

From High School to the Future:

A first look at Chicago Public School
graduates' college enrollment,
college preparation, and graduation
from four-year colleges

April 2006

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Consortium on
CHICAGO SCHOOL RESEARCH
AT THE UNIVERSITY OF CHICAGO

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Introduction



Our high schools were designed fifty years ago to meet the needs of another age. Until we design them to meet the needs of the 21st century, we will keep limiting—even ruining—the lives of millions of Americans every year ... Today, most jobs that allow you to support a family require some postsecondary education ... This could mean a four-year college, a community college, or technical school. Unfortunately, only half of all students who enter high school ever enroll in a postsecondary institution. That means that half of all students starting high school today are unlikely to get a job that allows them to support a family.

— Bill Gates, Speech to the National Governors Association, February 26, 2005

I know you can't get a good job without going to college, so that's basically why I want to go.

— Clifton, Chicago Public School junior

Other Chicago Public School juniors on their reasons for wanting to go to college:

Because I think nowadays it's necessary to get a good job ... just a simple high school diploma won't get you anywhere ... you need to go to college to get a good job ... to find something that you like, not only because of the money.

– Leah, Latino female student

To succeed in life ... Cause you know, I want to go to college to be able to get my degree to be able to get a good job, you know, a high paying job, so that I can be able to in the future have a family, be able to support them and not struggle working in factories or anything.

– Jaime, Latino male student

So I can extend my opportunities for my career, because I just know, basically you can't do much with just a high school diploma. I mean even McDonalds wants you to have at least some college degree to even work there.

– Dani, African-American female student

A good life, and I also want a good life for my parents, 'cause they work for me and they work hard, they both work in factories ... I want to get a good job, have a good life and if I don't get good grades, can't get into a good college. If I don't get into college then I can't get a career; no career, no good paying job, no white picket fence.

– Armando, Latino male student

Whether one is listening to a policy address by Bill Gates or talking to students from Chicago's public high schools, the message is loud and clear: the economy has changed, and graduation from high school is no longer a sufficient qualification for most jobs. Adolescents and their parents are keen economists. They know the facts. Rising economic payoffs to college and declines in the earnings of those without postsecondary experience mean that high school graduation and participation in college or some form of postsecondary training are essential for effective participation in the economy.¹

Not surprisingly, the educational aspirations of youths have risen significantly over the past several decades.

Nationally, between 1980 and 2002, the percentage of tenth-graders stating that they hoped to complete a bachelor's degree or higher nearly doubled from 41 to 79 percent (see Figure I-1). These rising aspirations are shared across racial and ethnic groups, with the largest increases documented among low-income students. These increases have translated into growing numbers of racial/ethnic minority and low-income high school graduates enrolling in college, although their enrollment rates continue to lag behind those of middle- and higher-income students (see Figure I-2). Rising aspirations are also reflected among students in Chicago. In the 2005 Consortium on Chicago School Research survey of high school seniors, 78 percent stated that they hoped to complete a bachelor's degree or higher, similar to the national data, and an additional 14 percent hoped to attain a two-year or vocational degree.²

The Aspirations-Attainment Gap

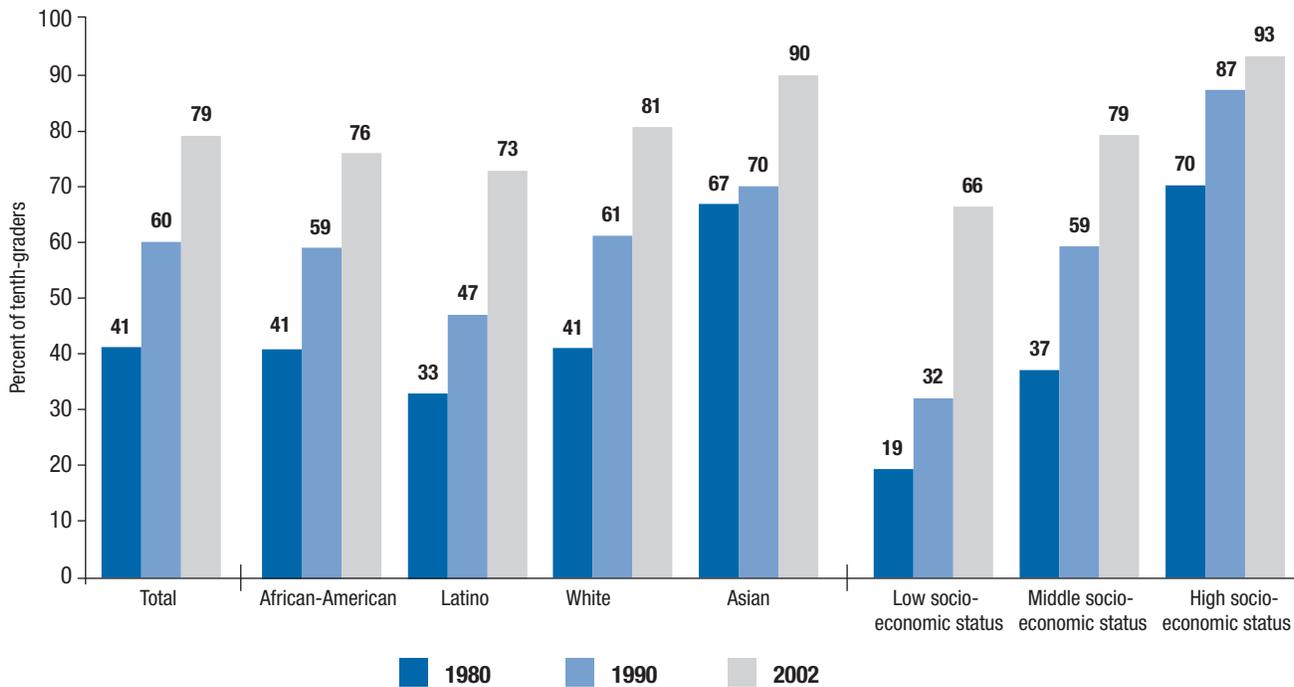
The problem, however, is that too often students' aspirations are not translating into college success, even for students who enroll in college. Among students who plan to attend a four-year college, racial/ethnic minority students are much more likely to end up attending a two-year college or not attending college at all.³ Most importantly, rising college enrollment is not translating into concomitant increases in degree attainment. From 1990 to 2004, the percentage of African-Americans aged 25 to 29 who report that they have attended some college increased by 16 percent, so that

In the 2005 Consortium on Chicago School Research survey of high school seniors, 78 percent stated that they hoped to complete a bachelor's degree or higher . . .

by 2004, more than half of African-Americans in this age group had attended some college. However, only 17 percent of these African-American young adults had graduated from a four-year college, which represents an increase of only 4 percent since 1990. Lack of progress in college participation is particularly dire for Latino students, who lag in both college attendance and completion. In 2004, less than one-third of Latino young adults had attended some college, and only 11 percent of Latino young adults had completed a bachelor's degree or higher, rates only slightly higher than 15 years earlier.⁴

Figure I-1

Percentage of U. S. tenth-graders who expect to attain a bachelor's degree or higher



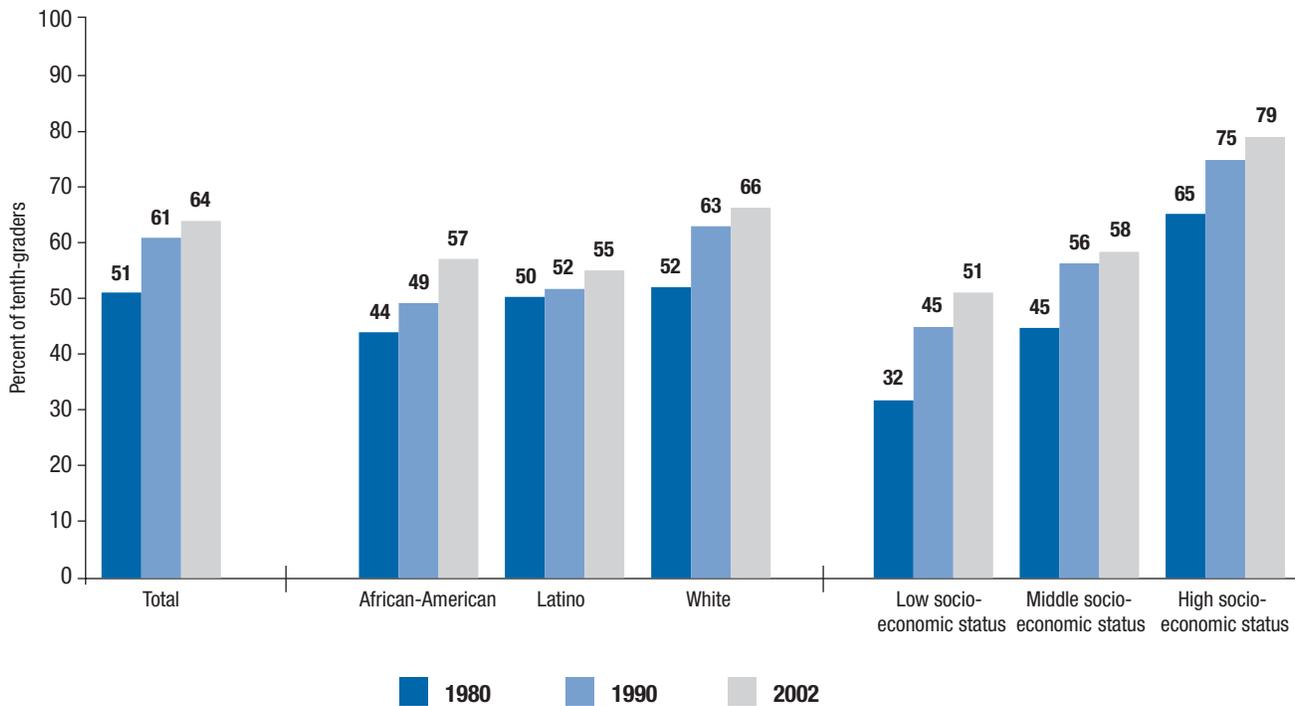
Note: Low socioeconomic status represents the bottom 20 percent of family income, high socioeconomic status is the top 20 percent of family income. The socioeconomic status was determined using parents' and students' reports of parental educational attainment, occupation, and family income.

Addressing this aspirations-attainment gap is one of the most vexing problems in education today. How do we translate rising aspirations into college success and completion? What does it mean to support students in gaining access to four-year colleges, in being prepared for college, and in making successful transitions? We know that high schools must be at the front line of addressing this problem. There is a growing body of research linking students' high school performance and coursework to postsecondary access and college performance. Perhaps the most well-known work in this area is Clifford Adelman's *Answers in the Tool Box*, which draws on transcript data from the U.S. Department of Education's longitudinal high school studies to examine the link between high school preparation and college performance. Adelman found strong links between a student's high school GPA, achievement test scores, and the rigor of his or her coursework and the likelihood of college graduation.⁵ Other studies have similarly documented strong associations between students' high school performance

and coursework and their performance on college entrance examinations, the likelihood of placement in remedial courses in college, and their college performance.⁶ Previous research finds that racial/ethnic minority and low-income students are much less likely to leave high school with the qualifications (such as test scores, grades, and coursework) that give them access to postsecondary education, particularly to four-year colleges, and which have proven critical in determining college performance and persistence.⁷ One analysis of national data estimated that in 1992, less than half of African-American and Latino graduates had test scores, GPAs, and coursework that would even minimally qualify them for admissions to a four-year college, compared to 68 percent of white graduates.⁸

While it is clear that high levels of preparation are important for college access and success, there is also evidence that an information gap exists for first-generation college students. In recent research, which included surveys of Illinois students, Venezia, Kirst, and Antonio found that

Percentage of recent U.S. high school graduates who were enrolled in college in the October following graduation



Note: The Condition of Education does not report historical trends in the percentage of Asian students who enrolled in college in the October following graduation. In Figure 1-3 we do report the percentage of Asian students who enroll in college the October after graduation. Data in Figure 1-3 were derived directly from Census Bureau data access tables for the Current Population Survey, 2002 and 2003. These online census tables, however, are not available prior to 1999, and thus we could not tabulate historical statistics for Asian high school graduates. The participation rate for each year is based on a three-year average (e.g., 1980 represents the average percentage of high school graduates who were reported by the Census bureau as enrolled in college in 1979, 1980, and 1981). Low socioeconomic status represents the bottom 20 percent of family income, high socioeconomic status is the top 20 percent of family income. The socioeconomic status was determined using parents' and students' reports of parental educational attainment, occupation, and family income.

Source: U.S. Department of Education, National Center for Education Statistics 2004a. *The Condition of Education, 2004*, NCES 2004-077. John Wirt, Patrick Rooney, Susan Choy, Stephen Provasnik, Anindita Sen, and Richard Tobin. Washington, D.C.: U.S. Government Printing Office. Supplemental Table 15-1.

few minority students and their families fully understood the requirements of college application and admission.⁹ Moreover, James Rosenbaum found that 40 percent of urban high school students with college plans believed that how they performed in high school was irrelevant to their future. Students who did not believe that their performance in high school mattered for access to college exerted less effort in high school and fared more poorly later in their education.¹⁰ This problem of connecting skills and effort in high school to success in college is most acute in urban environments, but it is a general problem as well. In a 2004 survey of college graduates commissioned by Achieve Inc., 65 percent of college students agreed or strongly agreed that they would have “worked harder and applied themselves more in high school” and “taken more rigorous courses” if they had known what college would be like.¹¹ Students at two-year colleges

were even more likely (75 versus 60 percent) than those at four-year colleges to agree that they would have changed what they had done in high school if they had understood the demands of college.

In summation, research on the link between students' high school experiences and their college access and performance suggests that high schools must play a dual role in improving the transition to college for their students. First, high schools must build strong instructional programs and school environments that give students access to, and preparation for success in college. Second, high schools must provide the information and support that students need to understand what college preparation actually entails and to aspire to postsecondary experiences that demand high performance.

From High School to the Future: A New Consortium Study of the Postsecondary Experiences and Outcomes of CPS Graduates

In 2004, the Consortium on Chicago School Research began a new multi-year research project, *From High School to the Future*. The project has both quantitative and qualitative components. The quantitative project is tracking the post-high school experiences of successive cohorts of graduating CPS students and systematically analyzing the relationships among high school preparation, college choices, and postsecondary outcomes. Using analysis of students' transcripts and achievement test scores, as well as surveys of students and teachers, we will examine the extent to which students' coursework and other experiences in school shape their performance in high school and college, and the extent to which our high schools are developing the kinds of skills and qualifications students will need. Drawing on survey data, the study will examine the extent to which high schools are providing students with supports in preparing for college and the extent to which students' access to academic and social supports in high school shape their college choices, level of preparation, and ultimately, college performance. The new study also has a qualitative component, which follows a diverse group of students from three Chicago high schools from eleventh grade until two years after high school graduation and examines differences in the educational demands of their classroom environments through a linked

observation study of high school and college classrooms.

Subsequent reports in this series will address many of the main findings reported here. At present, we plan to release four future reports, which will be published over the next three years.

- **Social and Academic Supports for Postsecondary Education (2007).** Using data from high school student and teacher surveys, this report will examine how various aspects of students' high school experience shape their college access and performance, and the extent to which differences in levels of support and expectations across high schools may explain some of the differences in college outcomes across high schools.
- **The Effects of High School Coursework and Access to College-Oriented Coursework (2007).** This report will analyze student course-taking throughout the system and look at differences in instruction across classes using data from surveys and from our qualitative study. The high school coursework report will focus specifically on understanding whether and how participation in honors, AP, and specialized programs (e.g., International Baccalaureate and advanced mathematics and science coursework)

may shape students' access to college and performance in college, both directly and indirectly, through improved grades and test scores.

- **A Close Look at the College Transition: Academic Transfer, Persistence, and Dropout (2008).** This report will examine in detail academic transfer and dropout patterns in the first two years of college and will track graduation rates in two-year colleges.
- **Does College Choice Matter? (2008).** This final report will follow up on one of the most controversial findings in this report—that the college choices of CPS graduates matter a great deal in whether they obtain a degree.

In addition, in the winter of 2006, each high school that participated in the Consortium's 2005 high school survey received an individual postsecondary survey report. These individual school reports provided detailed information to schools about the levels of guidance and support students in their school report receiving from teachers and counselors, their own aspirations and academic behaviors, and the norms and expectations of their teachers and parents.

Report Overview

Chicago Public Schools (CPS) has made preparing students for success in postsecondary education and careers a central focus of its reform efforts in high schools. In 2003, CPS established the Department of Postsecondary Education in the Office of High School Programs, which has instituted an array of new initiatives aimed at providing guidance, academic enrichment opportunities, and financial resources to students, parents, and high schools. As part of the initiative, CPS began to track the postsecondary plans and participation of its graduates and has developed new school- and system-level reports on postsecondary outcomes. In 2005, CPS also produced a new high school report card that highlights measures of postsecondary preparation and participation as key indicators of high school performance.

- How prepared are CPS graduates for college, and how does this shape their access to different types of colleges?
- How many CPS students graduate from four-year colleges within six years after high school graduation?

The report is divided into three chapters, each focusing on one of these three areas of analysis. Chapter 1 presents a descriptive overview of the college-going rates and patterns in the college attendance of CPS graduates, as well as how those rates differ by students' demographic characteristics and across high schools in the city. In the second chapter, we begin to look at the question, what matters for college access? We look at CPS graduates' ACT scores, grade point averages (GPAs), and levels of participation in

Central to the success of CPS's new postsecondary planning efforts is a better understanding of where CPS currently stands as a school system . . .

Central to the success of CPS's new postsecondary planning efforts is a better understanding of where CPS currently stands as a school system, what matters most in shaping students' postsecondary choices and experiences, and what strategies high school educators and the school system can use to improve students' postsecondary outcomes. For this reason, the Consortium has begun a multi-year study that will systematically examine the college experiences and performance of CPS graduates. This first report from this new research project, entitled *From High School to the Future: A first look at Chicago Public School graduates' college enrollment, college preparation, and graduation from four-year colleges*, is intended to provide a baseline indication of where CPS stands as a school system. We focus on some very basic questions:

- How many CPS graduates are going to college? Where are they going, and how does that differ by race/ethnicity, gender, and high school attended?

rigorous coursework (e.g., honors, Advanced Placement, and International Baccalaureate). By identifying the ACT scores and GPAs that students need in order to have access to four-year, selective, and very selective colleges, we are able to examine the extent to which CPS graduates' levels of preparation may create barriers to college access, particularly for African-American, Latino, and male students.

The first two chapters of this report focus on college access; however, as recent research demonstrates, getting to college is only the first step. Attaining a bachelor's degree requires a student to persist and graduate from a four-year college. In Chapter 3, we provide a first look at how CPS students perform once they enroll in four-year colleges by looking at the graduation rates of earlier cohorts of students (graduates from 1998 and 1999) for six years after their high school graduation. We also examine how college graduation rates differ by race/ethnicity, gender, level of preparation in high school, and college attended.

The goal of this report is to provide a first look at the college attendance patterns, academic qualifications, and college performance of CPS graduates, raising issues that the school system and individual schools must grapple with as they begin to focus on improving students' access to college and their attainment of college degrees.

This is the first report in a series. There are many findings in this report that we will pursue in more detail in subsequent reports, and there are many topics that we will address in subsequent work as we add new data, such as surveys from high school teachers and students. We are not able in this report to take a detailed look at the support students receive for college attendance, their access to guidance and information, and the quality of instruction within their courses. We will address these issues in subsequent work as we analyze new survey and qualitative data from high school students and teachers. In this work, we will delve more deeply into what factors may explain differences across high schools in college-going rates, the types of colleges students attend, and the levels of preparation of graduates.

Furthermore, this report does not examine the performance of CPS graduates who enroll in two-year colleges, because we lack the data necessary to evaluate the persistence, completion, and transfer rates of CPS graduates who attended two-year institutions in the late 1990s. Chapter 1 demonstrates that many CPS graduates enroll in two-year colleges, particularly the Chicago City Colleges. Two-year colleges provide all high school graduates with the opportunity to continue their education. Seventy-eight percent of CPS seniors report that they aspire to attain a bachelor's

degree, and two-year colleges may offer a transition between high school and attaining this degree. Our lack of attention to two-year college performance should not be taken to mean that we do not believe that two-year colleges are important institutions for CPS students or an important topic for research. Subsequent reports will examine issues of performance in two-year institutions as well as issues of college transfer and persistence as we follow more recent cohorts of students into college.

Role of This Study

Whenever a school system takes on a new problem and begins to look at the related data, it will uncover issues that are both disturbing and controversial. Many such areas are identified in this report. We want to applaud the CPS administration and leadership at the high schools for giving access to these data so early in their efforts. We agree that critical to solving problems is taking an honest look at where our students and high schools currently stand. Whenever possible, we have tried to provide detailed data by high school, though we clearly cannot do this for every statistic presented in this report. We hope that the school system and individual schools and colleges will use this report and the data presented as an opportunity to rise to the challenge our students have presented us with, and begin to address the central questions of how CPS students' experiences in high school may shape their college access and performance.

Endnotes

¹ Economic Report of the President (2005).

² Nagaoka, Stoker, Roderick, and Coca (2006).

³ U.S. Dept. of Ed., National Center for Education Statistics (2001).

⁴ U.S. Dept. of Ed., National Center for Education Statistics (2004b); Carnevale and Desrochers (2003).

⁵ U.S. Dept. of Ed., Office of Educational Research and Improvement (1999).

⁶ ACT, Inc. (2004a); U.S. Dept. of Ed, National Center for Education Statistics (2002); U.S. Dept. of Ed, National Center for Education Statistics (2005); Rose and Betts (2001); and U.S. Dept. of Ed., National Center for Education Statistics (2001).

⁷ U.S. Dept. of Ed., Office of Educational Research and Improvement (1999); Barth (2003).

⁸ U.S. Dept. of Ed., National Center for Education Statistics (1997a). Researchers examined the college qualifications of 1992 graduates who

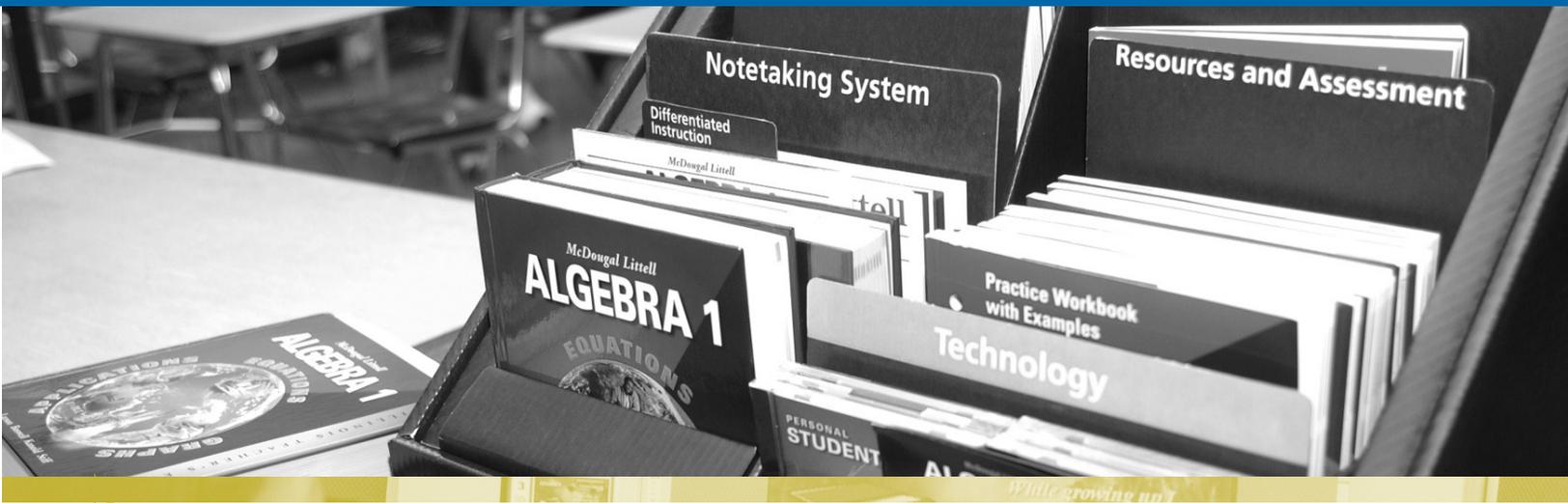
were part of the National Educational Longitudinal Study of 1988 (NELS88). They characterized student qualifications for four-year colleges using information on their GPA and class rank; scores on the ACT, SAT, and NELS aptitude test; and academic coursework. Their analysis differs somewhat from our characterization of college access (see Table 2-2) because they did not analyze actual college-going patterns, but used the highest qualification students had and their relative rank. This report also found that low-income students were over 30 percentage points less likely than higher-income students to graduate from high school even minimally qualified for college. At the high end, white graduates were more than twice as likely as African-American seniors (35 versus 16 percent) to graduate “very or highly qualified,” and higher-income students were more than two and one-half times more likely to graduate “very or highly qualified.”

⁹ Venezia, Kirst, and Antonio (2003).

¹⁰ Rosenbaum (2001).

¹¹ Achieve, Inc. (2005).

Chapter 1



College-Attendance Rates and College-Going Patterns of Chicago Public School Graduates

In 2005, as a part of new initiatives aimed at improving postsecondary outcomes, the Chicago Public Schools (CPS) began tracking and reporting the college participation rates of its graduates using data from the National Student Clearinghouse (NSC). In the spring of 2005, CPS's new Department of Postsecondary Education in the Office of High School Programs released the first in a series of annual reports that provide individual high schools with information on the postsecondary enrollment of their graduates.

In this chapter, we expand upon CPS's initial look at the college-going patterns of its graduates by analyzing data from two earlier cohorts: the graduating classes of 2002 and 2003.¹ We use data from these earlier cohorts to look at how many CPS students make the transition to college by the May following graduation from high school, not just by the fall after graduation.

College Enrollment among CPS Students

Fall enrollment, however, is how national data are reported, and thus we begin by comparing the fall college-attendance rates of CPS graduates to estimates of the college-going rates of students in Illinois and across the nation. In the remainder of the chapter, we report college enrollment by spring, which allows us to fully capture the proportion of high school graduates who make the transition to college within the year after graduation. We then draw on the NSC data to gain a general picture of the college-attendance patterns of CPS graduates and the extent to which those patterns vary by race/ethnicity and gender. Where do most CPS graduates attend college? What types of colleges are CPS students enrolled in? And how do college-going rates vary across CPS high schools? The enrollment rates reported in this chapter differ slightly from those reported by the Department of Postsecondary Education, because in this chapter we report only the postsecondary enrollment of students who were not in special education and students who did not attend alternative high schools.

In 2002, there were 13,379 graduates of CPS high schools who were not in special education and who did not attend alternative high schools (see Figure 1-1). By October after graduation, NSC identified 6,690 of these students, or about 50 percent, as enrolled in college. By the next spring, an additional 1,006 graduates from the class of 2002 had enrolled in colleges that participated in the NSC. Thus, within one year after graduation, 58 percent of 2002 CPS graduates in our sample had enrolled in either a two- or a four-year college that participated in the NSC (see “Data Used in This Report” on page 12).

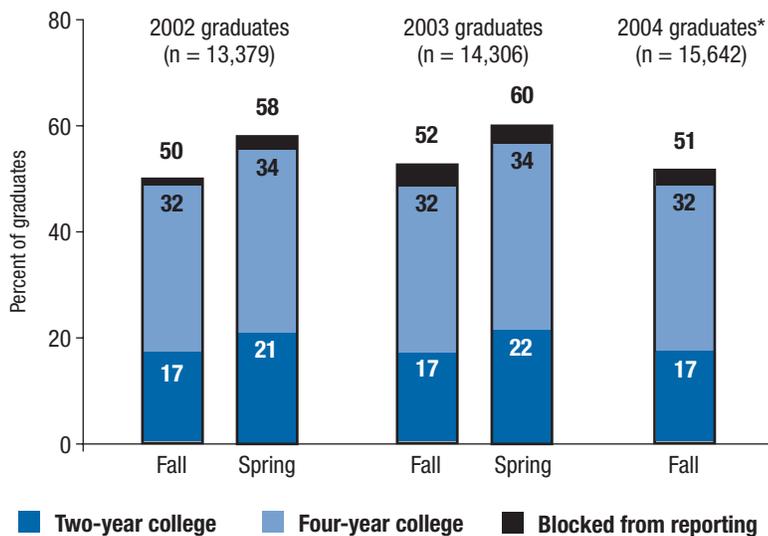
Not all colleges participate in the NSC. At present, the NSC collects college-enrollment data on 91 percent of students enrolled in college in the United States. This does not mean, however, that our analysis fails to capture 9 percent of CPS students who are enrolled in college, because most colleges in Illinois participate in the NSC, and at present most CPS students attend colleges in Illinois. We estimated

the number of CPS graduates who might have enrolled in a college that does not participate in the NSC by comparing those colleges that do participate in NSC to the colleges that CPS seniors reported they would be attending when they filled out the new Senior Exit Questionnaire (SEQ) in May of 2004. The SEQ is a part of the new CPS tracking system. Before graduating, seniors are asked to complete an online questionnaire that asks them to report on their plans after graduation and their participation in college search and application. Matching NSC data to those colleges that seniors in the SEQ stated that they were planning to attend and had been accepted to, we estimate that, at the high end, NSC data will miss approximately 5 percent of CPS graduates who may be enrolled in college. Thus, it is possible that 63 percent, not 58 percent, of 2002 CPS graduates were enrolled in college within one year of graduation. As seen in the sidebar “How big is the undercount for CPS students in the NSC?” (see page 15) colleges that CPS students planned to attend that do not participate in NSC are primarily local proprietary and

Figure 1-1

About half of CPS graduates enroll in college by the fall after graduation

Percentage of CPS graduates attending college by the fall and spring after graduation from high school



* Fall data only; spring data not available.

Note: Students with records that were blocked from reporting had enrolled in a college in the NSC data, but because either the students or the colleges blocked further information, we are unable to identify the type of college the students were attending. CPS graduates do not include students in special education or graduates of alternative high schools.

technical institutions, most notably Robert Morris College.

A final limitation of our college-tracking data is that not all students and all colleges that participate in the NSC allow their records to be shared with other educational institutions. A student's report is "blocked" if either the student or the college he or she attends fails to grant consent for NSC to share the data with other educational institutions. Because students' records can only be blocked once they enroll in college, we know that students with blocked records are attending college, and thus we can include them in the total count of college attendees. However, we cannot identify the colleges these students attend and thus do not include them in our later analysis of the types of colleges attended by CPS graduates.

Differences across Cohorts

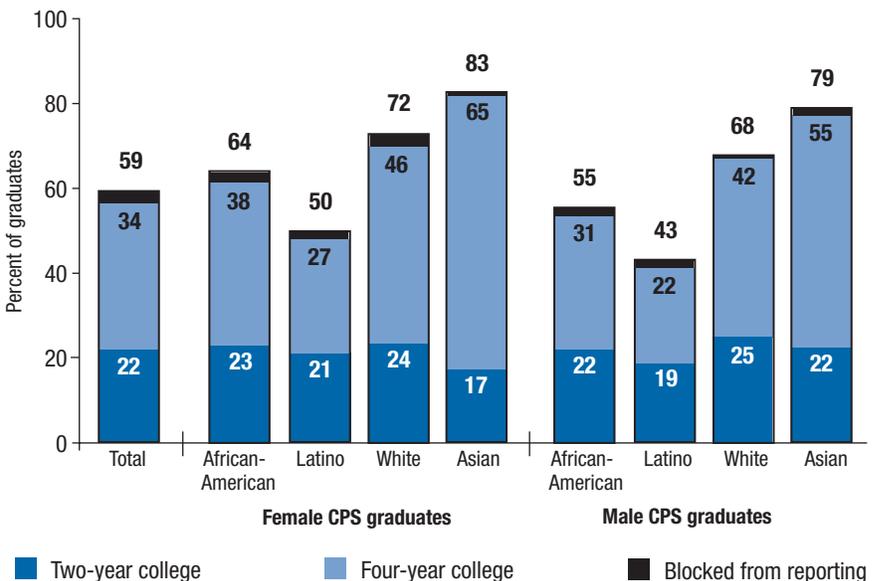
Students who graduated in 2003 were slightly more likely than 2002 graduates to enroll in college, both by the fall and by the spring after graduation; 2004 graduates were not much more likely than the 2003 cohort to enroll in college. In 2004, 51 percent of CPS graduates enrolled in college in the fall after graduation, a rate comparable to the prior year. Because we do not yet have enough data on graduating cohorts to report trends, in the rest of this report we present results for the 2002 and 2003 graduating classes combined.

College-Going Rates by Race/Ethnicity and Gender for the CPS Classes of 2002 and 2003

On average, 59 percent of CPS graduates from the classes of 2002 and 2003 enrolled in college by the spring following their graduation from high school: 22 percent in a two-year college, 34 percent in a four-year college, and 3 percent with blocked NSC records (see Figure 1-2). Thus, among CPS graduates who enrolled in college, approximately 39 percent enrolled in two-year colleges and 61 percent enrolled in four-year colleges.

Figure 1-2

Latino and male students are significantly less likely to enroll in college
2002 and 2003 CPS graduates enrolled in college by the spring after graduation



College participation rates in CPS vary significantly by race/ethnicity and gender.² Asian graduates were the most likely to attend college and the most likely to attend a four-year college. Latino graduates, on the other hand, were the least likely to attend college, particularly four-year colleges. Half of Latino female graduates and 43 percent of Latino male graduates enrolled in any college in the year after graduation. Only 27 percent of Latino female and 22 percent of Latino male graduates enrolled in a four-year college. Gender differences in college-going rates occurred in every racial/ethnic group but were most pronounced among African-American students. Male African-American graduates were 9 percentage points less likely to attend college than female African-American graduates, with most of that difference occurring because the male graduates were far less likely to attend four-year colleges. Indeed, most of the racial/ethnic and gender differences we observe in the college-going rates of CPS graduates occur because of differences in four-year college enrollment. For example, female white and African-American graduates were about equally likely to attend two-year colleges (24 versus 23 percent), but female white graduates were much more likely to attend four-year colleges than female African-American graduates (46 versus 38 percent).³

Data Used in This Report

1. What is the National Student Clearinghouse, and how did we determine whether students were enrolled in college?

Beginning in 2004, the Chicago Public Schools (CPS) started to track the college outcomes of its graduates through an arrangement with the National Student Clearinghouse (NSC). The NSC is a nonprofit corporation that began in 1993 to assist higher education institutions in verifying enrollment and degree completion. In 2004, NSC expanded its services to high school districts and through its new program, “Successful Outcomes,” is allowing school systems to follow their graduates. CPS is the first major urban school system to participate in this program and produce reports on its graduates. More than 2,800 colleges currently participate in the NSC, which covers 91 percent of postsecondary enrollment in the United States. At present, most Illinois colleges participate in NSC’s enrollment verification programs. Because City Colleges of Chicago joined NSC in 2001, and a large proportion of CPS students enroll in City Colleges of Chicago schools, we are able to track most postsecondary institutions that CPS graduates attend by examining the classes of 2002 and 2003. The most significant local institution in Chicago that does not participate in NSC is Robert Morris College (see “How big is the undercount in the NSC data? An estimate” on page 15). For more information on NSC or its Successful

Outcomes programs, see NSC’s web site, www.studentclearinghouse.org.

Beginning with the class of 2004, the CPS Department of Postsecondary Education began to report on the college enrollment of its graduates. CPS plans to continue following that class and subsequent classes. In addition, CPS has obtained NSC data on the college outcomes of graduates from prior years (1998-2003). Through collaboration with CPS, we use those data to conduct the research presented in this report.

2. How did we determine whom to count as a CPS graduate?

Most students graduate from high school in June, but it is also possible for students to graduate in August and at other points in the school year. We focus on students who graduated from CPS in either June or August. A graduate was defined as a student who met two criteria: (1) he or she was enrolled as a senior at the beginning of the school year, and (2) he or she was identified by CPS as receiving a diploma before September of the next school year. Thus, students counted as graduating in 2002 are those who began their senior year in the fall of 2001, and received a diploma from a CPS school (including charter high schools) by the end of the summer of 2002. Students are not counted as graduates if they transferred to CPS during their senior year and then graduated.

