dropout by Race/Ethnicity
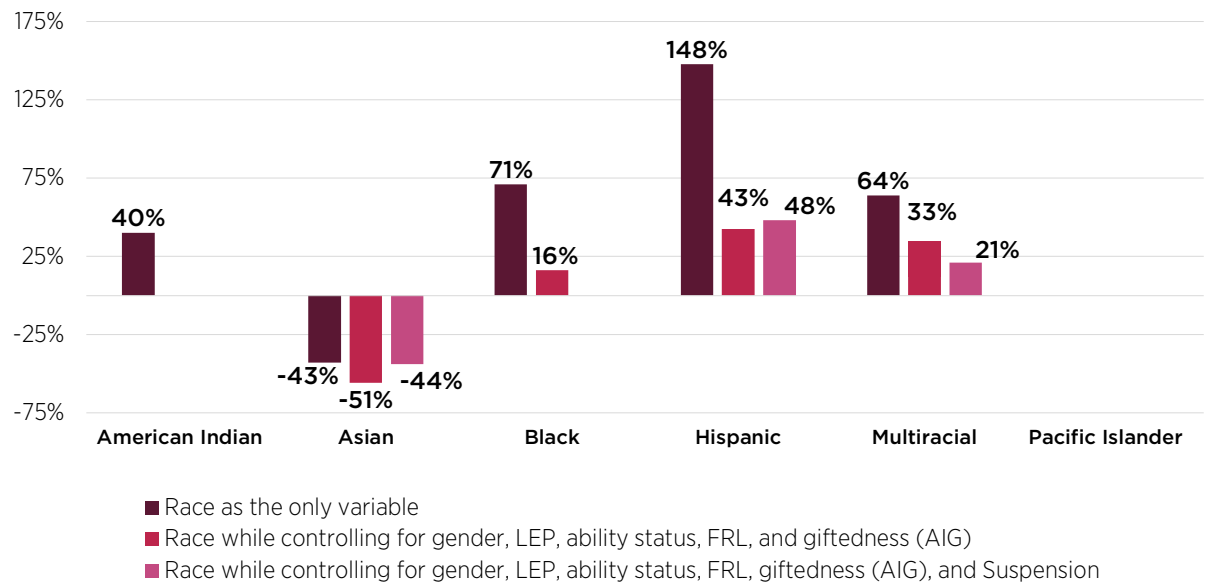
Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness.

In Model 1 (race/ethnicity only), Asians were 43% less likely to drop out and Pacific Islanders were similarly likely to drop out compared to their White student peers. American Indian (40%), Black (71%), Hispanic (148%), and Multiracial students (64%) were all more likely to drop out than their White student peers.

In Model 2, which controlled for gender, Limited English Proficiency, special education status, giftedness, and eligibility for free/reduced lunch, the model predictions remained largely unchanged for Asians and Pacific Islanders as compared to Whites. American Indian students were no longer significantly different from Whites. The likelihood of dropout for Black (16%), Hispanic (43%), and Multiracial (33%) students remained higher than those of Whites, although the magnitude dropped substantially. ▶

In the final model that included a control for if a student had been suspended at least once during the year, Asians remained less likely than Whites to drop out and American Indian and Pacific Islander students remained similarly likely to drop out compared to Whites. With the inclusion of suspension, Black students were no longer significantly different from Whites. Net of all other factors, Hispanic students were predicted to be 48% more likely and Multiracial students were predicted to be 21% more likely than Whites to drop out.

Overall, results of the prediction model showed Pacific Islander students had similar odds of dropping out, and Asian students were approximately half as likely as White students to drop out after controlling for all other factors. While American Indian and Black students had higher overall dropout rates than White students, when we controlled for other factors, race/ethnicity no longer appeared to be a powerful predictor of dropout for those groups. Multiracial and Hispanic students remained significantly more likely to dropout than Whites net of other predictors.

The dramatic drop in the likelihood of dropout for Hispanic students between Models 1 and 2 is likely due to the over-representation of Hispanics among Limited English Proficient students. The strength of suspension as a predictor of dropout is also worth noting. **After controlling for other factors, including race/ethnicity, students that were suspended at least once during the year they dropped out were 230% more likely to drop out than those were not suspended. By adding suspension to the prediction model and controlling for its influence, Black students were no more likely than Whites to drop out of high school.**

REASONS FOR DROPOUT

We also wanted to analyze the reasons students drop out. The state reports data on 21 reasons for dropout. A reason of "unknown" was provided for approximately 1300 students. Given its inherent ambiguity, we do not include these students in our analysis of the reported reasons for dropout. Approximately 1200 students reported dropping out to attend community college or community college high school. While the state considers these students dropouts, we do not interpret leaving high school for community college as representing the same degree of detriment as other reasons, such as discipline problems, academic problems, or social-emotional problems. These students are also excluded from our analysis of the reported reasons for dropout. We do not include students who moved for similar reasons.

Table 1 in Appendix A shows the percentage of all dropouts by reason. Attendance is far and away the most cited reason for dropout, accounting for 43% of instances. Unknown reasons are the next highest (12.2%), followed by community college (11.7%), lack of engagement with school/peers (6.4%), choice of work over school (6.0%), and moving (4.4%). ▶

We also wanted to know whether students from different racial groups provided different reasons for dropping out. To do so, we made pairwise comparisons between all racial groups based on the reasons for dropout. We do not interpret racial differences within the reason unknown based on its inherent ambiguity or decision to pursue community college and moving, as we do not interpret these as representing the same degree of future detriment as other reasons, such as discipline problems, academic problems, or psychological/emotional problems. To remain consistent with other analyses in this report, we focus on differences between student groups of color and their White counterparts (Whites are the comparison group).

Table 11.1 shows the reasons student groups of color cited for dropout at significantly higher rates than Whites, and the reasons Whites cited at significantly higher rates than other racial/ethnic groups (also see Appendix A, Table 2).

TABLE 11.1 : Reasons for Dropout Relative to Other Racial/Ethnic Groups

American Indian (vs. Whites)	Discipline Lack of Engagement with School, Peers Expectations of Culture, Family, Peers
Asian (vs. Whites)	Choice of Work Over School
Black (vs. Whites)	Discipline / Expulsion / Suspension Incarceration Child Care Needs
Hispanic (vs. Whites)	Choice of Work Over School Child Care Needs
Multiracial (vs. Whites)	Incarceration Child Care Needs
Pacific Islander	---
White (vs. other Groups)	Substance Abuse Attendance Lack of Engagement with School, Peers Health Problems Unstable Home Environment Psychological / Emotional Problems

As compared to Whites, school discipline and the criminal justice system (incarceration) factor prominently in the reasons for American Indian, Black, and Multiracial students dropping out. The choice of work over schools appears to precipitate dropout among Asian and Hispanic students as compared to Whites. The need for childcare is a factor for Black, Hispanic, and Multiracial students versus their White counterparts. American Indians report a lack of engagement with peers and the expectations of culture, family, peers more often than Whites.

In general, White students tended to differ significantly from only Black and Hispanic students in their reported reasons for dropout. As compared to Blacks and Hispanics, White students were more likely to cite attendance, substance abuse, health problems, lack of engagement with school/peers, unstable home environments, and psychological/emotional problems as reasons for dropout. ■

TAKEAWAYS

Overall, statewide dropout rates follow a familiar pattern, with Asian and White students below the state average and American Indian, Black, Hispanic, Multiracial, and Pacific Islanders above the state average. Unlike many other metrics in this report, race/ethnicity does not appear to retain a substantial effect on dropout rates in our prediction models after controlling for other variables for Black and American Indian students. Yet, dropout data demonstrates how race/ethnicity can still condition educational outcomes indirectly through differential representation of racial groups within other metrics (such as free/reduced lunch eligibility and suspension). While Black and White students have a similar likelihood of dropping out when we control for free/reduced lunch eligibility and suspension, Black students nonetheless have an overall statewide dropout rate that is 48% higher than Whites (2.9% vs. 1.8%). Much of that difference can be attributed to the over-representation of Black students within lower socioeconomic strata and the over-selection of Black students for suspension. Thus, additional academic attainment supports for poor(er) students and closing the racial/ethnic discipline gap could also be expected to close the graduation gap between American Indian students, Black students, and their White counterparts.

The persistently higher likelihood of Hispanic and Multiracial students dropping out as compared to White students is concerning and warrants further investigation. While the gap has narrowed substantially over the last two decades, Hispanics have historically had higher dropout rates than other groups (Grimlich, 2017). Furthermore, the dramatic drop in the likelihood of Hispanics dropping out compared to Whites after controlling for language status indicates that Hispanic students designated as Limited English Proficient may not be receiving adequate support and intervention to avoid dropout.

Despite being the fourth largest racial group in North Carolina and the nation, Multiracial students have been the subject of very little empirical research related to dropout or other metrics of concern, such as school discipline (but see Triplett, 2018). As such, this report provides some of the first evidence that dropout may be a key lever in the educational attainment of Multiracial students.

Finally, our analysis raises issues related to the relationship of racial groups to the reasons for dropout. With regard to school discipline, results suggest that, as compared to White students, the over-selection for suspension documented elsewhere in this report is an important barrier to graduation for American Indian and Black students. Further, the relationship between school discipline, interaction with law enforcement, and the juvenile/adult justice system, commonly referred to as the school-to-prison pipeline, may also be affecting graduation rates for Black and Multiracial students versus their White counterparts.

The data also suggest that at least a subpopulation of Asian and Hispanic students feel compelled to enter the workforce before they have the opportunity to finish high school or matriculate to college. Given the strength of Limited English Proficiency as a predictor of dropout, language status, as well as nativity and immigration status, may be a key lever of high school completion for Asian and Hispanic youth as compared to their White counterparts. Further, the results suggest that limited access to childcare may be constraining high school completion for Black, Hispanic, and Multiracial students versus Whites. While it is unclear why American Indian students cite lack of engagement with peers and expectations of culture, family, and peers more often than White students, it is worthy of future research.

With regard to White students, the data align with our analysis of chronic absenteeism in suggesting that attendance is a significant problem for White students across a number of educational outcomes. Furthermore, White students appear to be over-exposed to physical, psychological, and emotional problems as well as unstable home environments as compared to student groups of color. This result raises questions about whether the processes for identifying and addressing the physical, psychological, and emotional problems of White students are in place in North Carolina public schools.

We analyze average weighted and unweighted GPA as a factor of student race/ethnicity in a sample of approximately 95,000 students.

Grade point average (GPA) represents a student's average performance in courses over time. GPA is commonly calculated by using a numeric scale, where A = 4.0, B = 3.0, C = 2.0, D = 1.0, and F = 0. GPAs may be calculated at the end of a course, semester, or grade level; however, cumulative high school GPA, an average of all final grades individual students earned during high school, is often what is being referenced in discussions about student academic performance, class rank, and college admissions (Sadler & Tai, 2007).

Most schools use weighted and unweighted GPA calculations as a means of capturing the rigor of students' coursework. Weighted GPA calculations give students additional points for grades earned in higher-level courses, such as honors courses or Advanced Placement courses. In weighted-grade systems, an A in a higher-level course might be awarded a 4.5 or 5.0, for example, while an A in a lower-level course is awarded a 4.0. Weighting systems often vary widely across schools, districts, and states.

GPA is often used to determine academic honors such as honor roll and class rank. Such honors, along with weighted and unweighted GPA calculations, have historically been an important factor used by colleges, postsecondary programs, and employers to assess a student's academic ability and performance. Indeed, according to the National Association for College Admission Counseling (Clinedinst & Patel, 2019), more postsecondary institutions assign "considerable importance" to a student's grades in all courses (i.e. cumulative GPA) than to any other factor in college admissions.

Colleges and universities consider GPA important for good reason. Decades of research has found that GPA is the strongest predictor of a student's course performance in postsecondary coursework (college GPA) -- better than ACT, SAT, or the California Achievement Test (Chissom & Lanier, 1975; Halpin, Halpin, & Schaer, 1981; Noble & Sawyer, 2002). While high school grades appear to be a consistently strong predictor of postsecondary performance in aggregate, research has found that GPA has less predictive utility for some student groups of color, particularly Black and Hispanic students (Zwick & Himelfarb, 2011). The scholars note that this difference may be partially explained by the extent to which these students attend schools with fewer socioeconomic resources.

In North Carolina, statutory law [GS 116-11(10a)] and the North Carolina Department of Public Instruction (NCDPI) govern GPA calculations. NCDPI is legally required to maintain a standardized, automated transcript system that includes GPA and class rank, among other things (NCDPI Policy: High School Transcript Standards, GRAD-009). Schools and LEAs calculate both unweighted and weighted GPAs that reflect additional quality points for advanced coursework.

