

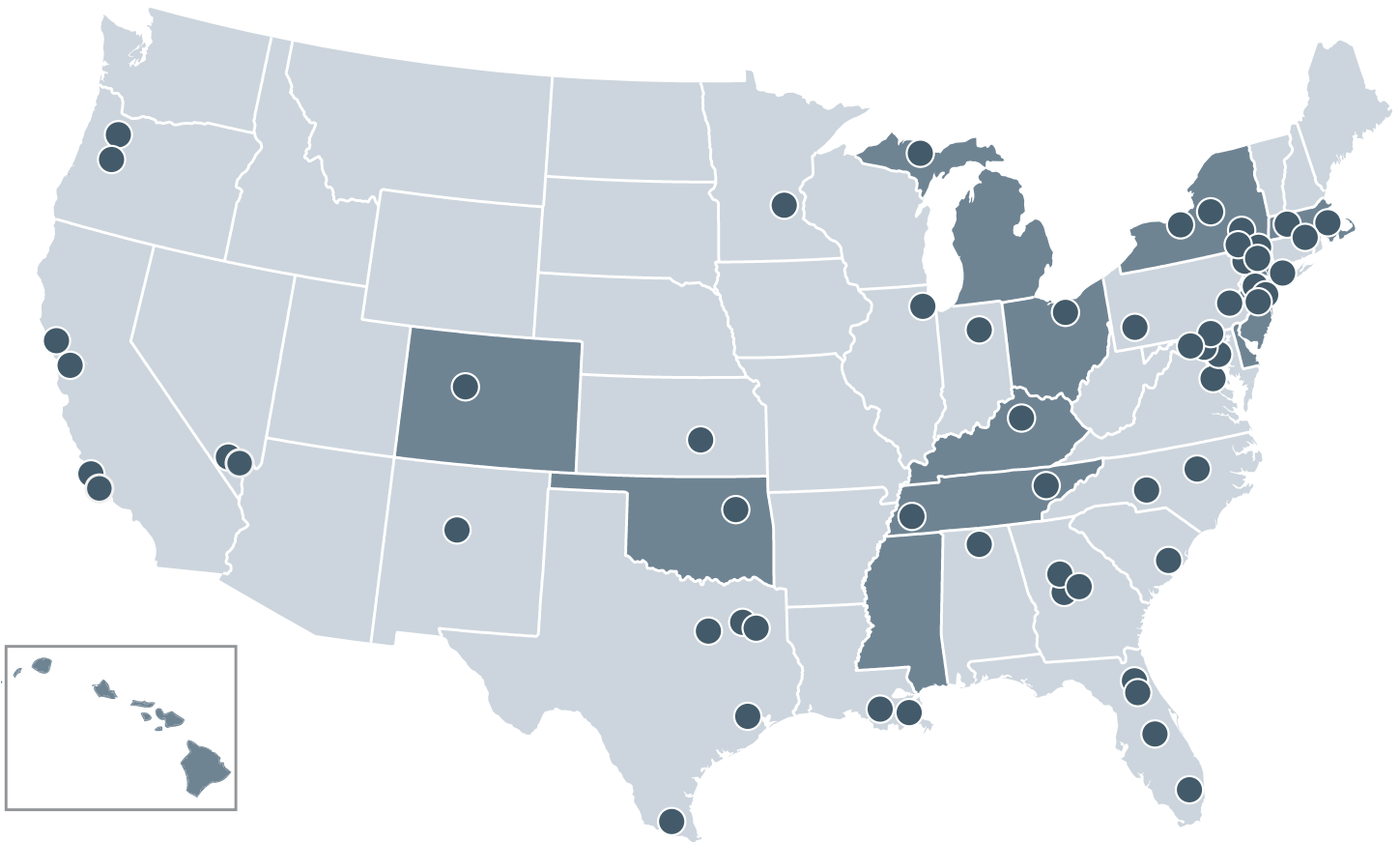
STRATEGIC **DATA** PROJECT

SDP COLLEGE-GOING DIAGNOSTIC

Cleveland Metropolitan School District

April 2015





THE STRATEGIC DATA PROJECT (SDP)

MISSION AND VISION

Since 2008, SDP has partnered with 75 school districts, charter school networks, state agencies, and nonprofit organizations to bring high-quality research methods and data analysis to bear on strategic management and policy decisions. **Our mission is to transform the use of data in education to improve student achievement.**

Part of the Center for Education Policy Research at Harvard University, SDP was formed on two fundamental premises:

1. Policy and management decisions can directly influence schools' and teachers' ability to improve student achievement.
2. Valid and reliable data analysis significantly improves the quality of decision making.

THEORY OF ACTION

SDP believes that if we are able to bring together the right people, assemble the right data, and perform the right analysis, we can help leaders make better decisions—ultimately improving student achievement significantly.

To make this happen, SDP pursues three strategies:

Strengthening Analytic Capacity

Placing and supporting data strategists in partner organizations who will influence policy at the local, state, and national levels

Uncovering New Insights through Applied Research

Creating policy- and management-relevant analyses for districts and states

Supporting Network Growth and Improved Decision-Making

Transforming how data is used in the education sector through broad dissemination of analytic tools, methods, and best practices

The project is supported by the Bill & Melinda Gates Foundation.

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Introduction and Background

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In 2013, the Strategic Data Project (SDP) partnered with the Cleveland Metropolitan School District (CMSD) to expand the use of data to inform policy and management decisions within the district. As part of this partnership, SDP collaborated with CMSD to analyze the high school graduation and college-going outcomes of CMSD students. This set of high-leverage, policy relevant analyses is known as the SDP College-Going Diagnostic.

SDP developed the College-Going Diagnostic in response to the growing body of evidence of the importance of postsecondary education. A few generations ago, a high school diploma was sufficient to ensure the goals of stable employment and financial security. Today it is difficult to reach these goals without postsecondary education, whether in the form of a two- or four-year college or a technical program. Research has shown that an individual with a bachelor's degree will earn approximately \$844,000 more, on average, over his or her lifetime than an individual with only a high school diploma (U.S. Census Bureau, 2011). Given the critical role of higher education in determining the long-term success of students, it is imperative that education agencies understand patterns related to high school and college-going outcomes.

The College-Going Diagnostic was a timely research collaboration in light of the recent initiatives related to college going in Cleveland. In 2010, the Higher Education Compact was established to improve college readiness, access, and persistence for CMSD students. The Compact's members include CMSD, 17 colleges and universities which enroll 80% of college-enrolling CMSD graduates, and more than 50 youth-serving civic, philanthropic, and business organizations. In 2011, the district enacted the Plan for Transforming Cleveland's Schools, also known as the "Cleveland Plan" (see sidebar on The Cleveland Context). One of the plan's major components was to adopt a "portfolio schools" strategy, which would support and grow high-performing schools in the district and close schools that did not foster strong outcomes for students. Successful implementation of the Cleveland Plan hinged on using data to both identify successful schools and provide parents, students and educators with data on student outcomes.