Throughout the report, our sample of graduates differs in two significant ways from the sample used by the CPS Department of Postsecondary Education in their recent report on the college outcomes of the class of 2004. First, we report college outcomes only for students who were not enrolled in special education at the time of graduation. Second, we do not include students enrolled in alternative high schools.

Appendix 1 presents an analysis of the postsecondary outcomes of special education graduates for the classes of 2002 and 2003. Fully 12 percent of CPS graduates in 2002 and 2003 were in special education at the time of graduation. African-American graduates, particularly male graduates, were the most likely to be in special education at the time of graduation. In 2002 and 2003, 21 percent of African-American male students (versus 13 percent of white male students) and 10 percent of African-American female students (versus 8 percent of white female students) were enrolled in special education at the time of graduation.

Given the high rates of special education placement among students who graduated from CPS, why exclude them from our analysis in the main sections of the report? A central focus of this report is understanding how students’ postsecondary outcomes are influenced by their entering high school test scores,

performance in their coursework (as measured by GPA), participation in advanced coursework (e.g., honors and Advanced Placement classes), and performance on the ACT. While most special education students take exams such as the Iowa Tests of Basic Skills (ITBS) and ACT, we do not know the extent to which performance on these exams is comparable to that of regular education students. The same issues arise in examining students' grades and coursework. Because we cannot assess the extent to which information on pre-high school and high school performance is comparable for special education and regular education students, we cannot adequately investigate the determinants of college outcomes for special education students.

Students who graduated from alternative high schools and Youth Connections Charter School programs are also not included in our study, even though CPS includes them in their analyses. Graduates of these schools are typically students who dropped out and later returned to school in an alternative setting. Again, though these students are an important group of graduates, we lack the ability to properly interpret their outcomes. We expect that they would have different postsecondary outcomes because they had dropped out previously and are often older than their counterparts who did not drop out, but we have no concrete means of assessing how different those outcomes are.

3. How did we define which college a student was enrolled in?

Previous research shows that students who delay entry have a decreased likelihood of attaining a college degree.¹ In this report, we focus on students making an “immediate” transition to college, meaning they were enrolled in an NSC-participating institution within one year, that is, by May 1 of the year following their high school graduation. As discussed, CPS reports enrollment by the fall after graduation in order to transmit data to schools on a timelier basis. In this report, we rely on both fall and spring college enrollment to fully capture the students who enroll in college within the year after graduation. Students who did not enroll in college within this time frame but enrolled at a later date are not counted as being enrolled in college in this report. Of the students who did not enroll in college in the year after high school graduation, up to 5 percent of them enrolled in college more than a year later. Future Consortium research will look more carefully at students with delayed enrollment. The vast majority of these students attended community colleges, and their pathways will be considered as the study progresses.

NSC provides detailed data on any college a student was enrolled in, even if that student only took one course. Thus, if a student took a summer course at a community college before going on to a four-year institution in the fall, NSC data will count the community college as the first college in which the student enrolled. In this report, we define students' enrollment as the first school they enrolled in full time, if they enrolled in multiple schools after graduation. If the

student enrolled in multiple schools part time, we counted the first institution at which the student was enrolled after high school graduation as the student's college. If a student only enrolled in one postsecondary institution, we counted that school, regardless of the date of enrollment or full-time status, provided that date was before May 1 of the year after graduation.

4. How did we identify the type and selectivity of the college students were enrolled in?

Throughout this report, we classify postsecondary institutions by their “selectivity.” There are many different methods of categorizing the selectivity of colleges. We use the Barron's competitiveness categories, which rank colleges by the proportion of applicants admitted and by the overall achievement level of the entering class as measured by high school GPA, class rank, and test scores.

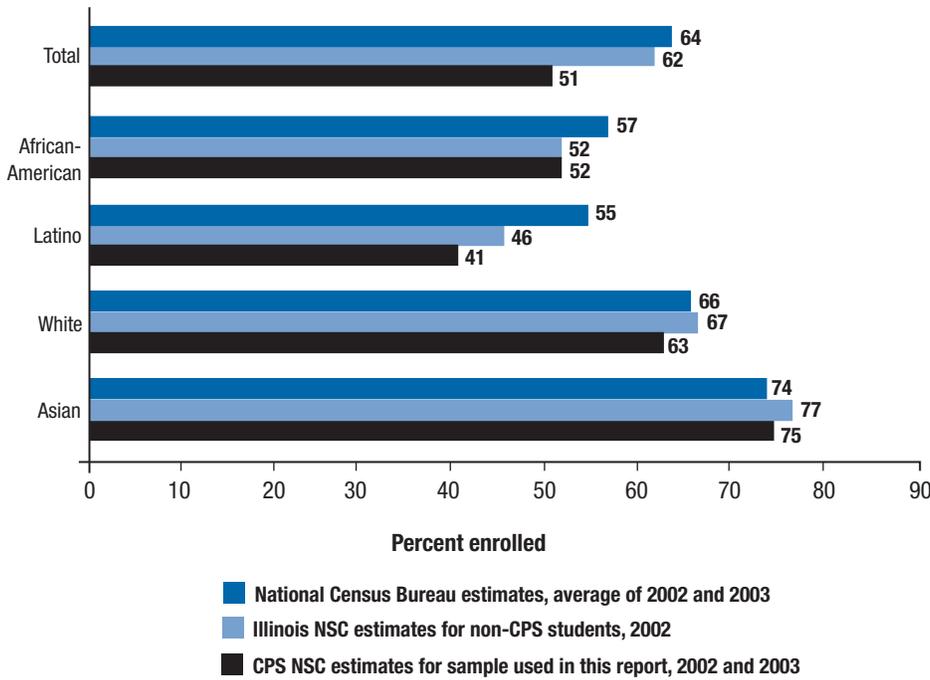
We classify colleges as two-year or four-year based on the designation indicated in NSC data. NSC also includes a classification of less than two-year colleges that we merged with the two-year category, because of the small number of CPS graduates enrolling in these schools. For additional characteristics of colleges, such as a designation as a Historically Black College or University (HBCU) and whether it was in state, we used the National Center for Education Statistics (NCES)'s Integrated Postsecondary Education Data System (IPEDS).

¹ Fry (2002).

Figure 1-3

CPS graduates, particularly Latino graduates, are less likely to attend college than their counterparts in Illinois and the nation

2002 and 2003 CPS graduates' fall college-enrollment rate compared to high school graduates across Illinois and the nation



Note: National estimates are based on self-reporting of college enrollment by recent high school graduates from the Current Population Survey of the Census Bureau. Here, we report the average of 2002 and 2003. State estimates are based on college enrollment in the NSC for the Illinois class of 2002, from a study by the Illinois Education Research Council. CPS estimates for the classes of 2002 and 2003 do not include students in special education or in alternative schools. See sidebar: How Big is the Undercount in the NSC Data? An Estimate.

National and State Comparisons of Fall College Enrollment

CPS is the first major school system in the United States to build a postsecondary tracking system and use it to publicly report the college enrollment of its graduates. Hence, we do not have estimates from other large urban school districts for comparison. There is also no national tracking system that provides comparable information for a nationwide cohort. We do have two important sources, however, to help place these results in context. First, we can obtain an estimate of national comparisons from a yearly survey conducted by the U.S. Census Bureau as part of the Current Population Survey. Unlike our CPS estimates, these estimates are based on self-reports. Second, we have an Illinois comparison based on data from the Illinois Education Research Council (IERC), which has been following the

college participation rates of the Illinois graduating class of 2002 using data from NSC. Estimates from IERC are more comparable to our CPS estimates because they are based on the same data source that we are using to estimate CPS college enrollment.

Figure 1-3 compares estimates of the college-participation rates of CPS students to national Census Bureau estimates and IERC estimates for Illinois, exclusive of CPS graduates. Both the national and Illinois estimates are based on college enrollment by the fall following graduation. In 2002 and 2003, the Current Population Survey estimated that 64 percent of all 16- to 24-year-olds who stated that they had graduated from high school the previous year reported that they were enrolled in college in the fall. Estimates of the college-going rate of graduates from Illinois are slightly lower. IERC estimates that in 2002, 62 percent of Illinois public school graduates, excluding CPS graduates, attended college

in the fall after graduation, compared to only 51 percent of CPS graduates.

Chicago students are much less likely to make the immediate transition to college than seniors in the rest of Illinois and across the nation. However, if the racial/ethnic composition of Illinois and the nation were similar to Chicago, the college participation rates of CPS graduates would not differ nearly as much. When we look within racial/ethnic groups, the college-going rates of CPS students are only slightly lower. African-American and white graduates of CPS are attending college at slightly lower rates than their racial/ethnic counterparts nationwide. The gap between CPS students and students in Illinois and the nation is most likely slightly larger than that represented here, because unlike the national and Illinois samples, our CPS sample does not include students who were enrolled in special education programs (see “Caveats about Comparisons of CPS Graduates’ College-Participation Rates to the Illinois and

How Big is the Undercount in the NSC Data? An Estimate

The National Student Clearinghouse (NSC) has data on 91 percent of students who are enrolled in colleges and universities in the United States. This does not mean, however, that the analyses in this report have failed to capture 9 percent of CPS graduates who are enrolled in college. CPS graduates tend to enroll in

because of the limitations of the NSC data, we must assume that our analysis does not include all CPS graduates who are enrolled in college, and that all numbers are undercounts to some degree.

An important question for school systems like Chicago is whether NSC data captures college enrollment for undocumented students. Undocumented students may enroll in two-year or four-year colleges, and colleges report all enrollments to NSC. NSC matches CPS students to students in its database by information such as name, birth date, social security number, and home address. NSC attempts to match all CPS students regardless of whether the student has a social security number. If an undocumented student from CPS enrolls in, for example, a Chicago city college, we may identify that student using criteria other than social security number that are used in the matching procedure. Students who are undocumented may be less likely to enroll in college. Unfortunately, it is not possible given our current data to identify students who are undocumented for there are many reasons that CPS students are missing social security numbers and other identifying information.

We can begin to estimate how many students we may be missing from NSC reports by using CPS's new online Senior Exit Questionnaire (SEQ) and comparing the colleges students indicated they planned to attend to the

colleges CPS graduates were reported to attend by the NSC. In the 2004 SEQ, there were 125 colleges that CPS students said they planned to attend that were not in NSC, most of which were listed by only one student. In total 716 students said that they planned to attend one of these colleges. If all of these students actually attended these colleges, the error rate, that is the percentage of CPS graduates who are enrolled in college but were not included in NSC data, would be approximately 5 percent.

However, we also know that not all students who said that they were going to attend college in the May SEQ actually enrolled in college in the fall. When the May SEQ results are matched to the NSC data, only 72 percent of seniors who reported that they knew which college they were attending were actually enrolled in a college the following fall. If 72 percent of these 716 students actually enrolled in college, this would mean that we were missing only 508 CPS graduates who were enrolled in college that did not report to NSC, with an undercount of about 3 percent. Applying this to the graduating classes of 2002 and 2003 would raise our estimate of the proportion of CPS seniors who attend college from 55 percent to 58 percent. In addition, some students who did *not* have concrete plans in May could enroll in a college in the fall that is not in NSC. The undercount primarily affects students who attend two-year and nonselective four-year institutions, since almost all of the colleges that CPS students say they plan to attend that are not in NSC fall into these categories.

	Graduates who are not in special education or alternative schools
Total graduates in 2004	15,639
Graduates who said in the Senior Exit Questionnaire that they had been accepted to and were planning to attend a college not in the NSC	716
Estimated error rate if all these students actually attended those colleges	5%
Percentage of 2004 graduates who said in the Senior Exit Questionnaire in May that they had been accepted to a college in the NSC and then were actually attending college in October after graduation	72%
Estimated number of students missed by using NSC data, assuming that only 72 percent of the 716 actually attended a college	508
Estimated error with NSC/SEQ correction	3%

Postsecondary institution	Number of 2004 graduates who reported that they plan to attend that institution
Robert Morris College	139
Lincoln Technical Institute	47
Northwestern Business College	41
East-West University	35
Illinois Institute of Art	33
Fox College	30
Westwood College of Technology	29
Cooking and Hospitality Institute of Chicago	26
Graceland University	25
Universal Technical Institute	20
Northern Michigan University	19
Harrington Institute of Interior Design	17
Central State University	15
Fisk University	15
Bethune-Cookman College	14
Rust College	14
American Academy of Art	11
Other colleges with 10 or fewer graduates	186
Total	716

local colleges that do participate in NSC, with the exception of Robert Morris College, making the CPS undercount smaller than that of the nation. Still,

Caveats about Comparisons of CPS Graduates' College-Participation Rates to the Illinois and National Rates

Each fall, the Census Bureau conducts a survey of a representative sample of the population, the Current Population Survey. In the October survey, young adults are asked whether they graduated from high school in the last year and whether they are currently enrolled in college either full or part time. Since its data are based on self-reports, the Census Bureau likely overestimates the total college enrollment. By relying on self-reports, Census Bureau estimates are likely to capture students who attend colleges that do not participate in the National Student Clearinghouse (NSC). These differences suggest that comparing college-participation rates based on census estimates to those obtained using NSC data for our sample of CPS graduates would lead us to overstate the difference between CPS graduates' college-enrollment rate and that of high school graduates nationwide. At the same time, the gap may be larger because the Census Bureau data does not allow us to

exclude students whom we might expect to be less likely to attend college and whom we exclude from our estimates (i.e., graduates who were in special education or who attended alternative high schools).

The Illinois Education Research Council (IERC) defines its Illinois sample, the graduating class of 2002, as students who took the Prairie State Achievement Exam (PSAE) as juniors in 2001. IERC estimates for college-attendance rates in Illinois are based on NSC data, and are therefore more comparable to our estimates in Chicago, but with two important differences. First, in CPS we are following graduates regardless of whether they took the PSAE, while IERC identifies the graduating class based on who took the PSAE in 2001, even though some 2002 graduates may not have taken the PSAE at that time. Second, IERC was not able to identify students who were enrolled in special

education, nor did it count students who were blocked by NSC as enrolled in college. These differences would mean that, unlike the national estimate, we are most likely underestimating the difference between the college-attendance rates of students in Chicago and students in the rest of Illinois. If this report's analysis included students who were enrolled in special education and graduated from alternative schools, as does the national data, the estimated CPS fall college enrollment rate for the classes of 2002 and 2003 would fall to 47 percent. If we only include graduates from the 2002 and 2003 classes who took the PSAE, regardless of whether they were enrolled in special education or alternative schools, as does the Illinois data, the college participation rate would rise to 53 percent. Thus, while the gap between the national and CPS estimates is most likely larger by as much as 4 percent, the gap between Illinois and CPS estimates is likely smaller by up to 2 percent.

National Rates” on page 16 for details on the data used in Figure 1-3).

An important finding is that the largest gap in the college-going patterns of CPS graduates occurs among Latinos. Nationally, more than half of Latino graduates (55 percent) are enrolled in college in the fall after graduation, compared to only 41 percent of CPS Latino graduates. Even compared to IERC estimates for Illinois, whose Latino population is ethnically similar to Chicago’s, Latino graduates in Chicago are less likely to be enrolled in college. Thus, Latino graduates are demonstrating both the lowest college-participation rates of any racial/ethnic group in Chicago, and the largest gap in college participation between CPS graduates and high school graduates in the rest of the state and the nation.

College-Attendance Patterns of CPS Graduates

So far we have looked only at whether CPS graduates are attending college and whether they are attending two- versus four-year colleges. We have not looked at the kinds of colleges graduates are attending. College selection can be influenced by an array of factors. Students’ choices will depend upon factors such as whether they have knowledge of different college options, what kinds of colleges they believe are affordable, and whether they actively participated in a college search process. In addition, their choices will depend upon which colleges they are qualified to gain admittance to, which colleges they can afford, and whether they considered schools outside Chicago. In the next chapter, we look closely at how CPS students’ qualifications may shape their college choices.

Results from the 2004 CPS Senior Exit Questionnaire suggest that many CPS students engage in only a limited college search process. Of CPS seniors who reported in May 2004 that they planned to attend a college in the fall, about 16 percent had not yet applied to even one college. Only 50 percent of seniors with college plans stated that they had applied to at least three colleges, an indication of active participation in the college search process. In an era where

Table 1-1: The top 10 colleges attended by CPS graduates account for 53 percent of all CPS college-goers
Average number of 2002 and 2003 CPS graduates enrolled in the most frequently attended colleges

School	2002 Barron's selectivity group	Six-year graduation rate of institution*	Average CPS enrollment per year	Average percent of CPS college-goers enrolling per year	Cumulative percentage
University of Illinois at Chicago	Selective	45.3%	705	9.1%	
Wilbur Wright College	Two-year	N/A	574	7.4%	16.5%
Northeastern Illinois University	Nonselective	17.9%	531	6.9%	23.4%
Richard Daley College	Two-year	N/A	439	5.7%	29.1%
University of Illinois at Urbana-Champaign	Very selective	81.0%	397	5.1%	34.2%
Harold Washington College	Two-year	N/A	397	5.1%	39.3%
Northern Illinois University	Somewhat selective	52.9%	297	3.8%	43.2%
DePaul University	Selective	63.7%	267	3.4%	46.6%
Malcolm X College	Two-year	N/A	238	3.1%	49.7%
Chicago State University	Somewhat selective	15.2%	223	2.9%	52.6%

* The six-year graduation rate is the graduation rate for all students (not just CPS students) at that institution. Source: The Education Trust. 2005a. College results online. Available online at www.collegeresults.org. Washington, D.C.: Author.

many students in middle class communities engage in wide college searches and apply to a range of schools, only half of CPS students who planned to attend college seemed to have been actively engaged in the college search process.

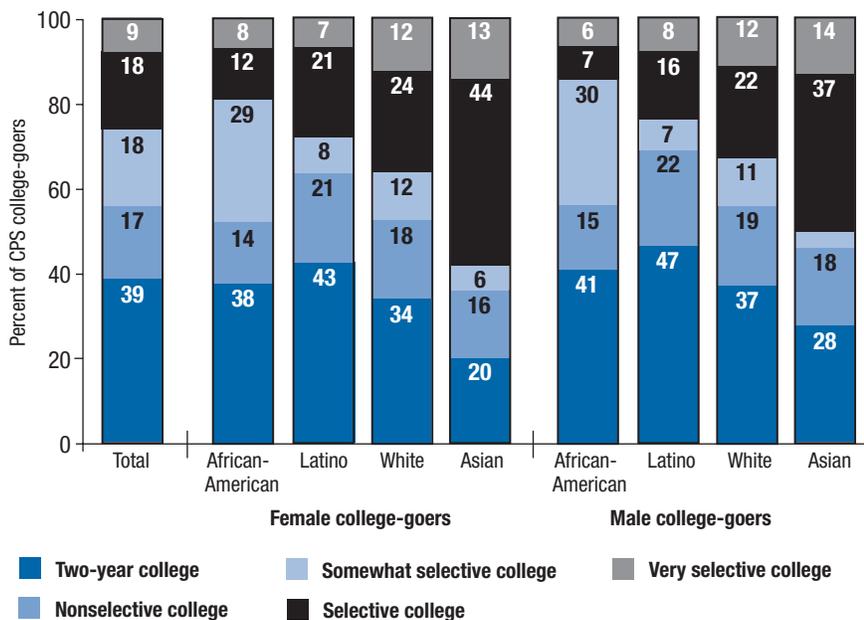
Perhaps a reflection of CPS seniors’ relatively constrained approach to college application, the defining characteristic of the college-attendance patterns of CPS graduates is that they are highly concentrated in a limited number of local, mostly public institutions. More than half of CPS college-goers attend only ten colleges (see Table 1-1). One consequence of this tight feeder pattern is that CPS graduates tend to be concentrated in local two-year and nonselective four-year colleges, as well as in colleges and universities that have low graduation rates, even when compared to schools with similar selectivity.

One of the most popular ways to rate colleges is by national college rankings such as those compiled by *U.S. News and World Report* and *Barron's Profile of American Colleges*. These college rankings rate four-year colleges on the academic qualifications of the students that attend the college (e.g., ACT or SAT scores, GPA, and class rank), as well as the percentage of applicants who are accepted. In our

Figure 1-4

Only 27 percent of CPS graduates who attended college went to selective or very selective schools

2002 and 2003 CPS graduates who attended college, according to college selectivity, by race/ethnicity and gender



analysis, we grouped four-year colleges into four separate categories based on their 2002 Barron's ratings: nonselective, somewhat selective, selective, and very selective. This last category, very selective, combines Barron's top two categories (highly and most competitive). See Appendix 2 for details on these selectivity categories. Nonselective four-year colleges in Illinois include Northeastern Illinois University, DeVry University, Columbia College, and Roosevelt University. Somewhat selective colleges include several large public universities such as Chicago State University, Northern Illinois University, and Southern Illinois University at Carbondale. Selective colleges in Illinois include the University of Illinois at Chicago, DePaul University, and Loyola University. And very selective colleges in Illinois include the University of Illinois at Urbana-Champaign, the University of Chicago, and Northwestern University.

When the schools attended by CPS graduates are grouped by these selectivity categories, fully 74 percent of CPS students who attended college went to a two-year, a nonselective, or a somewhat selective college. African-American CPS graduates were the least likely to attend selective or very selective colleges, while Asian college-goers were the most likely to attend such colleges. Indeed, more than half of

CPS's Asian college-goers attended selective or very selective colleges. Thus, not only are Asian graduates of CPS more likely to go to college and more likely to go to four-year colleges, they are also more likely to attend selective and very selective colleges (see Figure 1-4).

Table 1-2 shows the four-year colleges most commonly attended by CPS students within each selectivity group. For each college, we also report the six-year graduation rate for all students, not just CPS students, as well as the six-year graduation rate for under-represented minority students. Data in these tables were calculated by The Education Trust based on publicly available information reported to the U.S. Department of Education in the Schools and Staffing Survey. These data are available online at www.collegeresults.org.⁴

The selectivity rating of a college is related to graduation rates: more selective colleges tend to have higher graduation rates. To a large extent, this is not surprising. More selective colleges, by definition, are composed of students with higher test scores and GPAs, and as we will see in Chapter 3, students with higher test scores and GPAs are more likely to graduate from college, regardless of which college they attend. However, even within selectivity categories, colleges vary widely in the graduation rates of their students.

... fully 74 percent of CPS students who attended college went to a two-year, a nonselective, or a somewhat selective college.

Table 1-2 demonstrates that even within colleges with similar selectivity ratings, CPS students are very concentrated in a small number of colleges. For example, more than half of CPS students who attend nonselective colleges attend Northeastern Illinois University or DeVry University. Half of CPS graduates who attend somewhat selective colleges attend Northern Illinois University, Chicago State University, or Southern Illinois University at

Table 1-2: The most popular colleges for CPS graduates

Colleges attended by 10 or more CPS graduates, averaged across 2002 and 2003

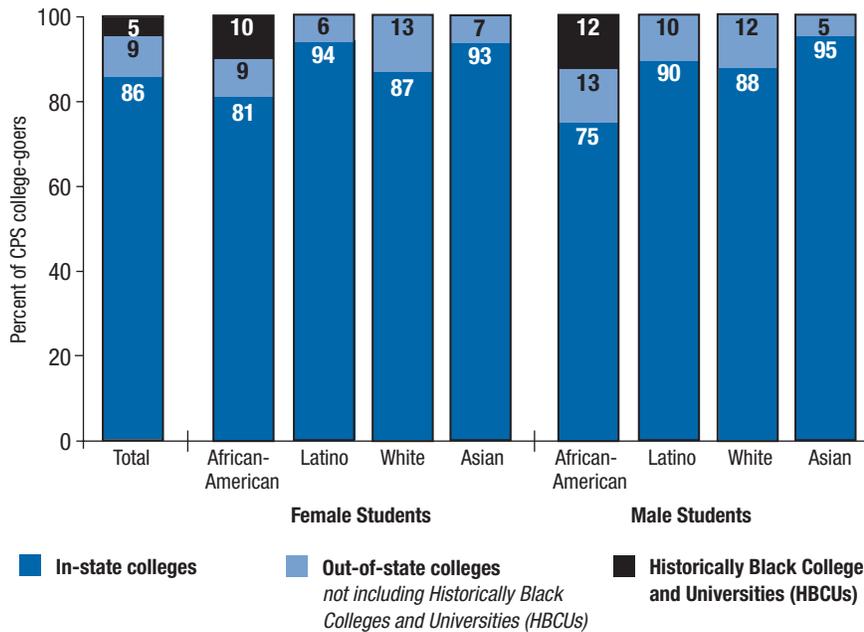
Barron's selectivity category (percentage of CPS graduates attending a college in that category)	Graduates within category who attended specific college		Six-year college graduation rates*	
	College name	Number	Percent	All students
NONSELECTIVE COLLEGES (17% OF CPS GRADUATES ATTENDING COLLEGE)				
Northeastern Illinois University	531	40.3%	17.9%	11.7%
DeVry University-Illinois	206	15.6%	n/a	n/a
Columbia College Chicago (IL)	163	12.3%	27.3%	17.0%
Roosevelt University (IL)	57	4.3%	24.5%	14.7%
Alabama A&M University	41	3.1%	38.0%	38.3%
Jackson State University (MS)	36	2.7%	62.3%	52.2%
Howard University (DC)	26	1.9%	65.6%	64.8%
Southern Illinois University of Edwardsville	18	1.4%	44.6%	30.5%
Grambling State University (LA)	17	1.3%	34.6%	34.3%
National-Louis University (IL)	17	1.3%	18.3%	13.2%
Kendall College (IL)	16	1.2%	29.8%	18.2%
Concordia University (IL)	13	1.0%	51.8%	29.4%
Langston University (OK)	12	0.9%	36.4%	37.1%
Tuskegee University (MS)	10	0.8%	50.8%	49.9%
SOMEWHAT SELECTIVE COLLEGES (18% OF CPS GRADUATES ATTENDING COLLEGE)				
Northern Illinois University	297	21.0%	52.9%	34.6%
Chicago State University	223	15.8%	15.2%	15.2%
Southern Illinois University at Carbondale	202	14.3%	45.3%	34.8%
Illinois State University	68	4.8%	59.1%	44.3%
Western Illinois University	51	3.6%	55.3%	43.8%
North Park University (IL)	49	3.4%	44.8%	30.0%
Saint Xavier University (IL)	47	3.3%	51.5%	35.6%
Florida A&M	37	2.6%	44.8%	44.9%
Eastern Illinois University	30	2.1%	59.5%	46.1%
Aurora University (IL)	26	1.8%	48.6%	44.2%
University of Iowa	25	1.7%	64.5%	51.5%
Clark Atlanta University (GA)	24	1.7%	30.6%	30.5%
University of Arkansas at Pine Bluff	23	1.6%	31.0%	31.3%
Lewis University (IL)	22	1.6%	50.4%	37.7%
Hampton University (VA)	22	1.5%	54.4%	54.4%
Dominican University (IL)	18	1.3%	60.3%	43.2%
Alabama State University	15	1.0%	21.2%	21.6%
Benedictine University (IL)	14	1.0%	53.0%	41.9%
North Central College (IL)	14	1.0%	66.3%	46.3%
SELECTIVE COLLEGES (18% OF CPS GRADUATES ATTENDING COLLEGE)				
University of Illinois at Chicago	706	52.0%	45.3%	35.3%
DePaul University (IL)	267	19.7%	63.7%	53.5%
Loyola University Chicago (IL)	137	10.1%	67.8%	51.1%
Tennessee State University	39	2.8%	45.2%	46.5%
University of Wisconsin at Madison	36	2.6%	75.8%	58.2%
Bradley University (IL)	27	2.0%	71.2%	56.5%
Michigan State University	21	1.5%	69.0%	53.4%
Purdue University (IN)	20	1.4%	66.7%	57.6%
Dillard University (LA)	16	1.1%	42.3%	42.1%
Iowa State University	15	1.1%	65.7%	48.6%
VERY SELECTIVE COLLEGES (9% OF CPS GRADUATES ATTENDING COLLEGE)				
University of Illinois at Urbana-Champaign	398	59.1%	81.0%	63.8%
University of Chicago	40	6.0%	87.1%	82.5%
Illinois Institute of Technology	31	4.6%	62.3%	52.2%
Northwestern University (IL)	30	4.4%	93.1%	90.6%
University of Michigan at Ann Arbor	21	3.1%	85.1%	69.6%
University of Missouri at Columbia	12	1.8%	66.5%	55.3%

* The six-year graduation rate is the graduation rate for all students (not just CPS students) at that institution. Source: The Education Trust. 2005a. College results online. Available online at www.collegeresults.org. Washington, D.C.: Author.

Figure 1-5

CPS graduates are more likely to attend college in Illinois

Percent of 2002 and 2003 CPS college-goers who attended college in state, out of state, and at HBCUs



Note: There are no HBCUs in Illinois.

Carbondale. Finally, 59 percent of CPS graduates attending very selective colleges attend the University of Illinois at Urbana-Champaign. Thus, not only are CPS graduates concentrated in a very small number of schools, they also are mostly attending large state universities.

Part of the reason that CPS graduates attend only a small number of colleges is that very few CPS graduates who attend college leave Illinois (see Figure 1-5). Among 2002 and 2003 CPS graduates who attended college, 86 percent stayed in Illinois. Asian and Latino graduates were the least likely to leave the state. African-American graduates were the most likely to leave, largely to attend Historically Black Colleges and Universities (HBCUs). One-quarter of male African-Americans and 19 percent of female African-Americans attended out-of-state colleges, about half of whom attended HBCUs. In Chapter 3, we will look more closely at how CPS graduates' choice of college shapes their likelihood of graduating and obtaining a four-year degree. At first glance, CPS graduates' current college choices and attendance patterns suggest that they are most often attend-

ing colleges that are less selective and that offer relatively low probabilities of completing a four-year degree.

Differences in College-Attendance Patterns across High Schools

So far this chapter has focused on systemwide trends in college enrollment. One of the most important characteristics of the college-attendance patterns of CPS graduates is how greatly postsecondary outcomes differ across high schools in the city. Figure 1-6 shows the proportion of the graduating classes of 2002 and 2003 enrolled in two- and four-year colleges for each high school in CPS. Because we base our analysis on the college enrollment of 2002 and 2003 graduates, we do not report results for several new Chicago public high schools that did not have graduates until 2004, such as Walter Payton High School, King High School, and Young Women's Leadership Charter High School.

At the low end, in seven high schools (Kelvyn Park, Tilden, Wells, Orr, Farragut, Clemente, and Richards) fewer than 35 percent of graduates attend any college at all. Of these seven high schools, four have a predominately Latino student body. At the high end, five high schools (Northside College Prep, Jones College Prep, Whitney Young, Chicago Agricultural, and Von Steuben) have more than 80 percent of graduates attend college. High college participation rates in the top high schools are driving the overall college-attendance rate of the system. The systemwide college participation rate, excluding students whose records were blocked, is 57.5 percent, but more than 70 percent of high schools had college participation rates lower than the overall average. Moreover, while 60 percent of high schools send the majority of their graduates to either a two- or four-year college, in only 13 of 74 high schools do the majority of graduates enroll in four-year colleges (see Figure 1-7). Only three high schools (Northside Prep, Whitney Young, and

... there is wide variation in students' college attendance rates even within schools that serve quite similar populations of students.

Lincoln Park) send more than 40 percent of their graduates to selective or very selective colleges (see Figure 1-8). Table 1-3 provides details about each high school's college-attendance rates by two- or four-year college status and the selectivity of four-year colleges.

Figure 1-6 is most striking for the variation in students' college-going patterns across high schools. It is easy to understand why the high schools that show the highest college-attendance rates are at the top. Selective enrollment high schools (Northside College Prep, Jones College Prep, and Whitney Young) are schools that select students on the basis of their achievement test scores and are specifically designed to encourage students to attend college. A closer look at this figure, though, suggests that there is wide varia-

tion in students' college attendance rates even within schools that serve quite similar populations of students.

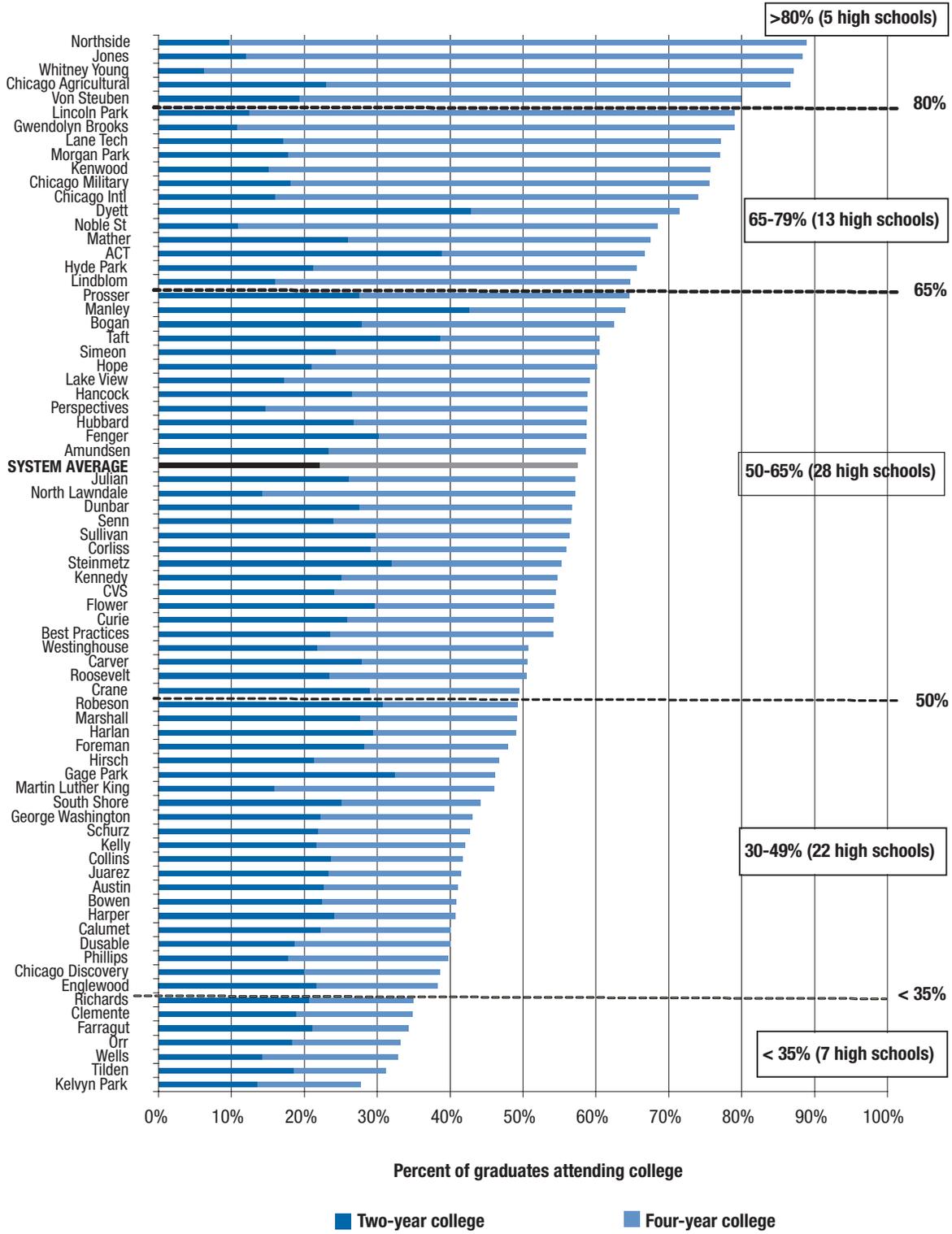
Take as an example the two high schools shown in Figure 1-9, George Washington High School and Bogan High School. Both are large, neighborhood high schools located on the South Side of Chicago. Washington serves a predominantly Latino population, while Bogan serves a predominantly African-American population. The entering test scores of their graduates were quite similar. At Washington, 53 percent of the combined graduates of 2002 and 2003 entered ninth grade at or above national norms on the Iowa Tests of Basic Skills (ITBS) in reading, compared to 50 percent at Bogan. ITBS math scores were also similar, with Washington graduates entering high school with slightly higher achievement in mathematics than Bogan graduates (56 versus 48 percent at or above national norms). These two schools are quite dissimilar in the college outcomes of their graduates. More than 63 percent of Bogan's graduates were attending college in the year after graduation, compared to only 43 percent of Washington's graduates.