As of the freshman class of 2015-2016, students receive five quality points for an A in an AP course and four and a half quality points for an A in an honors course. An A in a regular course garners just

four quality points.[15] The method for GPA calculations is devised by the University of North Carolina System and North Carolina Community College System. As is the case elsewhere, in North Carolina GPA is the basis for class rank calculations. GPA is also a key lever in students' ability to attain various high school diploma endorsements. Such endorsements identify students who have completed a specialized area of advanced or focused study [NC State Board of Education Policy GRAD-007, High Diploma Endorsements; NC GS 115C-81(b)]. GPA requirements range between 2.5 and 3.5 depending on the type of endorsement.

METHODOLOGY

In this report, we position GPA as both an outcome and an access variable. To the extent that GPA shows student performance across their academic work in secondary school, it represents an outcome in achievement. To the extent that different racial/ethnic groups have an equitable ability to attain the benefits of a higher GPA both in high school and postsecondary admissions, GPA represents a measurement of access and opportunity.

In the sections that follow, we analyze average weighted and unweighted GPA as a factor of student race/ethnicity in a sample of approximately 95,000 students. We also look at the spread between weighted and unweighted GPA within and across racial/ethnic groups. We present the results of a model that predicts the weighted GPA based on race/ethnicity, while controlling for gender, free/reduced lunch status, language status, special education status, and giftedness.

ANALYSIS

Figure 12.1 shows the average weighted and unweighted GPA by racial/ethnic group.

FIGURE 12.1 : Weighted and Unweighted GPA by Race/Ethnicity
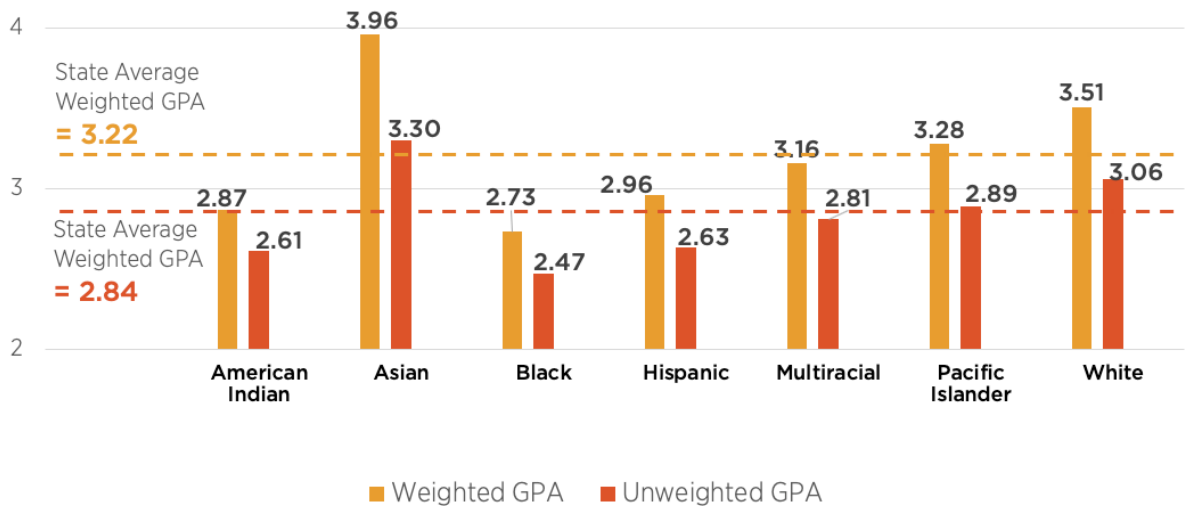
White and Asian students have the highest mean weighted GPAs, which are substantially above the state average. Pacific Islander and Multiracial students have mean weighted GPAs close to the state average. Hispanic, American Indian, and Black students have mean weighted GPAs well below the state average. Unweighted GPA follows the same pattern. With the exception of Asian and Pacific Islander students, the mean weighted GPAs of student groups of color fall below the statewide average.

We also built statistical models that predict weighted GPA based on race/ethnicity. Weighted GPA was modeled because it is the core statistic in class rank calculations, it is widely used as a way to differentiate the performance of students for college admissions, and it presumably reflects students' differences in performance and access to advanced coursework during high school. Model 1 represents predicted difference in weighted GPA between each racial/ethnic groups as compared to White students based on race/ethnicity alone. Model 2 shows the predicted difference based on race/ethnicity while controlling for gender, free/reduced lunch status, language status, special education status, and giftedness.

FIGURE 12.2 : Predicted Effect of Race/Ethnicity on Weighted GPA
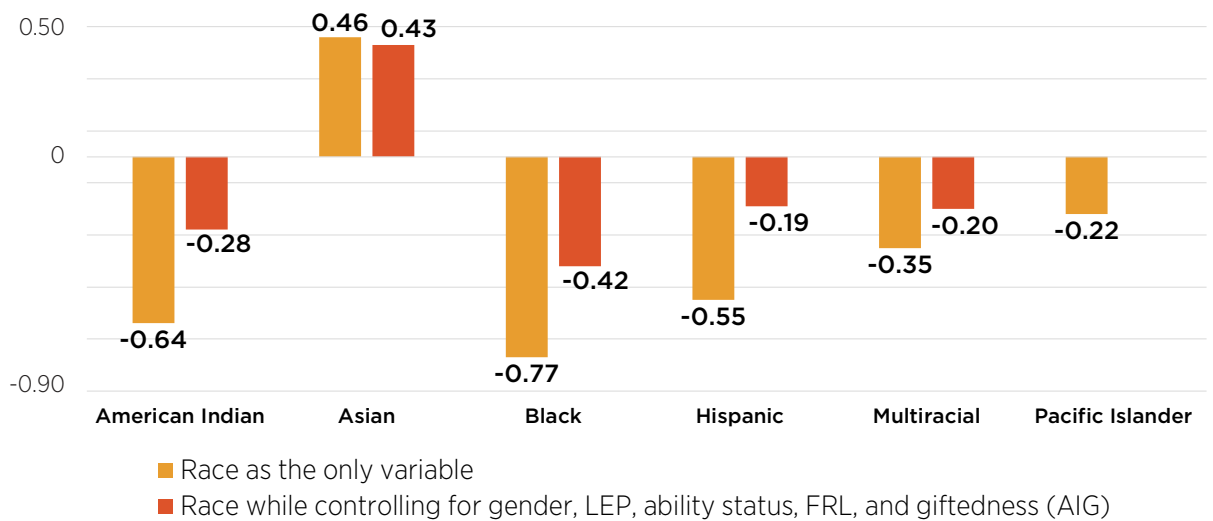
■ Race as the only variable
■ Race while controlling for gender, LEP, ability status, FRL, and giftedness (AIG)

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Any).

Race/ethnicity remained a significant and substantial predictor after accounting for other factors in the model. In Model 1, all student groups of color were significantly different than White students. Asian students were predicted to have GPAs approximately 0.46 points higher as compared to White students, and other student groups of color were predicted to have GPAs lower than their White counterparts by approximately 0.25 to 0.75 GPA points. It is worth noting that the negative coefficient for Black students was larger than those of all other student groups of color.

After adding control variables in Model 2, the direction of predicted differences remained the same, except for Pacific Islanders, who were no longer significantly different from Whites. For all student

groups of color, the size of the difference between student groups of color and their White counterparts got smaller. However, Asian students were still predicted to have a GPA 0.4 points higher than Whites, while Black students were predicted to have GPAs 0.4 points lower. ■

TAKEAWAYS

Race/ethnicity was a significant and substantial predictor of both weighted and unweighted GPA even after controlling for other related variables. Given its importance as an indicator of academic performance in high school and as a factor in postsecondary admissions, our results raise questions about college readiness across racial/ethnic groups in North Carolina public schools. In addition to simple differences in weighted and unweighted GPA, with the exception of Asian students, all student groups of color have a smaller differential between average weighted and unweighted GPAs, and the same groups also fall below the statewide differential. This finding likely indicates, as has been demonstrated elsewhere in the report (see Advanced Placement Courses, Honors Courses), that non-Asian student groups of color have lower performance than White and Asian students in advanced courses, but also that they have diminished access to the advanced course options that can boost weighted GPA. In addition, recall that research has found that GPA is a weaker predictor of college performance for Black and Hispanic students, and that this difference can be partially explained by the extent to which these students attend schools with fewer socioeconomic resources (Zwick & Himelfarc, 2011). In light of our findings related to Advanced Placement Courses and Honors Courses, this analysis raises further questions about the ability of public educational agencies to offer equitable access to rigorous coursework and/or their inability to adequately ensure that advanced courses are equally rigorous across schools and LEAs that serve diverse communities with differential access to resources.

In the sections that follow, we analyze data from approximately 104,000 public high school graduates in 2016-2017

The post-graduation occupational and educational ambitions of high school students are influenced by numerous personal and contextual factors (NCES, 2018; Frost, 2007). Students' often cite "family" and "myself" as the most influential factors in their thinking about college and career (NCES, 2018). Studies also indicate that students' perceptions of their own ability, the barriers they may face, and a sense of belonging in college or the workplace also affect postsecondary aspirations (Fouad & Byers-Winston, 2005; Horvat, 1997; Nora, 2004). Naturally, social context (family, community, school, etc.) play a role in students' perceptions of themselves and their place in the world. Broad forces like labor market conditions, residential segregation, and both real and perceived levels of discrimination in college admissions, campus life, and hiring practices also appear to influence aspirations (Fouad & Byers-Winston, 2005; Frost, 2007; Meyer, 1970).

Schools occupy an important position in the development of students' college and career intentions (NCES, 2018). The expectations of school staff, counseling behavior, the racial makeup of schools, and levels of school racial/class segregation have long been recognized as mediators of students' thinking and beliefs about college and career (Frost, 2007; Meyer, 1970). Research has also demonstrated how postsecondary intentions and the mix of factors that influence those intentions differ by race, ethnicity, and social class. Students of color, particularly Black and Hispanic students, appear to have different perceptions of their college and career options than wealthier, Whiter populations (Fouad & Byers-Winston, 2005). After all, they face the prospect of entering college environments and/or a labor market in which there is real and perceived racial and socioeconomic discrimination, and where people of their shared racial/ethnic group are concentrated in less elite institutions and lower level, unskilled occupations (Fouad & Byers-Winston, 2005; Bureau of Labor Statistics, 2019). These factors, in turn, affect the sense of belonging students of color feel when considering college and career choices (Frost, 2007; Horvat, 1997; Hurtado & Carter, 1996).

North Carolina high schools collect data on the intentions of graduates and report that data to the North Carolina Department of Public Instruction. These data represent students' self-reported postsecondary intentions, so they may not be indicative of students' actual trajectories after graduation. Graduates are asked to indicate if they intend to pursue enrollment in four-year college, two-year college, junior college, trade/business/nursing school, or community/technical college. Graduates may also indicate intentions to join the military, pursue employment, or some "other" option(s) after completing high school. State agencies do not collect data on what students actually do after high school, nor are intentions linked to actual choices in any meaningful way. ▶

METHODOLOGY

For the purposes of this report, we examine postsecondary intentions primarily as an indicator of access and opportunity because schools play such an important role in students' college and career perceptions, access to college-preparatory coursework, relationship to counseling, and the real/perceived postsecondary expectations of teachers and other school staff. Our analytical approach focused on college-bound versus non-college-bound intentions based on the well-researched link between college attendance and future income, social status, and career-related behavior. In the sections that follow, we analyze data from approximately 104,000 public high school graduates in 2016-2017. We report on college versus non-college intentions and the specific intentions of graduates based on racial/ethnic group. We also assess how race/ethnicity and a number of other relevant factors are related to the decision to pursue college.

ANALYSIS

Figure 13.1 presents the percentage of graduates with college-bound intentions and those with four-year college intentions by race/ethnicity. For data on all students' postsecondary intentions, see Appendix A, Table 6.