CMSD had also made great strides in using data to identify high-performing schools, but the district had less information about whether certain schools were better at serving students with the most, and the least, academic preparation. The diagnostic analyses enabled the district to investigate college-going outcomes for students of different backgrounds in greater depth and better understand the extent of variation across schools in rates of high school graduation, college enrollment, and college persistence for different types of students. The district is using this information as part of a data-driven dialogue for schools to share best practices around supporting college going for students of different academic and demographic backgrounds.

This report presents key findings from the College-Going Diagnostic for CMSD, using data from students in the 2006-07 through 2012-13 school years. Section I provides an overview of CMSD students' educational attainment across the entire college-going pathway—from entering ninth grade through enrollment in a postsecondary institution. Section II presents high school graduation outcomes across high schools and student background characteristics, such as race and prior achievement. Section III discusses findings related to college enrollment and persistence, as well as the college choices of highly qualified graduates.

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The Cleveland Context

Since the 1950s, Cleveland, like many other Rust Belt cities, has seen its economy shifting away from manufacturing toward new industries that require a college-educated workforce (Gordon, 2011). Cuyahoga County, where Cleveland resides, lost nearly 10% of its jobs in 2000–07 (Gordon, 2011) and ranked second in the nation for the number of businesses lost during the 2007–08 recession (Exner, 2010). Further, the U.S. Census (2013-b) estimates only 20% of Cleveland residents age 25 and older have an associate’s degree or higher.

The population of the city of Cleveland declined over 20% from 2000–10 (U.S. Census Bureau, 2013a). CMSD’s student population declined 40% in this same period (Ohio Department of Education, 2014). Many of the district’s students left for Cleveland charter schools or private schools throughout Cuyahoga County. As of the 2009–10 school year, private schools in the county served close to 40,000 students, approximately the same number served by CMSD (Ohio Department of Education, 2014). Three quarters of Cuyahoga County high school students in private school are White. In comparison, roughly three quarters of high schoolers in CMSD, and more than half of Cleveland residents, identify as Black (U.S. Census Bureau, 2013a).

In 2011–12, CMSD was facing a \$65 million deficit for the following school year after years of layoffs and spending cuts, low graduation rates, and test scores far below the national average. Cleveland Mayor Frank Jackson worked with CMSD CEO Eric Gordon, representatives from local foundations and charter schools, and national education experts to draft the Plan for Transforming Cleveland’s Schools, also known as the Cleveland Plan.

The Cleveland Plan envisioned a “portfolio schools” strategy, which would provide individual high-performing schools with greater autonomy, increase the number of district and charter schools with strong outcomes for students, close and replace failing schools, initiate a number of systemwide academic reforms, and focus the central office on support and governance. A primary goal of the Cleveland Plan was to triple the number of students enrolled in high-performing schools within six years (Cleveland Metropolitan School District [CMSD], 2012).

In July 2012, the state of Ohio passed a law granting CMSD local flexibility in teacher hiring practices and school management, with the idea that doing so would improve implementation of the Cleveland Plan (Lieszkovsky, 2012). For example, the law allowed the district to share local levy revenue and other assets such as buildings with charter schools affiliated with the district. It also allowed CMSD to include students in those charter schools in its student enrollment. That fall, city voters approved a four-year local levy worth about \$64 million annually to support implementation of the plan.

As the CMSD leadership team implements the Cleveland Plan, it continues to focus on using data to monitor progress and identify areas for policy changes. SDP’s partnership with CMSD, including the College-Going Diagnostic, has supported data-driven decision making in the district.

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Key Findings

Section I. The College-Going Pathway

- Using longitudinal data which tracks students from ninth grade through the second year in college five years later, for every 100 first-time ninth graders who enroll in a public high school in CMSD, 56 complete high school within four years, 30 seamlessly transition to college, and 20 persist to their second year of college.

Section II. High School Graduation Outcomes

- High school graduation rates vary widely across high schools in the district, even among schools that have similarly well-prepared students and among schools of the same type. For example, at the high school with the lowest graduation rate, just over 40% of students graduate on time as compared to the high school with the highest rate, where 100% of students graduate on time.
- Black students are more likely than their White peers to be in the bottom districtwide quartile of math achievement in eighth grade. However Black students in the second, third, and top quartile graduate at higher rates than their similarly prepared peers from other racial/ethnic backgrounds.
- For both Black and White students who score in the top quartile of eighth-grade math achievement districtwide, female students graduate at higher rates than their male peers. While these well-prepared female students graduate at rates of 92% and 87% for White and Black females, respectively, their male peers lag behind—graduating at rates of 83% and 75%, respectively.

Section III. College-Going Outcomes

College Enrollment

- Of high school graduates from CMSD high schools, 49% enroll in college seamlessly in the fall following their high school graduation: 19% enroll in two-year colleges, and 30% enroll in four-year colleges.
- There is a 70 percentage point difference in enrollment rates between the high schools with the highest and lowest shares of seamless college enrollers.

College Match

- College-ready high school graduates of different demographic backgrounds enroll in selective and highly selective colleges at varying rates. College-ready Black students are twice as likely to enroll in a selective or highly selective college (61%) relative to their college-ready White peers (31%).

College Persistence

- Of students who enroll seamlessly at four-year colleges, 75% persist to their second year. In contrast, their peers who enroll at two-year colleges persist at a rate of 50%.
- College persistence rates vary across high schools in the district. At the high school with the lowest persistence rate, 38% of students who enroll seamlessly in college persist to their second year, in contrast with a rate of 73% for the high school with the largest share of students who persist.

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Section I. The College-Going Pathway

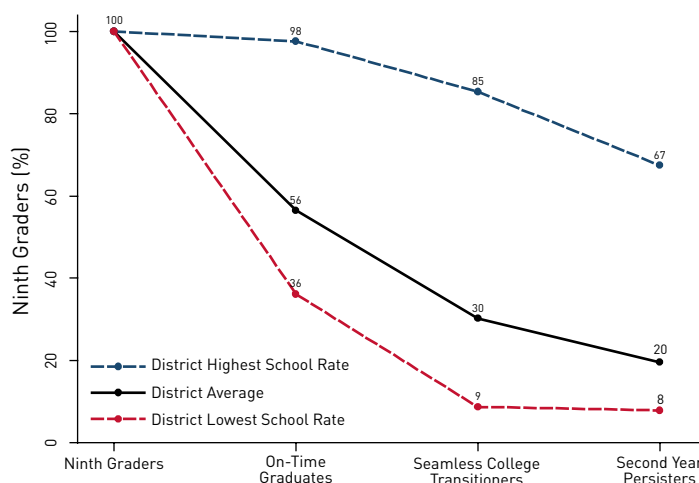
Each step on the road to postsecondary success presents students with obstacles and opportunities to further their education. SDP's college-going pathway tracks cohorts of first-time ninth graders through high school completion, seamless college enrollment, and persistence to the second year of college. By following the same group of ninth graders as they progress along the pathway, we are able to identify where the biggest drop-off in outcomes occurs and which milestones merit the greatest attention from the district.