Figure 1-6

In 29 of 74 CPS high schools less than half of the graduating class attends college; in only five CPS high schools do more than 80 percent of graduates attend college

Percentage of the graduating classes of 2002 and 2003 attending a two- or four-year college, across high schools



Note: The percentage of graduates shown in this figure do not include graduates whose records were blocked from the NSC data.

Table 1-3: College-attendance rates by high school

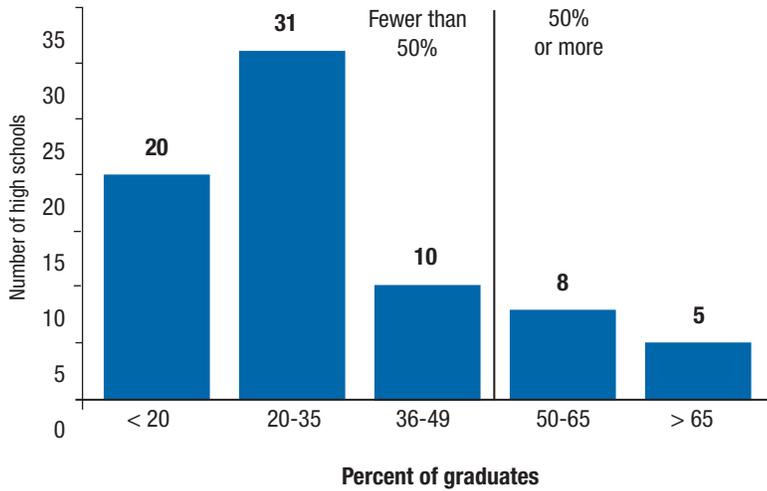
School name	Average number of graduates for 2002 and 2003	Percent at or above national norms on ITBS reading	Percent at or above national norms on ITBS mathematics	Percent			Percent non- and some-what selective	Percent selective	Percent very selective
				Percent any college	Percent two-year college	Percent four-year college			
Northside Prep	198	98.5	99.6	88.9	9.6	79.3	24.7	30.6	24.0
Jones	154	94.2	96.4	88.3	12.0	76.3	37.3	24.7	14.3
Whitney Young	436	98.2	99.2	87.2	6.3	80.8	24.8	29.4	26.7
Chicago Agricultural	109	76.2	74.4	86.6	23.0	63.6	41.9	12.4	9.2
Von Steuben	279	72.6	76.5	79.9	19.4	60.5	28.9	21.9	9.7
Lincoln Park	320	79.2	77.1	79.0	12.5	66.5	24.1	22.1	20.3
Gwendolyn Brooks	102	84.8	89.0	78.9	10.8	68.1	42.6	19.6	5.9
Lane Tech	840	90.7	94.1	77.1	17.2	59.9	25.3	26.1	8.5
Morgan Park	360	79.8	78.7	77.1	17.8	59.2	36.3	11.7	11.3
Kenwood	293	74.4	76.1	75.7	15.2	60.5	34.4	12.5	13.7
Chicago Military	47	60.8	74.7	75.5	18.1	57.4	39.4	10.6	7.4
Chicago Int'l. Longwood	25	43.8	50.0	74.0	16.0	58.0	32.0	10.0	16.0
Dyett	11	23.5	29.4	71.4	42.9	28.6	28.6	0.0	0.0
Noble Street	37	46.2	61.5	68.5	11.0	57.5	30.1	16.4	11.0
Mather	324	48.0	52.5	67.4	26.1	41.4	25.6	13.0	2.8
ACT	9	13.3	13.3	66.7	38.9	27.8	16.7	11.1	0.0
Hyde Park	272	58.2	62.0	65.6	21.2	44.4	32.4	7.0	5.0
Lindblom	75	71.5	80.3	64.7	16.0	48.7	30.7	10.7	7.3
Prosser	223	60.1	69.1	64.6	27.6	37.0	22.6	11.4	2.9
Manley	61	25.2	23.4	63.9	42.6	21.3	20.5	0.8	0.0
Bogan	297	50.1	48.2	62.5	27.9	34.5	19.5	12.3	2.7
Taft	216	48.6	49.3	60.6	38.7	21.8	13.5	7.4	0.9
Simeon	222	46.4	49.5	60.5	24.4	36.1	30.2	4.7	1.1
Hope	74	47.1	52.9	60.1	20.9	39.2	25.0	8.1	6.1
Lake View	177	47.8	47.2	59.2	17.3	41.9	20.4	13.0	8.5
Hancock	62	48.9	53.3	58.9	26.6	32.3	16.1	13.7	2.4
Perspectives	17	54.8	25.8	58.8	14.7	44.1	11.8	11.8	20.6
Hubbard	295	59.1	72.3	58.7	26.8	31.9	13.2	12.1	6.6
Fenger	86	31.5	31.5	58.7	30.2	28.5	16.9	7.0	4.7
Amundsen	266	40.9	41.5	58.6	23.4	35.2	23.0	11.5	0.8
SYSTEM AVERAGE	13.471	50.0	53.7	57.5	22.2	35.3	20.3	10.1	5.0
Julian	174	40.4	39.1	57.2	26.1	31.0	23.3	4.9	2.9
North Lawndale	18	53.8	53.9	57.1	14.3	42.9	40.0	0.0	2.9
Dunbar	150	39.8	47.2	56.7	27.6	29.1	24.2	2.9	2.0
Senn	235	37.9	40.4	56.6	24.0	32.6	21.5	8.7	2.3
Sullivan	149	48.3	47.7	56.4	29.9	26.5	16.4	7.7	2.3
Corliss	151	33.3	31.4	56.0	29.1	26.8	21.5	3.0	2.3
Steinmetz	340	40.2	43.3	55.3	32.1	23.2	14.3	7.6	1.3
Kennedy	293	59.0	71.1	54.7	25.1	29.6	12.8	14.4	2.4
Chicago Vocational	305	43.7	43.2	54.5	24.1	30.4	24.8	3.6	2.0
Curie	592	52.6	57.0	54.2	26.0	28.2	16.7	9.0	2.5
Best Practices	72	43.9	43.2	54.2	23.6	30.6	20.1	4.9	5.6
Westinghouse	214	40.6	42.6	50.7	21.7	29.0	24.1	2.8	2.1
Carver	77	38.5	32.6	50.6	27.9	22.7	14.9	5.2	2.6
Roosevelt	211	39.4	45.3	50.5	23.5	27.0	18.7	6.9	1.4
Crane	137	26.6	26.2	49.5	28.9	20.5	17.9	1.8	0.7
Robeson	73	20.6	23.8	49.3	30.8	18.5	15.1	3.4	0.0
Marshall	147	26.3	25.9	49.1	27.6	21.5	18.1	2.4	1.0
Harlan	102	21.6	28.7	49.0	29.4	19.6	14.2	4.9	0.5
Foreman	236	32.0	39.7	48.0	28.2	19.7	14.4	4.2	1.1
Hirsch	75	31.6	27.1	46.7	21.3	25.3	21.3	3.3	0.7
Gage Park	204	25.0	25.3	46.2	32.4	13.8	9.1	2.9	1.7
Martin Luther King	21	21.8	29.1	46.0	15.9	30.2	23.8	6.3	0.0
South Shore	139	29.4	30.8	44.2	25.2	19.1	15.8	1.4	1.8
George Washington	241	53.3	55.7	43.0	22.2	20.8	12.3	6.7	1.9
Schurz	327	29.3	40.8	42.7	21.9	20.8	16.2	4.0	0.6
Kelly	347	29.5	43.0	42.1	21.8	20.3	11.8	6.1	2.4
Collins	97	28.6	33.1	41.8	23.7	18.0	16.5	1.0	0.5
Juarez	223	31.1	45.5	41.6	23.4	18.2	8.1	8.8	1.3
Austin	126	24.4	22.1	41.0	22.7	18.3	15.9	2.4	0.0
Bowen	112	25.0	29.6	40.8	22.4	18.4	11.2	6.7	0.4
Harper	141	26.0	25.3	40.8	24.1	16.7	14.9	1.1	0.7
Calumet	32	28.6	25.6	40.1	22.3	17.8	12.7	4.5	0.6
Dusable	78	30.8	26.7	40.0	18.7	21.3	16.1	4.5	0.6
Phillips	71	27.9	28.8	39.7	17.7	22.0	16.3	2.8	2.8
Chicago Discovery	38	42.9	57.1	38.7	20.0	18.7	12.0	4.0	2.7
Englewood	90	31.8	35.0	38.3	21.7	16.7	15.0	1.7	0.0
Richards	85	28.0	22.7	34.9	20.7	14.2	11.8	2.4	0.0
Clemente	241	21.7	31.9	34.9	18.9	16.0	10.6	5.0	0.4
Farragut	322	28.2	40.6	34.3	21.1	13.2	9.5	2.6	1.1
Orr	104	21.8	21.8	33.2	18.3	14.9	12.0	1.4	1.4
Wells	189	21.5	33.2	32.9	14.3	18.6	12.5	4.0	2.1
Tilden	84	18.0	24.6	31.1	18.6	12.6	9.6	2.4	0.6
Kelvyn Park	298	25.1	28.6	27.7	13.6	14.1	11.2	2.7	0.2

Note: The table does not include CPS graduates whose records were blocked from the NSC data.

Figure 1-7

In only 13 of 74 CPS high schools do more than 50 percent of graduates attend a four-year college

High schools categorized by the percentage of graduates that attend a four-year college the spring after graduation

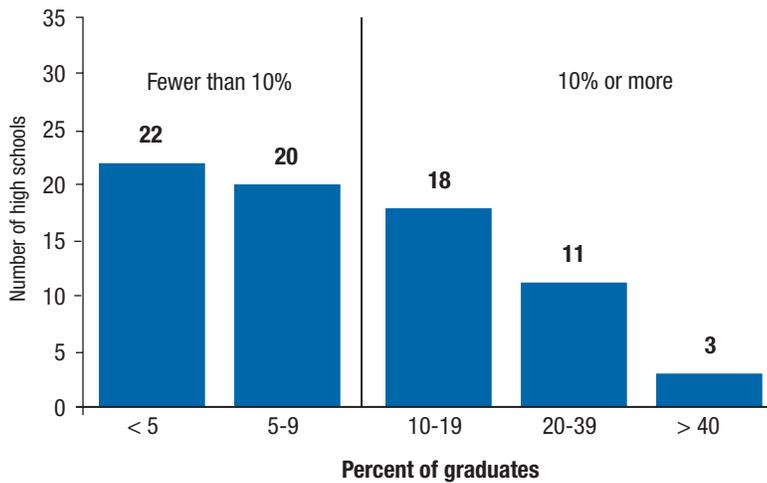


Note: On average, a CPS high school sends 30 percent of students to a four-year college the year after graduation.

Figure 1-8

More than half of CPS high schools sent fewer than 10 percent of their graduates to selective or very selective colleges

High schools, categorized by percentage of graduates who attended a selective or very selective college the year after graduation



Note: On average, a CPS high school sends 19 percent of its graduates to a selective or very selective college.

In addition, graduates from Bogan were substantially more likely to attend both four-year colleges (35 versus 21 percent) and selective or very selective colleges (15 versus 9 percent).

Even when high schools have similar college-attendance rates, we see large differences in the types of colleges their graduates attend. As shown in Figure 1-10, Noble Street Charter High School and Mather High School have almost identical college-enrollment rates, with approximately 68 percent of their 2002 and 2003 graduates reported as attending college by the NSC. These two schools also serve student bodies with very similar entering test scores. On average, 48 percent of Mather students and 46 percent of Noble Street students entered high school with scores at or above national norms on ITBS reading. Fifty-three percent of Mather students and 62 percent of Noble Street students entered high school with scores at or above national norms on ITBS math. Despite these similarities, graduates from Mather were more than twice as likely as Noble Street graduates to attend a two-year college (26 versus 11 percent). While few students from Mather (3 percent) attended a very selective college, 11 percent of Noble Street’s graduates did so. These two comparisons also demonstrate that the racial/ethnic composition of schools does not fully explain the wide differences in college outcomes. While one might point to differences in racial composition as contributing to the difference in college-attendance rates between Washington, a predominantly Latino school, and Bogan, a

predominantly African-American high school, racial/ethnic composition cannot explain the positive outcomes of students at Noble Street, another predominantly Latino high school, compared to Mather, which serves a racially mixed student body.

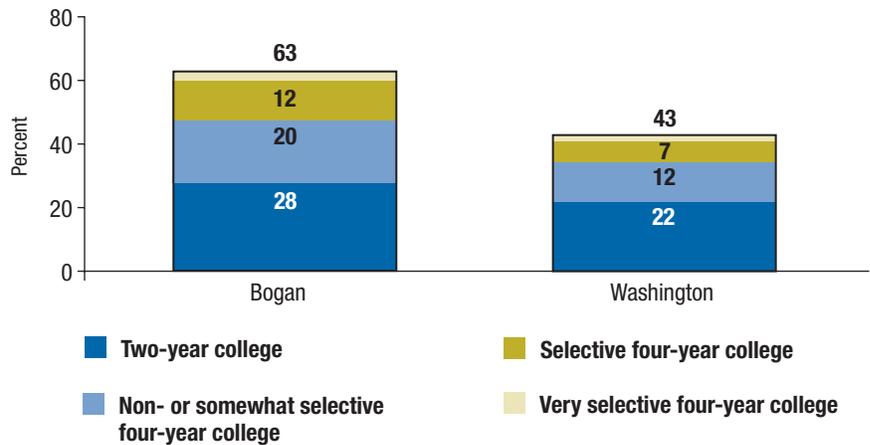
Grading Schools by Both Their College-Going Rates and the Types of Colleges Students Attend

These comparisons suggest that high schools differ both in the percentage of students they send to college, as well as by the kinds of colleges their graduates attend. Thus, just looking at the percentage of graduates who attend college does not provide a full picture of how well high schools are preparing their students for college and students' college outcomes. A student who attends a very selective college is more likely to attain a four-year degree than a student that attends a less-selective college. When evaluating the performance of high schools, we need to look both at how many students are going to college and where they are going. Figure 1-11 presents rankings of high schools with students' college-attendance outcomes "weighted" based on whether graduates went to college and what type of institution they attended. We assigned each graduate 0 points if he or she did not attend college, 1 point for attending a two-year college, 2 points for attending a nonselective or somewhat selective four-year college, 3 points for

Figure 1-9

Two schools with comparable characteristics, but different college-attendance rates

College participation rates by selectivity for 2002 and 2003 graduates of Bogan and Washington high schools

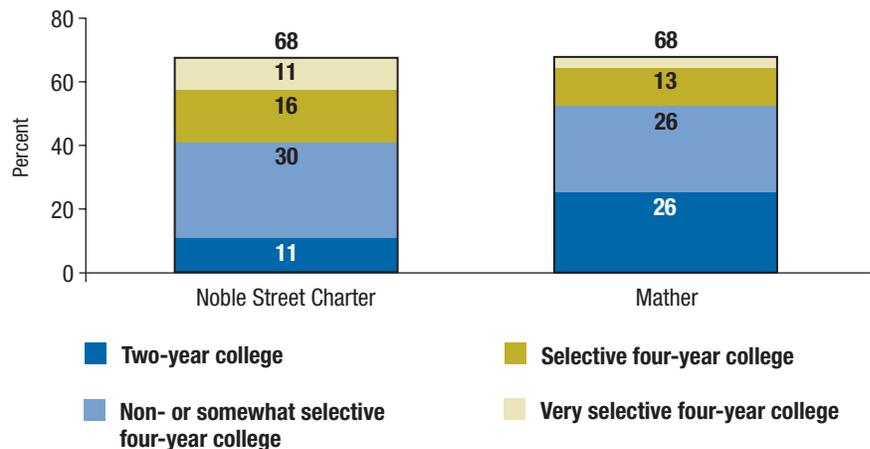


Note: At both Bogan and Washington, the average graduate entered ninth grade with similar test scores. In math, 48 percent of students at Bogan and 56 percent of graduates at Washington were at or above national norms. In reading, 50 percent of students at Bogan and 53 percent of graduates at Washington were at or above national norms.

Figure 1-10

Two schools with comparable student bodies and overall college-attendance rates, but different types of colleges attended

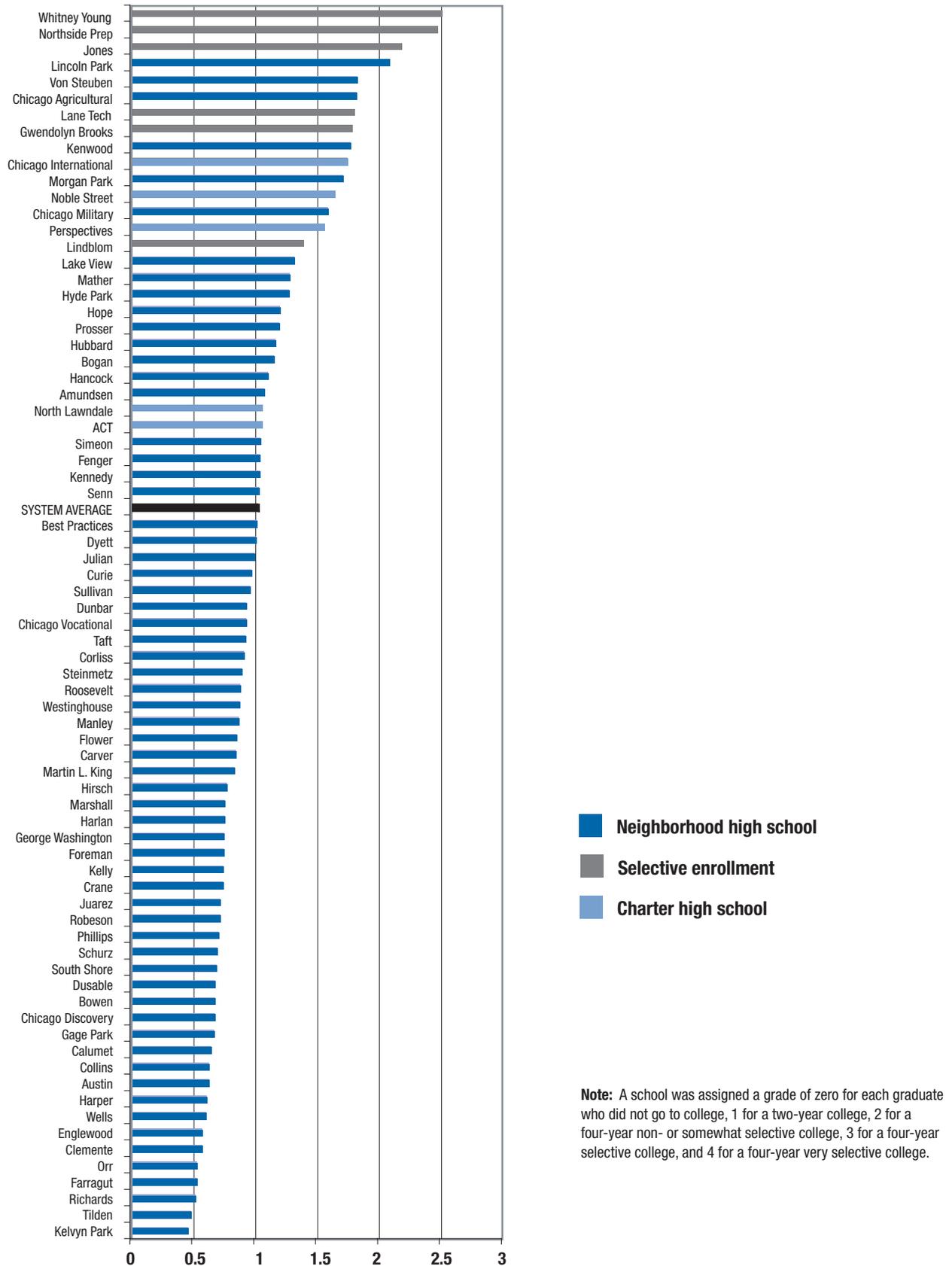
College-participation rates by selectivity for 2002 and 2003 graduates of Noble Street Charter and Mather high schools



Note: At both Noble Street and Mather, the average graduate entered ninth grade with similar test scores. In math, 62 percent of students at Noble Street and 53 percent of students at Mather were at or above national norms. In reading, 46 percent of students at Noble Street and 48 percent of students at Mather were at or above national norms.

Figure 1-11

High schools rated by percentage of graduates who go to college and types of colleges they attend



attending a selective four-year college, and 4 points for attending a very selective four-year college. We then averaged those scores by school, creating an overall rating for each school. Figure 1-11 shows the distribution of Chicago high schools ranked by college outcomes. Clearly, the top high schools are those that serve better-than-average students and which have college-oriented programs, specifically the selective enrollment high schools. Several neighborhood high schools that have specialized programs also emerge in the top 12, including Lincoln Park High School, Morgan Park High School, and Kenwood Academy.⁵ In addition, several charter high schools have significantly higher ratings than neighborhood high schools, both because they send more graduates to college and because they send more graduates to four-year colleges, especially selective and very selective colleges.

In this chapter we do not delve into possible reasons for differences in college-participation rates across high schools. These data certainly offer much fodder for discussion and further research. In subsequent reports, we will look closely

college and to attend four-year colleges. In Chapter 2, we begin to examine the extent to which students' performance in high school may shape these outcomes. Often in discussions about high school performance, educators raise the concern that many of the outcomes we observe in high schools are a reflection of differences in achievement that students bring to high school. Before looking at student performance in high school, it is worth examining the extent to which CPS graduates differed in their achievement upon entering high school. Indeed, at first glance, these racial/ethnic and gender differences may not seem surprising. A recent report by the Consortium on Chicago School Research documented that male students, particularly African-Americans, had significantly higher dropout rates than female students.⁶ Male African-American students in CPS often have the lowest test scores entering high school, so it might not be surprising that they have lower college attendance rates. Latino students also begin high school with low test scores. Conversely, Asian students enter high school with higher-than-average test

. . . several charter high schools have significantly higher ratings than neighborhood high schools, both because they send more graduates to college and because they send more graduates to four-year colleges . . .

at how differences in students' reports of the support they receive for postsecondary achievement differ across high schools. In the next chapter, we explore how differences in the preparation of students across high schools may shape students' access to different types of colleges.

How Much Do Pre-High School Differences Explain College-Attendance Patterns?

In this chapter, we observed important differences in college-attendance patterns by CPS graduates' race/ethnicity and gender. Regardless of race/ethnicity, male students are much less likely than female students to enroll in college. Latino graduates had the lowest college enrollment rates, while Asian graduates were the most likely to both attend

scores, so it also might not be surprising that Asian students are the most likely to attend selective and very selective colleges. Indeed, one reading of the racial/ethnic and gender differences we observe in postsecondary outcomes is that they may largely reflect differences in the skills that students bring to high school.

A closer look at who actually graduates from CPS high schools, however, suggests that this explanation is too simple. On average, male African-American and Latino students do enter high school less academically prepared than their female counterparts. However, the male students who make it through high school to graduation are a select group and tend to have higher eighth-grade achievement test scores than those who drop out. Table 1-4 compares the eighth-grade achievement of graduates from the classes of 2002 and 2003 with that of the entering class of students four

years earlier. We restrict the sample to those students who graduated from CPS in four years, which includes almost 90 percent of graduates.

There are two important points to take away from this table. First, while male African-American students enter high school with lower test scores than their female counterparts, male students who ultimately made it to graduation had entering test scores that were quite comparable to those of the female graduates. Thus, we cannot simply dismiss the lower college participation rates of male graduates as the result of being behind on entry to high school. Second, when school systems experience high dropout rates, the students who persist in school and actually graduate tend to have higher achievement than the students who drop out. While this is not surprising, it does mean that the average CPS graduate in 2002 and 2003 entered high school with reading and math test scores that placed them at or above national norms. Among white and Asian graduates, more than 70 percent entered high school with test scores at or above national norms. Thus, when we are talking about CPS graduates and their college outcomes, we are not talking, on average, about students with very low test scores

coming into high school. In fact, the graduates of CPS are those students who entered high school at or above national norms in reading and mathematics.

White and Asian students clearly came into high school much better prepared than Latino and African-American students. The difference in the entering test scores of African-American and Latino versus white and Asian students are quite striking, even among those students who make it to graduation. Thus, Latino and African-American graduates of CPS entered high school already facing significant hurdles to reaching their college ambitions. Clearly, closing the aspirations-achievement gap among CPS graduates must begin before ninth grade. As with male students, it does not appear that we can explain the significantly lower college participation rates of Latino students, particularly relative to African-Americans, by their entering test scores. Using more rigorous analysis, we found that differences in the entering test scores of Latino versus white CPS graduates account for only about one-third of the lower college-attendance rate of Latino students (this point is explored further in Chapter 2). In addition, the low college-participation rates of Latino students are occurring at a time when graduation rates and elementary school test scores are rising significantly among this group. The sidebar “How Are Dropout Rates of

African-American and Latino Students Affecting Their College-Attendance Rates?” examines racial/ethnic differences in college-attendance rates in greater detail.

Table 1-4: Because of high dropout rates, students who graduated from CPS entered high school, on average, with reading test scores at or above national norms

Eighth-grade reading achievement for CPS students entering high school in 1998 and 1999 and for students who graduated four years later

Percent scoring at or above national norms on the ITBS in 8th grade		
Students grouped by race/ethnicity and gender	1998 and 1999 entering class of 9th graders, (graduates and non-graduates)	1998 and 1999 entering class of 9th graders, (on-time graduates only)
Total	38%	51%
African-American, female	35%	47%
African-American, male	30%	46%
Latino, female	36%	44%
Latino, male	36%	46%
White, female	67%	73%
White, male	68%	76%
Asian, female	68%	69%
Asian, male	68%	71%

Note: The gap between the percentage at or above national norms in mathematics is similar, although the percentage of students scoring at or above national norms is higher than in reading. Numbers do not include students in special education.

Summary and Concluding Comments

Data from the NSC give us a first look at the college-attendance patterns of CPS graduates; however, this is not a complete picture. Individual high schools may object to using NSC data to calculate their students’ college participation as it will certainly miss some graduates. We estimate that across the city, college-participation rates of CPS graduates are underestimated by no more than 5 percent. This does not, however, rule out the possibility that an individual high

school's college-going rate might be even more underestimated, and data from this chapter are not meant to invalidate the tracking efforts of an individual school that might have more accurate data on the college participation of its own graduates, particularly graduates who attend a college that does not currently participate in the NSC. Rather, NSC data provide those schools that have not been tracking postsecondary outcomes with a first, important look at the college participation of their graduates and the relative performance of their high school in comparison to other high schools. These data also allow us to take a systemwide look at what kinds of colleges CPS graduates are attending and how that differs across high schools and by students' characteristics. And, most importantly, as we saw in this chapter and will see in the next chapter, NSC data allow us

high school may constrain their college choices. The second question, whether the concentration of CPS students in local colleges should be of concern, is more complicated. One way of approaching the issue is to ask whether CPS graduates are enrolling in colleges that maximize their likelihood of graduation. In the data presented in this chapter, we found that even among colleges with the same selectivity ratings, CPS graduates tend to enroll in colleges with much lower graduation rates. In Chapter 3, we will return to this issue by examining how the colleges CPS students attend shape their chances of attaining a four-year college degree.

Second, there is wide variation across CPS high schools in the proportion of graduates attending college, four-year colleges, and selective colleges. CPS has a few excellent high schools that send large proportions of their graduates to college and

CPS graduates attend a very limited number of local and in-state colleges and are concentrated in two-year and nonselective colleges.

to link college outcomes with graduates' demographic, elementary school, and high school information, so that we may begin to better understand the link between students' experiences within CPS and their college access, college choices, and ultimately, their chances of graduating.

In this first chapter, we described the college-going patterns of CPS graduates. Our analysis highlighted three defining characteristics of the college-attendance patterns of CPS graduates that we will be continuing to examine more closely in the next two chapters and in subsequent research.

First, CPS graduates attend a very limited number of local and in-state colleges and are concentrated in two-year and nonselective colleges. More than half of CPS graduates who attended college in 2002 and 2003 attended just ten colleges. Fully 74 percent of college-goers attended a two-year, a nonselective, or a somewhat selective college. This raises two questions. First, to what extent does this concentration reflect the fact that students from CPS graduate with credentials that give them only limited college choices? Second, should we be concerned that CPS graduates are concentrated in a small number of colleges? In the next chapter, we focus on this first question and look in detail at the extent to which students' qualifications upon leaving

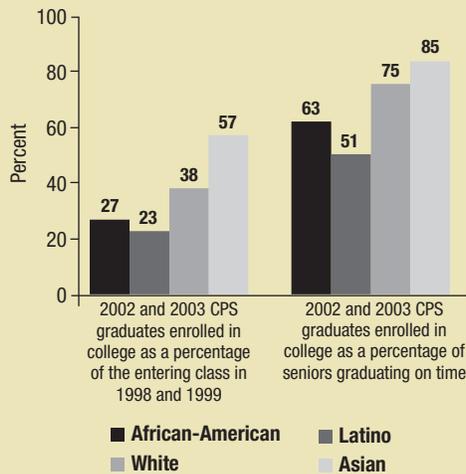
high proportions to four-year colleges. The performance of these top schools is driving the system average. On average, 59 percent of 2002 and 2003 CPS graduates attended college, 57.5 percent among students whose records had not been blocked. Yet, more than 70 percent of high schools had college-participation rates below the average of the city. At the low end, in seven CPS high schools, not even 35 percent of the graduating class attended college. While the better-performing high schools were dominated by selective-enrollment high schools, we also found several neighborhood high schools and smaller charter high schools that stand out as sending a large proportion of graduates to college and to four-year and selective colleges. This suggests that the high school students attend strongly shapes their likelihood of going to college, but it does not tell us why. On the one hand, differences in college-enrollment rates may largely be a reflection of the extent to which students in different high schools graduate with qualifications that give them access to college, particularly to four-year college. On the other hand, differences across high schools in their college-enrollment rates may also reflect the extent to which graduates who are qualified to go to college actually enroll. We begin to explore these questions in Chapter 2.

How Are Dropout Rates of African-American and Latino Students Affecting Their College-Attendance Rates?

One of the important findings of this report is that Latino CPS graduates are much less likely to enroll in college than other graduates. This finding is inter-

Figure 1. Part of the lower college-enrollment rate among Latino versus African-American CPS graduates is due to more African-Americans dropping out

College-enrollment rates as a percentage of the entering ninth-grade class and the graduating class



esting in light of a recent Consortium report which found that in Chicago, Latino students are graduating from high school at higher rates than African-

Americans.¹ According to that report, of students who entered CPS as ninth-graders in 1998 (and thus should have been in the graduating class of 2002), 65 percent of female Latino students graduated by age 19, versus 57 percent of female African-American students. The gap in graduation rates was even more pronounced among male students. For the 1998 cohort, 51 percent of male Latino students graduated by age 19 compared to only 39 percent of male African-American students. And, while CPS has made only moderate progress in increasing graduation rates among African-American students, there have been significant improvements in the graduation rates of Latino students. From 1991 to 2001, the graduation rates among female Latino students increased by 9 percentage points, from 56 percent to 65 percent.

Rising graduation rates among Latino CPS students is very good news. Indeed, nationwide, Latino students are signifi-

cantly more likely to drop out of school than African-American students.² This makes Chicago unique among major cities. But a difference in graduation rates between African-American and Latino students is one of the reasons that there is such a significant gap between the groups' college-going rates. We examined how differences in dropout rates could be affecting postsecondary participation rates by comparing the proportion of *graduates* who go on to college to the proportion of *entering freshmen* who go on to college (see Figure 1). We restricted our analysis to students who graduated on time. In 2002 and 2003, 63 percent of African-American graduates versus 51 percent of Latino graduates enrolled in college in the year after graduation. We also know that fewer African-American students made it to graduation. If we look at students who were freshman in 1998 and 1999, managed to graduate on time in 2002 and 2003, and then enrolled in college the year after graduation, 27 percent of African-American freshmen versus 23 percent of Latino freshmen enrolled in college within five years after entering high school.

Third, both the likelihood of attending college and the types of colleges graduates are attending vary by race/ethnicity and gender. Asian graduates of CPS, regardless of gender, are the most likely to attend college and to attend more selective universities. More than half of Asian CPS students who enrolled in college attended a selective or very selective college, compared to slightly over one-third of white graduates and less than 20 percent of African-American graduates. Male CPS students, reflecting national trends, were significantly less likely to enroll in college and significantly less likely to attend four-year colleges, particularly African-American and Latino male students. One of the most important trends in education over the past two

decades, both in CPS and the nation, has been the growing gender gap in school performance between male and female students.⁷ In CPS, there are dramatic gender gaps in dropout rates and here, we see it in college-going rates as well. Pre-high school differences in achievement do not sufficiently explain these gender differences in college enrollment. There were few differences between male and female graduates in their pre-high school test scores. Thus, these differences must arise as students move through the same high school.

In general, the college-attendance rates of CPS students do not compare that unfavorably to estimates of college-going patterns for racial/ethnic minority students in Illinois

Thus, the proportion of freshmen who eventually graduate on time and go on to college differs very little between Latino and African-American students. The difference is that fewer African-American students appear to making it to graduation.

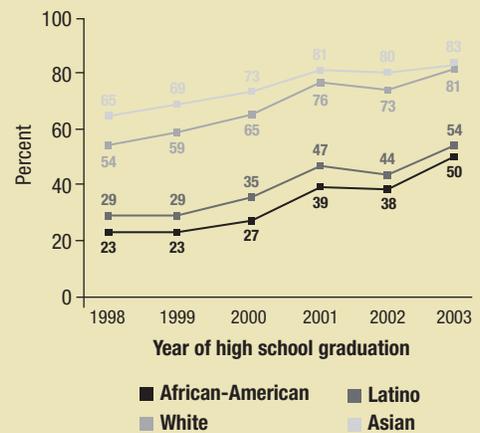
Normally, rising high school graduation rates would mean that students who graduate are increasingly less likely to go to college because they are “weaker” academically. Many high schools, for example, complain that if they work to decrease dropout rates they will keep their weaker students and will pay the price in terms of decreased test scores and lower college-participation rates. Thus, it would be easy to assume that because Latino students are graduating at higher rates, the average Latino graduate is less academically prepared and thus less academically qualified to attend college than the average African-American graduate.

In Chicago, however, improvements in the graduation rates of Latinos have been occurring at a time of equally rapid improvements in entering test scores. Thus, while more Latino students are graduating than African-American students, the average Latino graduate is equally or better prepared on entrance

to high school (see Figure 2). In the next chapter, we will examine how prepared students are for college on the basis of their GPAs and average ACT scores. We find that differences in the college participation rates between Latino and White graduates also cannot be explained by differences in their academic performance in high school, although the gap between African-American and white graduates disappears once we control for the high schools they attended.

In summation, African-American graduates are more likely than Latino graduates to enroll in college. However, the proportion of entering freshman who eventually enroll in college four years later is not very different for Latino and African-American students because fewer African-American students are making it to graduation. The dramatic improvements in Latino high school graduation rates have not, however, translated into higher college-participation rates. Their lower college-participation rates cannot be explained by the fact that those Latino students who are moving on to graduation are somehow weaker academically. It may be

Figure 2. Percentage of students at or above national norms on the eighth-grade ITBS mathematics assessment by year and race/ethnicity



that non-Latinos in CPS show a higher propensity to go to college, even among students with comparable prior performance, ACT scores, and GPAs. We do not know if this means that Latino students who have less of a propensity to go to college are making it to graduation and then deciding not to go, while African-American students who would not have gone to college are simply not making it to their senior year.