FIGURE 13.1 : Proportion of Students with College Intentions by Race/Ethnicity

■ % of All Students with College Intentions
■ % of Students with College Intentions that Plan to Attend 4-year colleges
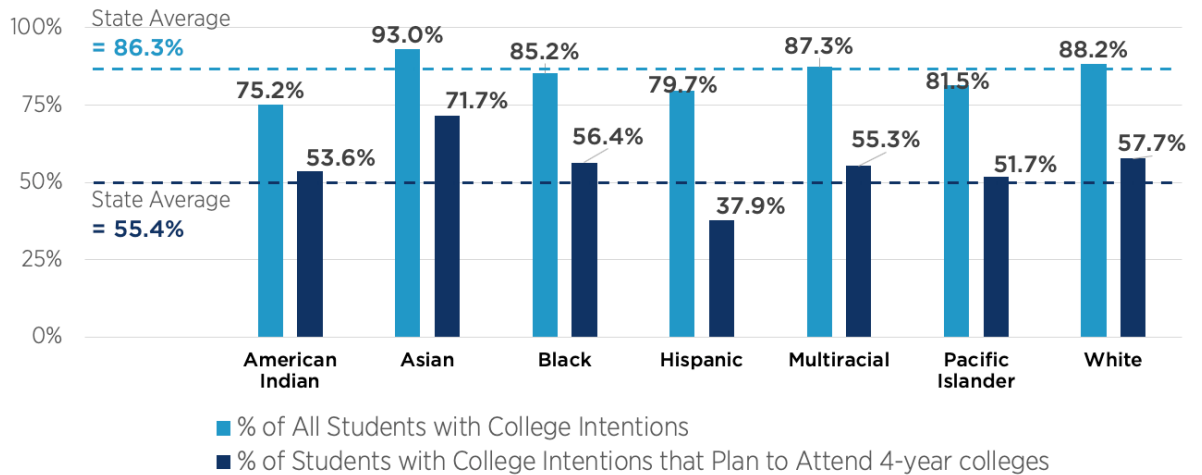
Asian, White, and Multiracial students report the highest average rates of college-bound intentions and do so at rates above the statewide average (86.3%). American Indian, Black, Hispanic, and Pacific Islander students intend to enroll in college at rates below the statewide average. American Indian (75.2%) and Hispanic students (79.7%) intend to enroll in college at the lowest rates. ▶

Among graduates that plan to enroll in four-year colleges, Asian, Black, and White students are above the statewide average (55.4%), while American Indian, Hispanic, Multiracial, and Pacific Islander students fall below the average for all graduates. **The percentage of Hispanic students aspiring to four-year colleges is remarkably low relative to other racial/ethnic groups. Were they to match the current statewide average, an additional 860 Hispanic students would aspire to college, and over 2000 more Hispanic students would aspire to attend four-year colleges.**

We also built models to predict the likelihood that students from different racial groups would have college-bound intentions. Model 1 represents the likelihood of a student from each racial/ethnic group to report college-bound intentions as compared to White students based on race/ethnicity alone. Model 2 shows the likelihood based on race/ethnicity while controlling for gender, free/reduced lunch status, language status, special education status, and giftedness. Figure 13.2 presents the results of the prediction model.

FIGURE 13.2 : Likelihood of College Bound Intentions by Race/Ethnicity
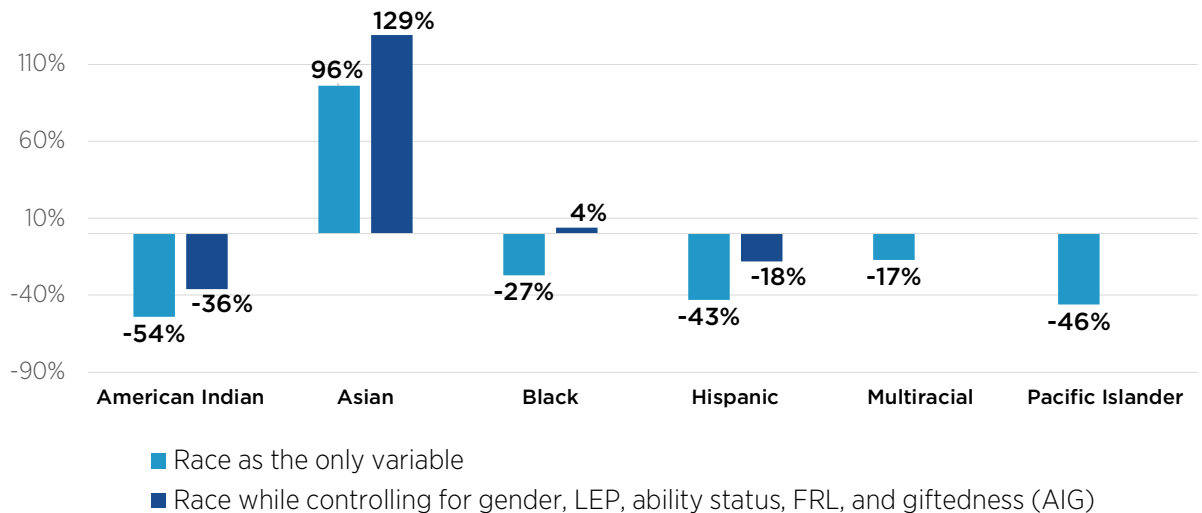
Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness.

While controlling for other factors, Asians have dramatically higher odds of having college intentions than their White counterparts. Black students were 4% more likely to aspire to college than Whites net of other factors in the model. American Indian (-36%) and Hispanic (-18%) students were predicted to have substantially lower likelihoods of college intentions even while controlling for other variables. The college intentions of Multiracial and Pacific Islander students were similar to those of White students when controls were applied. ∎

TAKEAWAYS

The analysis presented here supports previous literature in the finding that race/ethnicity is an important factor in the college and career aspirations of high school graduates (Fouad & Byers-Winston, 2005; Frost, 2007; Nora, 2004). We found differences among North Carolina public high school graduates in 2016-2017 of different races/ethnicities with regard to intentions to enroll in college, the proportion of college aspirants who planned to enroll in four-year colleges, and in the likelihood that student groups of color would intend to enroll in college after graduation as compared to White students after controlling for other potentially relevant factors.

Results were particularly concerning for American Indian and Hispanic students who consistently showed large differences from other groups across our different analyses. Controlling for Hispanic students' over-representation among Limited English Proficient populations appears to attenuate (but not erase) the difference between the college intentions of Hispanic and White students. When considered alongside high school dropout data presented elsewhere in this report, analyses raise serious questions about the ability of North Carolina public schools to produce college-ready, college-aspiring Hispanic students. The situation appears to be even worse for American Indian students, who remain far less likely than Whites to aspire to college. Overall, the results suggest that American Indian and Hispanic students may lack the structural supports (i.e. academic expectations, counseling behavior, access to college-preparatory curricula) afforded to other racial ethnic groups.

Results for Black students were noteworthy as well. While fewer Black students in aggregate reported plans to enroll in college (including four-year college) as compared to their White counterparts, the relationship inverted when we controlled for other relevant factors, such that Black students were 4% more likely than Whites to aspire to college. Thus, even though Black students appear to aspire to college at rates higher than similarly situated White students, our results suggest that their over-representation among lower income and special education populations and under-representation in gifted programs may constrain the ability of Black students from realizing their postsecondary intentions.

Overall, our analysis is consistent with previous literature that emphasizes how the college and career challenges faced by non-Asian students of color are different than those faced by White and Asian students. We view the processes that contribute positively to students' postsecondary intentions as a part of explicitly stated goals of North Carolina public schools around college and career readiness. Research suggests that culturally appropriate college and career counseling, which incorporates the sociopolitical context within which students of color work and live, has a better chance of addressing the unique needs of students of color (Fouad & Bingham, 1995; Nora, 2004). While our analysis captures the variation in students' intentions, the absence of complementary data on outcomes makes it difficult to fully appreciate the effect that differences in postsecondary intentions might have on the future of students from disparate racial/ethnic backgrounds.

NORTH CAROLINA END-OF-GRADE & END-OF-COURSE TESTING

In 2016-2017, North Carolina students took end-of-grade (EOG) tests in English Language Arts and Mathematics in grades 3 through 8. Science EOGs were taken by students in grades 5 and 8. End-of-course (EOC) tests in Biology, English II, and Math I were administered in high school at the completion of the associated coursework. EOGs and EOCs are intended to measure students' proficiency on the North Carolina Standard Course of Study (NCSCOS) for each subject or grade level. Assessment results are used for school, district, state, and federal accountability reporting. Student performance is reported as a scale score based on the number of correct items. Scale scores fall in the 400s for EOGs and the 200s for EOCs. Based on scale score, students are assigned one of five achievement levels: 1 = Limited Command, 2 = Partial Command, 3 = Sufficient Command, 4 = Solid Command, or 5 = Superior Command.

METHODOLOGY

For the purposes of this report, we position EOG and EOC assessment primarily as outcome indicators indicating point-in-time mastery of course content. While student performance is partially a reflection of access and opportunity to learn, students do not have differential access to the administration of assessments. North Carolina does administer alternative EOG and EOC assessments for students receiving special education services (NCEXTEND), but we do not examine them in this report.

In the sections that follow we analyze the EOG/EOC performance of all students who took the assessment in the 2016-2017 school year. We report differences in mean scale score and mean achievement level by race/ethnicity for all assessments. We also built prediction models that analyzed scale score and achievement level as a factor of race/ethnicity while controlling for the effect of other potentially relevant factors, including gender, free/reduced lunch status, language status, special education status, and giftedness. ▶

ANALYSIS

MEAN SCALE SCORE

Tables 14.1, 14.2, 14.3, and 14.4 present EOG/EOC mean scale scores by race/ethnicity.

TABLE 14.1 : Mean Reading Scale Score by Race/Ethnicity

	Reading (Grade 3) (n=120,679)	Reading (Grade 4) (n=128,413)	Reading (Grade 5) (n=117,365)	Reading (Grade 6) (n=114,768)	Reading (Grade 7) (n=107,181)	Reading (Grade 8) (n=120,223)
American Indian	435.26	440.84	445.38	448.73	450.75	453.01
Asian	444.39	450.53	455.17	458.48	461.53	463.39
Black	435.18	441	445.47	447.86	449.54	452.91
Hispanic	435.74	442.02	446.35	449.32	451.22	454.45
Multiracial	440.18	445.89	450.15	452.92	455.46	457.88
Pacific Islander	438.25	445.11	449.82	452.98	453.8	458.12
White	442.81	448.7	452.94	456.1	458.26	460.87
All Students	439.38	445.35	449.74	452.72	454.84	457.71

TABLE 14.2 : Mean Math Scale Score by Race/Ethnicity

	Math (Grade 3) (n=121,411)	Math (Grade 4) (n=121,215)	Math (Grade 5) (n=118,040)	Math (Grade 6) (n=114,871)	Math (Grade 7) (n=107,855)	Math (Grade 8) (n=116,032)
American Indian	447.24	445.62	445.56	446.81	446.62	445.43
Asian	457.25	457.08	458.17	459.11	459.38	459.25
Black	446.1	445.01	445.7	446	445.12	445.12
Hispanic	448.42	447.66	448.42	448.6	447.54	447.59
Multiracial	450.39	449.64	450.29	450.21	450.29	450.03
Pacific Islander	449.64	449.96	450.81	451.25	449.05	450.13
White	453.24	453.03	453.16	453.5	453.32	453.35
All Students	450.45	449.9	450.38	450.74	450.32	450.31

TABLE 14.3 : Mean Science Scale Score by Race/Ethnicity

	Science (Grade 5) (n=118,124)	Science (Grade 8) (n=115,964)
American Indian	250.3	248.24
Asian	258.01	258.1
Black	248.29	246.87
Hispanic	249.85	248.73
Multiracial	253.36	252.34
Pacific Islander	251.91	251.52
White	256.12	255.28
All Students	252.89	251.99

TABLE 14.4 : Mean Scale Score in Math I, English II, and Biology by Race/Ethnicity

	Math I (n=123,831)	English II (n=119,210)	Biology (n=113,687)
American Indian	247.68	145.67	246.62
Asian	259.84	154.35	256.52
Black	246.73	145.3	245.17
Hispanic	248.85	146.88	247.22
Multiracial	250.98	149.68	250.65
Pacific Islander	251.38	147.58	250.44
White	253.98	152.33	253.51
All Students	251.26	149.57	250.33

The pattern of racial/ethnic differences in EOG/EOC scores across all subjects and grade levels is remarkably consistent. Asian students have the highest mean scale scores on every assessment followed by White students, and both groups scored above the statewide average on all EOGs/EOCs. Multiracial and

Pacific Islander students' mean scores are close to one another and hover around the statewide average, but in all cases are higher than American Indian, Black, and Hispanic students' mean scores. With very few exceptions, Hispanic students outperform American Indian students who outperform Black students. Mean scores for American Indian, Black, and Hispanic students fall below the statewide average on all assessments.

MEAN ACHIEVEMENT LEVEL

Tables 14.5, 14.6, 14.7 and 14.8 present EOG/EOC mean achievement level (1 – 5) by race/ethnicity. The state deems a score of 3 or higher to mean students are proficient in that subject.