Figure 1 shows the percentage of CMSD ninth graders who successfully complete each step. For every 100 first-time ninth graders who enroll in a public high school in CMSD in the 2006–07 and 2007–08 school years, 56 complete high school within four years, 30 seamlessly transition to college, and 20 persist to the second year of their postsecondary studies.¹ Among five other large urban school districts where SDP has performed similar analyses, three have high school graduation rates that are similar to CMSD (within two percentage points), while two have higher graduation rates (five and 10 percentage points higher, respectively) (Strategic Data Project, 2012b).

Students at different CMSD high schools progress along the education pipeline at vastly different rates. Figure 1 also presents the average high school graduation, college enrollment, and college persistence for the schools with the highest and lowest average rates at each step on the pathway. At the school with the highest on-time graduation rate, 98% of first-time ninth graders graduate from high school within four years. In contrast, at the school with the lowest high school graduation rate, only 36% of students graduate on time. The difference is even greater for college enrollment, for which the top high school's enrollment rate (85%) is more than nine times the lowest high school's enrollment rate (9%). The remainder of this brief unpacks several factors associated with districtwide differences in high school graduation, college enrollment, and college persistence.

Twenty percent of CMSD ninth graders graduate on time, seamlessly enroll in college and persist to their second year of college.

Figure 1. Student Progression From Ninth Grade Into College: District Average, Minimum and Maximum



Note. The sample includes 6,919 2006–07 & 2007–08 first-time ninth graders. Postsecondary enrollment outcomes from NSC matched records. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

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Section II. High School Graduation Outcomes

High school graduation is a critical milestone on the path to postsecondary success. By the time students enter high school, their prior academic and social experiences, as well as family background, have already strongly influenced their likelihood of graduating from high school. However, research suggests that high schools have a sizable impact on education outcomes for their students as well. For example, recent studies found that differences between high schools, as opposed to other factors related to students' backgrounds, explain about 20% of the variation in student outcomes (Rumberger & Lim, 2009; Rumberger & Palardy, 2005). In this section, we examine patterns in high school graduation rates by high school and student demographic characteristics. To explore the role that high schools play in influencing students' subsequent postsecondary outcomes, the first set of analyses describes how high school graduation rates vary across district high schools and high school types. Understanding these patterns is a critical step towards improving long-term outcomes for CMSD students.

Figure 2 shows the graduation rates for each high school, with separate rates for on-time graduation (within four years of entering ninth grade) and late graduation (within six years). On average, 60% of ninth graders graduate high school on time and 5% graduate late, but several district high schools have graduation rates that are substantially above or below the district average.³ As Figure 2 demonstrates, close to 100% of the students at John Hay Early College High School graduate on time, whereas just over 40% of students graduate on time at East Technical High School. The rate at which students graduate late also varies across schools. More than 15% of ninth graders at Washington Park High School graduate in more than four years, though most schools have late graduation rates below 5%.

At the same time, students at different CMSD high schools enter the ninth grade with varying levels of prior academic achievement. Particular schools have high concentrations of the most- and least-prepared students. For example, in three high schools, more than one third of incoming ninth graders scored in the bottom quartile districtwide on the math Ohio Achievement Assessment (OAA) in eighth grade. Meanwhile, more than half of the students at six other high schools scored in the top quartile. Since preparation in the elementary and middle school grades is strongly associated with student performance in high school and beyond, such differences in prior achievement may also account for some of the variation in graduation rates across high schools.

Note on School Types

Comprehensive Schools. These schools are open-admission neighborhood high schools. These neighborhood schools have historically operated with less differentiated instruction across student ability and few specialized programs in specific subject or vocational areas.²

Specialty Schools. These high schools focus on particular career and vocational training tracks, such as medicine, dentistry, and criminal justice. Though nearly all specialty schools have open admissions policies, not all students who list a specialty school as a top choice are able to enroll. School assignment takes place via lottery when schools are oversubscribed.

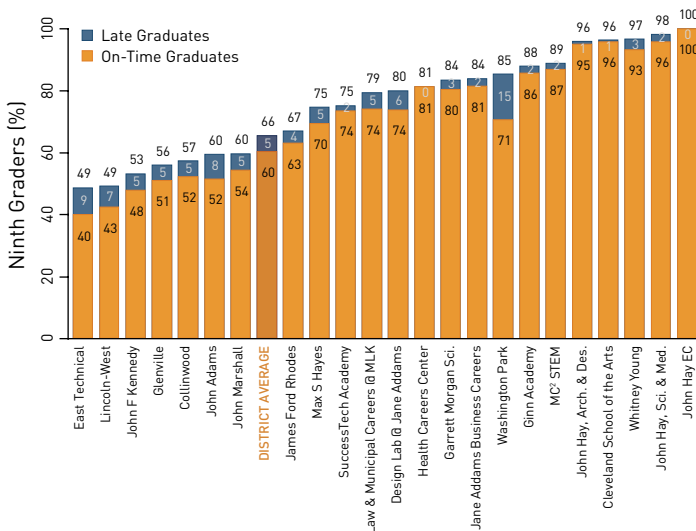
New and Innovative Schools. These high schools focus on particular subject areas, such as science, technology, engineering, and mathematics (STEM), or offer unique academic experiences, such as an all-male academy. Four out of six new and innovative schools in this analysis have entrance requirements. Like specialty schools, assignment takes place via lottery when schools are oversubscribed.

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Section II. High School Graduation Outcomes

Ninth graders from the high school with the highest graduation rate are twice as likely to graduate as those from the one with the lowest rate.

Figure 2. High School Graduation Rates by High School



Note. The sample includes 6,615 2007–08 & 2008–09 first-time ninth graders. Student cohort membership data from Ohio Department of Education records. All other data are from DMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

Figure 3 displays the relationship between average eighth-grade math test score and graduation rate.⁴ The analysis also draws upon the school types developed by CMSD for research and planning purposes; each high school is labeled as comprehensive, specialty, or new and innovative (see Note on School Types on page 7). Not surprisingly, across CMSD schools, higher average eighth-grade math OAA test scores (horizontal axis) are associated with higher on-time graduation rates (vertical axis). All but two comprehensive schools have students with eighth-grade math test scores at or below the district average of 396, and all but one graduate their students at a rate below the district-average graduation rate of 64%. In contrast, most specialty and new and innovative schools enroll students with average eighth-grade math test scores above the district average (401 and 411 are the average test scores for students in specialty and new and innovative schools, respectively) and graduate those students at above-average rates (80% and 92%, respectively).

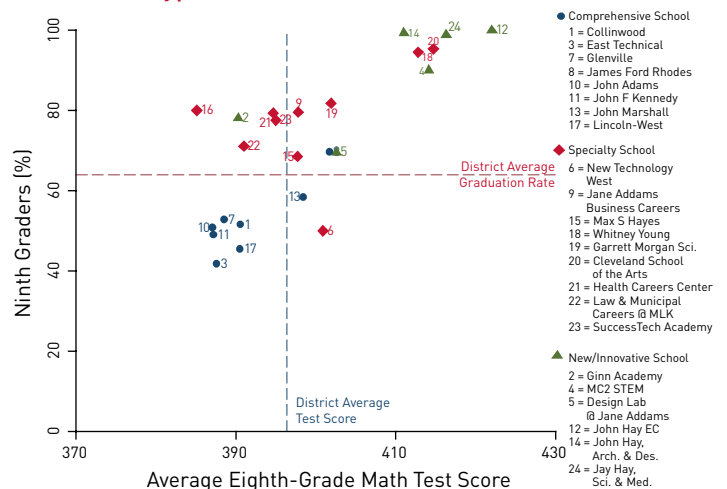
The higher average incoming achievement at specialty and new and innovative schools may be due to admissions

requirements, though not all of these schools have entrance criteria. Enrollment and high school graduation rates at different school types may also be related to student characteristics that are difficult to measure. Strongly motivated students, for example, may be more likely to graduate from high school and also be more likely to attend a specialty or new and innovative school.