¹ Allensworth, 2005

² Llagas, 2003.

and the nation. This does not mean that CPS is doing well. It means that CPS, for the most part, is facing problems that other systems are facing. The exception is that Latino students in CPS are much less likely to attend college than Latino students in the rest of the state and nation.

There is a common perception that Latino students are less likely to attend college because their parents are not supportive of this goal. We find little evidence for this contention. As we have pointed out in this chapter, Latino students in Chicago are demonstrating dramatic improvement in elementary school test score performance and improvement in high school graduation rates. CPS students’ reports of their aspirations and their parents’ aspirations

also confirm that Latino students aim to attend college and that their parents are pushing them in the same direction. Latino seniors in CPS are only slightly less likely than other students to say that they hope to complete some postsecondary education. In our 2005 Consortium survey, 9 percent of Latino seniors versus 7 percent of African-American seniors stated that they planned to stop their education at a high school diploma. Latino seniors were less likely, however, to report that they hoped to complete a four-year degree. Only 70 percent of Latino seniors in our 2005 survey stated that they hoped to complete a bachelor’s degree or higher, compared to more than 80 percent of African-American and white seniors. Latino seniors were nearly twice as likely

as African-American and white seniors (21 percent versus 12 percent and 11 percent, respectively) to state that they hope to complete a two-year or technical degree. Thus, differences in Latino seniors' aspirations may help explain their higher concentration in two-year colleges, but they cannot explain their significantly lower college-attendance rates in comparison to their African-American and white classmates. Most importantly, Latino seniors in our survey were only slightly less likely than African-American and white seniors to report that their parents wanted them to go to college. When asked what they thought their parents wanted them

to do next year, 84 percent of Latino seniors reported that their parents wanted them to go to college, versus 89 percent of African-American and white seniors.

The fact that Latino students are aspiring to college at rates comparable to their CPS classmates yet are enrolling in college at lower rates is a provocative finding that we will be returning to at each stage of our analysis, both in this and subsequent reports. This is particularly important given that CPS's Latino students are enrolling in college at lower rates than their counterparts in Illinois (which has an ethnically similar Latino population).

Endnotes

¹ Throughout this report, we exclude from our analyses students enrolled in special education and those who graduated from alternative high schools. The college-attendance rates for students with disabilities are reported in Appendix 1. We also provide further information on the students in the alternative high schools in Appendix 1.

² CPS serves an overwhelmingly racial/ethnic minority population. Of 2002 and 2003 graduates, 46 percent were African-American, 34 percent were Latino, 6 percent were Asian, 13 percent were white, and less than 1 percent were Native American. CPS graduates are also disproportionately female; 58 percent of graduates are female. These percentages reflect our sample and thus do not include students in special education or graduates of alternative schools.

³ CPS classifies students from a wide range of countries, such as Pakistan and Iran, as “white,” and almost 40 percent of students our sample who are white were born outside the United States. This number is higher

than for Latinos, 33 percent of whom were born outside the United States. We do not include Native Americans in the racial/ethnic breakdowns because of their small numbers in CPS, but they are included in all other analyses.

⁴ The Education Trust (2005a).

⁵ Lincoln Park, Kenwood, and Morgan Park are neighborhood high schools with attendance boundaries. However, these schools also have special programs that serve academically advanced students, including International Baccalaureate programs at Lincoln Park and Morgan Park, and seventh and eighth grade Academic Centers at Kenwood and Morgan Park.

⁶ Allensworth (2005).

⁷ Allensworth (2005); Tyre (2006); and Weaver-Hightower (2003).





How Qualifications Shape Chicago Public Schools Graduates' Access to College

According to the Consortium's 2005 Senior Survey, nearly 80 percent of CPS seniors state that they hope to complete at least a bachelor's degree, and fully 93 percent hope to complete some college or technical education.¹ Yet we saw in the previous chapter that only 59 percent of CPS graduates enroll in college, and those who do so tend to enroll in two-year or nonselective four-year colleges. The gap between aspirations and enrollment was largest among African-American and Latino graduates. African-American graduates enroll in college but are highly concentrated within two-year colleges, while Latinos lag both in overall college enrollment and in enrollment in four-year colleges. The bottom line is that CPS needs to raise both the proportion of students who attend college and the proportion of students who attend four-year colleges, particularly selective and very selective colleges.

What strategy should high schools use to move forward with this objective? One strategy is to focus on improving the support

and guidance that students receive as they go through the process of college search, application, and selection. Another strategy is to improve students' qualifications so that more students will have access to a broader range of colleges. In this chapter we focus on the second strategy and ask, are students prepared to fulfill their college aspirations when they graduate from CPS high schools? In asking this question, we are also asking whether high schools are up to the task set forth in CPS's education plan of ensuring that all students are ready for postsecondary education or a career.²

Open admissions at two-year colleges mean that enrolling in college is an option for all students who graduate from high school. However, most CPS graduates aspire to attain a degree from a four-year college. Researchers have found that even among two-year college students who intend to get a bachelor's degree, few students transfer to a four-year college.³ In this chapter, we focus on the extent to which CPS students have the academic qualifications needed for access to four-year colleges, specifically more selective

colleges. We examine three dimensions of qualifications that colleges use in making their admissions decisions and which previous research has found to be associated with the likelihood of college success: 1) ACT scores; 2) performance in coursework, as measured by unweighted grade point averages (GPA) in major subjects; and 3) enrollment in academically rigorous coursework, particularly honors, Advanced Placement (AP), and International Baccalaureate (IB) courses. This chapter examines how these qualifications shape students' access to college and how qualifications differ across high schools. As in the previous chapter, we limit our analysis to 2002 and 2003 graduates of regular CPS high schools who were not in special education at the time of graduation. This chapter focuses on four central questions about preparation and access to college:

1. Do CPS graduates have ACT scores and GPAs that give them access to four-year colleges, particularly

Why Focus on Four-Year Colleges and Why Worry about the Selectivity of Colleges?

This chapter examines the extent to which CPS graduates' qualifications provide them with access to different kinds of colleges, particularly four-year colleges and more selective institutions. While not all students may aim to go to selective colleges, more than 80 percent of CPS seniors do hope to complete a bachelor's degree. Therefore, it is important to know whether they are qualified to attend a four-year college after high school. Often, students enroll in two-year colleges with the hope of later transferring to four-year colleges. However, national studies have found that only about 10 percent of students who initially enroll in two-year colleges ultimately complete a bachelor's degree. Moreover, students who hope to attain a bachelor's degree are nearly three times

more likely to accomplish that goal if they enroll in a four- versus a two-year college.¹

We make distinctions among four-year colleges of varying selectivity to determine the extent to which CPS graduates have a wide array of options available to them when choosing a college. As we saw in the previous chapter, four-year colleges differ widely in the graduation rates of their students. Students in colleges that are selective or very selective are much more likely, on average, to graduate. In addition, the selectivity of the college is a popular way of ranking colleges, used by students and parents to make college decisions through reports such as *Barron's Profile of American Colleges*. We are not advocating that all students who aspire

to a bachelor's degree should necessarily make an immediate transition to a four-year college, but they should have the option to do so.

¹ In the U.S. Department of Education's *Beginning Postsecondary Students Longitudinal Study*, 63 percent of the first-time postsecondary students who planned to complete a bachelor's degree and who enrolled in a four-year college accomplished that goal within six years. In comparison, only 22 percent of first-time postsecondary students who planned to complete a bachelor's degree and who first enrolled in a two-year college were able to obtain a bachelor's degree within six years (U.S. Department of Education, National Center for Education Statistics, 2003a).

selective and very selective colleges? What kinds of qualifications matter the most in shaping access to college?

2. How do the qualifications of CPS graduates differ by race/ethnicity and gender? To what extent do these differences across racial/ethnic and gender groups explain the differences in college participation rates we observed in Chapter 1?
3. How many CPS students are engaging in more rigorous college-oriented coursework (namely honors, AP, and IB courses) and how does participation differ across high schools? To what extent does participation in more rigorous coursework increase students' access to different types of colleges?
4. How do CPS high schools differ in the qualifications of their graduates? Are graduates attending colleges that match their qualifications?

CPS Students' Qualifications and Access to College

When making admissions decisions, colleges rely heavily on two measures of students' performance in high school: 1) scores on college admissions tests like the SAT and ACT, and 2) performance in coursework as measured by GPA and class rank. College admissions tests are used primarily as a standardized indicator of students' college readiness compared to their peers nationwide. These tests are meant to provide an independent assessment of reasoning and critical thinking skills. Whether such tests really measure this, particularly for racial/ethnic minority students, is hotly debated.⁴ Regardless, most four-year colleges require the SAT or ACT for admission. Grades are also a measure of whether students have mastered the material in their classes, and they indicate to colleges a different kind of college readiness—whether students have demonstrated the work effort and study skills needed to meet the demands of a college environment. In this first section of Chapter 2, we

Perspectives on College Qualifications

Greene and Forster label a student as qualified to attend college if he or she possesses basic literacy skills, took certain courses during high school (four years of English, three years of math, and two years each of natural science, social science, and foreign language), and graduated from high school.¹ Using this rubric, they estimate that only 32 percent of public high school students leave high school qualified to attend four-year colleges. Broken down by race/ethnicity, only 38 percent of Asian students, 37 percent of white students, 20 percent of African-American students, and 16 percent of Latino students graduate high school qualified to attend a four-year college. These very low numbers probably would fall even lower if one considered the proportion of students not just

qualified to attend college, but rather prepared to attend and graduate from college. The Education Trust maintains that the single best predictor of college success is the quality and intensity of a student's coursework, and thus sets forth much more rigorous guidelines for high school course taking.² Accordingly, students who intend to attain a college degree should take four years of English, three years of math (including Algebra 1, Geometry, and Algebra 2), an additional year of math beyond Algebra 2 (e.g. trigonometry or calculus), three years of natural science (including biology, chemistry, and physics), three years of social science, and two years of a second language. In a recent report, ACT recommends a similar core curriculum, and emphasizes the importance of tak-

ing physics and calculus to succeed in college.³ In addition, ACT predicts students' probability of success in college based on their scores on three ACT tests: English composition, algebra, and biology. Students who receive at least a score of 18 on the English composition test, 22 on the algebra test, and 24 on the biology test can expect to have a high probability of success in the corresponding college course (defined as a 75 percent chance of earning a C or better; 50 percent chance of earning a B or better).

¹ Greene and Forster (2003).

² Barth (2003).

³ ACT, Inc. (2004a).

Table 2-1: CPS graduates have lower ACT scores than other students in Illinois and the nation

CPS, Illinois, and national average ACT composite scores by race/ethnicity for 2002 and 2003

	All CPS graduates	All Illinois students	National test-takers
Total	17.1	20.2	20.8
African-American	16.1	16.7	16.9
Latino	16.7	17.6	18.5
White	20.3	21.6	21.7
Asian	20.3	22.1	21.7

Source: ACT, Inc. 2004b. Measuring college readiness: The Illinois graduating class of 2004. Available online at www.isbe.net/news/2004/2004_IL_ACT_data.pdf.

first look at the status of CPS students on these two measures of qualification for college. In a later section in this chapter, we look at a third measure of college qualification, students' course-taking patterns.

ACT Scores

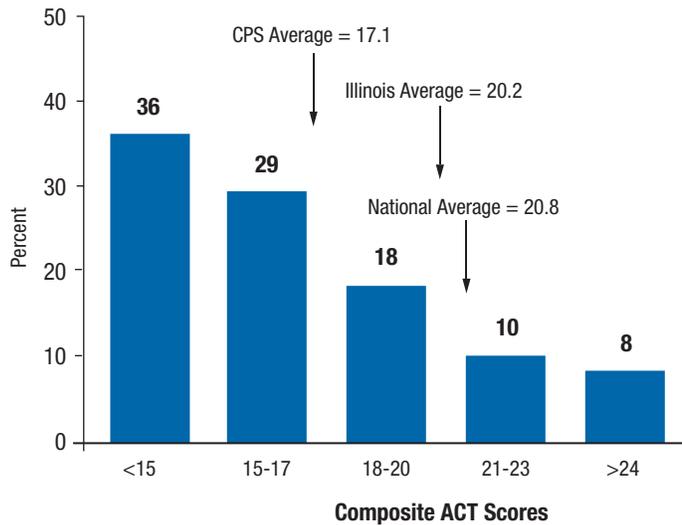
In the Midwest, most students take the ACT if they are planning to apply to college. Since 2001, Illinois has included the ACT in its annual state high school test, the Prairie State Achievement Exam (PSAE). Thus, in Chicago all juniors take the ACT, which means that we have scores for all students in Chicago, not just those who have demonstrated a proclivity for college attendance by taking the exam.⁵ This means, however, that ACT results for Illinois and Chicago are not directly comparable to national results, because students in Illinois take the ACT even if they have no intention of enrolling in college. Our data may also underestimate CPS students' ACT scores, because we use the ACT scores from the PSAE examination, not the higher scores that students who retake the exam may submit to colleges.⁶

Table 2-1 shows that the average composite ACT score of CPS graduates was 17.1, compared to 20.2 for the entire state of Illinois and 20.8 for students nationally (see Appendix 3 for a table providing equivalent SAT scores). By any standard, these results are dismal. As we saw in Chapter 1, CPS graduates did not start high school far behind their peers nationally; their average eighth-grade test scores placed them at or above national norms on the Iowa Tests of Basic Skills (ITBS). By eleventh grade, less than 20 percent of graduates were able to obtain ACT scores that placed them above the national average of college-bound students who took the ACT

Figure 2-1

CPS graduates have very low ACT scores: More than 65 percent score 17 or below on the ACT

Composite ACT scores for 2002 and 2003 CPS graduates



Note: The ACT scores are based on the ACT component of the Prairie State Achievement Exam (PSAE) taken by all Illinois students in their junior year.

(see Figure 2-1). More than one-third of CPS graduates scored below a 15 on the ACT, which would place them at approximately the 9th percentile of the national distribution. Nearly two-thirds scored a 17 or below, placing them below the 26th percentile nationally. As a point of reference, Northeastern Illinois University, a local nonselective public college, states on its website that it only admits students who were either in the top half of their graduating class or scored at least a 19 on the ACT, a score that most CPS graduates fail to reach.

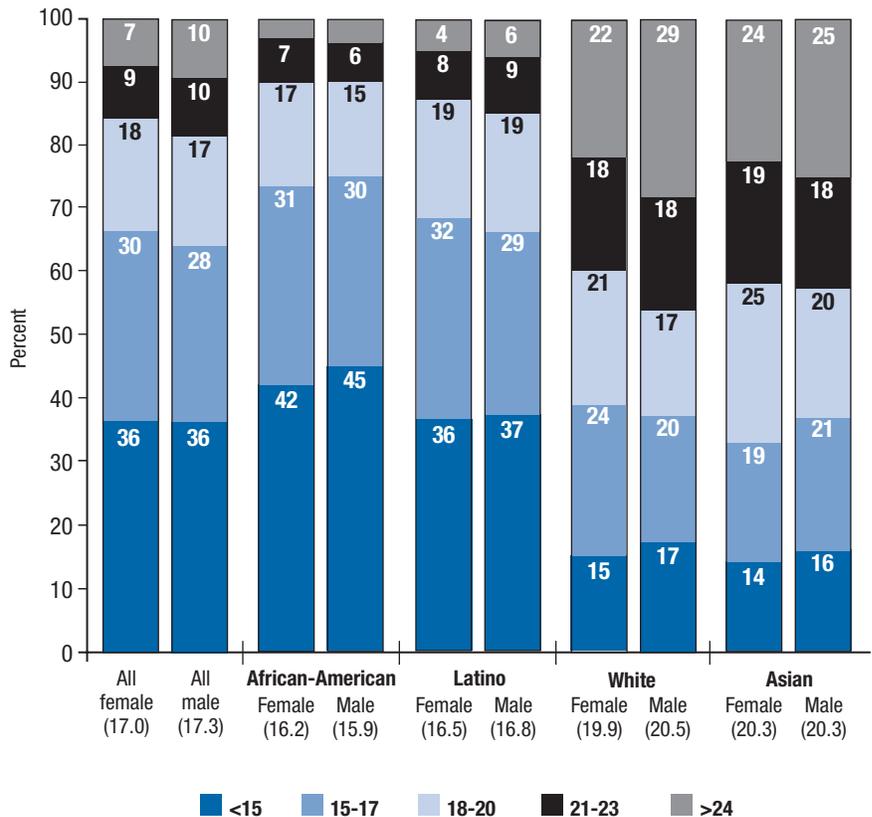
We saw in the previous chapter that, among those students who graduated, male students entered high school with similar eighth-grade test scores to female students. This was also true for ACT scores. As seen in Figure 2-2, both within and across racial/ethnic groups, male students did not score, on average, very differently from their female counterparts on the ACT. When we compare across racial/ethnic groups, however, we see dramatic differences.

The ACT scores of African-American and Latino graduates are particularly troubling. African-American and Latino students entered high school with significantly lower test scores than white and Asian students. Fully 75 percent of white and Asian graduates entered high school with reading scores at or above national norms compared to half of African-American and Latino students (as was discussed on page 28). These differences became more pronounced during high school. Nearly three-fourths of African-American graduates and two-thirds of Latino graduates scored 17 or lower on the ACT, compared to less than 40 percent of Asian and white graduates. The differences are just as extreme for higher ACT scores. More than 40 percent of Asian and white students in CPS scored higher than 21 on the ACT,

Figure 2-2

Less than a third of Latino and African-American graduates score an 18 or higher

Average ACT scores of 2002 and 2003 CPS graduates by race/ethnicity and gender

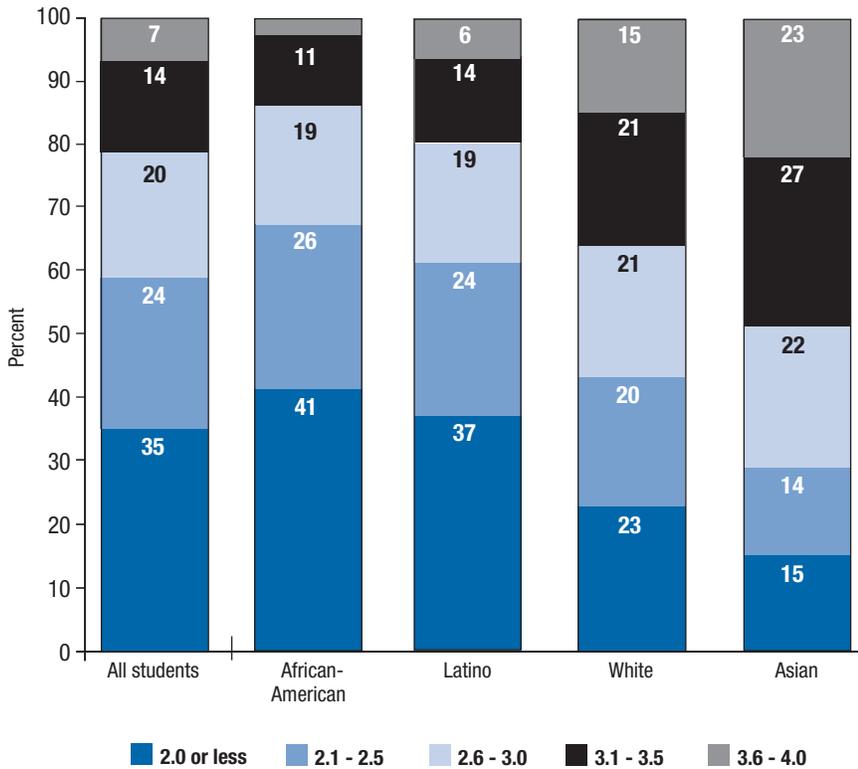


Note: The number in the parentheses is the mean ACT score for that group.

Figure 2-3

Fewer than 20 percent of Latino and African-American students graduate with a GPA higher than 3.0

Unweighted GPA in core classes of 2002 and 2003 CPS graduates by race/ethnicity



Note: Graduates without transcript data, including graduates of charter schools, are not included.

which is above the national average, compared to only 9 percent of African-American students and only 13 percent of Latino students. It is important to note that the gap between CPS's overall average ACT score and the average scores for Illinois and the nation is much larger than the gap if the comparison were between CPS students and their racial/ethnic counterparts in Illinois and the nation. Thus, if the racial/ethnic composition of Illinois and the nation were similar to CPS, the gap would likely be much smaller.

There are several possible interpretations of CPS graduates' extremely low performance on the ACT. One interpretation is that CPS students score so poorly because Chicago high schools are selling their students short by setting standards too low. There is a popular and compelling folktale of the urban high school student who gets straight A's, graduates at the top of her class and then, on entry to college, finds that she is not adequately prepared. There is

ates suggest that few fit the characterization of the urban folktale. In fact, many students struggle throughout high school and graduate with

Within all racial/ethnic groups, male graduates are doing much worse in their classes than their female counterparts . . .

GPA that reflect mediocre performance in their coursework. Figure 2-3 shows the distribution of unweighted GPAs in core classes for the CPS graduates of 2002 and 2003. CPS uses a weighted GPA that counts an A in an honors class as 5 points and an A in an AP class as 6 points on a four-point scale. The weighted GPA indicates both students' performance in their classes and the rigor of their coursework.⁸

a common perception that grades are vastly inflated in lower-performing high schools, and that students are given higher grades for doing more basic and poorer quality work than they would receive in selective enrollment or suburban high schools.⁷ A second interpretation is that low ACT scores are just one of many indicators that Chicago high schools are failing students by not building on the capacity that students are bringing to high school and not developing the content knowledge and skills students will need to be ready for college. A third interpretation is that for CPS students, particularly Latino and African-American students, the ACT does not reflect their actual capacity and mastery of material and they are underperforming on the test. It is beyond the scope of this report to investigate potential underperformance of CPS students on the ACT. We can, however, look more broadly at student performance throughout high school as measured by grades.

GPA

Data on the GPAs of CPS graduates suggest that few fit the characterization of the urban folktale. In fact, many students struggle throughout high school and graduate with GPAs that reflect mediocre performance in their coursework. Figure 2-3 shows the distribution of unweighted GPAs in core classes for the CPS graduates of 2002 and 2003. CPS uses a weighted GPA that counts an A in an honors class as 5 points and an A in an AP class as 6 points on a four-point scale. The weighted GPA indicates both students' performance in their classes and the rigor of their coursework.⁸

In this chapter, we look separately at course performance and rigor. To do that, we re-analyzed grade transcripts and calculated an unweighted GPA based only on students' grades in their core classes of English, math, science, social science, and world language.

The unweighted GPAs of CPS graduates are very low. More than one-third of CPS graduates have less than a 2.0 GPA in their core classes, and 59 percent graduate with a 2.5 GPA or less. A 2.0 GPA means that a student has a C average, and typically received C's as well as some B's and D's. Only 7 percent of CPS students graduate with a GPA greater than 3.5. While the low GPAs do not resolve the question of whether grades are inflated, it appears that CPS teachers are not reluctant to give students D's or F's in core classes and that many CPS students are struggling academically. CPS graduates' low ACT scores are not occurring in isolation; the low GPAs suggest that students are not mastering class content that might prepare them to perform better on the ACT.

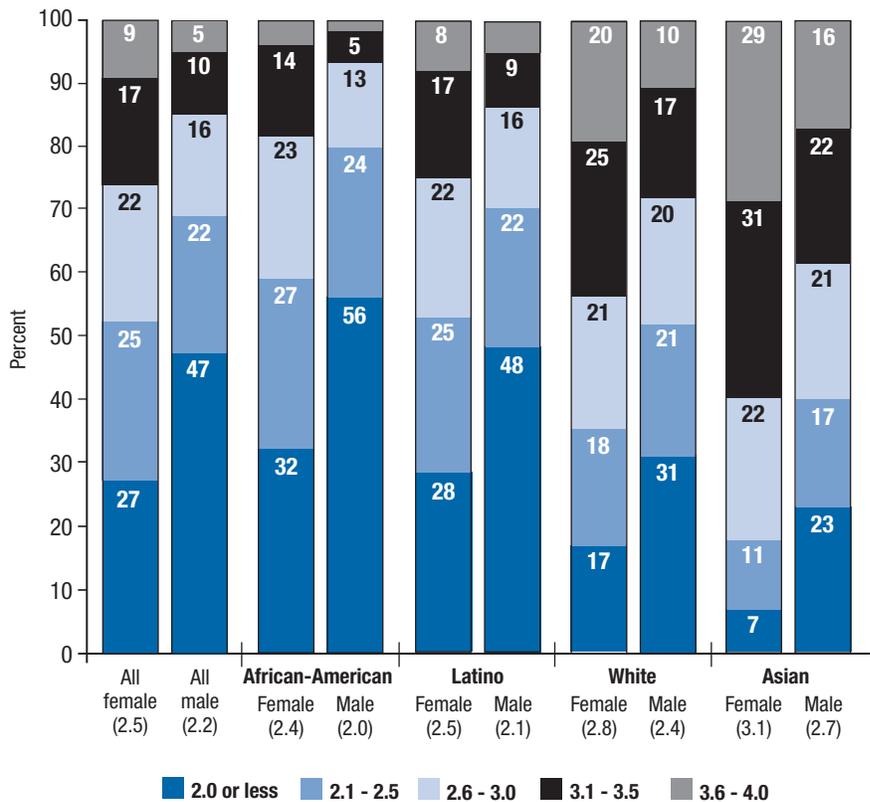
As with ACT scores, we observe dramatic differences in students' GPAs by race/ethnicity. Fully 67 percent of African-American students and 61 percent of Latino students graduate with an unweighted GPA of 2.5 or less in their core classes, compared to 43 percent of white students and only 29 percent of Asian students (see Figure 2-3). Asian students were the most likely to excel in their courses. Indeed, 50 percent of Asian students graduate with a GPA higher than 3.0 in their core classes, compared to only 14 percent of African-American students and only 20 percent of Latino students. Thus, among African-American and Latino graduates, low ACT scores are coupled with low GPAs.

Gender differences in students' GPAs are even more dramatic (see Figure 2-4). Within all racial/ethnic groups, male graduates are doing much worse in their classes than their female counterparts; 47 percent of male graduates,

Figure 2-4

Male graduates have substantially lower GPAs than female graduates; only 55 percent have a GPA higher than 2.0

Average GPA of 2002 and 2003 CPS graduates by race/ethnicity and gender



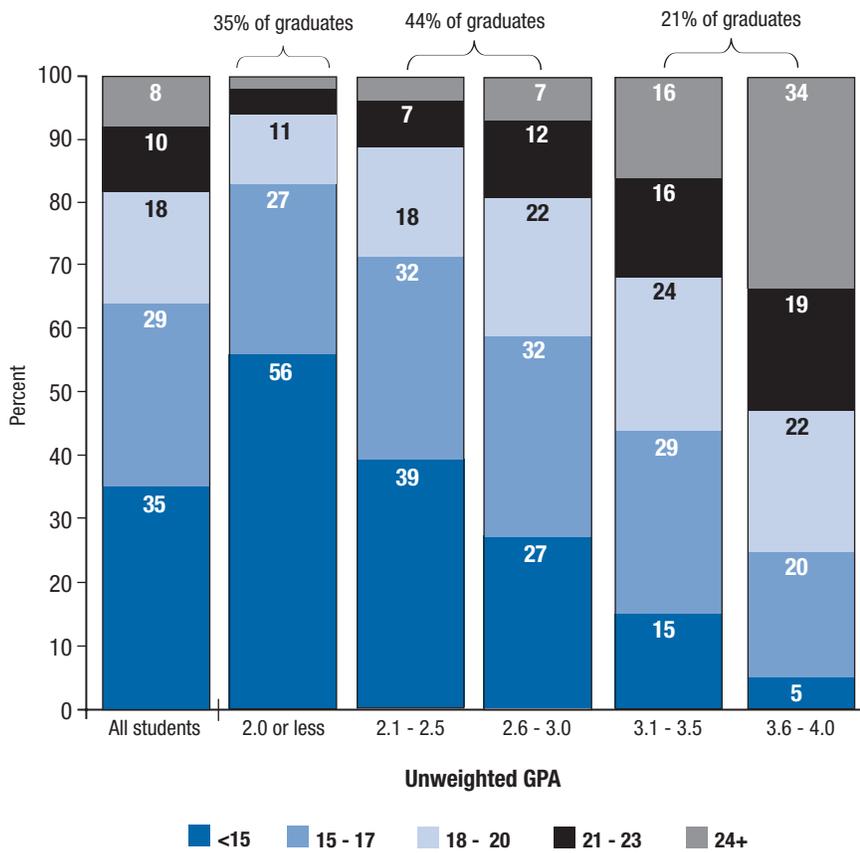
Note: Graduates without transcript data, including graduates of charter schools, are not included. The number in the parentheses is the mean unweighted GPA in core classes for that group.

versus 27 percent of female graduates, had GPAs of 2.0 or lower in their core classes. More than one-quarter of female graduates have a B average or better (above 3.0) in their core classes, versus only 15 percent of male students. The gender gap is most pronounced among African-American graduates. Male African-Americans have by far the lowest GPAs of any subgroup; more than half graduate with a 2.0 GPA or less in their core subjects. Female African-Americans are more than twice as likely as their male African-American classmates (18 versus 8 percent) to graduate with a GPA higher than 3.0 in their core classes. There is also a large gender gap among Latino graduates. While nearly half of male Latinos graduate with a 2.0 GPA or less, only one-quarter of female Latinos graduate with a GPA that low.

Figure 2-5

GPA and ACT are highly related; most graduates with high GPAs also have higher ACT scores

Distribution of ACT scores by unweighted GPA for 2002 and 2003 CPS graduates



Note: Graduates without transcript data, including graduates of charter schools, are not included.

The extent to which low ACT scores reflect low performance throughout high school is a centrally important question. Figure 2-5 takes another look at these data by displaying students' ACT scores by unweighted GPAs. Clearly, graduates with low GPAs tend to have low ACT scores; most students with a 2.5 GPA or below have ACT scores of 17 or less. CPS graduates who do poorly in the classroom also do poorly on the ACT. There is a group of graduates who, despite receiving good grades in their core classes, struggle on the ACT. Of the 7 percent of CPS graduates with at least a 3.6 GPA, one-quarter have ACT scores of 17 or less. This is a group of students who have worked hard throughout high school and done well in their courses, yet still perform

poorly on the ACT. However, this group represents less than 2 percent of all CPS graduates.⁹

CPS graduates' ACT scores and GPAs suggest that high schools provide few students with the skills, content, and credentials needed for access to four-year colleges and for success once enrolled. This is particularly disturbing when one considers that these students began high school with relatively high entering achievement test scores and managed to graduate from high school despite high dropout rates in CPS. Thus, the low ACT scores and GPAs are not solely the result of students entering high school poorly prepared. Rather, between eighth grade and graduation, high schools did not provide these students with the content and skills that they need for admission to four-year colleges.

How Do ACT Scores and GPA Shape Students' Access to College?

How important are low ACT scores and GPAs in shaping CPS graduates' access to college? Figures 2-6, 2-7, and 2-8 compare the relative influence of ACT scores and GPA on dif-

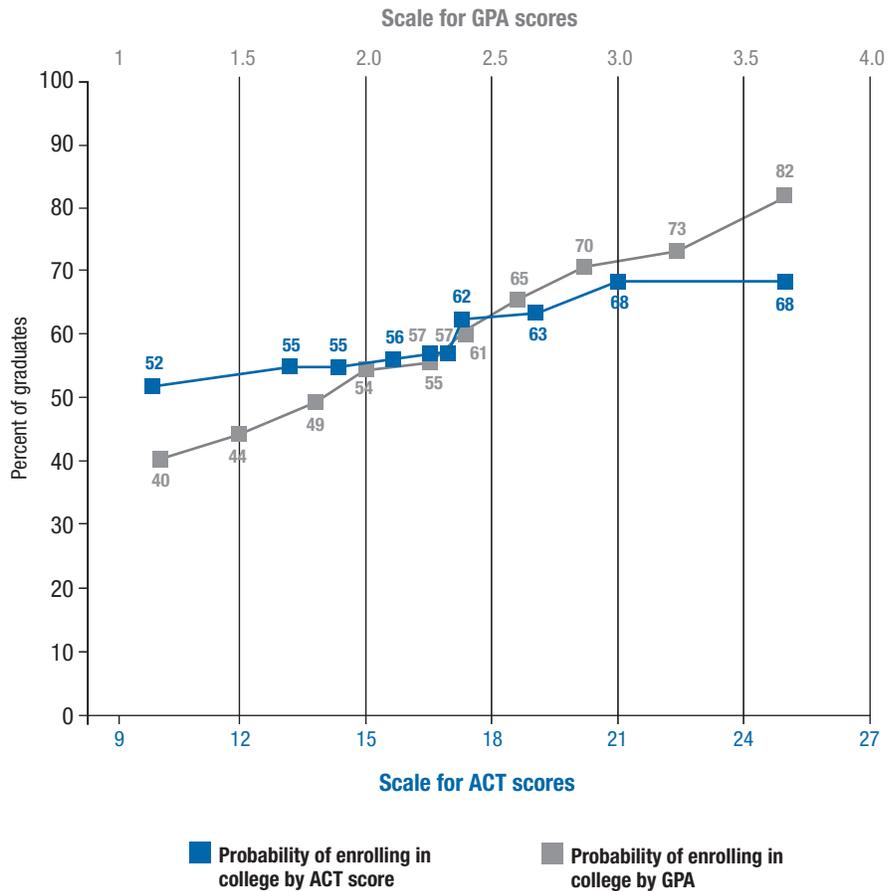
ferent college outcomes, once we have taken into account students' grades (for variation by ACT scores), ACT score (for variation by GPA), demographic characteristics, elementary school test scores, and high school attended. We estimate the probability of attending: 1) college versus no college for all graduates (Figure 2-6); 2) a four-year versus a two-year college among those graduates who attend college (Figure 2-7); and 3) a selective or very selective college versus a nonselective or somewhat selective college among those who attend four-year colleges (Figure 2-8). The ACT line in Figure 2-6 shows the predicted probability of attending college for CPS graduates with similar GPAs and school and demographic characteristics, but different

ACT scores. Likewise, the GPA line in Figure 2-6 shows the predicted probability of enrolling in college for graduates who have similar ACT scores and other characteristics but different GPAs. The symbols on the ACT line in Figure 2-6 indicate deciles on the ACT for CPS graduates. Thus, graduates in the first decile (i.e., the bottom 10 percent of CPS graduates) had a median ACT score of 10, while graduates in the top decile had a median ACT score of 25 (see Appendix 4 for details on the model). Similarly, the points on the GPA line in Figure 2-6 represent the deciles in GPA for CPS graduates. The graduates with GPAs in the bottom decile had a median GPA of 1.2 and graduates with GPAs in the top decile had a median GPA of 3.7.

Low ACT scores are not a significant barrier to CPS graduates enrolling in college, nor are high ACT scores a guarantee of graduates going to college (Figure 2-6). In fact, after controlling for GPA and other characteristics, ACT scores make little difference in CPS graduates' likelihood of enrolling in college. Graduates in the bottom ACT decile have a 52 percent probability of enrolling in college, which is only 16 percentage points less than graduates in the top decile, even though this is a difference of scoring a 10 on the ACT versus a 25. Unlike ACT scores, GPA has a large effect on graduates' probability of enrolling in college. While similar graduates scoring in the top and bottom deciles on the ACT have similar probabilities of enrolling in college, a corresponding change from the bottom to the top decile in GPA more than doubles a graduate's probability of enrolling in college, from 40 to 82 percent. One possible explanation is that GPA may be capturing more than achievement in the classroom—students who get better grades may also be putting more effort into doing well in school and may have a more positive attitude about school, making them more likely to continue their education.