TABLE 14.5 : Mean Reading Achievement Level (1 -5) by Race/Ethnicity

	Reading (Grade 3) (n=120,679)	Reading (Grade 4) (n=128,413)	Reading (Grade 5) (n=117,365)	Reading (Grade 6) (n=114,768)	Reading (Grade 7) (n=107,181)	Reading (Grade 8) (n=120,223)
American Indian	2.41	2.29	2.26	2.3	2.51	2.25
Asian	3.56	3.49	3.52	3.96	3.72	3.45
Black	2.37	2.26	2.25	2.18	2.36	2.24
Hispanic	2.44	2.39	2.36	2.56	2.55	2.41
Multiracial	3.02	2.89	2.86	2.79	3.03	2.8
Pacific Islander	2.77	2.8	2.79	2.98	2.94	2.81
White	3.36	3.26	3.24	3.29	3.37	3.16
All Students	2.92	2.77	2.82	2.87	2.97	2.76

TABLE 14.6 : Mean Math Achievement Level (1 -5) by Race/Ethnicity

	Math (Grade 3) (n=121,411)	Math (Grade 4) (n=121,215)	Math (Grade 5) (n=118,040)	Math (Grade 6) (n=114,871)	Math (Grade 7) (n=107,855)	Math (Grade 8) (n=116,032)
American Indian	2.74	2.43	2.45	2.3	2.27	2.01
Asian	4.01	3.96	4.07	3.96	3.99	3.78
Black	2.59	2.35	2.47	2.18	2.06	1.97
Hispanic	2.91	2.72	2.85	2.56	2.4	2.29
Multiracial	3.17	2.99	3.1	2.79	2.79	2.61
Pacific Islander	3.04	2.99	3.15	2.98	2.62	2.67
White	3.56	3.47	3.51	3.29	3.25	3.08
All Students	3.18	3.03	3.12	2.87	2.81	2.66

TABLE 14.7 : Mean Science Achievement Level (1 -5) by Race/Ethnicity

	Science (Grade 5) (n=118,124)	Science (Grade 8) (n=115,964)
American Indian	2.98	3.03
Asian	3.91	4.13
Black	2.71	2.85
Hispanic	2.93	3.11
Multiracial	3.36	3.56
Pacific Islander	3.18	3.46
White	3.7	3.92
All Students	3.29	3.5

TABLE 14.8 : Mean Achievement Level (1 -5) in Math I, English II, and Biology by Race/Ethnicity

	Math I (n=123,831)	English II (n=119,210)	Biology (n=113,687)
American Indian	2.35	2.47	2.43
Asian	3.88	3.5	3.76
Black	2.22	2.42	2.25
Hispanic	2.53	2.64	2.54
Multiracial	2.81	2.97	2.99
Pacific Islander	2.93	2.75	2.97
White	3.23	3.3	3.39
All Students	2.85	2.96	2.95

E(RACE)ING INEQUITIES

The same pattern observed in scale scores also applies to achievement level, with students' racial/ethnic groups stratified into bands such that Asian and White students have the highest scores and score above the state average on all assessments. Multiracial and Pacific Islander students hover at the state average and without exception score higher than American Indian, Black, and Hispanic students. Black students have the lowest mean achievement level on all assessments. Table 14.9 shows the predicted number of additional American Indian, Black, and Hispanic students that would be grade-level proficient if those groups were to perform at the current statewide average in 3rd grade math, 8th grade reading, and biology.

TABLE 14.9 : Predicted Number of Additional Grade-Level Proficient Students

	Math (Grade 3)	Reading (Grade 8)	Biology
American Indian	145	274	214
Black	5290	5447	6120
Hispanic	1576	2607	2032

PREDICTED SCALE SCORE

Often in statistical analysis of large data sets, the degree of consistency observed for racial/ethnic patterns of mean scale score and achievement level indicates that another variable (or other set of variables) is influencing the relationship. To better test the effect of race/ethnicity on EOC/EOG outcomes, we built prediction models that isolated the effect of race/ethnicity to the greatest extent possible by controlling for gender, free/reduced lunch status, language status, special education status, and giftedness.

Tables 14.10, 14.11, 14.12, and 14.13 present the results of the prediction models. The figures listed represent the predicted net change in scale score for each student group or color as compared to White students while controlling for those factors.

TABLE 14.10 : Net Change in Predicted Reading Scale Score by Race/Ethnicity

	Reading (Grade 3) (n=120,679)	Reading (Grade 4) (n=128,413)	Reading (Grade 5) (n=117,365)	Reading (Grade 6) (n=114,768)	Reading (Grade 7) (n=107,181)	Reading (Grade 8) (n=120,223)
American Indian	-4.62	-4.83	-4.52	-3.88	-3.97	-4.4
Asian	2.2	1.9	1.97	2.52	3.5	3.15
Black	-5.26	-5.16	-4.66	-5.02	-5.29	-4.71
Hispanic	-1.61	-2.09	-2.46	-2.16	-1.95	-1.45
Multiracial	-1.37	-1.53	-1.33	-1.46	-1.2	-1.33
Pacific Islander	-2.24	-1.5	-1.51	---	-2.86	---

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Reading).

TABLE 14.11 : Net Change in Predicted Math Scale Score by Race/Ethnicity

	Math (Grade 3) (n=121,411)	Math (Grade 4) (n=121,215)	Math (Grade 5) (n=118,040)	Math (Grade 6) (n=114,871)	Math (Grade 7) (n=107,855)	Math (Grade 8) (n=116,032)
American Indian	-3.52	-4.45	-4.71	-3.41	-3.31	-4.48
Asian	4.06	3.73	4.37	5.37	5.74	5.97
Black	-5.07	-5.5	-4.74	-4.44	-4.93	-4.96
Hispanic	-0.84	-1.3	-1.03	-0.98	-1.44	-1.35
Multiracial	-1.75	-2.07	-1.46	-1.67	-1.51	-1.57
Pacific Islander	-1.83	---	---	---	-2.86	---

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Math).

With few exceptions, the pattern of racial/ethnic differences in predicted EOG/EOC scale scores is similar to what we observed for mean scores. In comparison to White students and while controlling for other relevant factors, Asian students have the highest predicted scale score on every assessment. Hispanic students tend to compare more favorably than Multiracial student to Whites in math assessments across grade levels. The reverse is true for reading and science assessments. With controls applied, Pacific Islander students are similar to Whites across most assessments. American Indian and Black students again have the lowest predicted net scale scores on all assessments.

TABLE 14.12 : Mean Science Achievement Level (1 -5) by Race/Ethnicity

	Science (Grade 5) (n=118,124)	Science (Grade 8) (n=115,964)
American Indian	-3.37	-4.1
Asian	2.16	3.62
Black	-5.65	-5.68
Hispanic	-2.53	-2
Multiracial	-1.61	-1.47
Pacific Islander	-2.58	-1.52

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness (Any).

TABLE 14.13 : Net Change in Predicted Math I, English II, and Biology Scale Score by Race/Ethnicity

	Math I (n=123,831)	English II (n=119,210)	Biology (n=113,687)
American Indian	-3.4	-3.96	-4.01
Asian	6.18	3.97	3.87
Black	-4.57	-5.58	-5.68
Hispanic	-1.22	-2.21	-2.32
Multiracial	-1.63	-1.53	-1.52
Pacific Islander	---	---	---

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Status, Language Status, Special Education Status, and Giftedness. For Reading 3rd-8th and English II, the effect of giftedness in reading was controlled. For Math 3rd-8th and Math I, the effect of giftedness in math was controlled. For Science 5th & 8th, the effect of giftedness of any kind was controlled.

PREDICTED ACHIEVEMENT LEVEL

The figures listed in the tables below represent the predicted net change in achievement level for each student group of color as compared to White students while controlling for other relevant factors.

TABLE 14.14 : Net Change in Predicted Reading Achievement Level by Race/Ethnicity

	Reading (Grade 3) (n=120,679)	Reading (Grade 4) (n=128,413)	Reading (Grade 5) (n=117,365)	Reading (Grade 6) (n=114,768)	Reading (Grade 7) (n=107,181)	Reading (Grade 8) (n=120,223)
American Indian	-0.58	-0.59	-0.58	-0.51	-0.45	-0.51
Asian	0.29	0.24	0.24	0.7	0.38	0.36
Black	-0.69	-0.67	-0.62	-0.68	-0.61	-0.55
Hispanic	-0.22	-0.31	-0.38	-0.15	-0.25	-0.2
Multiracial	-0.18	-0.21	-0.19	-0.27	-0.15	-0.17
Pacific Islander	-0.29	-0.2	-0.26	---	-0.25	---

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Status, Language Status, Special Education Status, and Giftedness (Reading).

TABLE 14.15 : Net Change in Predicted Math Achievement Level by Race/Ethnicity

	Math (Grade 3) (n=121,411)	Math (Grade 4) (n=121,215)	Math (Grade 5) (n=118,040)	Math (Grade 6) (n=114,871)	Math (Grade 7) (n=107,855)	Math (Grade 8) (n=116,032)
American Indian	-0.49	-0.63	-0.66	-0.51	-0.48	-0.61
Asian	0.47	0.45	0.48	0.64	0.69	0.7
Black	-0.7	-0.78	-0.67	-0.66	-0.71	-0.67
Hispanic	-0.12	-0.19	-0.15	-0.16	-0.23	-0.21
Multiracial	-0.25	-0.29	-0.22	-0.26	-0.23	-0.23
Pacific Islander	-0.28	-0.22	---	---	-0.42	---

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Status, Language Status, Special Education Status, and Giftedness (Math).

TABLE 14.16 : Net Change in Predicted Science Achievement Level by Race/Ethnicity

	Science (Grade 5) (n=118,124)	Science (Grade 8) (n=115,964)
American Indian	-0.4	-0.52
Asian	0.2	0.31
Black	-0.69	-0.71
Hispanic	-0.29	-0.2
Multiracial	-0.19	-0.17
Pacific Islander	-0.31	---

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Status, Language Status, Special Education Status, and Giftedness (Any).

Results for predicted achievement level follow a now well-established pattern. Asians outperform all students. Whites outperform all non-Asian student groups of color. Hispanic, Multiracial, and Pacific Islander students perform below Whites and Asians, but vary by subject area when compared to each other. American Indian and Black students were predicted to consistently perform below all other groups, and predicted achievement levels for Black students were the lowest on every assessment. ▶

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Not only does EOG/EOC performance produce clear stratifications between racial/ethnic groups, but the size of differences between groups across all measures is surprisingly consistent as well.

E(RACE)ING INEQUITIES

TABLE 14.17 : Net Change in Predicted Math I, English II, and Biology Achievement Level by Race/Ethnicity

	Math I (n=123,831)	English II (n=119,210)	Biology (n=113,687)
American Indian	-0.49	-0.48	-0.55
Asian	0.69	0.31	0.45
Black	-0.65	-0.55	-0.75
Hispanic	-0.16	-0.14	-0.32
Multiracial	-0.23	-0.15	-0.21
Pacific Islander	---	-0.28	---

Whites are the comparison group. Control Variables: Gender, Free/Reduced Lunch Status, Language Status, Special Education Status, and Giftedness. For Reading 3rd-8th and English II, the effect of giftedness in reading was controlled. For Math 3rd-8th and Math I, the effect of giftedness in math was controlled. For Science 5th & 8th, the effect of giftedness of any kind was controlled.

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TAKEAWAYS

North Carolina public school students are clearly and consistently stratified by EOG/EOC performance across all subjects and grade levels. Asians perform far above other groups on every measure, followed by White students. American Indian and Black students have the lowest performance across all measures. Hispanic, Multiracial, and Pacific Islander students fall between those extremes. While other factors like free/reduced lunch status, special education status, language status, giftedness, and gender (for some subjects) account for some of the observed variance in aggregate EOG/EOC performance, race/ethnicity remains a statistically significant and powerful predictor of both mean scale score and mean achievement level after controlling for those other factors.

To give just a few examples from our results, after controlling for other factors in the models, being Black (as compared to White) is a stronger predictor of achievement level than free/reduced lunch status in nine of the 15 assessments. This pattern is strongest in elementary math and middle school science results. In 5th and 8th grade science, a Black racial designation (as compared to White) better predicts achievement level than does students' academically/intellectually gifted status. The American Indian racial designation (as compared to White) approaches but does not exceed the influence of free/reduced lunch status on several assessments as well.