Yet differences in on-time graduation rates exist even among schools of the same type and with similar average levels of prior achievement. Figure 3 represents these differences as the vertical distance between high schools of the same type (shown in Figure 3 by their symbol and color) and with similar average test scores in eighth grade. For example, Max S. Hayes High School (#15) and Jane Addams Business Careers High School (#9) are both specialty schools whose incoming ninth graders score on average slightly above the district average score on the eighth-grade OAA. However, the on-time graduation rate at Jane Addams Business Careers Center (80%) is 12 percentage points higher than at Max S. Hayes High School (68%), suggesting that high-school-related factors may also influence, at least in part, their students' likelihood to graduate on time.

Differences in average on-time graduation rates exist among schools of the same type and with similar average levels of prior achievement.

Figure 3. On-Time Graduation Rates by Prior Achievement and School Type



Note. The sample includes 6,343 2007–08 through 2009–10 first-time ninth graders with valid eighth-grade OAA math test scores. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

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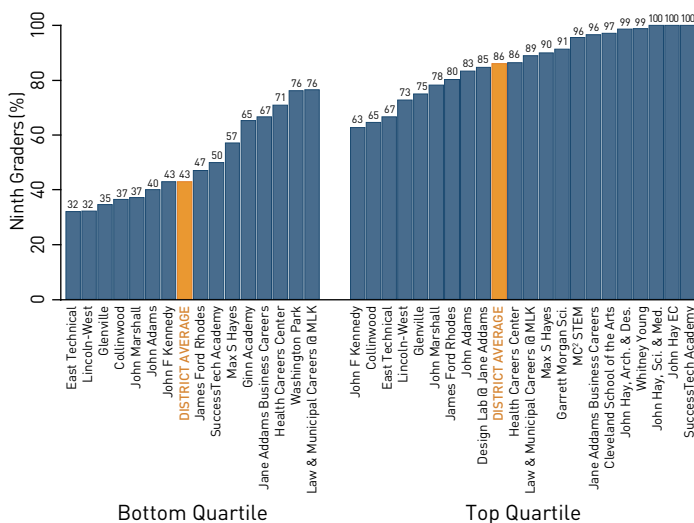
Section II. High School Graduation Outcomes

Figure 4 further illustrates the importance of prior preparation and the role of high schools in influencing whether students graduate on time. The figure reports on-time graduation rates by high school for subgroups of students who are in either the bottom or top quartile of eighth-grade math achievement districtwide.⁵ Not surprisingly, on average, CMSD students in the highest quartile of prior achievement are more likely to graduate than their peers in the lowest-scoring quartile. However, there are substantial differences in graduation rates across high schools in the district for students of similar academic preparation within each quartile. For example, the graduation rate for students in the bottom quartile is more than twice as high at the high school with the highest graduation rate (76%) compared to the high school with the lowest graduation rate (32%).

Figure 4 also demonstrates that there are substantial differences in high school graduation rates across CMSD high schools for students in the top quartile of prior achievement. For example, 63% of top-quartile students at

Large differences in on-time graduation rates exist across high schools, even among students with similar prior achievement levels.

Figure 4. On-Time High School Graduation Rates by High School and Top/Bottom Quartile of Prior Achievement



Note. The sample includes 3,245 2007–08 through 2009–10 first-time ninth graders with eighth-grade OAA math test scores. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

John F. Kennedy High School graduate on time, in contrast with Whitney Young High School, where nearly all top-quartile students graduate on time. Due to their high level of prior academic preparation relative to their peers, one might expect top-quartile students to graduate at similar rates regardless of the high school they attend. However, four out of five large urban school districts where SDP has performed similar analyses had a spread in graduation rates across district high schools of a similar magnitude to CMSD for top-quartile students.⁶

Examining high school graduation rates across high schools allows us to compare outcomes for students with comparable academic and social experiences. Similarly, student demographics is another dimension that be used to analyze students' high school outcomes. Education research has shown that student background information is predictive of whether a student will drop out of high school, but that there are students who succeed even when their background characteristics suggest they might not (Allensworth & Easton, 2005). Understanding the extent to which high school graduation patterns may vary for students with different demographic characteristics can help the district identify possible points of intervention that can better support these student groups.⁷ The second set of analyses in this section examines trends in high school graduation rates for students by race, ethnicity, and gender.

On average, Black and White students with eighth-grade test scores in CMSD graduate high school at nearly the same rates: 67% of White students graduate from high school on time, in comparison with 64% of Black students and 60% of Hispanic students (analysis not shown). The gap in high school graduation rates for White and Black students is much smaller than the national average. Nationwide, 83% of White students and 66% of Black students graduated high school on time in the 2009–10 school year (Stillwell & Sable, 2013).

To examine these patterns more closely while accounting for differences in prior achievement, Figure 5 divides Black, Hispanic, and White students into four quartiles districtwide based on their average eighth-grade math test score. When we compare students of different races but similar prior preparation, Black students in the top three quartiles of prior achievement outperform their White peers. The gap in on-time graduation rates is largest among the most-prepared students. Black students in the top quartile graduate from high school at a rate of 88% while similarly well-prepared White students graduate at a rate of 80%.

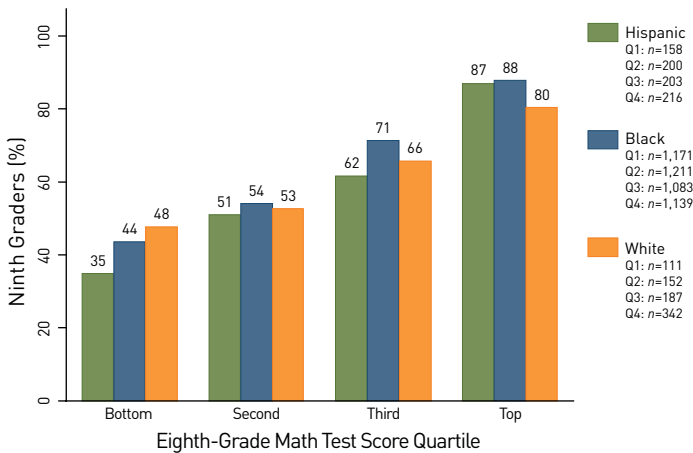
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Section II. High School Graduation Outcomes

At the same time, it is important to note the vastly different prior achievement profiles of students from different race/ethnicities. For example, 43% of White students have eighth-grade scores that place them in the top quartile districtwide, compared with about one quarter of Black students. Thus, while highly prepared Black ninth graders graduate high school at higher rates than their similarly well-prepared White peers, Black students, overall, are much more likely to have entered high school with lower levels of academic achievement, and graduate high school at slightly lower rates than their White peers.