Figure 2-6

Having a high GPA matters more than a high ACT score in access to college
 Predicted probability of CPS graduates enrolling in any college by ACT score and unweighted cumulative GPA



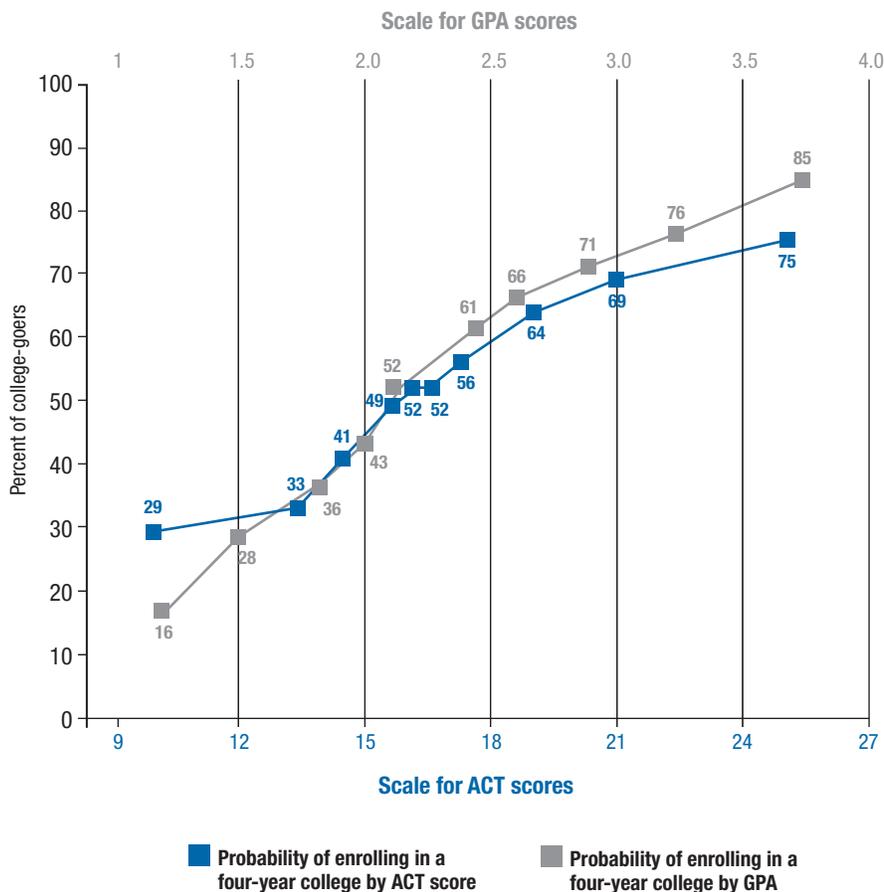
Note: The symbols on the lines indicate the median ACT score or GPA for each decile of CPS graduates, with the lowest decile (10th percentile) on the left and the highest decile on the right.

Low ACT scores are, however, a significant barrier to students attending four-year colleges (see Figure 2-7). Among CPS graduates who enroll in college, those with ACT scores less than 18 are much less likely to attend a four-year college than college-goers with higher scores. College-goers with ACT scores of 24 have about a 70 percent chance of attending a four-year college. Even more than low ACT scores, low GPAs constrain students' college options. College-goers with slightly-above-average GPAs of 2.4 (the sixth decile) are about 18 percent more likely than similar college-goers with slightly-below-average GPAs of 2.0 (the fourth decile) to attend a four-year college (increasing from 43 to 61 percent). A similar shift on the ACT, from a below-average score of 15.5 (the fourth decile) to an above-average score

Figure 2-7

Having a high GPA matters more than a high ACT score in access to four-year colleges

Predicted probability of CPS graduates enrolling in a four-year versus two-year college by ACT score and unweighted cumulative GPA among students attending college



Note: The symbols on the lines indicate the median ACT score or GPA for each decile of CPS graduates, with the lowest decile (10th percentile) on the left and the highest decile on the right.

of 16.6 (the sixth decile), would only increase the probability of attending a four-year college by 3 percent, from 49 to 52 percent.

Among students enrolled in four-year colleges, those with ACT scores of 24 have about a 30 percent chance of attending a selective or very selective college (see Figure 2-8). However, only 8 percent of CPS graduates have ACT scores of 24 or above, and even fewer Latino and African-American graduates have scores that high. As with ACT scores, CPS graduates need very high grades to get into a selective college. Of the CPS graduates enrolled in four-year colleges, only those in the top decile (with GPAs around 3.7) have more than a 50 percent probability of attending a selective or very selective college. Graduates with an unweighted GPA less than 2.5 have less than a 20 percent likelihood of attending a selective or very selective four-year college. Thus, among graduates attending four-year colleges, we would predict that only those with a GPA greater than 3.5 would attend a selective or very selective college.

Colleges consider both ACT scores and GPAs when deciding whom to accept, but graduates with higher GPAs have a greater probability of going to college, four-year colleges, and more selective colleges. Two-year colleges allow high school graduates with low ACT scores and GPAs to enroll in college; however, those students' poor performance in high school makes them less likely to gain access to four-year colleges. Grades in core classes, much more than scores on the ACT, matter in shaping CPS graduates' enrollment in college.

Overall Measures of Preparation and Differences across High Schools

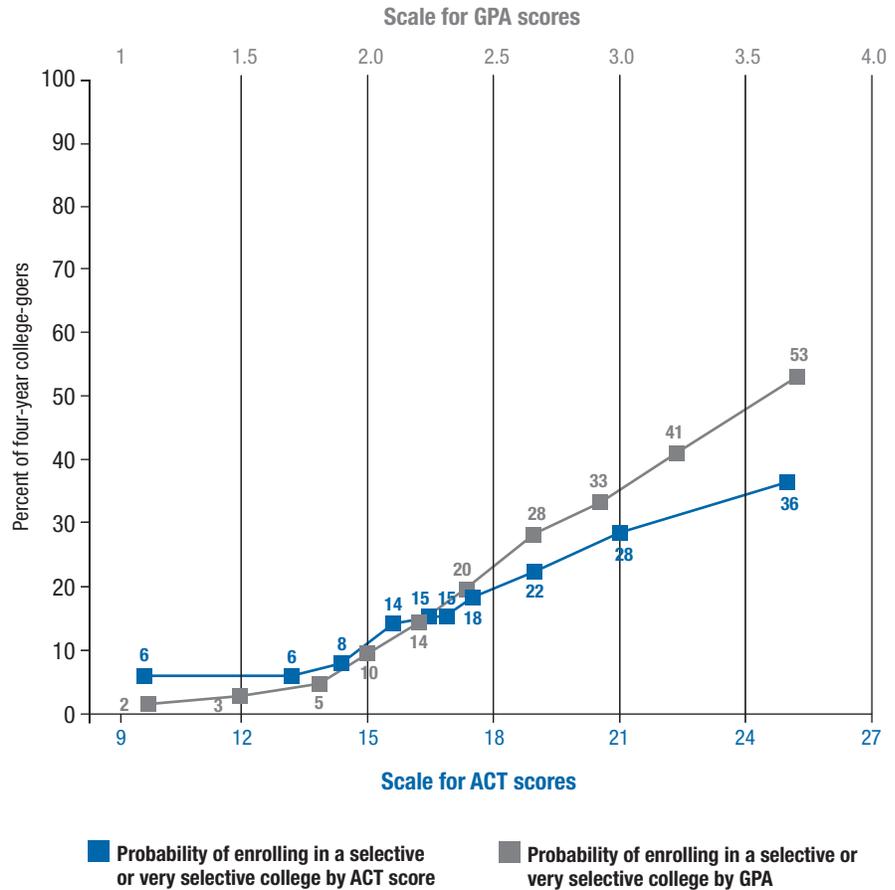
It is not surprising, given CPS graduates' low ACT scores and GPAs, that they are concentrated in two-year and nonselective colleges. CPS graduates with ACT scores above 18 and with GPAs above 2.5 are much more likely to attend four-year colleges. Graduates with ACT scores above 24 and those with GPAs above 3.5 had significantly higher probabilities of attending a selective or very selective college. But few CPS graduates have these higher ACT scores or GPAs, and male, African-American, and Latino graduates are particularly unlikely to fall into these categories. We can summarize these results by combining students' GPA and ACT performance into a measure of the qualifications needed by CPS graduates to gain access to four-year colleges categorized by Barron's selectivity ratings (see Table 2-2). Our rubric indicates the minimum GPAs and ACT scores that CPS graduates would need in order to have a good chance of being accepted to and enrolling in these types of schools based on the college-going patterns of their classmates with similar ACT scores and GPAs.¹⁰ Because all high school graduates have the option of attending a two-year college, we categorized graduates with ACT scores and GPAs that fall below the level necessary for likely admittance to a nonselective four-year college as being limited to attending two-year colleges.

The GPAs and ACT scores we used are generally lower than the definitions used in college ratings such as Barron's

Figure 2-8

Having a high GPA also matters more than a high ACT score in access to selective and very selective colleges

Predicted probability of CPS graduates enrolling in a selective or very selective versus a non- or somewhat selective college by ACT score and unweighted cumulative GPA among graduates enrolled in a four-year college



Note: The symbols on the lines indicate the median ACT score or GPA for each decile of CPS graduates, with the lowest decile (10th percentile) on the left and the highest decile on the right.

Table 2-2: Access to college types based on CPS graduates' ACT scores and GPA patterns of college enrollment

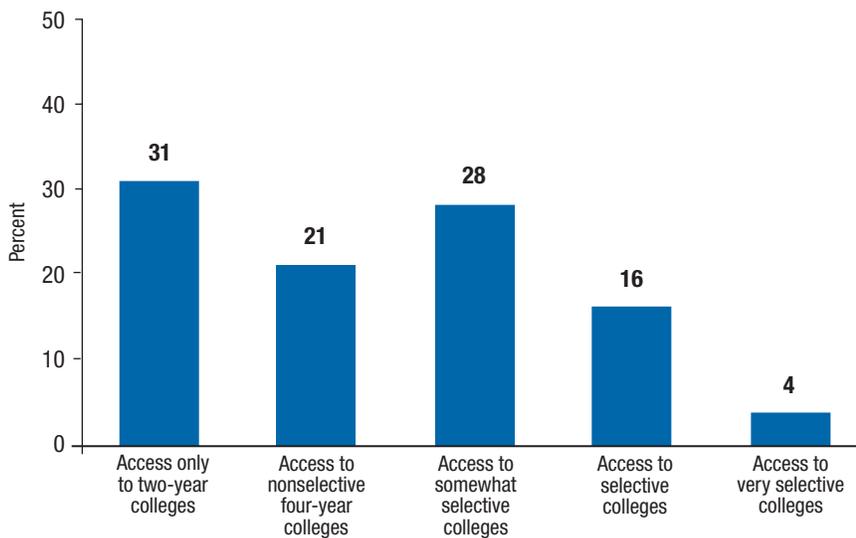
	2.0 or less	2.1-2.5	2.6-3.0	3.1-3.5	3.6-4.0
Missing ACT	Access to 2-year colleges	Access to nonselective 4-year colleges	Access to somewhat selective colleges	Access to selective colleges	Access to selective colleges
<18	Access to 2-year colleges	Access to nonselective 4-year colleges	Access to somewhat selective colleges	Access to somewhat selective colleges	Access to selective colleges
18-20	Access to nonselective 4-year colleges	Access to somewhat selective colleges	Access to somewhat selective colleges	Access to selective colleges	Access to selective colleges
21-23	Access to somewhat selective colleges	Access to somewhat selective colleges	Access to selective colleges	Access to selective colleges	Access to selective colleges
24+	Access to somewhat selective colleges	Access to selective colleges	Access to selective colleges	Access to very selective colleges	Access to very selective colleges

Note: Graduates without transcript data, including graduates of charter schools, are not included.

Figure 2-9

About 20 percent of CPS graduates had GPAs and ACT scores that gave them access to selective or very selective colleges

CPS graduates' access to two-year and four-year colleges of varying selectivity



Note: Graduates without transcript data, including graduates of charter schools, are not included.

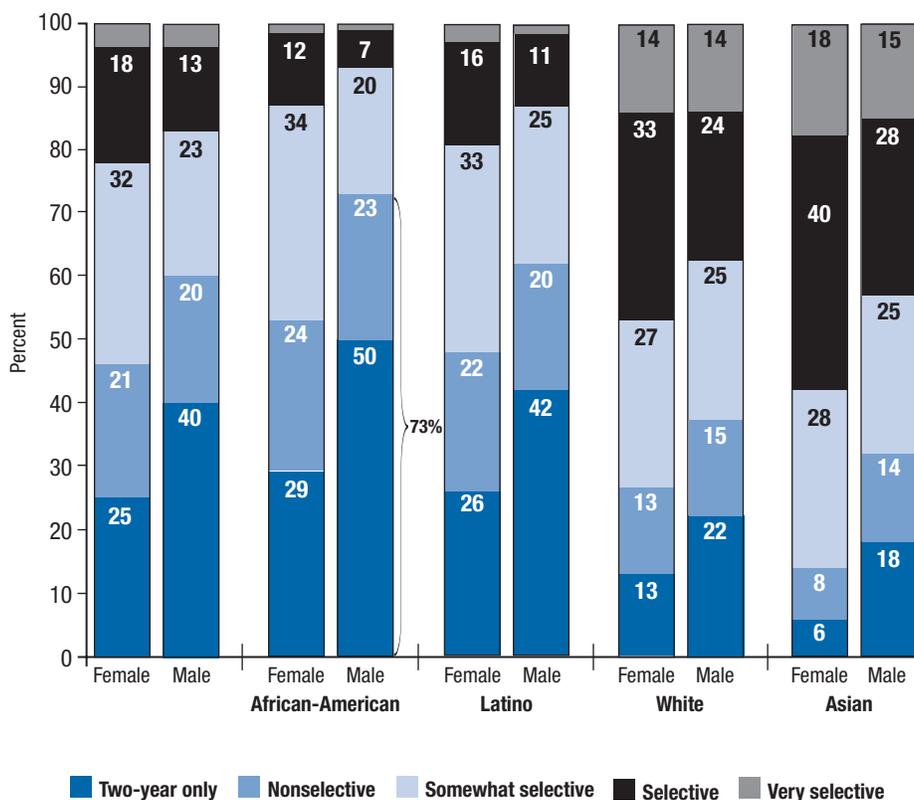
and other existing rubrics to measure qualifications.¹¹ This is largely because we are basing the rubric on the actual college-going patterns of CPS graduates and their GPAs and ACT scores, and our definition of “qualifications” does not encompass all of the criteria that colleges use in their acceptance decisions. For example, college admissions decisions often rely on class rank, and in low-performing high schools, graduates may have low GPAs, but relatively high class ranks, and still be admitted.

Figure 2-9 shows the percentage of CPS graduates whose ACT scores and GPAs suggest that they would have access to at least a four-year college, a somewhat selective college, a selective college, or a very selective college. Students with GPAs below 2.0 and ACT scores below 18 were coded as having access only to two-year colleges, because they would have difficulty gaining access to many nonselective four-year colleges. As seen in Figure 2-9, this first category of students who only have access to two-year colleges accounts for 31 percent of CPS graduates. Indeed, fully 52 percent of CPS students graduate with ACT scores and GPAs that would only qualify them for admittance to a two-year or nonselective four-year college. At the high end, only 20 percent of CPS graduates have GPAs and ACT scores that would qualify them for admittance to a selective or very selective college.

Few African-American and Latino high school graduates have ACT scores and GPAs that give them access to selective colleges such as the University of Illinois at Chicago (UIC) or DePaul

University. Only 14 percent of female African-American graduates, 20 percent of female Latino graduates, 8 percent of male African-American graduates, and 13 percent of male Latino graduates have qualifications that would give them access to a selective or very selective college (see Figure 2-10). White graduates are more than three times as likely as African-American graduates, and twice as likely as Latino graduates, to have the ACT scores and GPAs that would qualify them to attend colleges such as UIC and DePaul. We also see gender differences within racial/ethnic groups. These gaps are largely the result of significantly lower GPAs of male CPS graduates, not their ACT scores. Indeed, nearly three-quarters of African-American male students graduated from CPS with such low ACT scores and GPAs that they would only be likely to be admitted to a two-year or non-selective four-year college.

Figure 2-10
Nearly 75 percent of African-American male CPS alumni graduated with such low ACT scores and GPAs that they only had access to two-year or nonselective four-year colleges
 College access categories for 2002 and 2003 CPS graduates by race/ethnicity and gender



Note: Graduates without transcript data, including graduates of charter schools, are not included.

High School Performance and Racial/Ethnic and Gender Differences in College Attendance

We have presented evidence that low ACT scores and GPAs are related to lower probabilities of enrolling in college, particularly four-year and more selective colleges. In this section we examine whether the gaps in college-attendance patterns between male and female graduates and between white graduates and other racial/ethnic groups that we examined in Chapter 1 can be explained by ACT scores and GPA. We begin by looking at differences in the predicted probability of attending college for all CPS graduates and the probability of attending a selective or very selective college for students enrolled in a four-year college. We control for graduates' high schools and their pre-high

school characteristics, including eighth-grade test scores.¹² We then look at whether graduates' unweighted GPA in their core classes and their ACT scores have an additional effect on the probability of college enrollment.

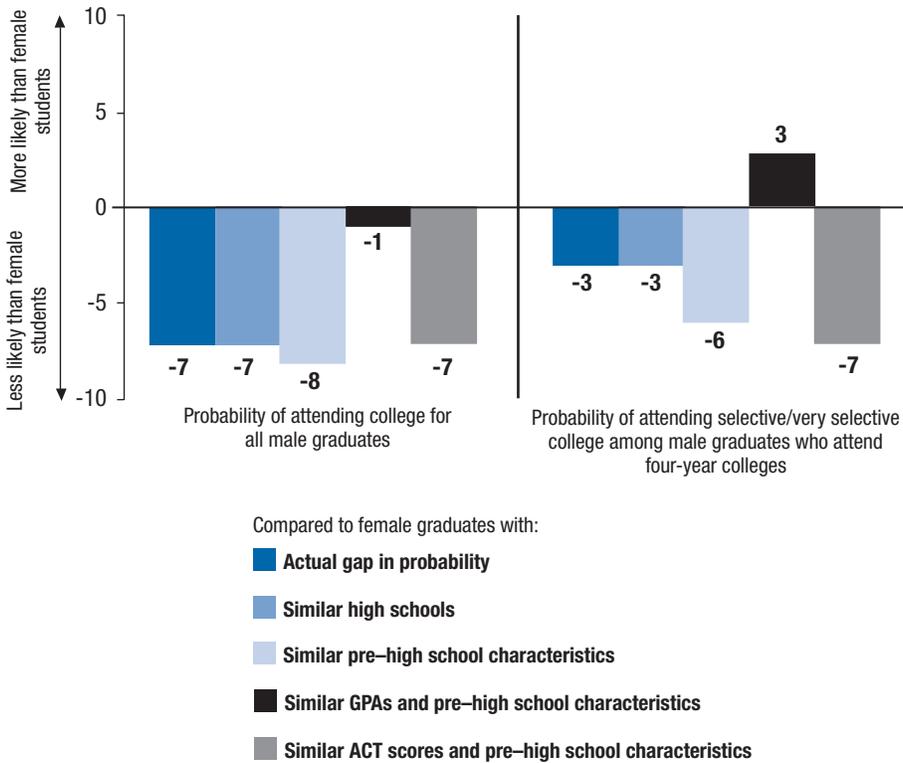
Male CPS graduates are about 7 percentage points less likely to enroll in college than female graduates (see Figure 2-11). The gap remains almost the same when we account for the high schools graduates attend, their demographic characteristics, and their eighth-grade test scores. It makes sense that differences in high school attendance explain little of the gender gap in college enrollment. Male and female students attend the same high schools and come from the same neighborhoods and socioeconomic backgrounds.

Examining high school performance, we find that GPA matters a great deal. Male graduates have much lower GPAs than their female counterparts, which explains much of

Figure 2-11

Male and female graduates with similar GPAs are about equally likely to enroll in college and to attend selective and very selective colleges

Probability of attending college and of attending selective and very selective colleges, controlling for student background



their lower college-participation rates. Given graduates with comparable GPAs, the gap between female and male graduates closes; male graduates are only slightly less likely to attend college than female graduates. In contrast, the gap remains when male graduates are compared to their female counterparts with similar ACT scores. We find even more dramatic results when looking at the probability of attending a selective college. Among graduates with similar GPAs attending four-year colleges, male graduates are slightly *more* likely than female graduates to attend a selective or very selective college. The gender gap actually grows among graduates with similar ACT scores. We have seen that ACT scores alone explain little of the gender gap in college enrollment. Thus, it is the male graduates' poor performance in high school coursework that explains their lower college-attendance rates.

Another question raised in Chapter 1 is, why are there such large gaps in the college-going rates across racial/ethnic groups? The gap in college-attendance between white graduates and African-American, Latino, and Asian

graduates can be partly explained by the high schools they attended (see Figure 2-12, 2-13, and 2-14). Once we control for pre-high school characteristics and the high schools that graduates attend, African-American graduates are about equally likely, Latino graduates are 13 percent less likely, and Asians are 12 percent more likely to enroll in college than white graduates. Much of the difference in college-participation rates between African-American and white students is explained by the fact that African-American students attend high schools with lower college attendance rates. When we account for the high school that students attend, the college-enrollment gap between African-American and white graduates drops from 12 to 1 percent. For Latino graduates, the gap is reduced by about one-third, from 21 to 13 percent. This analysis suggests then that even when Latino and white students attend

similar high schools, Latino students remain significantly less likely to enroll in college. We can also explain about one-third of the higher college-attendance rates of Asian versus white students by the fact that Asian students are more likely to attend high schools with higher college-attendance rates. Demographic characteristics and pre-high school test scores make little difference in college-attendance rates once we have controlled for which high school students attend.

What happens when we take high school performance into account? As we have seen before, ACT scores have little effect on college-going rates. However, when African-American graduates are compared to white graduates with similar GPAs, they are more likely to attend college. Given the very poor qualifications of African-American CPS graduates, their relatively high college-attendance rates seem surprising. Indeed, we see that African-American graduates do enroll in college despite their relatively poor ACT scores and low GPAs, and are in fact enrolling at higher-than-expected rates given their poor high school performance (see Figure 2-12).

In contrast, the gap in college-participation rates of Latino graduates remains steady, regardless of whether we control for ACT scores or GPA, at about 12 percentage points lower than white graduates (see Figure 2-13). That is, if we were to compare Latino and white graduates with similar ACT scores and GPAs, who attended similar high schools, the Latino graduate would still be less likely to enroll in college than the white graduate. Unlike African-American graduates, the gap in college enrollment between Latino and white graduates cannot be explained by lower levels of academic preparation. Similarly, the higher college-participation rates of Asian graduates compared to white graduates cannot be explained solely by Asian students' higher ACT scores and GPAs.

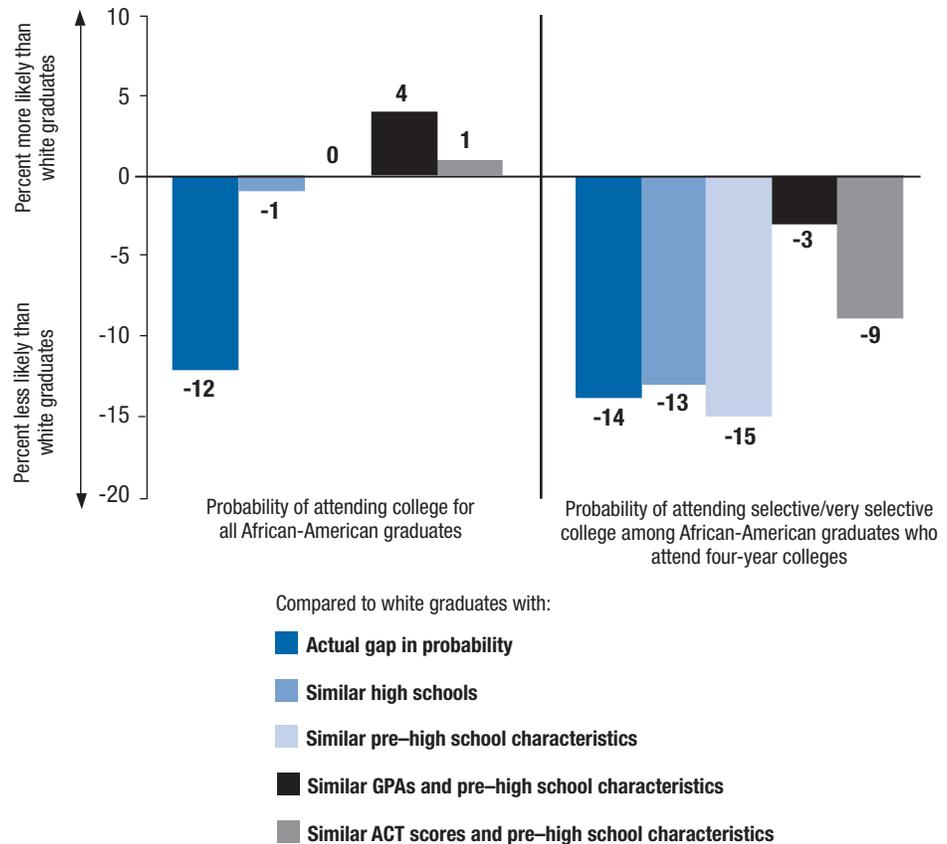
As with college-attendance rates, GPA explains more of the gap between African-American and white graduates in the predicted probability of attending more selective colleges than do ACT scores. Among students attending four-year colleges, an African-American graduate with a GPA and pre-high school characteristics similar to a white graduate's is only 3 percent less likely to attend a selective or very selective college. While Latino graduates are less likely to attend college even after controlling for academic preparation, among graduates who enroll in four-year colleges, Latinos are more likely to attend a more selective college. As with college-going patterns, Asian graduates are more likely than white graduates to attend more selective schools, even when we take into account their higher levels of academic preparation (see Figure 2-14).

We started this section with the questions raised in Chapter 1 about gender and racial/ethnic gaps in college attendance. We found that the gap between African-American and white graduates in the probability of going

Figure 2-12

After controlling for GPA, African-American graduates are more likely than white graduates to attend college, but are still slightly less likely to attend selective and very selective colleges

Probability of attending college and of attending selective and very selective colleges, controlling for student background

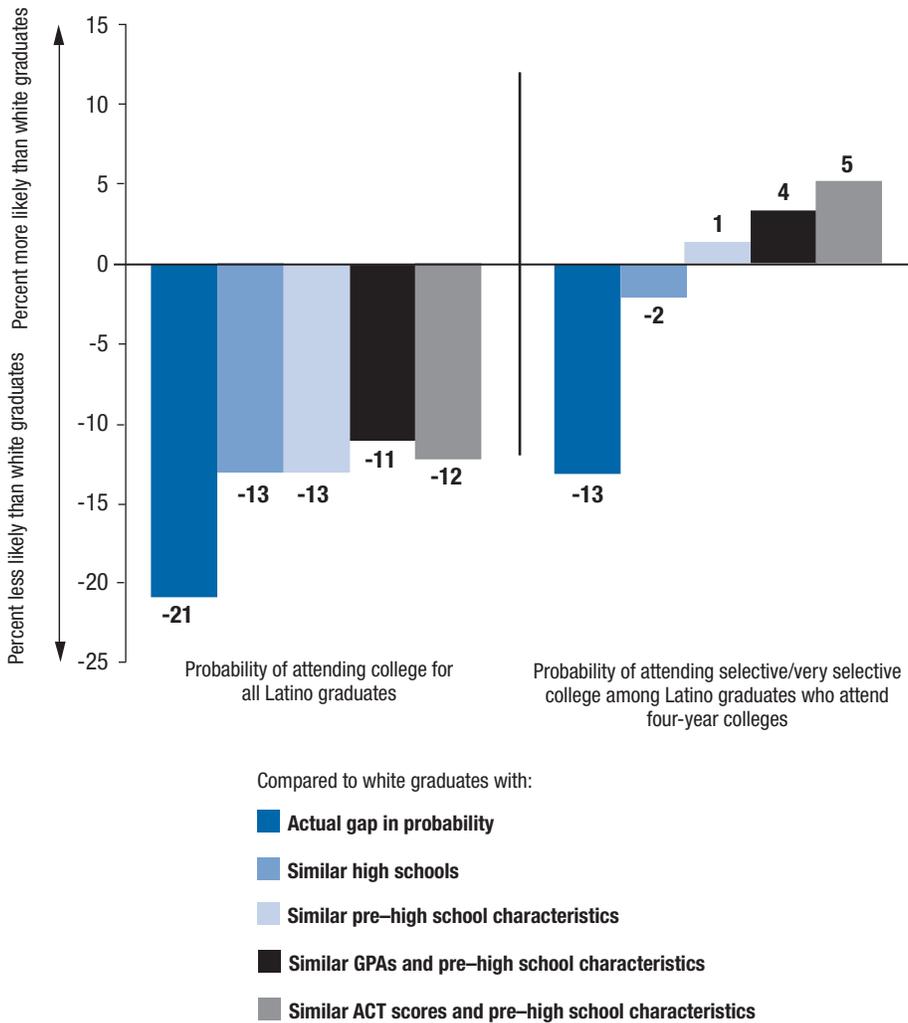


to college can be explained by pre-high school student characteristics. Much of this difference can also be explained by the fact that African-American students in CPS are attending high schools with poorer college-attendance rates. Similarly, we can explain about one-third of the poor college participation of Latino students by the lower college-attendance rates of the high schools from which they graduated. However, unlike African-American graduates, Latino graduates' eighth-grade test scores and student and school demographic characteristics do not further explain the gap with white students' college attendance. Stated simply, Latino students, controlling for their pre-high school characteristics, appear to be less likely to attend college, regardless of the characteristics of the high schools they attend.

Figure 2-13

Even with similar GPAs and ACT scores, Latino graduates are much less likely to enroll in college than white graduates

Probability of attending college and of attending selective and very selective colleges, controlling for student background



We have also found that our two measures of qualifications, and GPA in particular, explain much of the gaps we observed in Chapter 1. However, one critical question remains: why are Latino graduates less likely than other similar graduates to attend college? This gap is more surprising given that Latino graduates who do enroll in four-year colleges are in fact are *more* likely than white graduates to attend four-year selective and very selective colleges.

Finally, one of the most important trends in education over the past two decades, both in CPS and across the nation, has been the growing gender gap in school performance. It has been documented in dropout rates, and here

we see it in college-attendance rates. In this chapter, we found that we cannot explain this gender gap in college enrollment by the fact that, at least on measured characteristics, male graduates were more disadvantaged on entering high school or were concentrated in high schools with poorer college-going rates. It is male graduates' performance in their classes, as measured by GPA, that explains their lower college-going rates, rather than their ACT scores.

How Does Coursework Shape College Participation?

We now turn to coursework, our third measure of college preparation. Research on college access has consistently found that students who take more advanced coursework in high school are more likely to attend college, less likely to be placed in remedial courses in college, and more likely to be successful in the colleges they attend.¹³ Over the past decade, CPS has been a national leader in raising graduation requirements to be aligned with minimum college admissions requirements, and expanding the opportunity to take

more rigorous college-level courses and earn college credit to a wider range of students. Most of the growth in college-level coursework has come through an expansion of AP courses and an increase in the number of schools that offer the IB program. In this section, we take a first look at whether participation in these programs increases students' likelihood of attending college, independent of their prior achievement.

Participation in honors, AP, and IB courses could shape students' likelihood of going to college through several different pathways. First, these courses expose students to more rigorous content and higher expectations.¹⁴ In the

case of AP and IB programs, the curricula are explicitly linked to skills students will need to do college-level work. Students achieving high scores on program tests can receive college credit. In CPS, students earn additional GPA points for taking honors, AP, and IB courses, and thus will have higher GPAs to report to colleges. Second, such courses may act as a signaling mechanism to colleges that a student is college-level material—that is, willing to push him or herself, identified by the school as a top performer, and has had access to more rigorous material. Third, these courses may also cause students to be more oriented toward college by providing them with an academically oriented peer group, greater access to support for college from teachers and counselors, and confidence in their ability to do college-level work. Like previous researchers, we are unable to fully determine whether the effect of rigorous coursework is due solely to the experience of the class, or if some of the effect should be attributed to selection—that is, better-prepared and more motivated students enrolling in these classes.

The typical sequence for Chicago students who eventually take AP or IB courses is to take honors-level courses in their freshman and sophomore years and AP or IB courses in their junior and senior years.¹⁵ Thus, students who took AP courses also took honors courses. Without recognizing this, we may overstate the benefits of AP or IB courses. For this reason, we characterized students' coursework throughout high school based on their enrollment in advanced courses from freshman to senior year. We categorized students as enrolled in the "standard curriculum" if they never enrolled in an honors or AP course over the course of their high school career (e.g., all of their major subjects were coded as being "regular"-level courses). At the other end of the spectrum,

we characterized a student's overall curriculum as "advanced track" if he or she took six or more honors courses and at least two AP courses, or if he or she was enrolled in the IB program. Students in this curriculum group would be those who, on average, took at least two honors or AP courses a year in the major subjects. Students were categorized as being in an "honors track" curriculum if they took four or more honors courses (e.g., at least one a year) but never enrolled in an AP course. Students were categorized as being in an "honors with one AP" curriculum if they took four or more honors courses and not more than one AP course. Students were categorized as taking a "limited honors/AP" curriculum if they took three or fewer honors and not more than one AP course and thus did not participate in a systematic sequence of college-oriented coursework.