When we look at the magnitude and direction of racial/ethnic differences across all subjects and grade levels, the consistency of observed patterns is truly remarkable. Not only does EOG/EOC performance produce clear stratifications between racial/ethnic groups, but the size of differences between groups across all measures is surprisingly consistent as well. This level of uniformity is rare in statistical modelling that includes numerous predictor variables like the kind employed in this report.

Given the strength of race/ethnicity as a factor in EOG/EOC performance, along with the consistency of the effect in terms of direction and magnitude, it is difficult not to conclude that powerful, institutional factors are at play in the observed results. If we were to accept that some racial/ethnic groups begin school "behind," which we do not, the strong effect of race/ethnicity on elementary math for instance might be partially understood. However, such explanations become untenable when observed patterns persist through middle and high school. Recall that being Black is a stronger predictor of achievement level in 8th grade science than being academically gifted. Overall, explanations related to the systemic inequities in access and opportunity found across numerous indicators elsewhere in this report appear to be much more plausible in explaining highly stratified racial/ethnic results in EOG/EOC scores and achievement levels.

> **"** *If we compare all six student groups of color to Whites, 82% (191 out of 231) of significant comparisons indicated advantage to Whites.*

n this concluding section, we summarize the results of over 30 indicators of educational access and achievement examined, provide interpretations that span the full analysis and the six racial groups studied, discuss the significance of the overall findings, and explain the project's relationship to the ongoing work of its parent organization, CREED. Numerous directions for change flow from the analysis in this report, but a full explanation of those is beyond the scope of this initial examination. Given that comprehensive analyses of racial equity in North Carolina public schools are not being conducted by other educational institutions in the state, **the primary focus of the present work is to:**

1. **Provide an empirical basis for nuanced understanding of how race influences the educational experiences of students,**

2. **Identify key areas for future in-depth study, and**

3. **Indicate directions for intervention intended to provide equitable access to the benefits of public education in our state.**

This report asked two broad questions:

1. *Does race influence educational access and outcomes?*

2. *Does race influence access and outcomes after accounting for other factors, such as gender, socioeconomic status, language status, (dis)ability status, and giftedness?*

In this section we frame our answers to those questions in terms of accumulated (dis)advantage. We seek to assess the overall educational trajectory of racial groups in the state based on aggregate levels of access and achievement/attainment. As we have done throughout the report, White students are the reference group in comparisons.

It is important to note that analyses of data already collected, like those in this report, cannot establish causal links between measurements. That is, we cannot directly link student groups with less opportunity and access to diminished educational success as measured by achievement and attainment outcomes. However, we do ask that readers recognize the clear logical relationship between access and outcomes, as well as the cyclical nature of educational (dis)advantage. Children with less access have enhanced likelihood of school failure (broadly speaking), which in turn diminishes future access/opportunity, and so forth in a fashion that tends to accumulate even more barriers to educational success.

We also call attention to the systemic nature of our findings, which assess racial equity in all schools in the state, across virtually all readily available metrics, and among all U.S. Census designated racial groups. All of this is done in the context of the statutory and policy framework set forth by the North Carolina Constitution, the General Assembly, the State Board of Education, and the Department of Public Instruction.

The full analysis leaves no doubt that race is a powerful predictor of access, opportunity, and outcomes in North Carolina public schools. Furthermore, race affects the educational experiences of students in a very clear and consistent fashion, with Asian and White students tending to accumulate educational advantage and non-Asian student groups of color tending to accumulate disadvantage. Table 1 provides a simple visual representation of the relative advantage/disadvantage of student groups of color as compared to White students. A (+) denotes advantage and a (-) denotes disadvantage as compared to White students on the same indicator. The (…) symbol indicates no statistical differences. With 44 points of analysis and six student groups of color, there are a total of 264 possible pairwise comparisons.

Approximately 87% (231 of 264) of comparisons were statistically significant (p≤.05), meaning there is a very low probability that the observed result was due to chance. While this kind of comparison is imprecise by nature, it provides a broad measure of the extent of educational advantage/disadvantage at the state level. Most non-significant comparisons (21 out of 33) were between Pacific Islanders and Whites, which is likely due to the small number of Pacific Islanders in the state rather than because there are not substantial differences. Given the direction of the Pacific Islander vs. White comparisons that were significant, it is likely that with more Pacific Islander students, more significant negative comparisons would be revealed.

If we compare all six student groups of color to Whites, 82% (191 out of 231) of significant comparisons indicated advantage to Whites. Most cases (31 of 41) where students of color had advantage are in comparisons between Asians and Whites (more on this below), leaving only 10 instances (out of 187) of advantage for non-Asian students of color. Thus, if we only look at the five non-Asian student groups of color, approximately 95% of significant comparisons indicated advantage to Whites. **Multiracial students were disadvantaged in every significant comparison. American Indians and Pacific Islanders were advantaged in a single comparison. Black students were disadvantaged in all but three indicators (chronic absenteeism, dropout/graduation, and postsecondary intentions). Hispanic students were disadvantaged in all but four indicators (in-school suspension, out-of-school suspension, suspensions of subjective offenses, and chronic absenteeism). Asians outperformed other groups on all indicators of academic achievement and attainment despite numerous points of comparative disadvantage across the indicators of access.** ▶

TABLE 15.1 : Advantage/Disadvantage as Compared to White Students

	American Indian	Asian	Black	Hispanic	Multi Racial	Pacific Islander
Honors Courses Access	-	-	-	-	-	-
Honors Courses Taken	-	+	-	-	-	...
Advanced Placement Courses Performance	-	+	-	-	-	...
Advanced Placement Courses Access	-	-	-	-	-	-
Academically/Intellectually Gifted	-	+	-	-	-	-
Exceptional Children Designation *	+	-	-	-	-	-
Exceptional Children Judgmental Designations	-	+	-	-	-	-
Exceptional Children Separate Settings	-	-	-	-	-	-
In-School Suspension	...	+	-	+	-	...
Out-of-School Suspension	-	+	-	+	-	...
Suspension for Subjective Offenses	...	+	-	+	-	+
Chronic Absenteeism	-	+	+	+	...	...
Teacher Experience	...	...	...	...	...	...
Courses with Novice Teachers	-	-	-	-	-	-
Schools with Novice Teachers	-	-	-	-	-	-
Highly Qualified Teachers	+	-	...	...	...	-
Unqualified Teachers	-	-	-	-	-	-
Unknown Teacher Qualifications	-	-	-	-	-	-
Teacher Turnover	-	-	-	-	-	-
Teacher Vacancy	-	-	-	-	-	-
Teacher-Students Ethnic Match	-	-	-	-	NO DATA	NO DATA
Grade Point Average	-	+	-	-	-	...
Dropout/Graduation	...	+	+	-	-	...
Postsecondary Intentions	-	+	+	-	-	...
EOG Reading Grade 3	-	+	-	-	-	-
EOG Reading Grade 4	-	+	-	-	-	-
EOG Reading Grade 5	-	+	-	-	-	-
EOG Reading Grade 6	-	+	-	-	-	...
EOG Reading Grade 7	-	+	-	-	-	-
EOG Reading Grade 8	-	+	-	-	-	...
EOG Math Grade 3	-	+	-	-	-	-
EOG Math Grade 4	-	+	-	-	-	...
EOG Math Grade 5	-	+	-	-	-	...
EOG Math Grade 6	-	+	-	-	-	...
EOG Math Grade 7	-	+	-	-	-	...
EOG Math Grade 8	-	+	-	-	-	...
EOG Science Grades 5	-	+	-	-	-	-
EOG Science Grades 8	-	+	-	-	-	-
EOC Math 1	-	+	-	-	-	...
EOC English 2	-	+	-	-	-	...
EOC Biology	-	+	-	-	-	...
SAT	-	+	-	-	-	...
ACT	-	+	-	-	-	-
WorkKeys	-	+	-	-	-	...

Note: + denotes advantage and - denotes disadvantage as compared to White students. ... denotes no statistical difference between student groups of color and Whites.

Most of the symbols (+/-/…) in Table 15.1 represent predicted results of student groups of color compared to White students *after controlling for other relevant factors* (gender, socioeconomic status, language status, (dis)ability status, giftedness, suspension). In other words, they are not based on simple tallies or statewide averages of the various indicators. For instance, the symbols for GPA do not simply show that average GPAs among Whites are lower than Asians and higher than other groups, but that these same gaps remain after factoring out other predictors in a way that isolates the effect of race.

The remaining indicators measure exposure to benefit/penalty based on the racial composition of schools, such as Honors Courses Access, AP Courses Access, Schools with Novice Teachers, Teacher Vacancy, and Teacher Turnover. In these cases, we are asking if schools with greater proportions of students of color have different levels of access to rigorous coursework and the most effective teachers. As such, all student populations are examined together in a more binary fashion (White/not White).

While we cannot establish statistical causation, an examination of Table 15.1 and the associated results tables throughout the report make it clear that overall the same racial groups with accumulated disadvantage on access variables (i.e. teachers, rigorous coursework, discipline, EC status, AIG status) also have diminished outcomes (i.e. EOG/EOC scores, SAT, ACT, graduation). This makes it exceedingly difficult not to connect barriers to access and opportunity with attendant achievement and attainment outcomes. It also highlights the systemic nature of racial inequity in North Carolina public schools. **Were all students, regardless of racial background, to enter the North Carolina public school system with similar levels of readiness, ability, and educational resources, our results suggest that the current system would function to constrain the educational success of non-Asian student groups of color in such a way that upon exiting the system, these same groups would be less prepared for college, career, and adult life.** As such, the core interpretation of the full analyses conducted for this report is that in all but a handful of cases, systemic barriers to access and opportunity feed educational disadvantage among non-Asian student groups of color in North Carolina public schools.

Before we share conclusions related to the state of racial equity for individual racial groups, we should point out two bright spots in the data. **Although there are clear racialized patterns in the distribution of novice teachers, racial groups in North Carolina appear to have reasonably equitable access to experienced teachers as measured by years of experience. Although statewide data includes a substantial number of teachers with 'unknown" qualifications, North Carolina is clearly committed to staffing qualified teachers, with the vast majority having licenses and college degrees in their content area.** ▶

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Black students have among the highest exposure to judgmental and exclusionary exceptional children (EC) designations, the largest degree of under-selection for academically and intellectually gifted (AIG) programs, the largest disparities in in-school and out-of-school suspension, and are the most likely to be suspended for subjective offenses.

ASIAN

There are, as noted, exceptions to the overarching conclusion of our analysis that systemic barriers to access and opportunity feed educational disadvantage among non-Asian student groups of color. For instance, while they do not face the same level of systemic disadvantage, the achievement and attainment results of Asian students indicates that they, as a group, are insulated from the potentially adverse effects of over-exposure to less effective teachers and under-exposure to rigorous coursework. This may suggest that there is a "tipping point" at which the accumulated disadvantage within a racial group exceeds that group's ability to overcome educational barriers. It may also indicate that the economic success and attendant social capital attained by Asian Americans as a social group increases their resilience to educational obstacles.

It is also likely that different student groups of color encounter the educational system in different ways. While research and theory have firmly rejected the notion that all Asian children are smarter, work harder, more docile, and more compliant (Museus & Iftikar, 2013; Teranishi, Nguyen, & Alcantar, 2016), this does not preclude the possibility that this "model minority" mythology continues to leak into the policies and practices of educational actors in our schools. Finally, while all groups of color have experienced state sanctioned discrimination, exclusion, and violence in the American education system and beyond, the degree to which present and historical racism is infused in public education is likely different across groups. An important step in disentangling the various contributors to Asians' educational experiences would be to collect disaggregated data within the Asian demographic category to help illuminate the differences among and between the approximately 15 different ethnic Asian subgroups (Chinese, Hmong, Korean, Sri Lankan, Thai, Vietnamese, etc.)

BLACK

Our results for Black students represent a related exception. The pernicious history of slavery and violence against Black families throughout American history is well-documented (Anderson, 1988; Span, 2015) as is a legacy of negative stereotypes and racism against Black children in the public education system (Ladson-Billings & Tate, 1995; Staats, 2015). Our analyses reiterate these trends. Our results show that

within many of the access and opportunity metrics where Black students are disadvantaged compared to other student groups, they tend to have among the highest disparities of any student group. Black students have among the highest exposure to judgmental and exclusionary exceptional children (EC) designations, the largest degree of under-selection for academically and intellectually gifted (AIG) programs, the largest disparities in in-school and out-of-school suspension, and are the most likely to be suspended for subjective offenses. Given the unique history of discrimination against Black students, we draw attention to the substantial degree of subjectivity, discretion, and interpretation on the part of educational actors and school authorities in determining things like EC status, AIG status, punishment for (mis)behavior, and the meaning of subjective disciplinary offenses like disobedience, defiance, and insubordination. These determinations are in large part out of the control of Black students, as are many of the other indicators where they are disadvantaged, such as access to rigorous honors and Advanced Placement courses and numerous measures of access to effective teachers. This provides important context for our finding that Black students consistently have the lowest achievement results on EOG and EOC scores.