Among students with similar achievement, Black students in the top three quartiles of prior achievement graduate high school at higher rates than their White and Hispanic peers.

Figure 5. On-Time High School Graduation Rates by Race and Prior Achievement



Note. The sample includes 6,173 2007–08 through 2009–10 first-time ninth graders with eighth-grade OAA math test scores. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

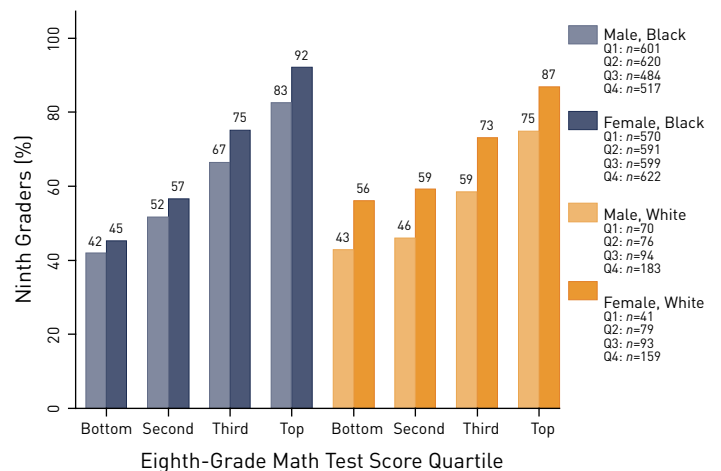
The types of high schools that Black students attend may account for some of the difference in graduation rates between top-quartile Black students and their White peers. High-achieving Black students disproportionately attend specialty and new and innovative schools, which are concentrated on the east side of Cleveland, where most Black students live. Thirty-nine percent of Black students attend a new and innovative or specialty school, compared with 28% of White students—despite the fact that a greater

share of White and Hispanic students score in the top quartile of achievement in eighth grade.

Furthermore, high school graduation outcomes also vary for students of the same race and prior achievement, but who are of different genders. Similar to Figure 5, Figure 6 shows high school graduation by race and prior achievement quartile, but further divides these categories by gender. Both Black and White female students graduate from high school at significantly higher rates than male students of the same race, across all levels of prior achievement. The difference between the graduation rates for boys and girls is largest for students in the top quartile. Among Black students, the high school graduation rate for top-performing female students is 9 percentage points higher than for similarly well-prepared male students. Among White students, this gap is 12 percentage points.

Female students graduate at higher rates than male students, regardless of race and academic preparation.

Figure 6. On-Time High School Graduation Rates by Prior Achievement, Gender, and Race



Note. The sample includes 5,396 2007–08 through 2009–10 first-time ninth graders with eighth-grade OAA math test scores. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

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Section III. College-Going Outcomes

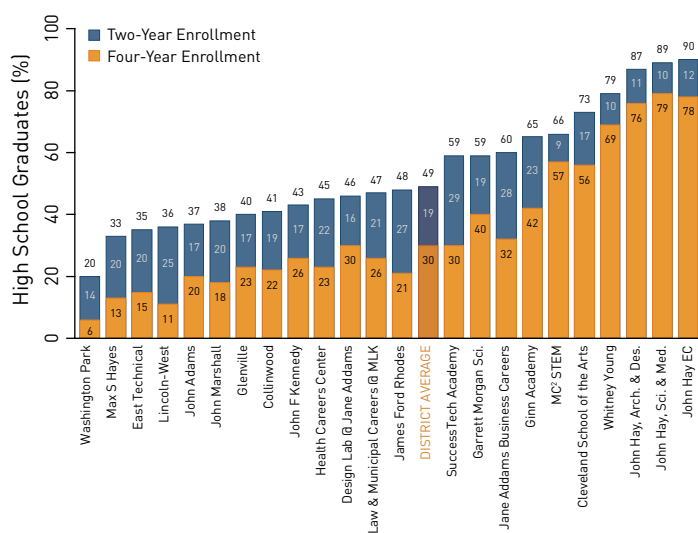
Given the substantial economic and social benefits of a college degree, it is important to understand school and student characteristics associated with college enrollment and persistence. This section describes analyses on college-going outcomes in CMSD across district high schools and student subgroups. The first set of analyses highlight key findings about students' college enrollment outcomes across high schools in the district, by type of postsecondary institution (two-year and four-year), and by timing of initial enrollment (seamless and delayed). For many high school graduates, however, college acceptance is just the first of many hurdles on the road to postsecondary success. The next two sets of analyses examine the types of colleges selected by CMSD high school graduates, and their level of persistence towards college graduation after initial enrollment. (See Appendix 1 for a discussion of data limitations which affect the analyses in this section.)

College Enrollment

From high school academic preparation to social and financial considerations, there are many reasons why a high school graduate may choose not to pursue a college degree. Even when students intend to enroll in college, they may encounter substantial obstacles to doing so. Students may come from families with no prior experience applying to college. After application and acceptance, there is an array of logistical and administrative steps necessary for college matriculation, such as securing housing, completing financial aid paperwork, paying a term bill, and registering for courses (Castleman, Page, & Snowdon, 2013). Recognizing patterns in college enrollment across high schools and demographic groups allows school districts and individual high schools to create policies that will help shepherd struggling students through the college enrollment process. This first set of analyses presents key findings around college enrollment patterns in CMSD.

College enrollment rates differ by 70 percentage points between the high schools with highest and lowest enrollment rates.

Figure 7. College Enrollment by High School, Seamless Enrollers



Less than half of high school graduates in CMSD enroll in college seamlessly the fall following graduation: 19% enroll at two-year colleges, and 30% enroll at four-year colleges.⁹ Similar to the trends in high school graduation rates, college-enrollment rates also vary considerably across schools (Figure 7). The same schools with the highest and lowest high school graduation rates remain the highest and lowest schools for college enrollment, with enrollment rates of 90% and 20% for John Hay Early College High School and Washington Park High School, respectively. At 70 percentage points, the difference in rates between the two schools is even larger for college enrollment than for high school graduation.

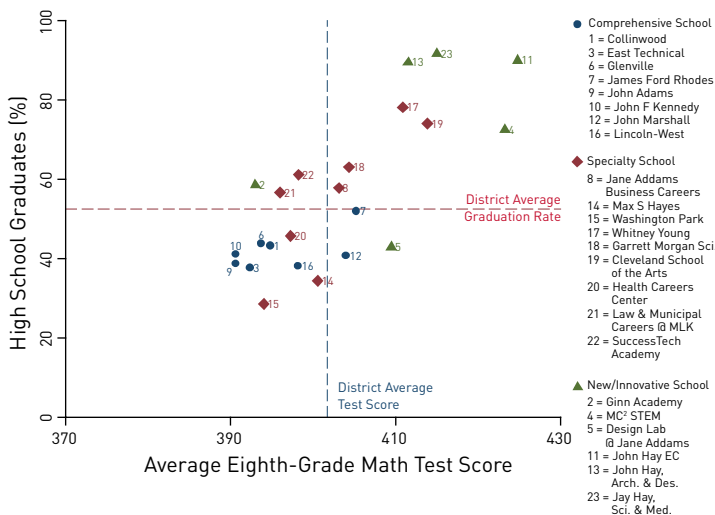
Figure 7 also shows the fraction of high school graduates from each high school that enrolls in two-year (shown in navy) and four-year (shown in orange) institutions. Across all high schools, there are substantial differences by high school in the shares of graduates from each school who attend two-year and four-year institutions. One in four high schools in the district see at least half of their college-bound high school graduates enroll in two-year, as opposed to four-year, programs.