Figure 2-14

Asian graduates are more likely than white graduates to attend a four-year college, as well as attend a selective or very selective college, even when controlling for GPA or ACT scores

Probability of attending college and of attending selective and very selective colleges, controlling for student background

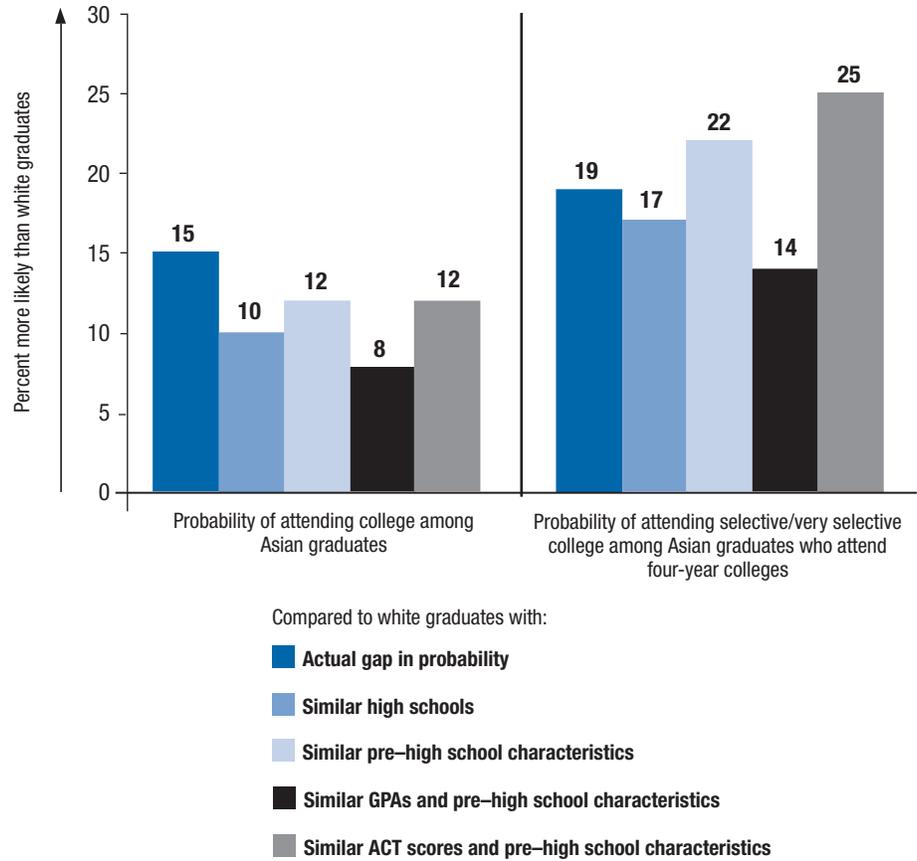
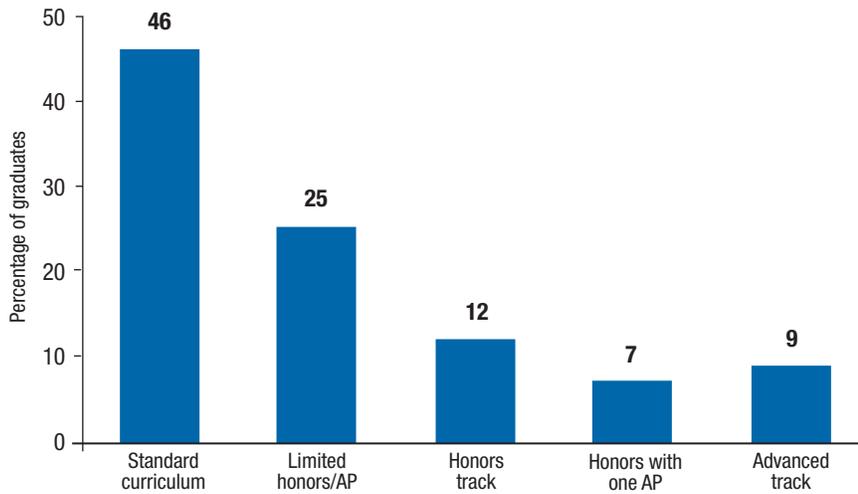


Figure 2-15

Almost two-thirds of CPS graduates take three or fewer honors classes

Percentage of CPS graduates in each curricular track



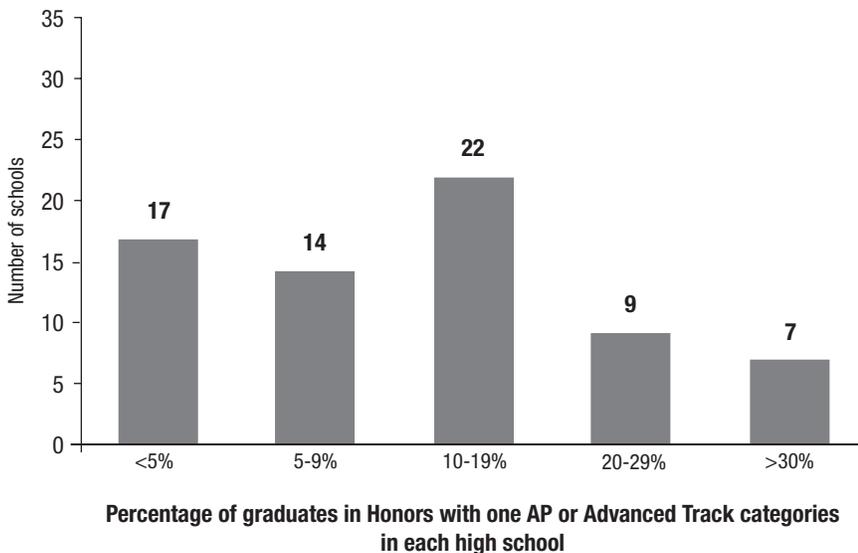
Note: Graduates without transcript data, including graduates of charter schools, are not included.

About half of all CPS graduates fell into our standard curriculum group, that is, they never took an honors or AP course (see Figure 2-15). Still, despite the rapid expansion of the AP program in Chicago and the high college aspirations of students, the number of students who engaged in a more rigorous curricular program—one in which they were regularly enrolled in honors courses and took at least two AP courses or were enrolled in the IB program—is quite limited. Only 9 percent of CPS graduates had sustained exposure to rigorous coursework that is explicitly intended to prepare students for college-level work. However, some students may not be taking more rigorous courses because the course offerings at their high schools are limited.

Figure 2-16

At 17 schools, less than 5 percent of students took advanced coursework

Distribution of high schools by graduates' participation in advanced coursework



Note: The five charter high schools in CPS are not included in these numbers, because their transcripts are not included with transcript data.

CPS's expansion of AP and IB courses was intended to increase the numbers of students in neighborhood high schools with access to coursework that had previously been limited primarily to selective enrollment high schools. An important question is whether the expansion of college-level programs has truly altered the opportunities for students to have sustained exposure to rigorous coursework, or if these opportunities continue to be concentrated in a small number of selective enrollment schools or only provided to a small number of students in neighborhood schools. In many Chicago high schools, few graduates take college-level coursework. At about half of the 69 high schools for which we have transcript data, less than 10 percent of graduates took coursework that falls into either the advanced track or honors with one AP category. In 17 of these high schools, less than 5 percent of graduates took a sequence of advanced coursework (see Figure 2-16). In only

The Advanced Placement and International Baccalaureate Programs

Starting with the entering class of 1997, CPS raised its graduation requirements to align with the New Basics Curriculum.¹ During this period, CPS also moved to dramatically expand programs such as Advanced Placement (AP) and International Baccalaureate (IB) to provide students in neighborhood high schools with the kinds of advanced curricular options typically afforded by selective enrollment schools. Between 1998 and 2003, the number of students enrolled in and the number of schools offering AP courses and IB programs grew considerably.

Originally designed to meet the educational needs of internationally mobile students, International Baccalaureate programs (IB) provide students with the opportunity to participate in a rigorous four-year course of study specifically designed to prepare them for college. Selection into IB programs at CPS high schools is competitive and is based

on students' course grades, a writing sample, a parent-student interview, and ITBS mathematics and reading scores. While the official IB curriculum does not begin until eleventh grade, CPS high schools provide students selected for the IB program with challenging pre-IB coursework during their freshman and sophomore years. In order to receive an IB diploma, students must successfully complete the required IB curriculum and extended essay, as well as pass a series of written course examinations. In 1998, only one Chicago high school offered students the option of participating in an IB program; however, by 2003, ten more schools had added IB programs. The number of graduating students participating in an IB program grew from 47 to 219, an increase of 366 percent.

Although not a specific series of classes, AP programs provide students with the opportunity to take college-level courses while they are in high school. While the

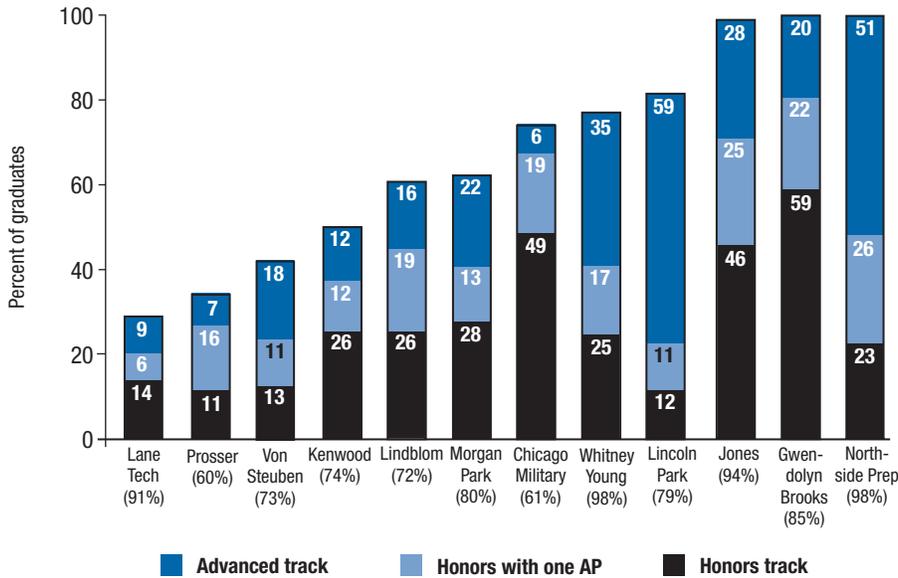
number and variety of courses varies by school, the AP program offers 35 AP courses in a wide variety of subject areas. Students enrolled in AP courses are provided with challenging curriculum, and students have the opportunity to earn college credit by scoring well on the corresponding end-of-course AP exam. In 1998, 47 CPS high schools had students enrolled in AP courses. This number grew by 26 percent to 59 by 2003. The number of graduating students who had enrolled in at least one AP course increased by 96 percent between 1998 and 2003, from 1,700 to 3,335.

¹ CPS requirements are actually slightly higher than the New Basics Curriculum, they add two years of a world language to the New Basics Curriculum of four years of English, three years of mathematics (Algebra, Geometry, and Advanced Algebra Trigonometry), three years of laboratory science, and three years of social science.

Figure 2-17

Some high schools with top students have few graduates who took a sustained set of rigorous coursework

Percentages of graduates taking rigorous courses among top high schools



Note: The number in the parentheses indicates the percentage of graduates who entered high school with ITBS reading scores at or above national norms. The high schools in this figure had at least 60 percent of their graduates enter high school with scores at or above national norms.

seven high schools did more than 30 percent of graduates take advanced coursework; of these, five are selective enrollment high schools. More importantly, about 40 percent of all CPS graduates who took advanced track coursework were concentrated in these seven high schools.

We find dramatic differences in the difficulty of coursework that students take, even among high schools where students entered well prepared. In Figure 2-17, we look at high schools where at least 60 percent of the entering freshman class scored at or above national norms on the Iowa Tests of Basic Skills (ITBS). At Lincoln Park, a neighborhood high school with a large IB program, 79 percent of graduates entered high school scoring at or above national norms in reading, and almost the same percentage of graduates took an honors, honors with one AP, or advanced track curriculum, including 59 percent taking the advanced curriculum. In contrast, at Lane Tech 91 percent of graduates entered high school scoring at or above national norms, but only 29 percent took an honors, honors with one AP, or advanced

track curriculum. It appears that even in high schools where students enter with relatively high test scores, many students are not taking coursework that would help prepare them for college.

At many Chicago high schools, few graduates have taken a sustained program of rigorous coursework, but does this actually affect graduates' access to college? In Figure 2-18, we show the results for our three college-going outcomes (college-going, enrolling in a four-year versus a two-year college, and enrolling in a selective or very selective college versus a nonselective or somewhat selective college) based on the rigor of students' curriculum. For students with similar GPAs, ACT scores, and demographics, being in the limited honors/AP, honors, honors with one AP, or advanced track curriculum does not make them much more likely to attend college. However, once we examine the probability of attending a four-year college among college-

goers, having coursework above the standard curriculum (i.e., taking at least an honors or other advanced course) makes a difference. We see the greatest impact of advanced coursework on the probability of attending a selective or very selective college among graduates attending four-year colleges. Graduates who took an advanced track curriculum rather than the standard curriculum had a more than 20 percent higher predicted probability of attending a selective or very selective college. Thus, while curriculum does not have an effect on college-attendance rates, it does have a significant impact on whether graduates enroll in selective and very selective colleges.

In this section, we found that few CPS graduates have taken an advanced curriculum, and that those who did are concentrated in a small number of schools. While taking more advanced coursework does not appear to greatly enhance graduates' probability of attending college, it does have a large impact on their likelihood of enrolling in a selective or very selective college. Increasing the number of

CPS graduates who have access to more selective colleges will require that high schools offer a sustained curriculum of rigorous coursework, particularly in those high schools that have students who enter prepared to do more advanced work.

How Much Do High Schools Differ in the Preparation of Their Graduates?

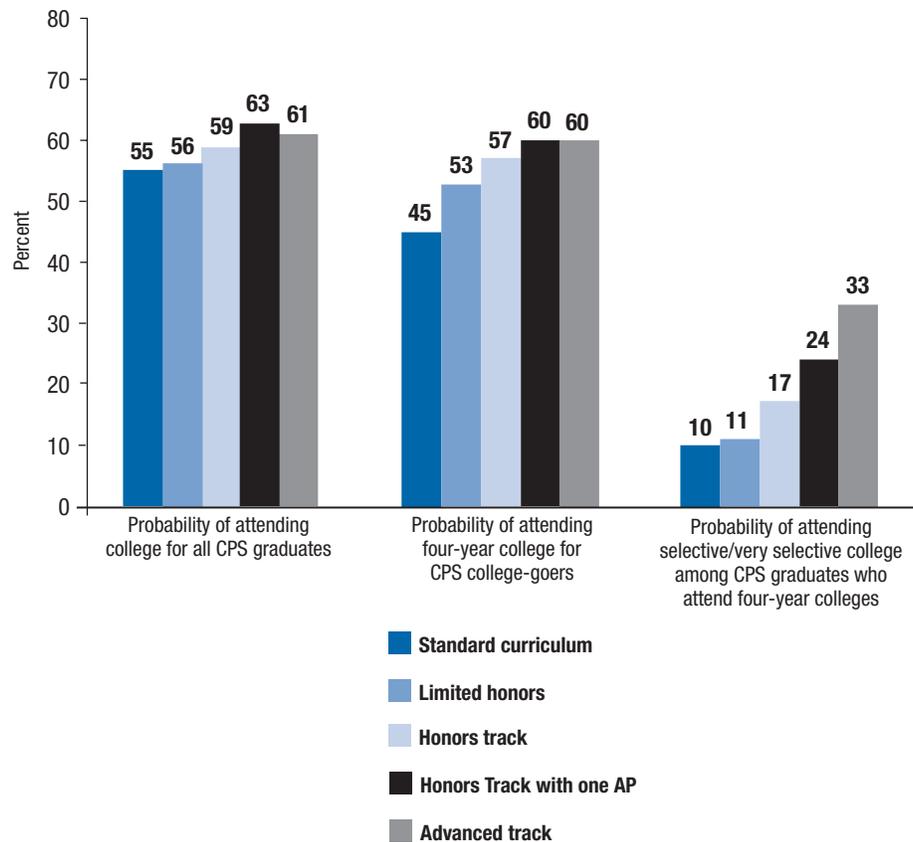
CPS has committed itself to ensuring that all students have access to postsecondary education. Over the past decade, CPS has increased graduation requirements and expanded its offerings of advanced coursework. In the previous section, we found that, despite significant investments and an impressive expansion of AP classes, few Chicago high schools are offering students the kind of higher-level curricula and sequences of courses that would allow their coursework to look comparable on paper to college applicants from other, higher-performing schools. In this section, we extend our analysis of differences in students' opportunities across high schools by asking: to what extent do high schools differ in whether their graduates have GPAs and ACT scores that give them access to postsecondary education?

An important set of policy questions that arises as urban school systems move toward college preparation and participation as measures of high school performance are: How many students from each high school should be expected to go to college, what types of colleges should their students be prepared for, and what should be the goal for different group of students within their school? At an administrators meeting last August, CPS announced the goal of sending 64 percent of its graduates, including students with disabilities, to college by 2010. At present, many high schools do not meet this goal. But, we also saw in Chapter 1 that high

Figure 2-18

Students who take AP courses and more rigorous curricula are much more likely to attend a selective or very selective college, even after accounting for students' GPAs and test scores

Probabilities of students attending colleges of varying selectivity, controlling for student background



schools differed widely in what kinds of colleges students were attending. In evaluating access, we want to evaluate whether students also have access to four-year colleges, which aligns with their aspirations, as well as to selective and very selective colleges. What should be the expectations in this area? One option is to evaluate whether students have access to four-year institutions and, particularly, to public four-year universities.¹⁶ In Illinois, a student would have access to the majority of the four-year public universities if he or she was qualified to attend a somewhat selective college. These four-year public universities include Chicago State and Northern and Southern Illinois universities. A student would have access to the University of Illinois at Chicago if he or she were qualified for admission to a selective college. And a student would have access to the best public college in the state, the University of Illinois at

Urbana-Champaign, if he or she were qualified to attend a very selective college.

Given these options, one possible criterion is to expect that at least half of the graduating class of each high school would have the preparation that would give them the option of attending a somewhat selective four-year public university in Illinois.¹⁷ A second criterion is that a student who attends any Chicago public high school and graduates in the top 10 to 20 percent of his or her class would be qualified to attend a selective four-year university such as the University of Illinois at Chicago. Finally, we would hope that at least the top 2 percent from every school could attend the state's most selective public university, the University of Illinois at Urbana-Champaign, especially given CPS's efforts to expand AP and IB programs in neighborhood high schools.¹⁸

As a system, CPS currently meets those rough criteria. As we saw previously in Figure 2-9, if we combine CPS graduates' ACT scores and GPAs, approximately 20 per-

- Only 14 of 69 non-charter high schools met the criterion that 20 percent or more of their graduates were qualified to attend a four-year selective college such as the University of Illinois at Chicago;
- And, few high schools in the city met the criterion of having any students graduate with the qualifications to gain access to Illinois' best public college, the University of Illinois at Urbana-Champaign or any other very selective college.

These low levels of qualification among graduates of the majority of CPS high schools certainly reflect the poor ACT performance of students in the schools (see Figure 2-20). In almost 84 percent of CPS high schools, the average ACT score is below an 18, the score that our rubric indicates students need to have a good chance of being accepted to the majority of four-year public universities in Illinois. Moreover, in about half of the high schools, very

. . . few high schools in the city met the criterion of having any students graduate with the qualifications to gain access to . . . the University of Illinois at Urbana-Champaign . . .

cent have the qualifications that would give them access to a selective or very selective college, and approximately 48 percent graduate with access to at least a somewhat selective four-year college. The problem, however, is that these students only attend a few schools. If we exclude the charter schools for which we do not have GPA data, half of the CPS graduates with qualifications to attend selective or very selective colleges attend only six high schools (Whitney Young, Northside College Preparatory, Lane Technical, Jones College Preparatory, Lincoln Park, and Morgan Park). The high performance of these schools currently drives the school system's results. Most CPS high schools do not meet our benchmarks for the percentage of graduates qualified for types of colleges (see Figure 2-19).

- Only 19 of 69 non-charter high schools met the criterion that 50 percent or more of their graduates are qualified to attend the majority of four-year public universities in Illinois (at least a somewhat selective college);

few graduates have ACT scores of at least 21. But these low levels of qualification are equally driven by the very low GPAs of graduates from these schools. Only 12 high schools have average unweighted GPAs above 2.4, and in more than half of CPS high schools, over 40 percent of students graduate with GPA lower than 2.0 (see Figure 2-21). Thus, contrary to the popular belief that it is easy to get straight A's in a low-performing high school, we find that students in better-performing high schools are much more likely to have high GPAs. Low ACT scores and low GPAs reflect the fact that students in these schools are struggling to pass their classes and graduate.

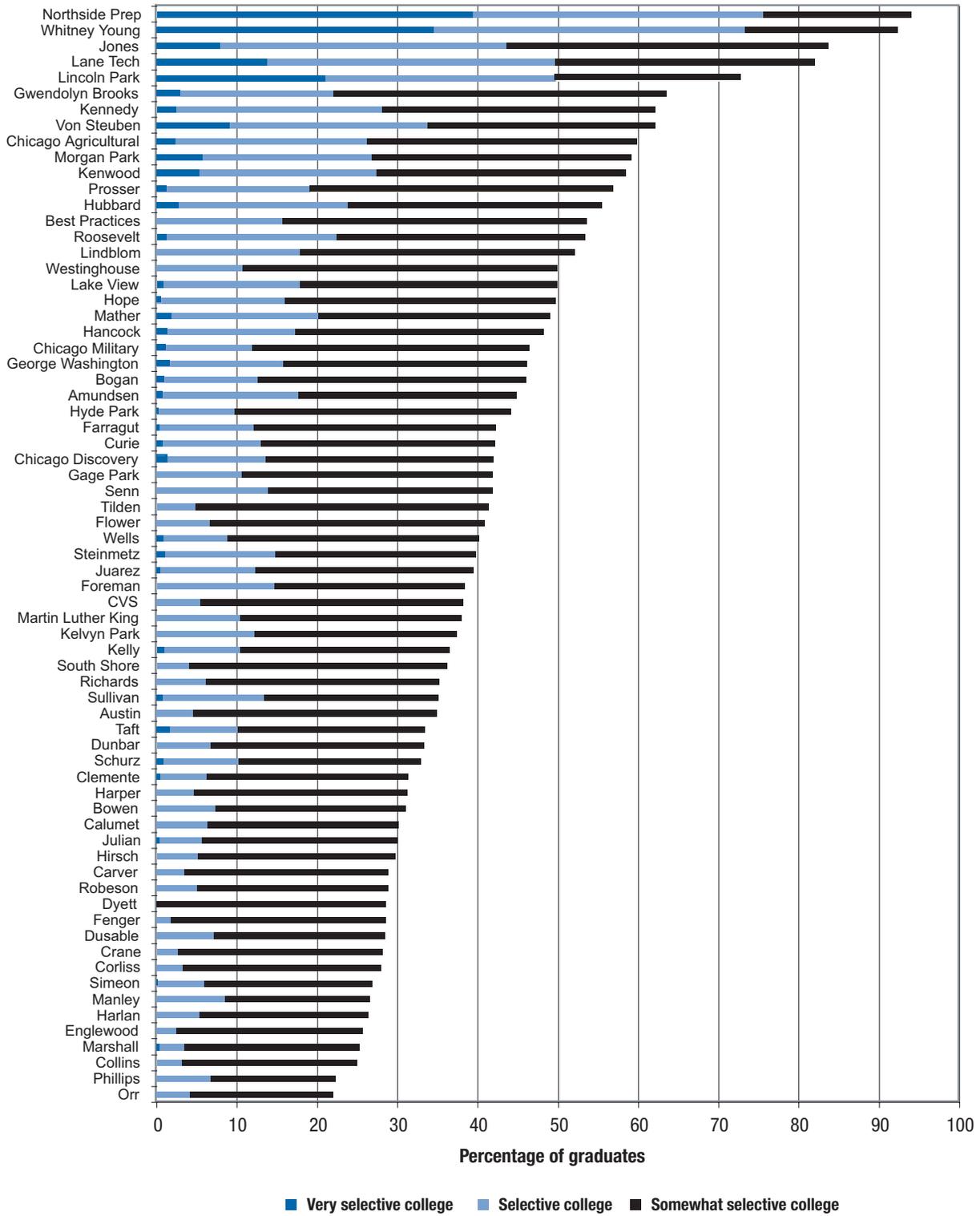
The Importance of Meshing Qualifications with Support

This chapter has focused on the question of whether CPS students' access to college, and particularly to four-year and selective colleges, is constrained by their qualifications.

Figure 2-19

Few high schools besides selective enrollment high schools meet our guidelines for qualifications

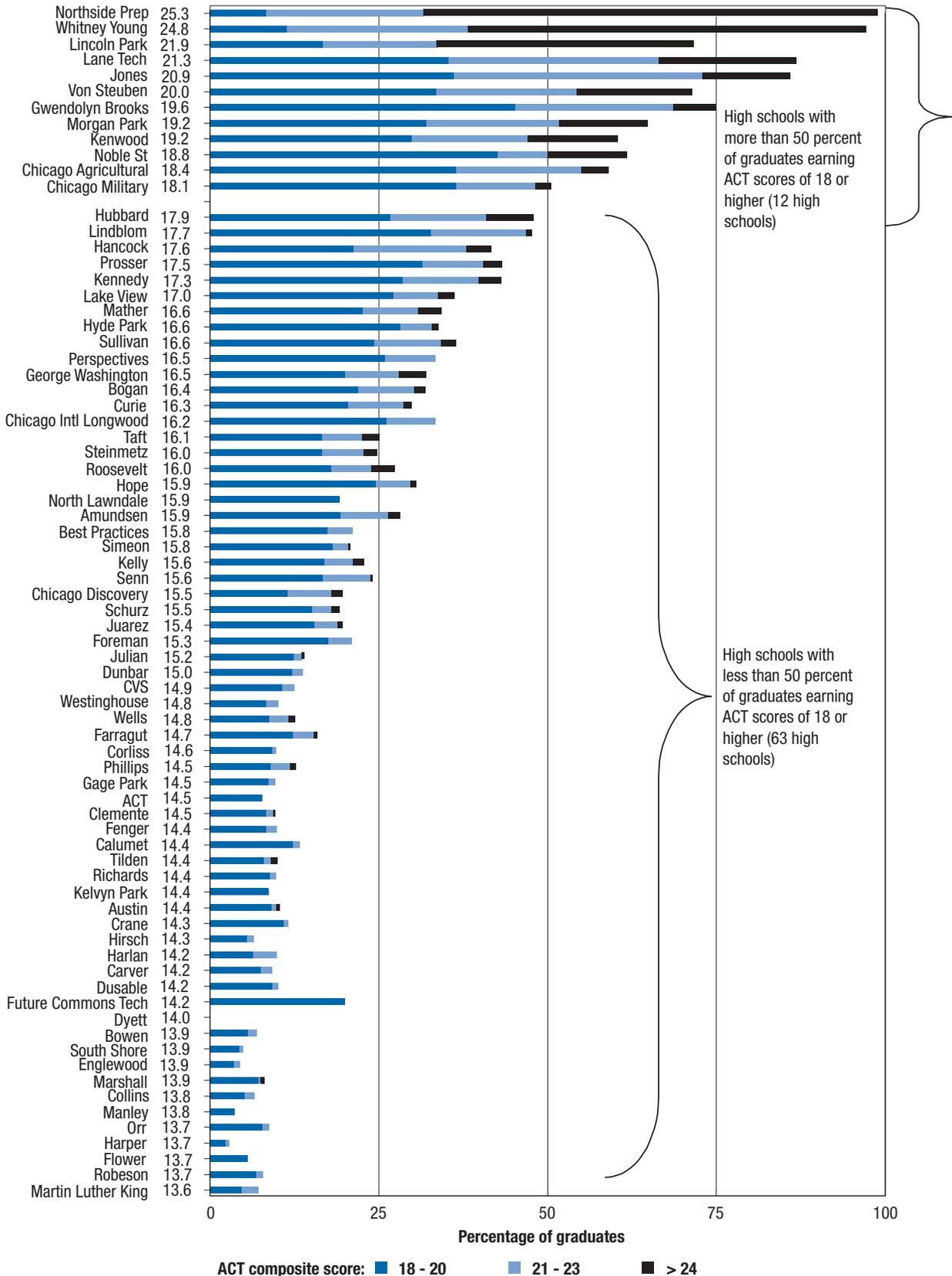
Percent of graduates qualified for somewhat selective, selective, and very selective colleges by high school



Note: The five charter high schools in CPS are not included in these numbers, because their transcripts are not included with transcript data.

Figure 2-20

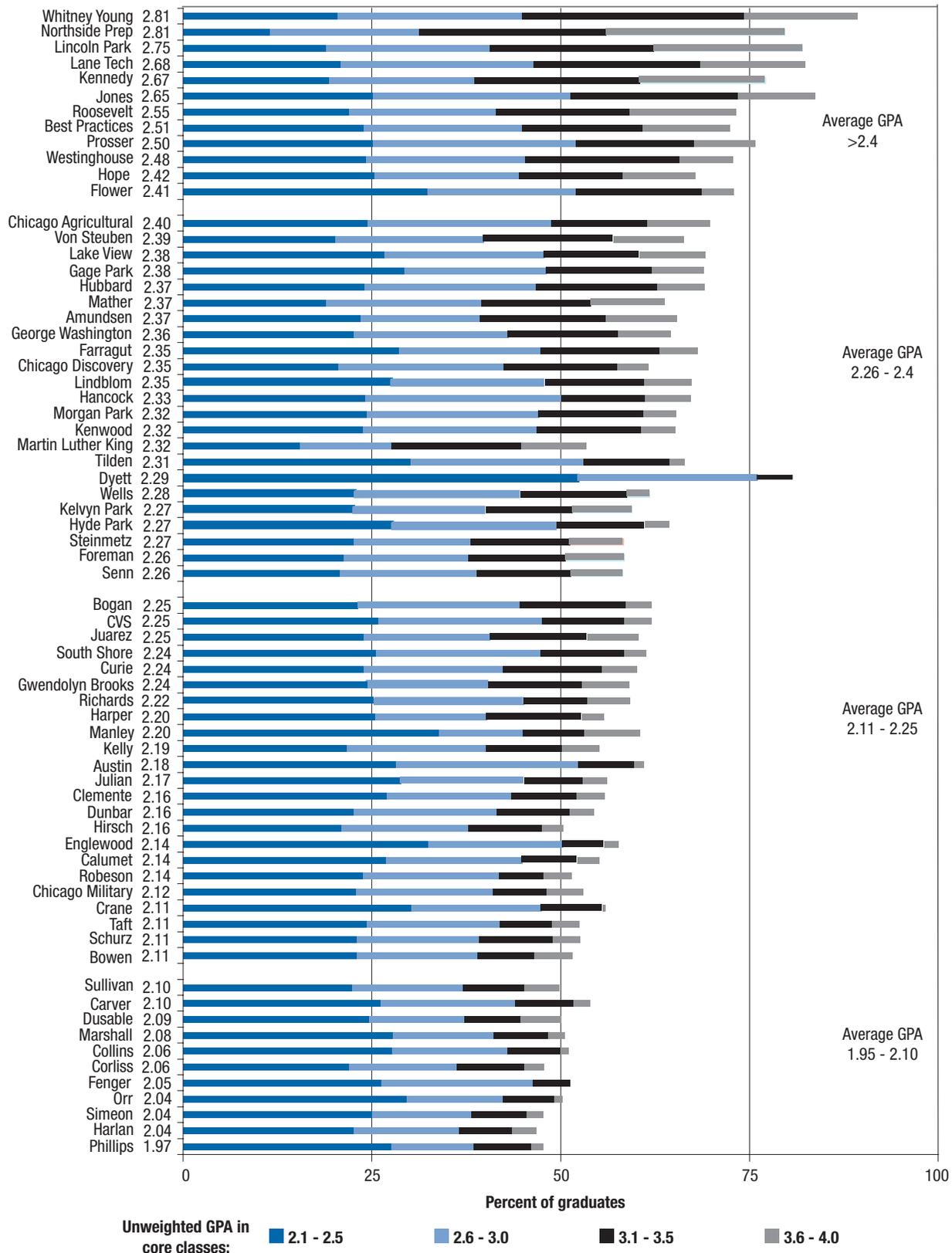
Very few high schools have more than 50 percent of graduates scoring above a 17
 ACT scores of the graduating classes of 2002 and 2003 across high schools



Note: Overall, 8 percent of graduates score above a 24 or above, 10 percent between 21 to 23, and 18 percent score between an 18 and 20 (see Figure 2-1).

Figure 2-21

In more than half of high schools, at least 40 percent of graduates have an unweighted GPA of 2.0 or lower
 GPA of the graduating classes of 2002 and 2003, across high schools



Note: Overall 7 percent of graduates have unweighted GPAs of 3.6-4.0, 14 percent 3.1-3.5, and 20 percent 2.6-3.0.

We find that we can largely explain CPS graduates' lower rates of enrollment in selective colleges, and particularly differences in college-attendance patterns by race/ethnicity and gender, by their level of qualification. We could not, however, explain the significantly lower college-attendance rates of Latino students in comparison to their African-American and white classmates by their level of qualification. Latino students are graduating with slightly higher levels of qualification than African-American students, but are much less likely to go to college.

Closing the aspirations-achievement gap in CPS must begin with a focus on improving students' qualifications. However, this alone will not be enough. CPS has begun new initiatives to provide more information and structures for students in neighborhood high schools to give them greater support in preparing for, applying to, and choosing colleges. For our next report, we will analyze Consortium survey data to examine much more specifically the extent to which students' access to college guidance and information, concrete support in applying to college, and the academic norms within high schools may shape college access. While

lowest college-attendance rates in the school system, but in Figure 2-19 we see that Kelvyn Park students rank near the middle in terms of the percentage of graduates who have qualifications that give them access to at least a somewhat selective college. The same is true of Farragut, which ranks sixth-lowest for the percentage of students attending college, but ranks near the middle in terms of students' levels of qualification.

Figure 2-22 makes this comparison directly, graphing the percentage of students in each high school that are qualified to attend a somewhat selective or more selective high school against the percentage of graduates who attended any four-year college. The band in the graph represents a proportionate number of students qualified to attend at least a somewhat selective college relative to the number actually attending any four-year college. We adjust the number for four-year college enrollment to allow for some error in college enrollment reporting and for graduates with high qualifications who opt out of college.

Most schools' college-going patterns reflect the qualifications of their graduates. However, in some schools,

Closing the aspirations-achievement gap in CPS must begin with a focus on improving students' qualifications. However, this alone will not be enough.

our school-by-school analysis suggests that many CPS high schools are simply not producing graduates who are prepared for admission to selective four-year colleges, these data also suggest that much more needs to be done to make sure that students who are qualified to go to college have the support to translate their qualifications into access. In Chapter 1 we ranked schools by the percentage of their students who attend college. Our ranking of high schools by college-going rates does not directly correspond to the ranking of high schools by the college qualifications we saw in Figure 2-19. We find that not only are there many high schools in which students are not qualified to attend college, but also that there are many high schools that have many more students qualified than are attending college. For example, in the previous chapter, Kelvyn Park had the

more graduates are qualified to attend college than actually enroll. High schools above the band, such as Simeon and Chicago Military, are sending more graduates than expected to four-year colleges. High schools below the band, such as Gage Park and Tilden, are sending fewer graduates than expected, suggesting that access to four-year colleges requires more from schools than simply preparing students with the requisite academic qualifications.

What We Have Learned

We have seen that many CPS graduates fulfill their college aspirations after they graduate from high school despite low ACT scores, low GPAs, and lack of rigorous coursework. Two-year colleges provide high school graduates with the

opportunity to continue their education, but preparation clearly plays a large role in shaping access to four-year colleges, particularly to more selective colleges. Several important themes have emerged from our examination of the relationship between preparation and college access.

First, many CPS students are graduating from high school with extremely low ACT scores and GPAs. More than two-thirds of CPS graduates have ACT scores of 17 or below, well below the national average of 20.8. More than one-third of CPS graduates have an unweighted GPA of 2.0 or below. The ACT scores and GPAs of African-American and Latino graduates are particularly low. In addition, only 8 percent of graduates have ACT scores of 24 or above, and only 7 percent have GPAs above 3.5.

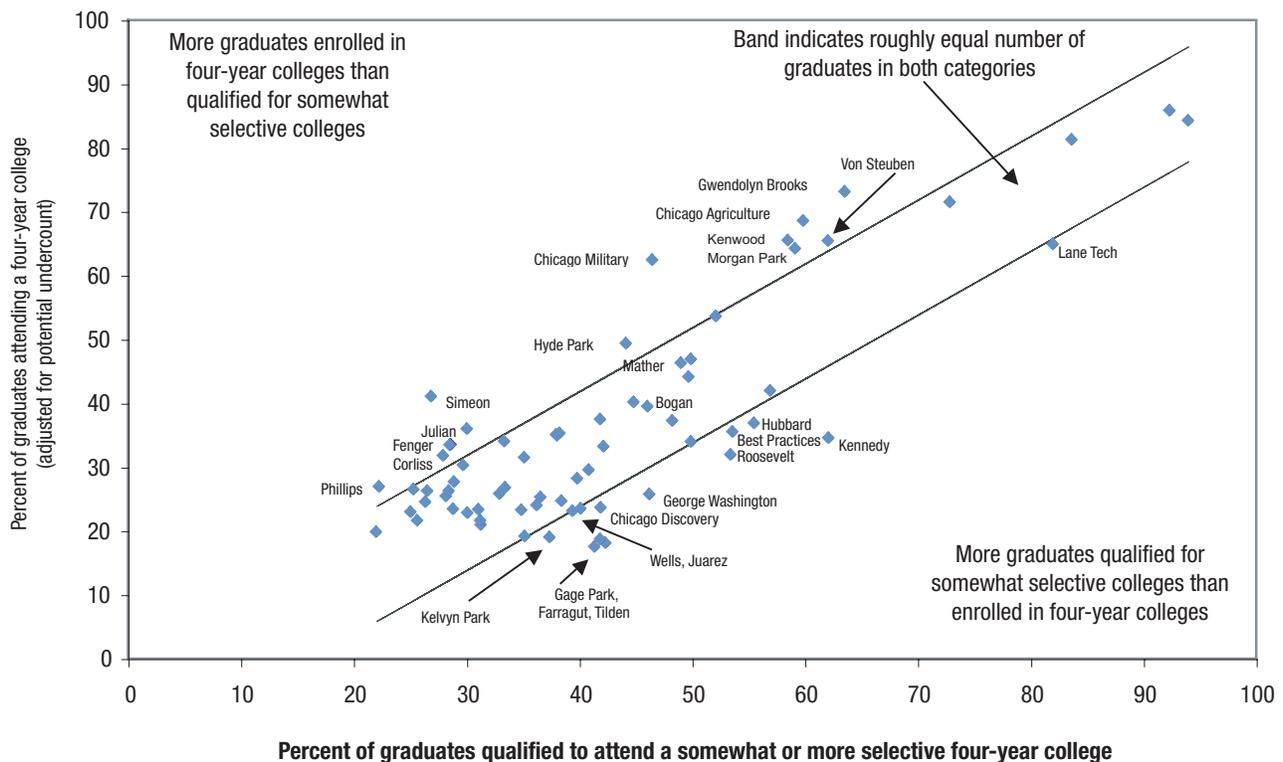
Second, preparation clearly matters for access to four-year colleges, and grades matter more than ACT scores for access to any type of college. For example, African-American graduates' lower likelihood of enrolling in four-year colleges and selective or very selective four-year colleges compared to their white classmates is driven largely by their lower GPAs. It appears that while African-American graduates do enroll in college, their choices are limited by their poor performance in high school.