However, there are several indicators in our analysis where students and families do exercise a substantial degree of control, specifically attendance (chronic absenteeism) dropout/graduation, and postsecondary intentions. For all of three of these indicators, Black students have similar or better results than Whites and several other racial groups after controlling for factors like gender, socioeconomic status, language status, (dis)ability status, giftedness, and suspension. It is noteworthy that *before* controlling for those other factors, Black students compare poorly with Whites on all three metrics. This suggests that **where Black students and families can exercise control over educational outcomes (attendance, dropout, college intentions), they demonstrate a strong commitment to success in school. However, their achievement outcomes appear to be constrained by disadvantages in access and opportunity, many of which are out of their control and vulnerable to the influence of racial prejudice and discrimination.** Of course, this recognition has powerful implications for the experiences of Black students in North Carolina public schools, but we also highlight how it challenges the racialized discourse in education that often suggests that Black students/families, and other non-Asian students/families of color, are somehow less committed to success in school (Anderson, 1988; Jones, 2012). **Indeed, our analysis strongly suggests the opposite, and that given equitable access and opportunity, Black students would likely make dramatic gains in achievement and attainment outcomes.**

PACIFIC ISLANDER

The results presented in this report provide some of the first empirical evidence of systemic racial inequity for previously unexamined or underexamined groups. As mentioned above, the small number

of Pacific Islanders in North Carolina public schools led to non-significant results in roughly half of the indicators examined, making it difficult to fully assess their overall level of comparative advantage/disadvantage. However, **among the significant indicators, all but one (suspension for subjective offenses) indicated disadvantage compared to White students.** Given that trend, and the limitations of the data, is likely that our analysis underestimates the areas of disadvantage for Pacific Islanders. Furthermore, the state of North Carolina does not collect data on Pacific Islander teachers. This leaves a substantial gap in our understanding of the educational experiences of these youth.

AMERICAN INDIAN

Our results show that American Indian students have among the highest degree of cumulative disadvantage of any group. Across the 44 indicators in Table 15.1, American Indians are disadvantaged in 38, including every indicator of academic achievement. They have comparative advantage in only 2 indicators (exceptional children designation and highly qualified teachers) and are similar to Whites in 4 indicators (in-school suspension, suspension for subjective offenses, dropout, and highly qualified teachers). **American Indian students are the least likely to aspire to college, take the fewest honors and AP courses, and have the highest levels of chronic absenteeism. Their levels of out-of-school suspension are approximately double the rate of White students, and American Indians are among the least likely to take courses with ethnically matched teachers.**

Taken together, our analysis of American Indians suggest that they may lack much of the structural support necessary for equitable levels of college and career readiness. As with other groups, attendance problems and over-selection for discipline likely diminish the achievement results of American Indian students. These disadvantages combined with decreased access to honors and Advanced Placement courses and few same-race teachers provide important insight into why so few American Indian students plan to attend college, despite their comparatively low high school dropout rate.

MULTIRACIAL

Multiracial students represent another underexamined student group. Given the complexity of their racial background, they are also perhaps the least understood of any student group of color, despite the fact that they make up a larger proportion of the student population than American Indians, Asians, and Pacific Islanders. The minimal research that has been devoted to Multiracial students has suggested that they are among the most vulnerable to accumulated disadvantage in educational settings (Triplett, 2018). Our analysis supports this conclusion.

Multiracial students are the only group in our analysis that is disadvantaged on every significant indicator of access, opportunity, and outcomes. Perhaps owing to the complexity of their racial identity, multiracial students do not represent the most acute levels of disadvantage in any single indicator. ▶

Hispanics have the highest levels of judgmental exceptional children (EC) designations, which include the developmentally delayed, behaviorally/ emotionally disabled, intellectual disability, and learning disabled designations.

However, they do have among the highest levels of suspension, particularly suspension for subjective infractions. As is the case for Pacific Islanders, North Carolina does not collect data on teachers that identify as Multiracial, making it difficult to fully assess their exposure to effective instruction.

HISPANIC

Although they appear to differ according to specific indicators, our analysis finds that Hispanic students in North Carolina public schools also have substantial accumulated disadvantage. **Of the 44 metrics assessed, Hispanics are disadvantaged (vs. Whites) on 38, advantaged on four, and similarly situated on only two indicators.** Three of the four metrics on which they have comparative advantage are related to school discipline (in school suspension, out-of-school suspension, and suspension for subjective offenses). This supports previous literature in suggesting that Hispanic students as a group experience school discipline in a less racialized manner than other non-Asian student groups of color (Gordon, Piana, & Keleher, 2000; Triplett, 2018). The final indicator with comparative advantage for Hispanic students (vs. Whites) is chronic absenteeism. This is not a surprising result considering that our analysis shows that suspension is such a powerful predictor of chronic absenteeism, even when we factor out absences due to out-of-school suspension. In other words, Hispanics' comparative advantage (vs. Whites) on chronic absenteeism may be in large part due to their relatively low rates of suspension and the heightened levels of absenteeism among Whites.

Hispanics represent the group with the most acute comparative disadvantage on several indicators, including dropout, lack of same-race teachers, and judgmental exceptional children (EC) designations. **The dropout rate among Hispanics is substantially higher than any other racial group in our analysis.** While the data did not allow us to empirically test the relationship, it is perhaps not a coincidence that Hispanic youth drop out at such high rates in the absence of same-race role models in schools, particularly given the documented pressure that many Hispanic youth feel to pursue employment after high school (see Dropout).

Hispanics' results on EC designations are also noteworthy. They do not have a particularly high likelihood of being designated EC in comparison to their proportion of the student population, but Hispanic results on EC demonstrate a unique pattern. First, there is a dramatic drop in the number of Hispanic EC designations when we use race alone as a predictor as opposed to when we control for other factors (i.e. gender, socioeconomic status, language status, (dis)ability status, giftedness). Secondly,

as mentioned, Hispanics have the highest levels of *judgmental* exceptional children (EC) designations, which include the developmentally delayed, behaviorally/emotionally disabled, intellectual disability, and learning disabled designations. This may suggest that language status is inappropriately contributing to learning disabled EC designations for Hispanic students. While further study is required, if language status is contributing to EC in this way, it may indicate that school staff lack the resources needed to provide non-Native English speakers with the additional educational support they require and/or that school staff harbor biases that cause them to conflate lack of facility in English with learning disabilities.

WHITE

While they serve as the comparison group in most of our analyses, our results still indicate comparative levels of (dis)advantage for White youth. With a single exception (Dropout/Graduation), **Whites have a clear pattern of results on the indicators related to educational outcomes (EOC scores, EOG scores, GPA, ACT, SAT, and WorkKeys), such that they underperform compared to Asians but outperform all other student groups of color.** White youth also tend to accumulate advantage with access and opportunity indicators. On 10 of the 21 indicators related to access, Whites are advantaged or similarly situated to all other groups. Results are mixed for the remaining 11 access indicators. The indicators where Whites compare most poorly to student groups of color are in-school suspension (ISS), chronic absenteeism, and dropout. While virtually all previous research has found that Whites are under-selected for discipline compared to non-Asian student groups of color, studies have also shown that all racial groups have similar misbehavior rates and that Whites tend to be punished less harshly than students of color for similar offenses (Finn, Fish, & Scott, 2008; U.S. Department of Justice & U.S. Department of Education, 2014). Therefore, our results for Whites on ISS may reflect a scenario where less punitive forms of discipline (in-school vs. out-of-school suspension) are rationed for Whites and more punitive forms of discipline are reserved for students of color despite similar rates and types of misbehavior (Welch & Payne, 2010).

More straightforward interpretations appear to apply to Whites and chronic absenteeism and dropout. Whites are over-represented statewide in chronic absenteeism compared to their proportion of the student population, but not in dropout. In our regression models, Whites tend to have much lower odds of both chronic absenteeism and dropout when race alone is used as a predictor. However, when we predict the odds of chronic absenteeism and dropout while controlling for other factors (Gender, Free/Reduced Lunch Eligibility, Language Status, Special Education Status, Giftedness, and Suspension), Whites compare to most student groups of color less favorably. This indicates that **compared to *similarly situated* students of color, Whites exhibit concerning patterns of attendance and persistence to high school graduation. It is likely that attendance problems contribute to dropping out of high school for Whites (and other groups).** Our examination of the reasons for dropout provide additional context for interpreting these results.

In addition to attendance, White students were more likely to cite substance abuse, health problems, lack of engagement with school/peers, unstable home environments, and psychological/emotional

problems as reasons for dropout. These reasons were relatively unique for Whites, as other groups tended to cite discipline, child care, and the choice of work over school. **Overall, our results may suggest that schools lack the structural supports needed to address the unique social, emotional, and psychological needs of many White students vulnerable to disengagement from school.**

SUMMARY AND FINDINGS, NOTABLE CHALLENGES, AND FUTURE DIRECTIONS

Given the sum of our findings, the state of racial equity in North Carolina public schools should be a point of critical concern and sustained action for all stakeholders in education. Our core conclusion, that systemic barriers to access and opportunity feed educational disadvantage among student groups of color in our state, is a betrayal of the promise of public education. The urgency of fully understanding the matter at hand is further increased by the recognition that those responsible for educational policy and practice in North Carolina do not appear to regularly conduct comprehensive, action-oriented analyses of the state of racial equity intended to produce reform.

Two broad challenges follow from the results of this report. First, **all student groups of color have inequitable access to the kinds of rigorous coursework and effective teachers necessary to ensure college and career readiness for all students.** The challenges associated with rigorous coursework and effective teachers will require state-level, systematic intervention both because the relevant legal and statutory regulations are enacted on the state level and because equitable access requires policy reform that encompasses the substantial racial, cultural, geographic, and socio-political diversity of our state. Exposure to inequitable forms of school discipline represents a second major challenge. While there is considerable variation reflected in the disciplinary experiences of different student groups, we view discipline reform as a pressing challenge because of the powerful influence that over-exposure to suspension appears to have on critical outcomes such as attendance and dropout, and because the racialized patterns of discipline in North Carolina raise fundamental legal and human rights issues that reach far beyond the field of education.

Group-specific challenges flow from our analysis as well. **Asian students reflect the same lack of access to rigorous coursework and effective teachers as other student groups of color.** Data indicating that they are the highest achieving group makes them no less deserving of the conditions and resources necessary to reach their full educational potential. **The pattern of results for Black students suggests that persistent prejudice and racism is still a key constraint on their educational success, especially in the areas of school discipline, exclusionary and judgmental exceptional children designations, and academically/intellectually gifted designations.** It is important to reiterate the implied role that racial subjectivities (beliefs, opinions, biases, ideologies, etc.) of school authorities presumably play in these areas. We also call attention to the contribution our analysis can make to honoring the struggle and reinforcing the commitment of Black students and families to public education. ▶

We believe the results of this report make it clear that the agencies and institutions responsible for fulfilling the mandate of public education laid out in the North Carolina Constitution and statutory law must demonstrate greater commitment to sustained attention, ongoing comprehensive assessment, and data-driven reforms to improve the state of racial equity in North Carolina public schools.

While Black students appear to have the largest magnitude of disadvantage on many indicators of access, American Indian and Pacific Islander students are disadvantaged across a higher proportion of metrics. While often of a different magnitude, **the patterns of disadvantage for American Indian and Pacific Islander students suggests that they face many of the same barriers as Black students related to racial subjectivities.** An overall lack of empirical research, and the educational community's understandable and necessary focus on Black – White inequity, have likely contributed to a lack of clarity about how race influences the educational experiences of American Indian and Pacific Islander youth.

Multiracial students represent an even more extreme example of this. While they are perhaps the least studied and the least understood, they are disadvantaged on the widest collection of access metrics, and thus likely have among the highest cumulative disadvantage of any student group in the state. It is truly astonishing that the fourth largest student racial group has been relegated to little more than an afterthought in the discourse and policymaking in North Carolina.