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Section III. College-Going Outcomes

Among students with similar math achievement in eighth grade, graduates from new/innovative and specialty schools tend to enroll in college at higher rates than graduates from comprehensive schools.

Figure 8. Seamless College Enrollment Rates by Prior Achievement and School Type



Note. The sample includes 3,048 2010–11 and 2011–12 high school graduates with valid eighth-grade OAA math test scores. Postsecondary enrollment outcomes from NSC records. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

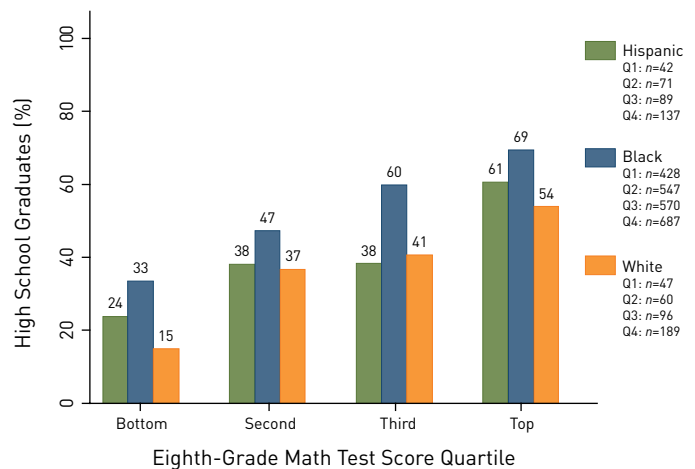
Figure 8 examines patterns in college enrollment rates by average prior achievement at each high school. As with high school graduation rates, college enrollment rates differ across schools, even for schools with similarly well-prepared students. Figure 8 shows this trend as the vertical distance between schools at roughly the same average eighth-grade math scores on the horizontal axis. New and innovative and specialty schools with students of above-average prior achievement enroll students in college at higher rates. However, some specialty schools enroll comparable or smaller shares of similarly prepared students in college as do comprehensive schools. For example, specialty school Washington Park High School (15) and comprehensive school Glenville High School (6) have identical average eighth-grade math test scores (394), but the enrollment rate at Washington Park High School is 15 percentage points lower than at Glenville High School.¹⁰

Just as students' background characteristics influence their likelihood of high school graduation characteristics such as race and academic preparation are also predictive of college enrollment. Relative to high school graduation, there is more variation in college enrollment rates by race or ethnicity. On average, 55% of Black students, 43% of White students, and 45% of Hispanic students enroll in college (analyses not shown).

Figure 9 shows college enrollment rates for students of different race/ethnicities and prior academic preparation. On average, Black high school graduates enroll in college at higher rates than White and Hispanic graduates across all levels of prior achievement. Among the most academically prepared students in the top quartile, 69% of Black students enroll in college, in contrast with 61% of Hispanic and 54% of White students. Unlike the trend in high school graduation, among students in the bottom quartile of prior achievement, Black students (33%) are much more likely to attend college than their White peers (15%).

Black students enroll in college at higher rates than their White and Hispanic peers with similar eighth grade achievement.

Figure 9. College Enrollment Rates by Race and Prior Achievement



Note. The sample includes 2,624 2010–11 and 2011–12 high school graduates with valid eighth-grade OAA math test scores. Postsecondary enrollment outcomes from NSC records. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

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Section III. College-Going Outcomes

College Match

Recent research has illuminated the importance of matching students to colleges that are appropriate fits for their skill levels (Strategic Data Project, 2013a). Students who are well matched to their institution are much more likely to persist to their second year and ultimately receive a degree. The analyses in this section analyze college match for CMSD high school graduates who are college ready.

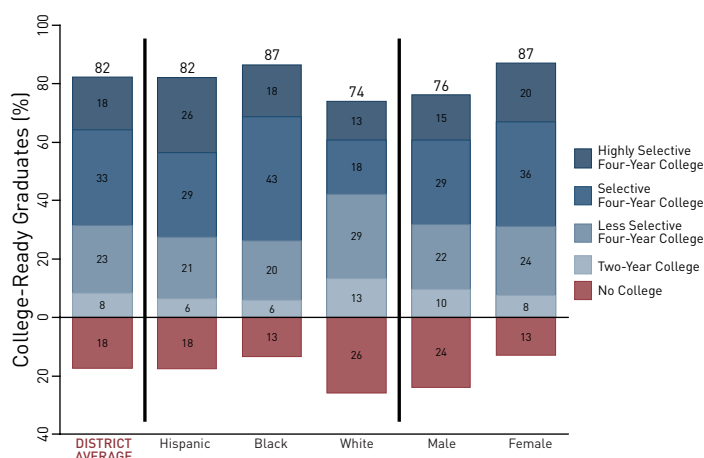
Figure 10 examines college match for students who are college ready, as indicated by a composite ACT score of at least 21. Research has shown that students who obtain this score have a 50% chance of obtaining a B or higher in credit-bearing first-year college courses (ACT, n.d.). Across four cohorts of CMSD high school graduates, 585 out of 8,451 students (7%) meet this standard.¹¹ Figure 10 also shows the selectivity of the colleges these students enroll in, as measured by the Barrons selectivity index. On average, 52% of college-ready graduates from CMSD enroll in a selective or highly selective college, 31% enroll in a less selective four-year college or a two-year college, and 18% do not enroll in any college.

The enrollment of college-ready graduates also varies by student background characteristics. As shown in Figure 10, 61% of college-ready Black students in CMSD enroll in a selective or highly selective college in comparison with 31% of White students. In addition, male and female college-ready students differentially enroll in selective institutions: 56% of female students and 44% of male students enroll in a selective or highly selective college.

Though the majority of college-ready graduates choose to enroll college, a considerable share of high-performing graduates appears to make postsecondary educational choices that do not match their high academic achievement. As mentioned, 18% of college-ready graduates districtwide do not enroll in any college. This rate is higher for certain demographic groups. Close to one quarter of college-ready male graduates and college-ready White graduates did not enroll in any college.

A considerable share of college-ready graduates appears to make postsecondary educational choices that undermatch their academic achievement.