Third, within all racial/ethnic groups, male students have much lower grades than their female counterparts. While male and female graduates began high school with similar test scores and also have similar ACT scores, male graduates are clearly doing worse in their classes throughout high school. The GPAs of male African-Americans and Latinos are particularly low, with about half graduating with a 2.0 or less.

Fourth, although they do explain the gap between African-American and white graduates' college-attendance rates, ACT scores and GPAs do not explain Latino graduates' lower rates of college enrollment. Latino graduates have college aspirations and parental support for postsecondary education similar to that of other CPS graduates. Although Latino students' ACT scores and GPAs are low, African-American graduates have even lower performance in high school, yet go to college at higher rates. It appears that preparation alone is not enough to explain the low rates of college enrollment among Latino graduates. College guidance and support may play a strong role in increasing the number of graduates who enroll in college.

Figure 2-22

Percentage of students qualified for a somewhat selective college versus the number attending a four-year college



Finally, despite increasing elementary school test scores, many Chicago high schools are not pushing students to meet their potential by providing challenging coursework. We found that taking challenging coursework such as honors and AP courses increases graduates' probability of enrolling in selective and very selective colleges. Some high schools that enrolled large numbers of students who entered high school with high test scores do not graduate proportionate numbers of students who took challenging coursework.

At the beginning of this chapter we asked what strategy Chicago high schools should be using to increase the number

of their graduates enrolling in college, particularly selective and very selective four-year colleges. We know that the preparation of CPS graduates limits their college options and improving preparation would be an important first step. GPA appears to have the greatest potential for change; small increases in students' GPAs are linked to substantial increases in their likelihood of enrolling in college. In addition, high schools could be better serving their higher-performing students by providing them with opportunities to take the challenging coursework that increases their chances of enrolling in selective and very selective colleges.

Endnotes

¹ Nagaoka, Stoker, Roderick, and Coca (2006).

² Chicago Public Schools (2002).

³ U.S. Dept. of Ed., National Center for Education Statistics (2003a).

⁴ For perspectives on whether college admissions tests are accurate indicators of future college performance, particularly for minority students, see Cloud (2001); Kohn (1999); and Fleming and Garcia (1998).

⁵ Although the PSAE is given to all juniors in the state of Illinois, we do not have ACT scores for 19 percent of 2002 and 2003 CPS graduates. It is likely that these students were absent during the test administration and did not retake the test at a later date. The graduates without ACT scores have much lower eighth-grade ITBS scores, with only 36 percent reading at or above national norms versus 52 percent for graduates with ACT scores.

⁶ We are unable to determine how many students retake the ACT and whether they were able to improve their scores. In our parallel longitudinal qualitative study, we interviewed 105 students after they took the PSAE, and almost all of them stated dissatisfaction with their ACT scores and intentions to retake the test. We will be conducting another round of interviews in the fall, and we will be following up with questions about whether students have in fact retaken the ACT and how they did the second time. Research has found that, in general, students' scores improve the second time they take the test, so the scores we are using in this analysis may be lower than the ACT scores submitted in college applications. See Andrews and Ziomek (1998); Lanier (1994); and Vigdor and Clotfelter (2003).

⁷ For example, see Thomas and Bainbridge (1997).

⁸ The average weighted and unweighted GPAs of CPS graduates are similar, although the weighted GPAs are higher. For all CPS graduates in 2002 and 2003, the average unweighted GPA was 2.3 and the average weighted GPA was 2.5.

⁹ The graduates with high GPAs and low ACT scores are scattered across high schools. In a few high schools, the majority of graduates with unweighted GPAs over 3.5 also have low ACT scores; however, these also tend to be high schools with few graduates with high GPAs.

¹⁰ We identified cutoffs for each qualification category by identifying descriptively the modal college attendance patterns of CPS graduates with different GPA and ACT combinations. Because this rubric reflects general patterns of college-going, some CPS graduates with ACT scores and GPAs that place them in a category enroll in a more selective college than indicated by their qualifications. The numbers also roughly align with the admissions requirements of in-state public universities: nonselec-

tive Northeastern Illinois University requires students to score at least a 19 on the ACT or be in the top half of their graduating class; somewhat selective Chicago State University requires an ACT score of 18 and a 2.5 GPA; selective University of Illinois at Chicago does not post minimum requirements but the entering class of 2005 had an average ACT of 23 and GPA of 2.75; more than 90 percent of 2005 admitted students at the very selective University of Illinois at Urbana-Champaign scored at least a 23 on the ACT and 80 percent were in the top 25 percent of their graduating class.

¹¹ For example, NCES defined being highly qualified as having at least one of the following criteria in the top 25 percent: GPA, class rank, NELS, SAT, and ACT. See U.S. Dept. of Ed., National Center for Education Statistics (1997a).

¹² We do not have data on students' elementary school grades. It is possible that students with low GPAs in high school also had poor grades in elementary school.

¹³ ACT, Inc. (2004a); Rosenbaum (2004); Barth (2003); U.S. Dept. of Ed., National Center for Education Statistics (2001); U.S. Dept. of Ed., Office of Educational Research and Improvement (1999); U.S. Dept. of Ed., National Center for Education Statistics (1997b).

¹⁴ The rigor of honors, AP, and IB courses may also differ across high schools. A future report in this series will examine the question of the relative rigor of these classes in high schools citywide.

¹⁵ Students usually enroll in the IB program their first year of high school but do not begin to take courses that count toward an IB diploma until their junior year.

¹⁶ The idea of having benchmarks for the percentage of high school graduates that should be ready for college has some precedent. States such as Florida, Texas, and California have set up policies that grant admission to public universities to all high school students graduating in the top part of their class.

¹⁷ The average CPS student who attended somewhat selective four-year public colleges in 2002 and 2003 graduated with a 17 or higher on the ACT. Since this is currently the average for CPS, it would make sense that we would expect that high schools should strive to get half of their graduates up to a 17.

¹⁸ As a reference, California guarantees admission to its University of California system to the top 4 percent of graduates of every high school. Within the University of California system, all colleges and universities are either selective or very selective.





Graduation Rates of Chicago Public School Alumni in Four-Year Colleges

*G*oing to college is a significant milestone, yet if students do not *remain* in college to graduate, they will not obtain the full benefits of a college education. At the beginning of this report we showed that the vast majority of Chicago Public Schools (CPS) students aim to complete at least a bachelor's degree. While many CPS students are going to college, they are enrolling with poor qualifications. In this chapter we ask, how likely are CPS students who enroll in four-year colleges to graduate, and to what extent do high school performance and college choice shape their likelihood of completing a four-year degree? Examining the CPS graduating classes of 1998 and 1999, this chapter shows the extent to which students who enrolled in a four-year college immediately after high school succeeded in obtaining a degree from a four-year college within six years.¹

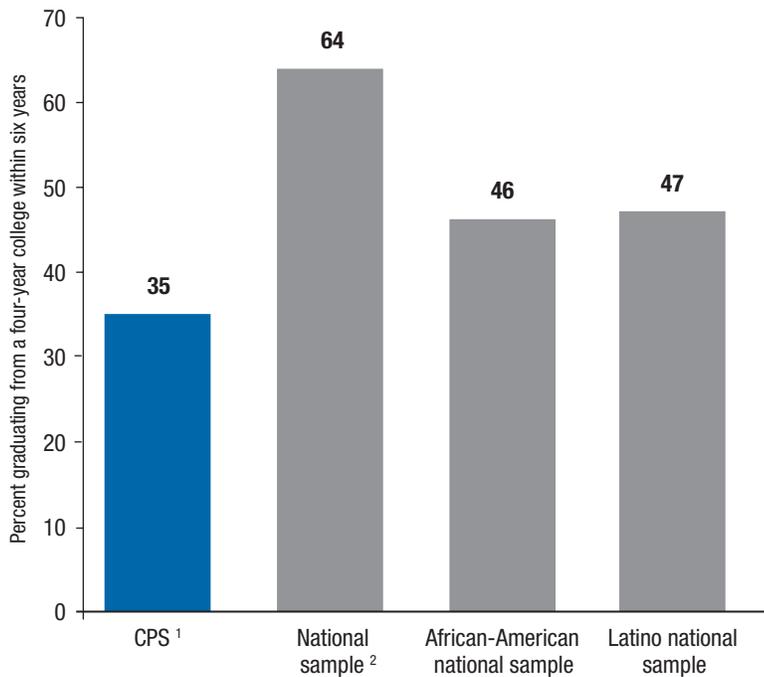
Four-Year College Graduation Rates Were Low for CPS Graduates

Among the 1998 and 1999 graduates of regular CPS high schools who enrolled as full-time students in a four-year college by the October after graduation, only 35 percent graduated within six years.² If a 35 percent graduation rate does not seem low, remember that this is the graduation rate only for those students who enrolled in a four-year college immediately after graduating high school. As shown in Chapter 1, only about one-third of CPS graduates enroll in a four-year college within a year after high school graduation. Furthermore, prior Consortium reports have shown that almost half of the students who enter a CPS high school never make it to graduation.³ If these

statistics are aggregated, they suggest that only about 6 percent of students who begin high school in CPS earn a four-year college degree by the time they are in their mid-twenties.

CPS college graduation rates look low when compared to national rates. Since the mid 1990s, the U.S. Department of Education has been tracking college outcomes nationally through the Beginning Postsecondary Students study. Data from this study show that nationally, 64 percent of students who enter four-year colleges graduate within six years (see Figure 3-1).⁴ Even if we account for the fact that CPS students are predominantly members of racial/ethnic minority groups, the CPS students who entered four-year colleges were much less likely to graduate within six years than their national counterparts. Nationally, 46 percent

Figure 3-1
Of CPS graduates who began a four-year college by fall after high school, only about one-third earned a degree within six years
 CPS graduates' college graduation rates compared to overall national rates, African-American national rates, and Latino national rates



¹ This statistic is calculated from those students who attended a college for which we have graduation information in the NSC database. Students who began college part-time, graduated from an alternative high school, or were eligible for special education services were not included in the statistic.

² U. S. Department of Education, National Center for Education Statistics. 2002. Descriptive Summary of 1995-96 Beginning Postsecondary Students: Six Years Later, NCES 2003-151. Lutz Berkner, Shirley He, and Emily F. Cataldi. Paula Knepper (project officer). Washington, D.C.: U.S. Government Printing Office.

Note: For national comparisons we use enrollment by October. For all other statistics we use enrollment by spring (one year after high school graduation).

Data Restriction in the Graduation Analysis

This is a first look at college graduation. Because we are limited by the data available on graduation from the National Student Clearinghouse (NSC), we cannot yet study the outcomes of students who enrolled in two-year colleges, and we cannot examine the outcomes of students who attended colleges that do not participate in the NSC.

A focus on four-year colleges. To look at six-year college-graduation rates, we need to go back to the CPS class of 1999. Unfortunately, Chicago's city colleges did not begin participating in the NSC until 2001. Since the majority of CPS students who attend two-year colleges go to a city college, we would have to limit our analysis to a very select and small group of two-year colleges if looking at six-year outcomes. In future reports, we will produce statistics on completion rates of two-year degrees and transfers to four-year schools among two-year college students for the classes of 2001 and later.

Graduation information in the National Student Clearinghouse.

As described in Chapter 1, at present the NSC is able to provide data for 91 percent of college enrollment nationally. However, not all colleges that participate in the NSC report graduation information. We do not include in our graduation analyses students who enrolled at any time in a college for which graduation information was not available within four years after high school graduation. Therefore, these statistics are based

on only 74 percent of the CPS students who went to a four-year college, and who went to a college that participates in the NSC. There are a few colleges popular with CPS graduates, including Northern Illinois and DePaul universities, for which we cannot provide graduation rates even though we know students enrolled in these colleges.¹ We also cannot provide graduation statistics for Robert Morris College because we have no NSC information on either enrollment or graduation for this college.

Appendix 5 shows the characteristics of colleges, and the CPS students who go to them, by whether graduation data is available to us through the NSC. In general, students who went to schools with graduation information in the NSC were similarly prepared for college as the students taken out; for example, the average unweighted GPA of students included in the analysis was 2.92, compared to 2.90 among those taken out. However, there are some small demographic differences among the students kept in the analysis compared to those taken out, including fewer African-American students (46 percent compared to 55 percent) and more Latino students (24 percent compared to 18 percent). The colleges for which we do not have information tend to have lower indicators of quality than colleges with graduation information in the NSC data. For example, the average institutional graduation rate of the colleges for which we have graduation information is 63 percent, compared to 53 percent for colleges removed from the

data. This suggests that the graduation rates reported here might be somewhat higher than they would be with a more complete dataset. However, most of the colleges excluded from the analysis enroll only very small numbers of CPS graduates.

A focus on students who should have graduated.

In addition to the data constraints that we faced from the NSC, we also chose to limit our sample to those students who should have been able to graduate from college within six years. We only looked at students who enrolled in a four-year college within one year after high school graduation, and for national comparisons we only included students who enrolled by October. We removed any students who started college at less than full-time status, which was 7 percent of students entering a four-year college immediately after high school.² We also removed students who were classified as eligible for special education services in high school, and those who graduated from alternative high schools, as we have throughout this report.

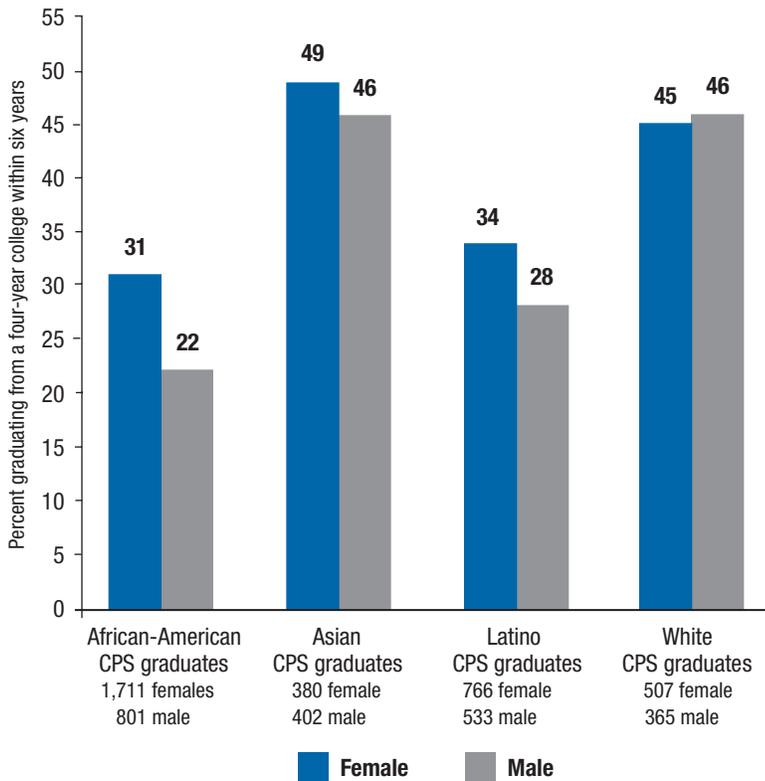
¹We do have graduation information for these institutions beginning in 2004. Work that examines graduation among later cohorts of CPS students will be able to incorporate these institutions.

²Of those students who started a four-year college at less than full-time status, 6 percent received a degree from a four-year college within six years.

Figure 3-2

Male African-American and Latino CPS alumni were least likely to graduate from college

Six-year college graduation rates by race/ethnicity and gender



of African-American students and 47 percent of Latino students who began college in 1995 graduated in six years, which is still considerably higher than the 35 percent graduation rate among CPS students who began college in 1998 and 1999.

When we break down CPS students' college graduation rates by race/ethnicity and gender, as shown in Figure 3-2, the differences between CPS and national graduation rates are even more problematic.⁵ Six-year college graduation rates for Latino and African-American CPS graduates were well below the rates for national samples of students of the same race and ethnicity, as shown in Figure 3-1. About one-third of female African-American and Latino CPS graduates completed a four-year college degree within six years. Male African-American CPS graduates had the lowest college completion rates, with just over one-fifth graduating within six years, while 28 percent of male Latinos graduated within six years. Asian graduates of CPS had the highest college graduation rates, with just under half graduating in six years. Slightly less than half of white CPS graduates completed col-

lege within six years, as well. Although Asian and white students had higher graduation rates than their African-American and Latino classmates, their graduation rates were still significantly below the national average of 64 percent.⁶

High School Preparation Matters

Chapter 2 of this report focused on the extent to which CPS students graduate with the qualifications they would need to gain access to four-year and selective four-year colleges. The goal of CPS's postsecondary efforts, however, should not be just to get students into college, but also to ensure that students have the preparation they will need to ultimately graduate from college. We find that many CPS students are finishing high school with very low ACT scores and grade point averages (GPAs), and that few students are participating in a rigorous sequence of honors and AP coursework. In this section we explore the extent to which student performance in these areas matters once students get to college.

Here we look at college graduation rates by students' high school GPA, the rigor of students' coursework, and test scores. The indicators in this chapter differ slightly from those used in the previous chapters. These changes were necessary because of the data available for the earlier cohorts of CPS graduates, as described in the sidebar on page 67. Instead of ACT scores, we use the eleventh-grade Tests of Achievement and Proficiency (TAP), which is highly correlated with the ACT ($r = 0.86$). Also, instead of categorizing students by participation in honors and AP coursework, we simply count the total number of honors and AP courses taken.

The first step in understanding how high school preparation matters is to look at the relationship of each of our central indicators of preparation (course performance, course rigor, and test scores) with eventual graduation from college. Figure 3-3 is arranged to allow comparison of the indicators of high school preparation. However, these indicators are all interrelated. Students with higher GPAs tend to take more honors classes and have higher TAP scores than students with lower GPAs. Some indicators may be related to college graduation simply because they are strongly related to other indicators. That is, knowing that a student has taken honors classes may not tell us anything more about whether he or she will graduate from college than just knowing his

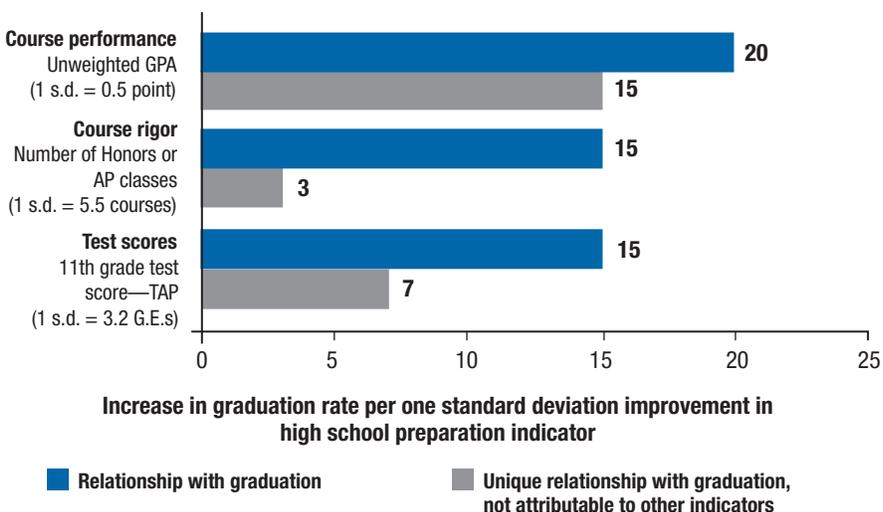
or her GPA. Therefore, after looking at the individual relationship of each indicator with graduation, we also show the unique relationship of each indicator with graduation and how they work in combination to predict college graduation. Details about the statistical models used to calculate the unique relationships are available in Appendix 4.

As would be expected, indicators of course performance, course rigor, and test performance all showed strong relationships with college graduation. But the strongest predictor of whether CPS students would graduate from college was their GPA.⁷ As shown in Figure 3-4, students who graduated from high school with a GPA less than 3.0 were very unlikely to graduate from college. Just over a quarter of the students with GPAs between 2.6 and 3.0 who enrolled in a four-year college graduated within six years, and less than 16 percent of students with GPAs less than 2.5 graduated. On the other hand, more than 60 percent of students who graduated from high school with an A average (a 3.6 or higher) completed a four-year college degree within six years. To put it simply, students who were not successful in their high school courses were unlikely to succeed in college.⁸

High school grades were a very important predictor of college graduation on their own, not just because students with high GPAs were likely to take more rigorous coursework and have high test scores. Figure 3-3 shows the unique relationship of GPA to graduation among students with similar coursework and test scores. This unique relationship is just slightly smaller than the overall relationship, indicating that grades themselves are what matters most to

Figure 3-3

A half-point increase in high school GPA was associated with as much as a 20 percentage point increase in graduation rates.* Test scores and course rigor showed significant relationships with graduation in part because they were related to GPA.



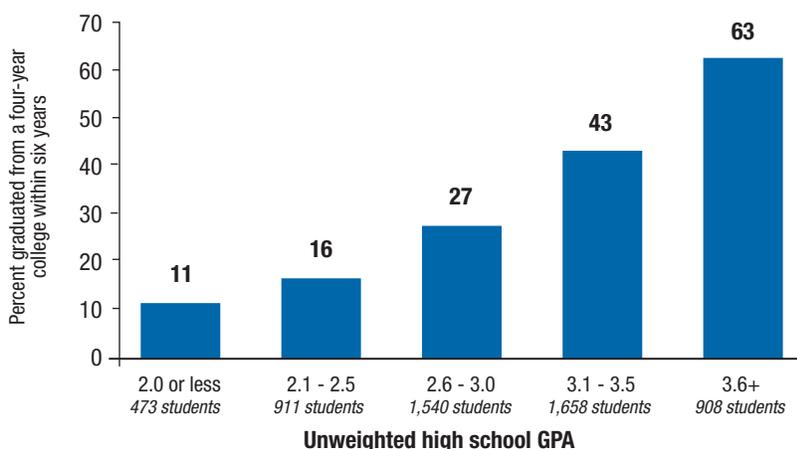
Note: Standard deviation is abbreviated “s.d.” Under test scores, grade equivalent is abbreviated “G.E.”

* Because these relationships are non-linear, the effects are not consistent at all levels of high school preparation. This chart represents a student with average preparation among CPS alumni who enroll in college. The effects are smaller for students with lower levels of preparation.

Figure 3-4

Students with high school GPAs less than 3.0 were unlikely to graduate from college within six years

College graduation rates by unweighted high school GPA

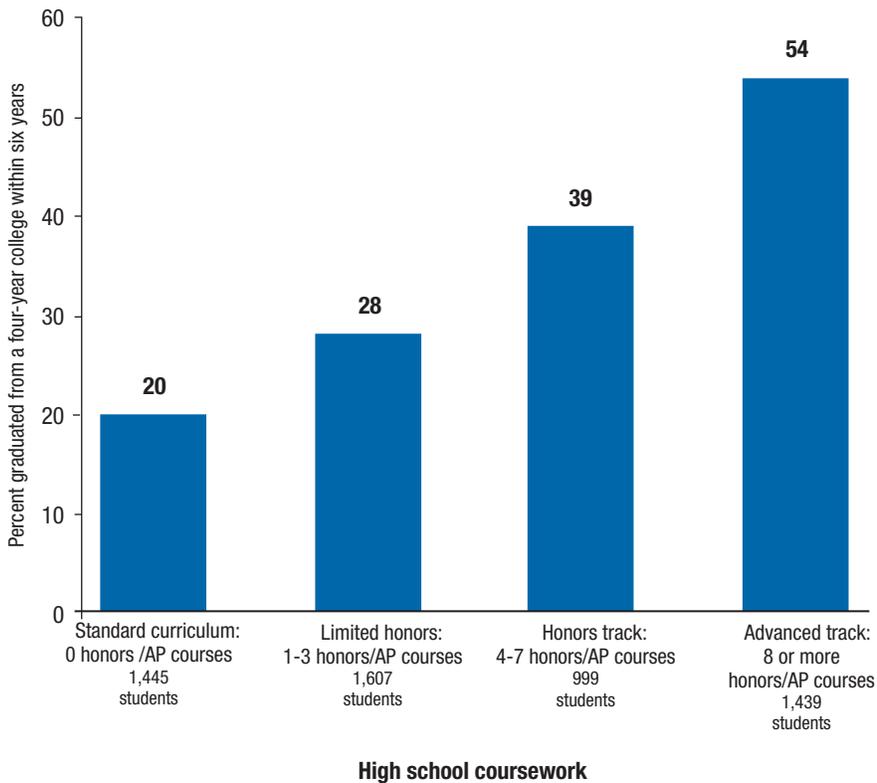


Note: These were CPS alumni who enrolled full time in a four-year college by spring following their high school graduation and enrolled in a college for which we have graduation information.

Figure 3-5

Students with more rigorous high school courses were more likely to graduate from college

College graduation rates by high school curricular track



Note: Definitions of curricular track are not exactly the same as in Chapter 2. For an explanation, see “Why Different Indicators of High School Preparation Are Used in This Chapter” on page 71.

be able to graduate from college. To put the GPA effect in context, these results suggest that if two students entered college with the same achievement test score and similar coursework, the student with a high school GPA of 3.0 would be about 15 percentage points more likely to graduate than a student with a 2.5 GPA.

While high school grades were the best predictor of college graduation, high school course rigor and test scores also mattered. The number of honors or Advanced Placement (AP) courses a student took was a strong predictor of graduation, as shown in Figure 3-5. Once unweighted GPA and TAP scores were controlled, though, coursework showed only a modest relationship to graduation, as indicated by its unique relationship to graduation in Figure 3-3. This occurred, in part, because students with rigorous coursework performed better on the TAP than students without rigorous coursework.⁹ When only unweighted GPA was controlled, taking about five and a half additional honors/AP classes was associated with a graduation rate 7 percentage points

higher than that of students with similar grades and no honors/AP classes. In other words, rigorous coursework seemed to help students achieve higher test scores, but contributed only slightly to college graduation beyond what was measured by the standardized test. We should note, however, that expansion of the AP program in recent years may result in very different relationships between course rigor in high schools and college graduation. In particular, we do not know whether the effect of AP coursework will be different when more than just the highest-performing students have access to these courses.

Eleventh-grade test scores were also good predictors of graduation, as shown in Figure 3-6. Among the CPS graduates who enrolled in college immediately after high school, less than one-third of the students who scored below national norms on the eleventh-grade TAP graduated from college. The majority of students with very high TAP scores did graduate from college, although graduation rates were fairly modest even for the very high score levels. Students’ TAP scores were about

as predictive of graduation as the number of honors or AP courses they completed (see Figure 3-3), and TAP scores remained a significant predictor of college graduation even after accounting for student GPA and coursework. The results shown in Figure 3-3 suggest that if two students entered college with the same grades and similar coursework, the student with a TAP score of 15 would be about 7 percentage points more likely to graduate than a student with a score of 12. This is a substantial difference, although less important than the grades that students earned.

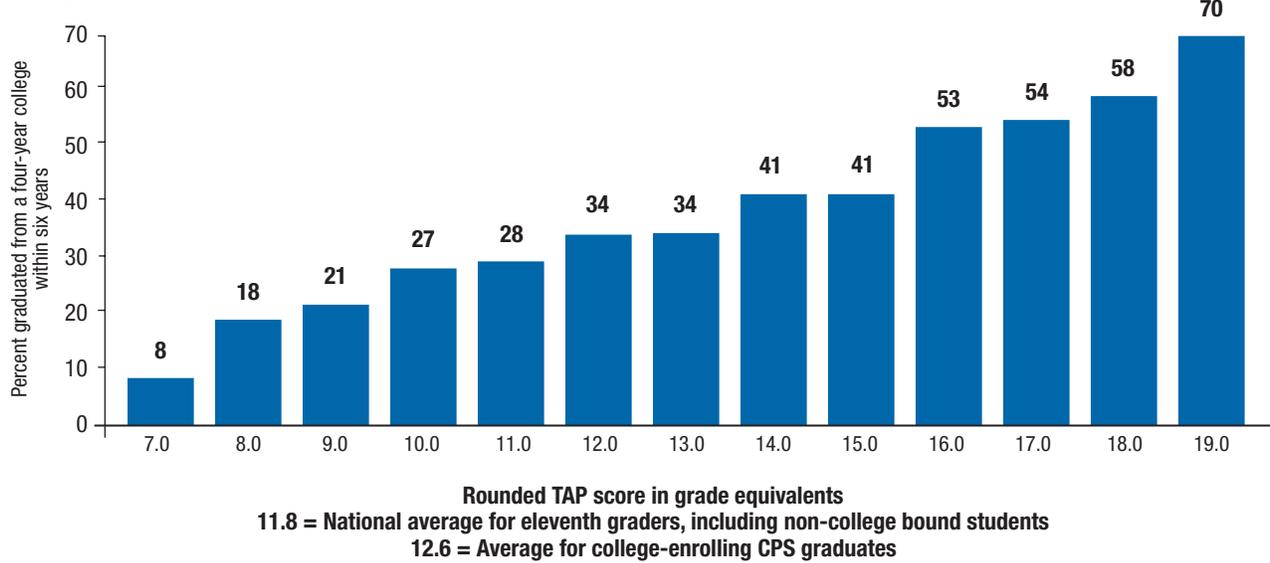
GPA in Combination with Test Scores and Course Rigor

The importance of GPA in shaping college graduation outcomes has significant implications for high school educators and students. High school GPA is not only a measure of whether students are mastering their coursework, but it is also a measure of how well students are developing the

Figure 3-6

Only about one-third of CPS graduates scoring at the national average on the TAP graduated from college within six years

College graduation rates by TAP score



Why Different Indicators of High School Preparation Are Used in This Chapter

The indicators used to measure high school preparation for analysis in this chapter differ slightly from those in the previous chapters.

TAP versus ACT. As described in Chapter 2, beginning in spring 2001 all students in Chicago began to take the ACT as part of Illinois’ high school assessment, the Prairie State Achievement Exam. Prior to 2001, Chicago schools were using the Tests of Achievement and Proficiency (TAP) which were given in ninth through eleventh grades to assess student performance in high schools. Therefore, for the classes of 1998 and 1999, we are not able to examine students’ ACT scores but must rely on students’ eleventh grade TAP scores. Luckily, juniors in CPS in spring 2002 took the TAP in tenth grade and the ACT in eleventh grade which

allows us to gauge how similar student performance would be on the two tests. Students’ scores were highly correlated ($r = 0.86$), suggesting that TAP is a good estimate for students’ overall achievement as would be indicated by the ACT.

AP coursework. In the previous chapter, we characterized students’ coursework based on specific patterns of participation in honors, Advanced Placement (AP), and International Baccalaureate (IB) courses over their four years in high school. Most of the expansion of the AP and IB programs happened after 1999. Thus, for the two cohorts we are studying, few students were taking AP classes and very few students were participating in the IB program. Because participation in these sequences was limited to

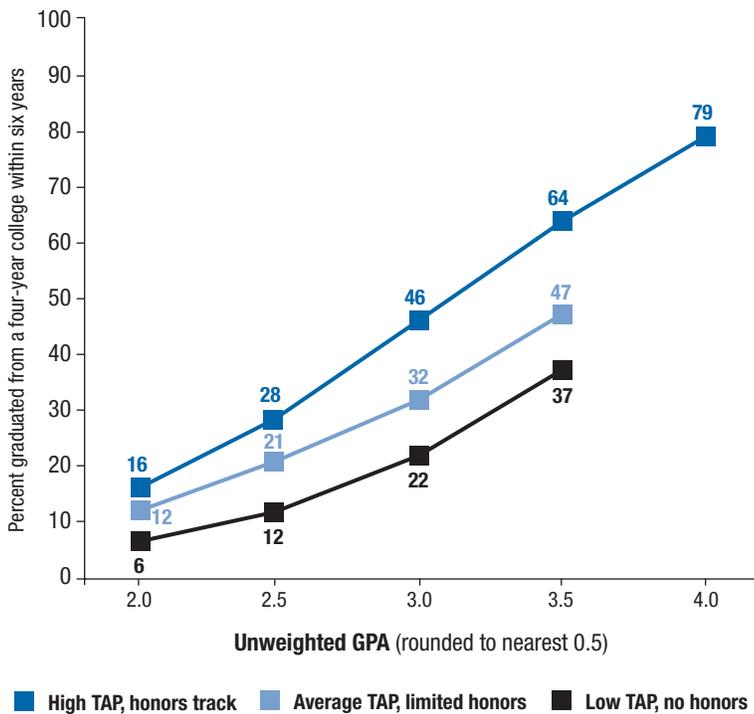
a few students in specific schools, these categories were not widely applicable to students graduating in the 1990s. In fact, any relationship that we might find between AP or IB coursework and college graduation would not only reflect potential positive effects of honors and advanced sequences, but also any effects of being in the most highly performing high schools in the city at that time. Therefore, instead of separating students into groups based on patterns of honors, AP, and IB coursework, we look at honors and AP courses together, and how the likelihood of college graduation improved with increased enrollment in any of these advanced courses.¹

¹Honors courses were available in most high schools in the system in the 1990s.

Figure 3-7

Students were very likely to graduate from college only if they had both high GPAs and good test scores

College graduation rates by high school GPAs of students in different curricular tracks



Note: Low TAP scores are defined as in the bottom half among all eleventh-graders (not just college-bound students). High TAP scores are defined as in the top quarter nationally, among all eleventh-graders. Honors track is defined as four or more honors/AP courses, while limited honors is defined as 1 to 3 honors/AP courses. Not all students fall into these three groups. These groups were chosen to highlight general trends. Almost no students with a 4.0 GPA had average or below average TAP scores.

study skills and work habits that will be critical when they experience more independence and higher expectations in college. This raises some further questions. For example, if students have very low academic skills as measured by tests, but learn to work hard in high school and thereby get good grades, will they be successful in college? Or do the skills and work habits needed for good grades matter most for those students who at least have the academic skills to succeed?

Figure 3-7 provides evidence on these questions, showing how GPA was related to graduation for several different groups of students—those with high TAP scores who took four or more honors or AP classes in high school, those with average TAP scores with one to three honors or AP courses in high school, and those with low TAP scores and no honors or AP courses in high school.¹⁰ For the few students with high GPAs but low TAP scores, high GPAs alone did not translate

into a high likelihood of graduating from college. While these students were more likely to graduate than low-scoring students with low GPAs, a high GPA on its own, in the absence of evidence of skills attainment through standardized test scores or rigorous coursework, was unlikely to translate into college graduation. At the same time, high TAP scores and rigorous coursework were not associated with graduation unless accompanied by good grades—perhaps evidence that students need to go beyond performing well on tests and have a broader range of skills and behaviors in order to succeed in both high school and college classes. Even students with a number of honors courses and high test scores were unlikely to graduate unless they had better than a 3.0 high school GPA.

Overall, college graduation was unlikely unless students had good GPAs (above a 3.0) and evidence in the form of test scores that their good grades indicated skills attainment. We cannot expect students who have performed poorly in their high school courses to be more successful when they arrive at college. In fact, research on college grades suggests that most students achieve lower grades in college than they did in high school.¹¹ As we saw from the last chapter on college enrollment, it is critical that CPS determines how to work with students and teachers to improve course performance. This must be done without resorting to grade inflation or diminishing course rigor, both of which would be likely to have adverse effects on the academic skills that are critical for both college admission and graduation.