While Hispanics as a group do not have the highest levels of cumulative disadvantage, our analysis reveals their unique pattern of disadvantage and the attendant challenges that they face. **High dropout rates and a dramatic lack of Hispanic educators calls our attention to the relationship between the state's commitment to a diverse and representative teaching corp and the educational success of its increasingly diverse students.**

White students as a group tend to have the least amount of disadvantage across indicators of access and opportunity. **With the exception of Asians, Whites also outperform students of color on virtually all indicators of academic achievement.** This suggests that in general, White students likely have the benefit of structural supports that lead to educational success. However, our analysis related to dropout and attendance (chronic absenteeism) indicate that North Carolina schools may need additional resources and support in order to address the unique family, social, and psychological circumstances of White students and their communities.

The process of conducting an analysis across so many indicators and racial groups in the state has given us some insights into issues related to data quality. First, taking steps to collect and analyze data within racial groups would contribute to our empirical understanding of patterns of racial (in)equity.

Specifically, **further disaggregating race data within the Asian and Hispanic racial groups to include racial/cultural subgroups and country of origin for recent immigrants may allow research to parse the unique patterns of educational (dis)advantage for these groups.** Doing so may help illuminate questions like: Why do Asians have such achievement success despite numerous structural disadvantages in access and opportunity? Why are there so few Hispanic teachers? Why do so many Hispanic youth leave high school despite relatively high aspirations to attend college? Answering these kinds of questions would increase understanding of the Asian and Hispanic experience but is also likely to bear on the educational journey of other student groups of color.

Our analysis also hints at a need for data that further encapsulates the geographic and regional diversity of the state, particularly in relation to White students. This kind of data could, for instance, help research better delineate between the experiences of rural, poorer White youth and their presumably wealthier urban and suburban counterparts.

There is also a clear need to collect data on teachers that identify as Pacific Islander and Multiracial. This is likely a simple matter of changing the options on a survey item. **The lack of data on Pacific Islander and Multiracial teachers and administrators leaves a gap in our understanding of a critical predictor of educational success.** In addition, state data on teacher qualifications includes a substantial proportion of teachers (~18%) with "unknown" qualifications. This makes it unclear whether any analysis of the relationship between teacher traits and student success (such as the EVAAS system) are valid. Unknown teacher qualifications take on additional salience today given policy discussions and proposals around such value-added measures.

Beyond the specific challenges discussed above, we believe the results of this report make it clear that the agencies and institutions responsible for fulfilling the mandate of public education laid out in the North Carolina Constitution and statutory law must demonstrate greater commitment to sustained attention, ongoing comprehensive assessment, and data-driven reforms to improve the state of racial equity in North Carolina public schools.

While policymaking bodies are ultimately responsible for the provision of a sound basic education and monitoring the performance of student groups in North Carolina, we contend it is necessary for a third non-governmental entity to take the lead by maintaining an intentional focus on race. Fortunately, racial equity has received increased attention as many stakeholder groups have adopted appropriate lenses when discussing the educational experiences of students. Racialized opportunity gaps require more intense scrutiny and action on the part of policy organizations and think-tanks. **Now more than ever there is a need for an organization with the express purpose of measuring and responding to inequities in education across lines of race, not as a peripheral venture, but as a core strategy.**

To that end, the parent organization that produced this report, the Center for Racial Equity in Education (CREED), was created. CREED is committed to centering the experience of people of color in North Carolina as it transforms the education system for the betterment of all students. Taking a

multi-pronged and purposefully multi-racial approach, CREED has three main branches of activity: Research, Engagement, and Implementation. **Through research, coalition building, and technical assistance, CREED works to close opportunity gaps for all children in P-20 education, especially children of color, with the vision that one day race will no longer be a substantial predictor of educational outcomes.**

To advance this mission, CREED conducts evidence-based research (the first of which are *E(race)ing Inequities* and *Deep Rooted*). Through partnerships with historians, researchers, and policy experts, we produce scholarship that allows for deeper and richer understanding of the issues facing students of color in North Carolina. In addition, CREED builds coalitions of school leaders, educators, parents, policymakers, and community members who have a shared agenda of creating equitable school systems. Through programming, communication and grassroots-organizing strategies, CREED is intent on shifting the atmosphere by providing the education and experiences needed to inform action in meaningful ways. Lastly, we support schools and educators with technical assistance and training designed to improve educational outcomes for students of color. As much as reports such as this one are instrumental in providing foundational knowledge about the myriad ways race influences our school system, direct service and professional development with practitioners is necessary for it to translate into sustainable change. CREED is committed to providing the sort of training and consultation that is often found wanting when engaging in issues racial equity.

In summary, our greatest contribution with respect to the findings of this report is to build an organization suited to respond to what we see. As things stand in North Carolina, no such entity exists that explicitly focuses on race, with interventions spanning the entire research-to-practice continuum. **We hope this report may come to represent a watershed moment and believe organizations like CREED are best suited to take up the challenge of enacting racial equity in North Carolina public schools.** ■

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APPENDIX A: TABLES

TABLE 1: Number and Percentage of Reasons for Dropout (All Students)

Reason	#	% of All Dropouts
Substance Abuse	56	0.5
Academic Problems	385	3.6
Attendance	4596	43.1
Community College or Adult High School	1231	11.7
Child Care Needs	95	0.9
Discipline / Suspension / Expulsion	261	2.5
Employment Necessary	76	0.7
Lack of Engagement with School, Peers	684	6.4
Expectations of Culture, Family, Peers	31	0.3
Health Problems	94	0.9
Unstable Home Environment	156	1.5
Incarcerated (Adult Facility)	219	2.1
Difficulties with English Language	18	0.2
Marriage	15	0.1
Moved	473	4.4
Pregnant	115	1.1
Psychological/Emotional Problems	100	0.9
Runaway	110	1
Unknown	1299	12.2
Choice of Work Over School	637	6
Total	**10671**	**100**

TABLE 2: Reasons for Dropout Relative to Other Racial/Ethnic Groups

	Asian	Black	Hispanic	American Indian	Multiracial	Pacific Islander	White
Substance Abuse	0	7	8	1	2	0	**38**
Academic Problems	3	136	65	4	15	0	162
Attendance	33	1222	1028	66	212	6	**2029**
Child Care Needs	2	**32**	**35**	2	**10**	0	14
Discipline / Suspension / Expulsion	0	**148**	29	**9**	10	0	65
Employment necessary	1	14	39	1	2	0	19
Lack of Engagement with School, Peers	4	207	95	**32**	29	0	**317**
Expectations of Culture, Family, Peers	2	5	7	**4**	1	0	12
Health Problems	2	16	9	1	3	0	**63**
Unstable Home Environment	3	31	23	5	14	0	**80**
Incarcerated (Adult Facility)	0	**152**	24	2	**15**	0	26
Difficulties with English Language	0	1	17	0	0	0	0
Marriage	1	2	5	0	0	0	7
Pregnant	2	35	33	2	6	0	37
Psychological / Emotional Problems	0	19	9	2	5	0	**65**
Runaway	3	40	19	3	9	0	36
Choice of Work Over School	**13**	131	**316**	5	13	1	158
Community College / Adult High School	9	364	169	10	69	1	629
Moved	11	153	134	10	30	1	134
Unknown	14	538	400	10	46	3	288

We do not assess racial/ethnic differences for these reasons based on ambiguity or the interpretation that they do not represent the same degree of future detriment as other reasons. **Reasons student groups of color cited for dropout at significantly higher rates than Whites, and the reasons Whites cited at significantly higher rates than other racial/ethnic groups.**

TABLE 3 : Objective vs. Subjective Disciplinary Incident Description Codes

Objective Offenses	Subjective Offenses
Aggressive behavior	Affray
Alcohol Possession	Communicating threats
Assault - other	Disrespect of faculty/staff
Assault involving the use of a weapon	Disruptive behavior
Assault on non-student w/o weapon & not resulting in serious injury	Excessive display of affection
Assault on school personnel not resulting in a serious injury	Gang activity
Assault on student	Harassment - verbal
Assault on student w/o weapon & not resulting in serious injury	Inappropriate Behavior
Assault resulting in a serious injury	Inappropriate language/disrespect
Being in an unauthorized area	Insubordination
Bomb threat	Other
Bullying	Other School Defined Offense
Burning of a school building	
Bus misbehavior	
Cell phone use	
Cutting class	
Cyber-bullying	
Discrimination	
Disorderly conduct	
Distribution of a prescription drug	
Dress code violation	
Excessive tardiness	
Extortion	
False fire alarm	
Falsification of information	
Fighting	
Gambling	
Harassment - Disability, racial, sexual, religious affiliation, sexual orientation	
Hazing	
Homicide	
Honor code violation	
Inappropriate items on school property	
Indecent Exposure	
Kidnapping	
Late to class	
Leaving class/school without permission	
Misuse of school technology	
Mutual sexual contact between two students	
No Immunization	
Physical attack with a firearm or explosive device	
Physical exam	
Possession of a firearm or powerful explosive	
Possession of a prescription drug	
Possession of a weapon (excluding firearms and explosives)	

TABLE 3 (CONTINUED)

Objective Offenses	Subjective Offenses
Possession of another person's prescription drug	
Possession of chemical or drug paraphernalia	
Possession of controlled substance in violation of law	
Possession of controlled substance in violation of law - Cocaine	
Possession of controlled substance in violation of law - Marijuana	
Possession of controlled substance in violation of law - Ritalin	
Possession of counterfeit items	
Possession of student's own prescription drug	
Possession of tobacco	
Property damage	
Rape	
Repeat offender	
Robbery with a dangerous weapon	
Robbery with a firearm or explosive device	
Robbery without a dangerous weapon	
Robbery without a weapon	
Sale of controlled substance in violation of law - Cocaine	
Sale of controlled substance in violation of law - Marijuana	
Sale of controlled substance in violation of law - Other	
Sale of controlled substance in violation of law - Ritalin	
Sexual assault not involving rape or sexual offense	
Sexual offense	
Skipping school	
Taking indecent liberties with a minor	
Theft	
Threat of physical attack with a firearm	
Threat of physical attack with a weapon	
Threat of physical attack without a weapon	
Truancy	
Under the influence of alcohol	
Under the influence of controlled substances	
Unlawfully setting a fire	
Use of alcoholic beverages	
Use of controlled substances	
Use of counterfeit items	
Use of narcotics	
Use of tobacco	
Violent assault not resulting in serious injury	

TABLE 4 : Exceptional Children (EC) Designations: Judgmental vs. Medically-Defined

Medically-Defined EC Designations	Judgmental EC Designations
Autistic	Behaviorally/Emotionally Disabled
Deaf-Blind	Developmentally Delayed
Educable Mentally Disabled	Intellectual Disability
Hearing Impaired	Learning Disabled
Multi-Handicapped	
Orthopedically Impaired	
Other Health Impaired	
Speech-Language Impaired Severely/Profoundly Mentally Disabled Traumatic Brain Injured	
Trainable Mentally Disabled	
Visually Impaired	

EC designations are enumerated by Public Schools of North Carolina, State Board of Education Department of Public Instruction: Exceptional Children Division, Section NC 1500-2.4 (b) (1-14).

TABLE 5 : WorkKeys Performance by Race/Ethnicity

	Platinum	Gold	Silver	Bronze	Did not earn Certificate	Total
American Indian	0	73	346	177	100	696
Asian	4	274	484	136	41	939
Black	2	777	5042	3202	1971	10994
Hispanic	7	657	3022	1130	519	5335
Multiracial	4	263	772	286	131	1456
Pacific Islander	0	7	14	6	4	31
White	102	6411	12906	3426	1822	24667
Total	**119**	**8477**	**22630**	**8388**	**4608**	**44222**

TABLE 6 : Self-Reported PostSecondary Intentions by Race/Ethnicity

	4 Years College	Community, Technical College	Trade, Business, Nursing	Junior College	Military	Employment	Other	Total
American Indian	545	462	6	4	56	311	43	1427
Asian	1989	767	13	4	48	139	72	3032
Black	12270	8967	237	268	1486	3199	851	27278
Hispanic	3707	5934	111	37	565	2215	427	12996
Multiracial	1617	1254	35	19	205	365	91	3586
Pacific Islander	46	43	0	0	8	15	7	119
White	27062	19230	467	127	2139	5354	1174	55553
Total	**47236**	**36657**	**869**	**459**	**4507**	**11598**	**2665**	**103991**

APPENDIX B: METHODOLOGY

The purpose of this report is to produce an analysis of the state of racial equity in North Carolina public schools using a comprehensive set of indicators of educational access, opportunity, and achievement/attainment outcomes. This initial analysis provides an empirical basis for CREED and other stakeholders to make decisions about where and how to develop reform efforts aimed at producing more equitable public schools that meet the needs of all students. To achieve this purpose, we ask two relatively straightforward research questions:

1. *What is the relationship between race/ethnicity and indicators of access, opportunity, and outcomes?*

2. *Does race influence indicators of access, opportunity, and outcomes after controlling for other relevant factors (i.e. gender, socioeconomic status, language status, (dis)ability status, and giftedness).*

Our operationalization of race, the collection of indicators analyzed, control variables used, and the overall analytical approach are discussed in more detail below. Given the findings of existing research on race and education, the underlying hypotheses of this analysis are that **race is a significant predictor of "every tangible measure" of educational access, opportunity, achievement, and attainment** (Darling-Hammond, 1998, p. 2). We further hypothesize that race is significant and substantial predictor after controlling for other factors that are traditionally positioned as relevant educational success.