Figure 10. College Choices of College-Ready Graduates by Student Demographics



Note: The sample includes 585 2008–09 through 2011–12 CMSD college-ready graduates, defined as a composite ACT score of at least 21. Postsecondary enrollment outcomes from NSC records. Selectivity classified according to 2012 Barron's rankings. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

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Section III. College-Going Outcomes

College Persistence

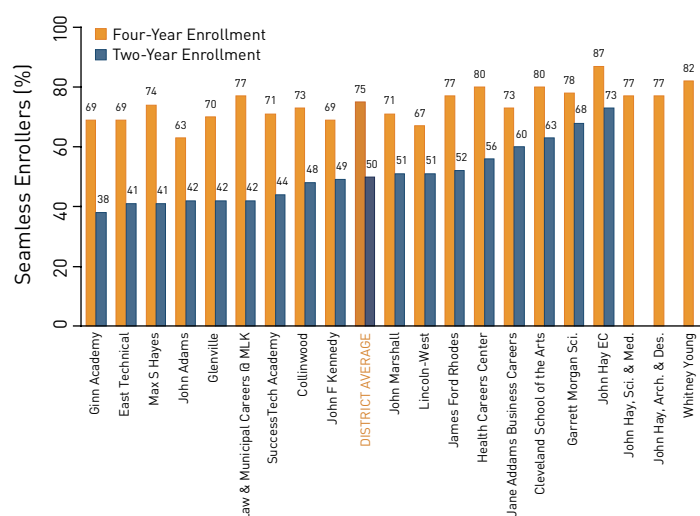
Though college enrollment is an important step toward degree attainment, academic struggles in advanced college courses, financial difficulties, and other obstacles may prevent a student from graduating college. In order to measure CMSD students' progress toward college degree completion, the last section of this report examines college persistence—that is, the rate at which students who enroll in college continue to attend college for a second consecutive year. Students' enrollment status at the beginning of the second year serves as an early indicator of their likelihood of graduation.

Figure 11 shows persistence rates by the last high school that CMSD seamless enrollers¹² attend and the type of institution where they enroll (two-year or four-year). CMSD students at four-year colleges are more likely to persist to their second year than students at two-year colleges. On average, seamless enrollers at four-year colleges persist at a rate of 75%, in contrast with a rate of 50% for seamless enrollers at two-year colleges. However, SDP analyses from other districts have shown that students who enroll in two-year colleges tend to have different characteristics that are also related to college persistence—for example, they are more likely to be eligible for free or reduced price lunch and less likely to be academically prepared than students pursuing four-year degrees (Strategic Data Project, 2013a).

Persistence rates also differ by high school¹³, particularly for students who enrolled at two-year colleges. Thirty-eight percent of seamless enrollers from Ginn Academy persist to their second year at a two-year college in comparison with 73% of enrollers from John Hay Early College High School. Persistence rates at four-year colleges across CMSD high schools also vary, ranging from 63% to 87%. Though high schools with above-average persistence rates at two-year colleges also tend to have above-average persistence rates at four-year colleges, some high schools do not exhibit this trend. At Lincoln-West High School, for example, 51% of students persist at two-year colleges (slightly above the district average) and 67% of students persist at four-year colleges (below the district average).

Students at four-year colleges are considerably more likely to persist to the second year of college than students at two-year colleges.

Figure 11. College Persistence to Second Year by High School and Type of Initial College



Note. The sample includes 4,092 2007–08 through 2010–11 high school graduates who seamlessly enrolled in a two-year or four-year college. Persistence is defined as enrolling for a second year at any college. Postsecondary enrollment outcomes from NSC records. Student cohort membership data from Ohio Department of Education records. All other data are from CMSD administrative records. Results exclude students who transferred out of CMSD. Alternative high schools have been excluded from these analyses.

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Conclusion

The SDP College-Going Diagnostic provides foundational evidence that CMSD can use to inform ongoing analyses about the effectiveness of district initiatives, particularly with regard to the Cleveland Plan. The diagnostic reveals that 56% of CMSD ninth graders graduate high school on time, 30% enroll in college in the fall, and 20% persist to their second year of college. In comparison, if the Cleveland Plan reaches its target to increase the graduation rate to 71% and increase the college enrollment rate to 66%, then 71% of ninth graders will graduate on time and 47% of ninth graders will enroll in college (CMSD, n.d.-a). Using analyses derived from the College-Going Diagnostic, policymakers can track cohorts of students over time to check the district's progress toward realizing the objectives of the plan.

The diagnostic also opens a dialogue for sharing best practices that target students of specific academic and demographic backgrounds in order to improve their high school graduation and college-going outcomes. For example, the diagnostic reveals that CMSD students in the top quartile of eighth-grade math scores districtwide graduate high school at vastly different rates (a range of 37 percentage points) depending on the school they attend. As a result of this finding, district principals have already begun to share their best practices around keeping the district's most-prepared students on track to graduate.

The diagnostic also reveals differences in secondary and postsecondary outcomes for students with similar prior achievement, but different race/ethnicities. Overall, Black students are significantly less likely to be academically prepared prior to entering high school than their White peers. Nonetheless, among those ninth graders who scored in the top quartile of prior achievement in eighth grade, 88% of Black students and 80% of White students graduated from high school. The differences in college enrollment rates are even larger—69% of Black top-quartile high school graduates enroll in college, in comparison to 54% of their White peers.

Similarly, findings from the diagnostic provide concrete evidence that males in the district are falling behind their female peers. Among White students in the top quartile of eighth-grade math achievement districtwide, males graduate from high school at a rate that is 12 percentage points lower than the rate for females; among Black students, the difference is nine percentage points. CMSD currently provides targeted support for Black males through the Closing the Achievement Gap (CTAG) program. The program identifies minority male students who are at risk based on a variety of indicators, such as absenteeism, and connects them with mentors (CMSD, n.d.-b). Findings from the diagnostic corroborate the anecdotal evidence in support of programs like CTAG.

In summary, analyses based on the College-Going Diagnostic will allow for the continual monitoring and improvement of programs over time. Whether analysts and policymakers track high school and college-going outcomes with respect to targeted interventions, such as CTAG, or in the context of the larger goals of the Cleveland Plan, these analyses are invaluable tools for the CMSD as it pursues its goals of reform.

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Appendix 1: Data Sources

Students Included in These Analyses

For most analyses, we combine student-level data from either three consecutive cohorts of first-time ninth graders, or two consecutive cohorts of graduates from traditional high schools. This ensures that we have sufficient numbers of students at each school and reduces short-term random variation in outcomes. While this is appropriate for understanding recent high school graduation and college-going outcomes of students in the district as a whole, major changes that occurred in any individual school over the most recent year examined may be muted in the reported outcomes.

We use the ninth-grade cohorts of 2007–08 through 2009–10 to analyze variation in high school graduation outcomes, and the high school graduation cohorts from 2010–11 and 2011–12 to examine college-going outcomes. Due to data availability and quality, however, some of the analyses presented in this brief may include only a subset of these cohorts.

Schools Included in these Analyses

Alternative and special education high schools are excluded from these analyses. All other high schools, including charter schools, are included. To preserve privacy, and in accordance with the Family Educational Rights and Privacy Act (FERPA), school data is suppressed in any figure where there are fewer than 20 students in the denominator of a percentage.

Tests Used to Identify Prior Student Achievement

For analyses that display information on prior student achievement (for example, Figure 3 in Section II), we use eighth-grade student scores on the mathematics portion of the Ohio Achievement Assessments (OAA).