DATA

Data was obtained from the North Carolina Education Research Data Center (NCERDC) housed at Duke University. NCERDC stores and manages data on all of North Carolina's public schools, students, and teachers. The data are available to researchers, nonprofit research institutions, and government agencies. However, non-governmental entities must pay a substantial fee to access data, and must also file reports and manuscripts resulting from the use of the date with NCERDC and NCDPI.

Most of the data used in the present work is reported annually to the North Carolina Department of Public Instruction (NCDPI) and NCERDC by schools in the state. Some data, such as ACT scores, are reported to the NCERDC by private entities contracted with state educational agencies. With a single exception, data used in this report is from the 2016-2017 school year. Our analysis of ACT performance uses data from 2015, the most recently reported data at the time of our data request.

The data cover all North Carolina public schools, teachers, and students from pre-kindergarten through grade 13. We analyzed grade 13 students along with other traditional high school students. Students in grade 13 remain in high school for a fifth year at middle college, community college, and/or early college high schools as a means of attaining tuition-free college credits. Detailed demographic, ability, and language data is not reported for pre-kindergarten students in the state. We do not include pre-kindergarten students in our analysis.

To give an idea of the scale of this work, we analyzed approximately 1.5 million students taking around 8.5 million separate courses, taught by over 75,000 teachers, in more than 2500 schools. Specific sample sizes and inclusion criteria varied according to indicator and are in the individual narrative sections.

CONCEPTS, INDICATORS, AND VARIABLES

"Race" and "racial equity" are central concepts of this report. Our understanding and theoretical positioning of race and equity are addressed elsewhere (see Introduction and Conclusion). For the purposes of the analysis, we use the self-reported race of students and teachers obtained by NCDPI and NCERDC. For students, racial groups reported by students align with those used by the U.S. Census Bureau: American Indian, Asian, Black, Hispanic, Multiracial, Pacific Islander, and White. Teacher data does not include the Multiracial or Pacific Islander racial groups but includes an "Other" category. The data keys and documentation from NCERDC do not address what "Other" might mean. Approximately 400 (or one-half of 1%) North Carolina teachers are listed as some race other than American Indian, Asian, Black, Hispanic, or White.

As it relates to the statistical analysis, racial equity would be observed when educational access and outcomes are independent of student's racial/ethnic identification -- in other words, when race alone does not predict access or outcomes while controlling for other relevant characteristics. Racial equity does not demand that all students have similar level of performance. In an equitable system we might continue to observe differences within racial categories, presumably based on individual abilities and environmental factors, but we would not observe substantial statistical differences between similarly situated students from different racial groups. Our analysis includes empirical tests of whether statistically significant and substantial differences exist between racial groups across indicators and whether race predicts access and outcomes independent of gender, socioeconomic status, language status, (dis)ability status, and giftedness.

As we have done throughout this report, we separate indicators into "access" and "outcomes" as a means of emphasizing the conceptual differences between what we might call the "inputs" and "outputs" in education. However, as it pertains to the analysis, the distinction is purely conceptual. We endeavored to employ the same analytical strategy (discussed in more detail below) for all indicators. The following tables show a list of the indicators included in the analysis.

Access Indicators

Honors Courses
- Access
- Honors Courses Taken

Advanced Placement Courses
- Performance
- Advanced Placement Courses Access

Academically/Intellectually Gifted

Exceptional Children
- Designation
- Judgmental Designations
- Separate Settings

Discipline
- In-School Suspension
- Out-of-School Suspension
- Suspension for Subjective Offenses

Chronic Absenteeism

Teachers
- Experience
- Courses with Novice Teachers
- Schools with Novice Teachers
- Highly Qualified Teachers
- Unqualified Teachers
- Unknown Teacher Qualifications
- Teacher Turnover
- Vacancy
- Teacher-Student Ethnic Match

Outcome Indicators

Grade Point Average	• Reading Grade 7	**End-of-Course Tests**
	• Reading Grade 8	• Math 1
Dropout/Graduation	• Math Grade 3	• English 2
	• Math Grade 4	• Biology
Post-Secondary Intentions	• Math Grade 5	
	• Math Grade 6	**SAT**
End-of-Grade Tests	• Math Grade 7	
• Reading Grade 3	• Math Grade 8	**ACT**
• Reading Grade 4	• Science Grades 5	
• Reading Grade 5	• Science Grades 8	**WorkKeys**
• Reading Grade 6		

The measurements associated with the indicators in Figure 1 represent the dependent variable(s) in our statistical models. Race is the focal independent variable across all analyses. In order to be as parsimonious are possible and limit statistical error, we include all racial groups coded as dichotomous variables (i.e. 1 = Asian, 0 = not Asian, …) rather than conducting and comparing separate analyses for each racial group. This strategy requires that one racial group be designated as a comparison group. It is customary (although not required) to select the largest group as the comparison group. As such, White students are positioned as the comparison group in all of our inferential prediction models. This yields results that are interpreted "as compared to White students."

Whenever possible, we also included gender, socioeconomic status, language status, (dis)ability status, and giftedness as control variables in order to isolate the effect of race on the dependent variable to the greatest extent possible with the available data. While a full review of the literature covering the relationship between these control variables and educational access/outcomes is beyond the scope of this section, existing research and theory make clear that there is both an empirical and a logical relationship between gender, socioeconomic status, language status, (dis)ability status, and giftedness and the various measurements of educational success.

Like race, gender represents student and teacher self-reported designation. Male and female are the only reported genders in North Carolina. We coded students as 1 = female, 0 = not female in our analysis. We used eligibility for federal free/reduced lunch (FRL) programs as a proxy socioeconomic status. North Carolina also reports data on "economically disadvantaged students" (EDS). The EDS label is based on FRL, and preliminary modelling showed that FRL was a stronger predictor of access and outcomes. We coded students as 1 = eligible for free or reduced lunch, 0 = not eligible for free or reduced lunch in our analysis. Students' language status is reported as one of four designations related to Limited English Proficiency (LEP): 1st Year Exempt, Not LEP, Exited LEP, Current LEP. The 1st Year Exempt designation is applied to students who are designated as LEP but who are exempt from certain EOG and EOC assessments because they who are in their first year in the United States and scored below a specified threshold on language screening test (W-APT). We coded students with the 1st Year Exempt and Current LEP designations as 1 = ELL and students with Not LEP and Exited LEP designations as 0 = not ELL. Ability status refers to students identified under the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973. Schools report the specific medically-defined disability to the state. See the Exceptional Children/Students with Disabilities section for a list of the medically-defined disability included in IDEA legislation. We did not distinguish between different disability categories in our analysis. We coded students

as 1 = having any medically-defined disability, 0 = not having any medically-defined disability in our analysis. Giftedness refers to students identified as academically or intellectually gifted (AIG). In North Carolina, students can be designated AIG in math, reading, and/or other. Students can hold multiple designations. In our analysis of EOG and EOC scores, we used the relevant designation (reading or math) depending on the subject area. Here, students were coded as 1 = AIG reading/math or 0 = not AIG reading/math. For science EOGs and EOCs, and for all other indicators, we created an AIG "any" variable indicating if students held any AIG designation, and coded students as 1 = AIG any or 0 = not AIG any.

ANALYTICAL APPROACH

Given that different racial groups have historically had disproportionate membership among students in poverty, non-native English speakers, and those designated as disabled and gifted, the primary purpose of controlling for these factors is to avoid attributing variation on the dependent variables in Figure 1 to variation in student/teacher race when differences are more accurately attributed to the control variables. Stated differently, were we to simply compare racial groups on the indicators in Figure 1 using only descriptive statistics (tallies, averages, proportions, etc.) without accounting for the control variables, it would be difficult to support (or fail to support) the claim that race is an independent, significant, and substantial predictor of educational access/outcomes. We present our results in a specific manner in order to mitigate this concern and to address arguments claiming, for instance, that racial inequity in education is primarily due to the association of race and socioeconomic status.

Throughout this report, whenever possible, we first present racially disaggregated descriptive statistics (tallies, averages, proportions, etc.). These results represent "what really happened" with different racial groups during the 2016-2017 school year. They answer questions like: Which groups had higher test scores? Which groups were suspended more often? Which groups took more Honors and Advanced Placement courses. However, descriptive statistics do not give any indication as to whether it was likely that race was actually influencing access/outcomes, or whether observed differences were likely due to random chance. To answer those questions, we use regression models (ordinary least squares or logistic), which can consider the effect of multiple factors (independent variables) on an outcome variable.

Regression models tell us which variables (i.e. race, gender, socioeconomic status, language status, (dis)ability status, giftedness) are significant predictors and the relative magnitude of their predictive power. To further demonstrate the isolated effect of race on a given metric of educational access or outcome, we entered the predictors into the regression models in blocks. In the first block, we enter race alone. In subsequent blocks we add the control variables. We present the results in blocks as well. This approach allows readers to clearly assess the results in light of our research purpose and questions:

- *Do access and outcomes differ by race?*
- *Are those differences likely due to chance?*
- *How do student groups of color compare to each other and to White students?*
- *Is race alone a good predictor of access and outcomes?*
- *Do things other than race predict those same measurements of access and outcomes?*
  Does race remain a strong predictor after controlling for other traits?

As these empirical questions are addressed for all of the indicators in Figure 1, readers and stakeholders will ultimately be able to make data-driven determinations about the state of racial equity in North Carolina.

To provide an example of the analytical approach and reporting procedure used throughout the report, we present a simplified version of suspension results (see the Suspension & School Discipline section for more detail). After reviewing the discipline literature covering the long history of racial discipline disparities, we present descriptive statistics indicating that among North Carolina public school students during the 2016-2017 school year, there are clear differences between racial groups in the number of suspensions and suspension rates. These differences are observed regardless of suspension type and whether we examine all incidences of suspension or only students suspended at least once. However, it is unclear from these statistics alone whether race is a powerful mediator of suspension.

We then turn to the prediction models for suspension. Here we used logistic regression to predict the likelihood that a student would be suspended at least once based on race, gender, socioeconomic status, language status, (dis)ability status, and giftedness. Just focusing on Black students, we see that being Black as compared to White significantly increases the predicted likelihood of experiencing in-school suspension (ISS) and out-of-school suspension (OSS). As mentioned above, we present the inferential results in blocks with race alone entered in block 1 and all predictors entered in block 2.

For ISS, Black students are 151% more likely than Whites to be suspended when race is the only predictor and 84% more likely when controlling for gender, socioeconomic status, language status, (dis)ability status, giftedness. For OSS, Black students are 273% more likely than Whites to be suspended when race is the only predictor and 158% more likely when controlling for other factors. Results are similar, though smaller in magnitude for American Indian and Multiracial students. With regard to the larger concept of racial equity in public schools, these results suggest that exposure to suspension is not equitably distributed among racial groups in the state.

It is important to emphasize that our analysis does not speak to causation. Despite the measures we have taken to isolate the effect of race on access/outcomes to the greatest extent possible with the available data, post hoc analysis of existing data cannot determine whether race "caused" differences in achievement scores, exposure to exclusionary discipline, dropout rates, etc. That said, we would also emphasize that education does not represent a research domain where it is ethical, feasible, or even possible to conduct randomized, experimental research that is able to make claims about causation. Statistics and scientific empiricism as we understand them cannot adequately account for the complex mix of factors that produce a single students' EOG score, much less the scores of the over 1.5 million students in the state. That is why empirical analysis must be informed by theory, the theoretical and conceptual underpinnings of research made plain, and the positionality of the researchers taken into account as stakeholders try to make informed decisions about how to address inequity in education. We have discussed our theoretical orientation and positionality in some length elsewhere (see Introduction). Given our theoretical and social locations, we suggest that a lack of causation should in no way prevent stakeholders from making data-driven decisions, and that the comprehensive, albeit correlational, nature of the present work is more than adequate to produce alarm and action related to the concerning state of racial equity in North Carolina public schools. ∎

E(RACE)ING INEQUITIES

The State of Racial Equity in North Carolina Public Schools

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