Data Used for College Enrollment Outcomes

In partnership with the school district, we obtained college enrollment data by linking the district's administrative student records to postsecondary enrollment data from the National Student Clearinghouse (NSC). NSC is a national nonprofit organization that provides postsecondary enrollment verification for colleges and universities. It maintains student enrollment records for over 3,400 institutions of higher education throughout the United States, including career and technical training institutes, as well as two- and four-year colleges and universities. Presently, NSC data covers institutions serving 98% of all postsecondary students nationwide, 93% of all students enrolled at postsecondary institutions in Ohio, and 92% of students enrolled at postsecondary institutions in neighboring states.¹⁴ The NSC provides the best currently available data on college enrollment. Nonetheless, actual college enrollment rates for CMSD graduates may be slightly higher than the rates reported in this brief because data is lacking for some CMSD graduates who enroll in institutions of higher education that do not report to NSC.

College enrollment rates reported in the brief may also be lower than actual rates because data about some students who attend NSC-participating institutions is restricted due to Family Educational Rights and Privacy (FERPA) blocks. These students have elected not to release their data for research purposes. The NSC can view these records, but does not provide data for these students to outside research organizations such as SDP. It is not uncommon for a large percentage of students to have FERPA blocks at particular institutions. The percentage of FERPA blocks is highly variable based on institutional policies, such as the information provided to students and families about FERPA (Dynarski, Hemelt, & Hyman, 2013). In Cleveland, FERPA blocks are of particular concern at Cuyahoga Community College (Tri-C), which serves the largest proportion of CMSD graduates of any institute of higher education. We estimate that close to one quarter (23%) of students enrolled at Tri-C from 2006 to 2012 have FERPA blocks. Thus two-year college enrollment rates, in particular, are likely to be understated in this report. Overall, we estimate that 9% of CMSD graduates who attended NSC-participating institutions between 2007 and 2012 have FERPA blocks.

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Appendix 2: Definitions

High School Completion Rate

To calculate high school completion rates, we use a cohort-based formula similar to the compact rate used by the National Governors Association and required for graduation-rate accountability by the No Child Left Behind Act.¹⁵ The SDP formula divides the number of high school completers (students earning standard diplomas) by the number of first-time ninth graders four years earlier.

To identify the number of first-time ninth graders four years earlier, we add together two groups of students: 1) students enrolled in a high school in CMSD in ninth grade and 2) students enrolled in a different district in ninth grade who transferred into CMSD at some point during high school. We exclude from the calculation students who transferred out of the district between ninth and 12th grade.

College Enrollment Rate

We report on two college enrollment outcomes for CMSD graduates who earn high school diplomas: 1) enrollment in college the fall following high school graduation (seamless enrollers) and 2) for those students who were not seamless enrollers, enrollment at any point within two years of graduating high school (delayed enrollers). To calculate seamless enrollment, we determine whether a student is enrolled in college as of October 1 of his or her high school graduation year. To calculate enrollment within two years, we use a cut-off date of two calendar years from the date of graduation.

College Readiness Rate

We define college readiness as an ACT composite score of 21, using test scores from the first time students take the ACT. The college readiness rates is calculated as the number of CMSD graduates, including late graduates, whose first ACT test scores meet or exceed this benchmark, divided by the total number of graduates including late graduates.

College Persistence Rate

We examine persistence rates in college for graduates who enroll in college. The persistence outcome is not dependent on maintaining enrollment at the same institution from one year to the next. Therefore, we consider a student to have persisted to the second year if we observe that student enrolled at any college one year after his or her initial enrollment. To calculate the rate for seamless college enrollers, we determine whether a student remains enrolled on October 1 one year following his or her initial enrollment date.

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Endnotes

¹ Actual college enrollment rates are likely to be somewhat higher than the rates reported in this brief because college enrollment data is unavailable for some students. This issue is of particular concern for enrollment at two-year colleges. See Appendix 1 for details.

² Though comprehensive schools have historically operated under a traditional high school model, the district has worked to develop new programming and initiatives for these schools. Given their recent implementation, the results of such programs will not be reflected in these analyses.

³ The high school graduation rate in Figure 2 is based on the 2007–08 and 2008–09 ninth grade cohorts, and therefore is somewhat higher than the rate shown in Figure 1, which uses earlier cohorts in order to track students through the second year of college.

⁴ Figures 3–6 include an additional cohort of ninth graders (2009–10) to reflect the most recent high school graduation data available. These data were not available for late graduation at the time of writing, and therefore high school graduation rates in Figure 2 may not match Figures 3–6.

⁵ Here and in other figures, rates for schools with fewer than 20 students in a given subgroup are suppressed.

⁶ Comparable data are reported in Strategic Data Project diagnostic briefs, including Albuquerque Public Schools (2014a); Boston Public Schools (2014b); School District of Philadelphia (2013b); Gwinnett County Public Schools (2012a); and Fulton County Public Schools (2011).

⁷ In other SDP partner agencies, the diagnostic analyses have also examined high school graduation outcomes by socioeconomic status. However, information on students' eligibility for free or reduced-price lunch (FRPL)—a typical measure for socioeconomic status—is not available in CMSD because the district is a universal feeder district, which provides free lunch to all enrolled students (CMSD, n.d.-c).

⁸ Due to small sample sizes, Hispanic students not shown.

⁹ The college enrollment figures in this section should be considered as lower-bound estimates. In particular, due to Family Educational Rights and Privacy Act (FERPA) blocks among students enrolling at Cuyahoga Community College (Tri-C), a large regional community college, the two-year college enrollment rate in the district could be up to 6 percentage points higher than reported here. For more information about FERPA blocks and the data used to determine college enrollment outcomes, see Appendix 1.

¹⁰ The college enrollment rates in Figure 7 are slightly lower than those displayed in Figure 8. This discrepancy occurs because the college enrollment rates in Figure 8 are calculated using only CMSD graduates with eighth-grade math test scores.

¹¹ These analyses combine data from four cohorts of graduates, including late graduates, in order to ensure sufficient sample size, and thus do not reflect recent increases in the college readiness rate.

¹² In this report, we show persistence rates for seamless college enrollers only. Research suggests that students who seamlessly transition from high school to college are more likely to complete a degree than delayed college-goers (Adelman, 2006; Bozick & DeLuca, 2005; Horn, Cataldi, & Sikora, 2005).

¹³ Persistence rates for MC2 STEM High School and Washington Park High School are not shown because these schools opened recently, and thus did not have enough high school graduates in each of the relevant cohorts.

¹⁴ The national coverage rate is reported by the National Student Clearinghouse (2013). The regional rate is calculated by comparing postsecondary institutions in the National Student Clearinghouse with the universe of postsecondary institutions in Ohio and its neighboring states as reported in the Integrated Postsecondary Education Data System (2013).

¹⁵ The National Governors Association compact rate is a four-year, adjusted cohort graduation rate used to determine the percentage of on-time high school graduates from a given four-year student cohort. It is widely considered a valid and reliable formula and has been adopted by more than half of the states to improve the consistency and accuracy of graduation reporting. For more information on the compact rate, see National Governors Association (2005, 2010).

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