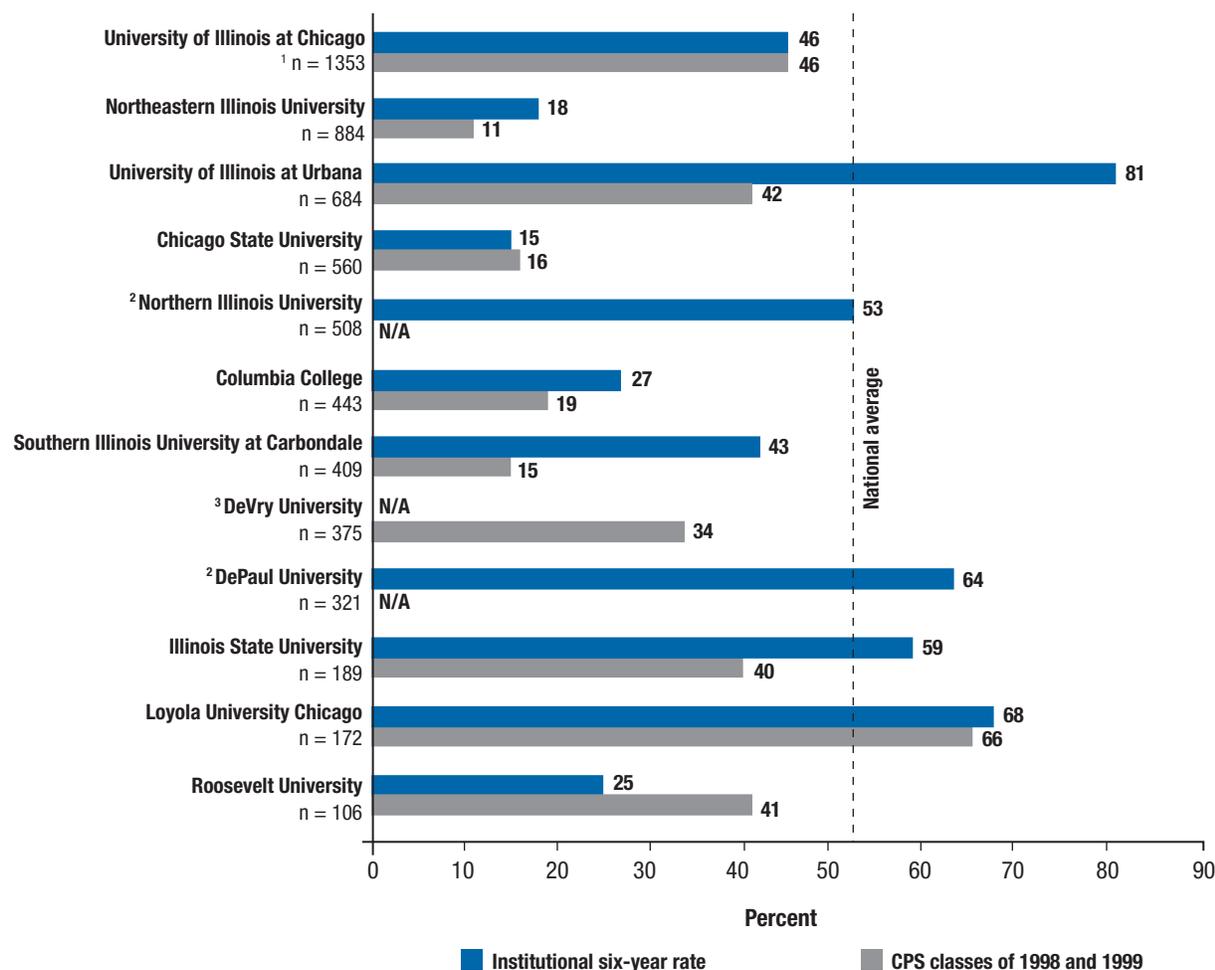
College Choice Matters

In Chapter 2 we saw that high school preparation strongly affected college enrollment. In Chapter 1 we saw that CPS students attend only a small number of colleges. In 2002 and 2003 more than half of college-bound CPS graduates attended just ten colleges, with nearly one-third of graduates attending only five institutions (the University of Illinois at Chicago, Northeastern Illinois University, and Wilbur Wright, Richard J. Daley, and Harold Washington City Colleges). Among graduates attending four-year colleges, almost two-thirds went to just seven institutions—the University of Illinois at Chicago, Northeastern Illinois University, the University of Illinois at Urbana-

Figure 3-8

Several of the most popular local colleges have extremely low institutional graduation rates, and at some institutions CPS students are much less likely to graduate than typical at that college

Institutional and CPS graduation rates at popular local colleges



¹ CPS enrollment size (n) is calculated from all students who started at the college, including those removed from calculation of graduation rates because of enrollment/transfer into a college without graduation information. The entire starting class must be used for the enrollment numbers in order to be comparable to those institutions for which we do not have graduation information.

² Prior to 2004, Northern and DePaul Universities reported enrollment information to the NSC but they did not report graduation information. Therefore, we can report the number of students that enrolled in these institutions from CPS, but we cannot report the graduation rates of those students.

³ The institutional graduation rate for DeVry University is not reported on the website of the Education Trust, the source used for institutional graduation rates in this figure.

Champaign, Chicago State University, Northern Illinois University, Columbia College of Chicago, and the University of Southern Illinois at Carbondale. One implication of this attendance pattern is that CPS graduates tend to be concentrated in local colleges that have very low graduation rates even when compared to schools with similar selectivity.

Here we examine how CPS students do in the most popular colleges to determine whether CPS should be concerned about the effects of students attending colleges with low completion rates. Figure 3-8 compares the graduation rates of all students and of CPS students in the four-year colleges most attended by the CPS classes of 1998 and 1999 (each of the colleges enrolled at least 100 CPS students from these classes). Data on the graduation rates for all students

including non-CPS graduates, which we call the institutional graduation rate, is based on information collected by U.S. Department of Education's National Center for Education Statistics, posted on the Education Trust web site.¹² Where available, this chart shows both the graduation rate of CPS students who went to the college and the institutional graduation rate. In one case, DeVry University, the U.S. Department of Education does not report an institutional graduation rate, and in other cases, DePaul and Northern Illinois universities, we do not yet have data on graduation rates for CPS students. Of the seven most popular institutions for CPS graduates only one—the University of Illinois at Urbana-Champaign—had an institutional graduation rate above the national average of 53 percent, and an additional college—Northern Illinois University—had an institutional graduation rate at the national average. Two of the most popular, Northeastern Illinois and Chicago State universities, had graduation rates far below average. Furthermore, at many colleges, CPS students were less likely to graduate than students from other school districts. In particular, CPS students were much less likely to graduate from the University of Illinois at Urbana-Champaign and Southern Illinois University at Carbondale, than was typical at those institutions. This is consistent with the data in Chapter 2 showing that many CPS students enter college with ACT scores and GPAs at the bottom threshold of what would be expected for institutions at each level of selectivity. Thus, not only are CPS students concentrated in colleges with low institutional graduation rates, but graduation rates among CPS students are even lower than typical at a number of the most popular institutions.

College Comparisons with Adjustments for Students' Preparation in High School

One reason that graduation rates vary so greatly across colleges is that they enroll very different types of students. Schools that enroll well-prepared students, such as the University of Illinois at Urbana-Champaign (Urbana-Champaign), should have higher graduation rates than schools with less-prepared students. A fairer way to compare colleges is by comparing students who have the same background characteristics and high school preparation but attend different schools. We can do this through statistical models that adjust the college-graduation rates for the advantages and disadvantages associated with enrolling students with different levels of high school preparation.¹³

For example, the unadjusted graduation rate of CPS alumni at Urbana-Champaign was 42 percent, as shown in Figure 3-8. While this is higher than average, it is not as high as we would expect because the CPS students who enrolled at Urbana-Champaign tended to be well prepared for college—with an average GPA of 3.7 and four honors or AP courses in high school. CPS alumni with similar high school preparation who attend other colleges graduated at a higher rate: 66 percent completed their degree within six years. In other words, the graduation rate of CPS alumni at Urbana-Champaign was about 24 percentage points lower than would be expected, given the types of CPS students who enrolled. Figure 3-9 shows the extent to which graduation rates at each college were higher or lower than we would expect, given the types of students that enroll at the college and graduation rates of CPS alumni at all other colleges. Each of these colleges enrolled at least 40 students from the CPS classes of 1998 and 1999. The number of colleges in Figure 3-9 was expanded from those in Figure 3-8 to show that graduation rates among the most popular colleges were substantially lower than those in colleges that were somewhat less popular. Colleges are displayed in order of popularity with CPS graduates, with the most popular college at the top. Each of the top six schools enrolled at least 400 students from the CPS classes of 1998 and 1999. Notice that graduation rates at these colleges were well below those of the other colleges, once adjustments are made for students' high school preparation. Northeastern Illinois, followed by Urbana-Champaign, Southern Illinois University at Carbondale, and Chicago State University had particularly low graduation rates given the types of students they enroll, and their rates were also lower than the majority of the remaining colleges not shown on the chart.

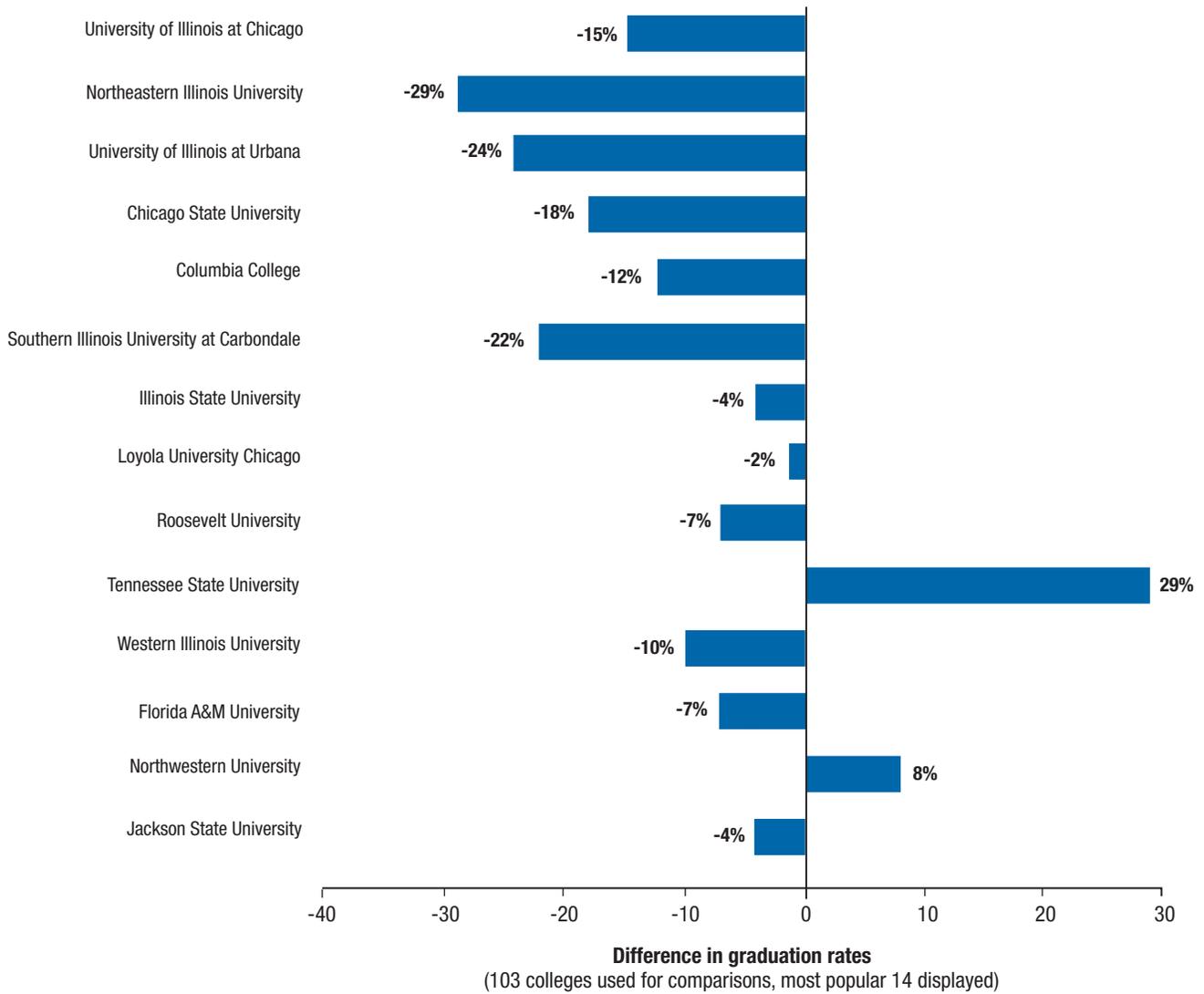
... at many colleges, CPS students were less likely to graduate than students from other school districts.

The data in Figure 3-9 imply that the colleges receiving the most students from CPS high schools also may be some of the colleges from which CPS students are least likely to graduate. However, only 14 schools are represented in this figure. These colleges may not be representative of the large number of other colleges attended by CPS graduates—after all, CPS graduates from the classes of 1998 and 1999 entered 103 different four-year colleges

Figure 3-9

Graduation rates at the most popular colleges for CPS alumni are lower than expected given the backgrounds of students entering the college

Differences in graduation rates compared to CPS alumni with similar backgrounds at other colleges

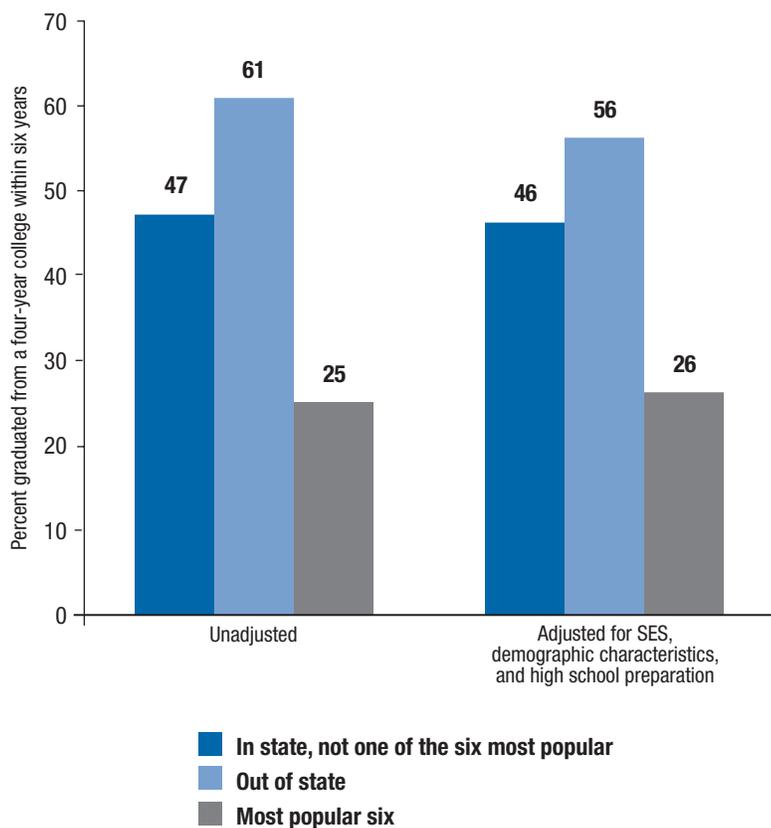


Note: Differences in graduation rates are calculated after removing advantages and disadvantages associated with students' backgrounds. The value of the difference is based on a student with average background characteristics for CPS students at that college. Comparisons are made through two-level hierarchical generalized linear models, with students nested within colleges, controlling for individual students' economic status in high school, race, gender, unweighted high school GPA, TAP score, and honors and AP coursework.

Figure 3-10

Graduation rates of CPS students were lowest at the colleges that CPS students were most likely to attend

College graduation rates by in-state versus out-of-state status and popularity among CPS students



Note: These percentages come from hierarchical linear models with students nested within colleges with dummy variables representing the most popular six schools and out-of-state schools. The unadjusted model included no variables at level 1, while the adjusted model included control variables for students' economic status, race, gender, TAP score, high school GPA, and high school course rigor. Similar results are obtained if non-nested student-level models are used instead of hierarchical ones.

that have graduation information in the NSC database. But because only a few CPS students entered each of these other colleges, it would be misleading to display their graduation rates. In addition, many of the colleges at the bottom of the chart are located outside Illinois, while all of the most popular colleges are within Illinois. It could be that location inside or outside the state affects CPS students' graduation rates.

For a better comparison of college graduation rates, graduation data on CPS students from all 103 colleges were pooled to show the average graduation rates at three types of colleges: the six most popular schools, other in-state schools, and out-of-state schools. As shown in Figure 3-10, graduation rates for CPS students at the most popular schools were substantially below those of other colleges in Illinois, even when adjustments are made to compare students with similar high school preparation and background characteristics. Students attending college outside of Illinois had higher graduation rates than students attending college in Illinois. Quite simply, CPS students who went to college someplace other than Northeastern Illinois University, Southern Illinois University, Chicago

All Degrees Are Not Equivalent

The NSC data allow us to identify graduation from a number of colleges. However, we do not know the extent to which the degrees and their requirements are consistent across colleges. The NSC database provides information on the type of degree received for only a subset of colleges for which graduation information is available. Because it would substantially limit the colleges that can be studied, we do not differentiate the

type of degree received from a four-year college in the statistics reported here. However, we are concerned that some four-year colleges offer associate's or two-year degrees, in addition to bachelor's degrees, and so comparisons of graduation rates from these schools with those from other four-year colleges may be misleading. The vast majority of four-year colleges do not grant degrees less rigorous than a bachelor's degree.

Of the four-year colleges with degree information in our NSC database only 1.3 percent of the degrees awarded were less than a bachelor's degree. However, Roosevelt and DeVry universities, two schools in which a number of CPS students enroll, are institutions that do offer degrees at levels less than a bachelor's. Therefore, graduation rates from these colleges may include as graduates students without bachelor's degrees.

Why the most popular colleges among CPS students show such poor graduation outcomes for CPS students . . . is a question that deserves further study.

State University, Urbana-Champaign, University of Illinois at Chicago, and Columbia college—the most popular schools—were more likely to graduate than students with similar preparation and backgrounds who followed a more popular route to college.

Why the most popular colleges among CPS students show such poor graduation outcomes for CPS students compared to most other schools is a question that deserves further study. It could be that students who go outside of the typical path are somehow different than other students. Perhaps they tend to be more independent, or are more likely to have received scholarships, entered special programs, or received special kinds of support for college, which attracted

them to diverse institutions. Such an argument might also explain why students who go to school outside of Illinois are especially likely to graduate. It is likely that students who attended less-popular institutions considered a broader range of colleges than those students who went to popular local colleges, and thus may have been more likely to choose a college to match their skills and interests. Going to college out of state, away from other CPS graduates, or away from family responsibilities may also hold particular advantages for some students, perhaps allowing them to more fully immerse themselves in the college experience.¹⁴ It is also likely that there is something about the functioning of some of the most popular institutions that makes it more difficult for students to graduate than at other schools. Fully understanding these differences in college graduation rates is beyond the scope of this report, but we start here by examining whether the institutional characteristics of local colleges explain any of the differences.



Graduation Rates by Institutional Characteristics

There are a number of traditional ways of thinking about differences across colleges, either by the characteristics of the students they enroll or structural features of the way they operate. Indicators of college quality, such as selectivity (e.g., median SAT/ACT, admittance rate), the types of students they enroll (e.g., percent part-time, age 25 or older, receiving Pell grants), their structure (e.g., size, reliance on part-time faculty, status as Historically Black Colleges and Universities, student-faculty ratio) and their costs and services (e.g., expenditures on students) could be expected to affect graduation rates.¹⁵ Such indicators have been used to group colleges into categories of similar schools for across-college comparisons by the Education Trust, and are used by students when making decisions about colleges.

tion. However, once adjustments are made to account for different levels of high school preparation among students, only a few college characteristics show even moderate relationships with graduation—only median SAT, educational expenditures per student, sector (private/public), and the percentage of students over age 25. Even these moderate relationships might be largely a reflection of the very low graduation rates at particular schools attended by many CPS students, as their relationship to graduation decreases by about half once the top six most-attended schools are removed from the analysis.

Why these college characteristics show so little relationship with graduation rates once we take out differences among students warrants further analysis. It could be that our sample of students is too highly concentrated in a few institutions to detect the effects of institutional characteristics on graduation. Alternatively, students' experiences

... once adjustments are made to account for different levels of high school preparation among students, only a few college characteristics show even moderate relationships with graduation . . . median SAT, educational expenditures per student, sector (private/public), and the percentage of students over age 25.

But to what extent are these characteristics associated with graduation rates for CPS students, and to what extent do they explain the low graduation rates of the most popular colleges among CPS students?

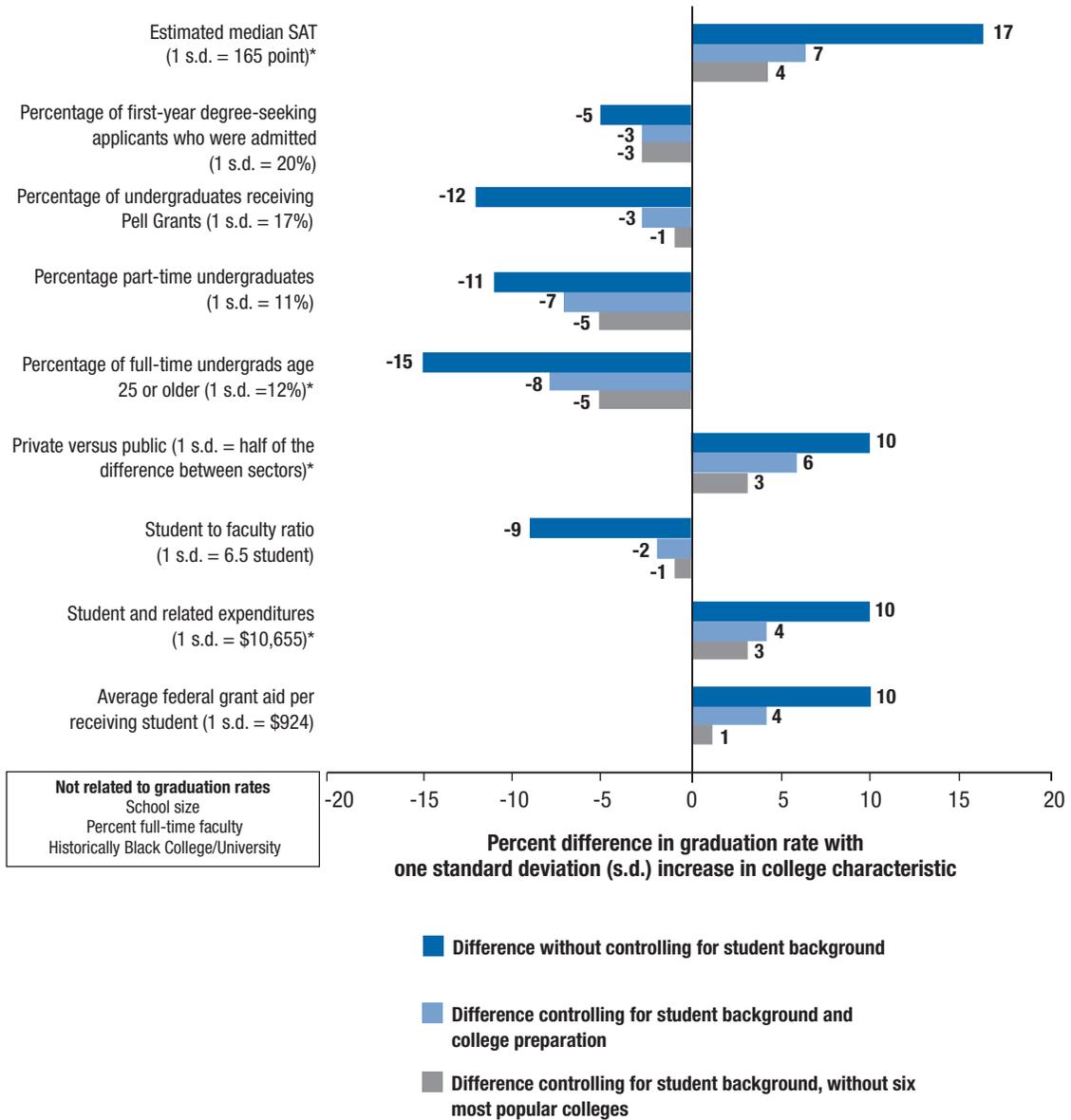
We compared the relationships of each college characteristic to graduation rates for CPS students, first without adjustments for students' backgrounds and preparation, and then with such adjustments (see Figure 3-11). As would be expected, without the adjustments, most of these characteristics show very strong relationships with graduation

within any given institution may be so varied that institutional statistics are only marginally informative about what the college offers particular groups of students. But because the relationships of these college quality indicators with graduation are so weak, they do little to explain the low graduation rates of the most popular colleges. Even when we control for the college characteristics that were significantly related to graduation in Figure 3-11, graduation rates at the most popular six colleges were significantly lower than graduation rates at other schools.¹⁶

Figure 3-11

Indicators of college quality and structure show only modest relationships with graduation rates for CPS students once differences in student backgrounds are controlled

Relationships of college characteristics with graduation rates



* p<.05 in model controlling for student background characteristics and including the most popular colleges. All indicators shown in the chart had significant relationships with graduation without student background control variables, and none had significant relationships when student background was controlled and the most popular six schools were removed.

A Closer Look at Graduation Rates in the Most Popular Colleges

Differences in college-graduation rates can be seen most clearly by comparing students at different colleges with the same levels of high school preparation. Figure 3-12 demonstrates how college choice, in combination with high school GPA, was related to very different graduation outcomes across students. Each of the lines in the chart represents a different college in Illinois, showing the graduation rate of the CPS students who went to that college, categorized by their high school GPA.

Three phenomena are visible in Figure 3-12. First, students with very low GPAs were unlikely to graduate regardless of which college they attended. Students with very poor high school grades—about a C average or a 2.0—did not go to a wide range of colleges, but regardless of where they

college choice to matter. We also have to consider that there may be important unmeasured characteristics underlying college choice that also affect graduation, so that students who choose Northeastern University when they could have enrolled at Loyola University might have qualities that also make them unlikely to graduate. Still, the very large differences in graduation rates across colleges, even among students with the same high school GPA, suggest that we need to pay attention to students' college choices. Working to improve students' high school grades is not enough to help them graduate from college if students with good preparation in high school make poor choices about college (e.g. by choosing a school with a low graduation rate or one that is not a good fit for the student) and, as a result, fail to eventually graduate.

. . . students with very low GPAs were unlikely to graduate regardless of which college they attended.

attended college, less than one-fifth graduated. Students with a high school GPA of about 2.5 attended a broader range of colleges, but still less than one-third graduated from any college. Second, regardless of the college, high school GPA mattered. At even the top schools attended by CPS graduates, high school GPA was strongly predictive of college graduation. This suggests, once again, that GPA was not only important in gaining admission to more selective schools, but also in succeeding once there. Finally, this chart suggests that college choice mattered substantially for graduation, especially among high-achieving students.

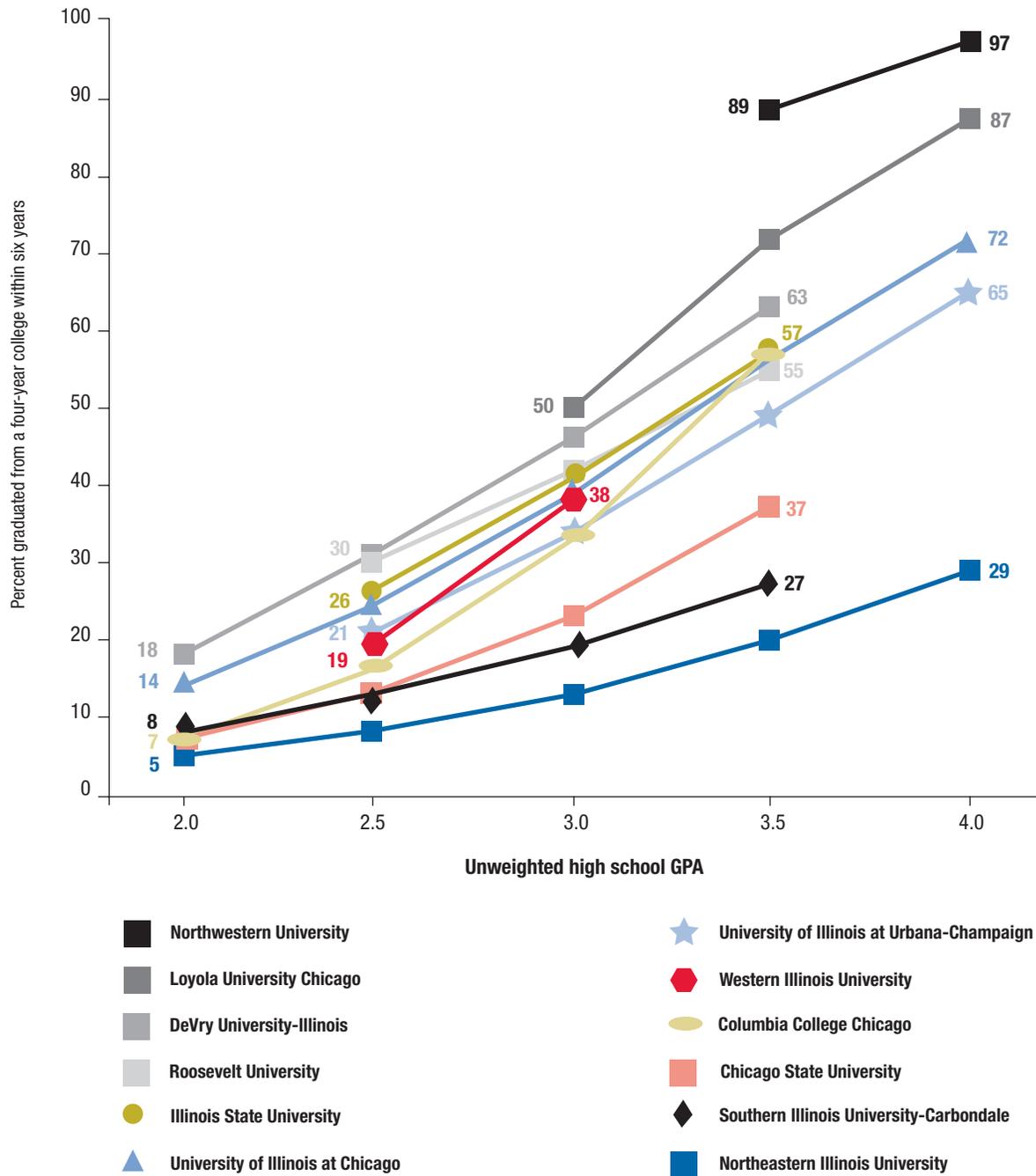
It may seem counterintuitive that college selection would be most critical for high-achieving students. One might think that high-achieving students would succeed in graduating regardless of where they went to college. However, these students also have the most options for college attendance, and so the most opportunity for col-

How Much Do High School Preparation and College Choice Explain the Differences in College Graduation by Race/Ethnicity and Gender?

In Chapter 1 we saw that African-American students from the CPS class of 2004 were more likely than other students to go to college outside Illinois. In the classes of 1998 and 1999, only African-American students went to out-of-state schools in significant numbers.¹⁷ Since students at out-of-state colleges were more likely to graduate than students attending college in Illinois, college choice should have had a positive effect on graduation rates among African-American students. Yet, Figure 3-2 showed that African-American college graduation rates were particularly low. This can be explained, to a large extent, by students' levels of high school preparation.

Figure 3-12

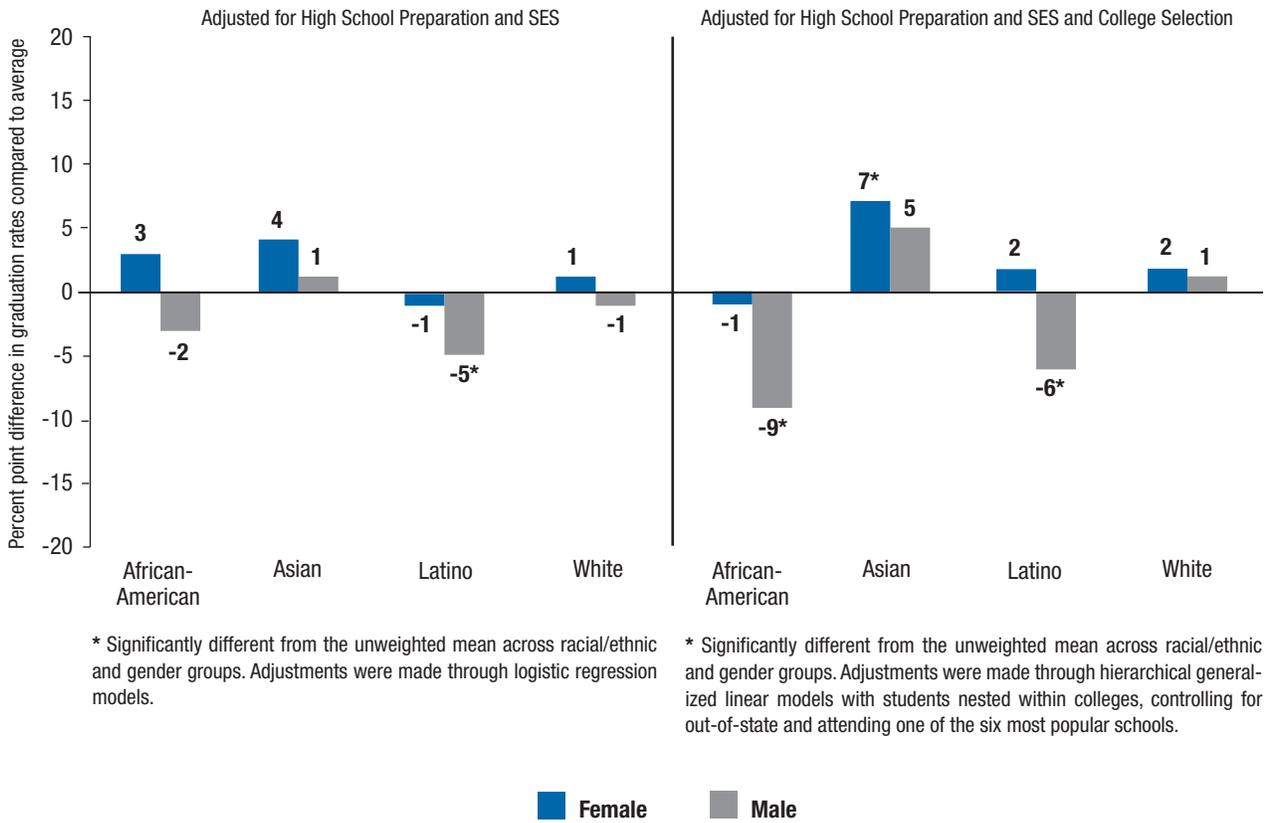
There are large differences in graduation rates by college, especially among students with strong high school GPAs
 College graduation rates by unweighted high school GPA for popular Illinois colleges



Note: These lines come from logistic regression models performed for each college, predicting graduation with GPA. The regression lines are based on data from all students at each college based on their actual (not rounded) GPA. However, points are included on the graph for a college only if at least 20 students at that college had a rounded high school GPA at that point. Colleges that enrolled fewer than 40 CPS alumni, such as the University of Chicago, are not shown to protect student confidentiality. Several colleges that were shown in Figure 3-9 are not shown in Figure 3-12 because almost all CPS students at those colleges had the same rounded GPA, so it was not possible to discern the GPA-graduation relationship among CPS students at those schools.

Figure 3-13

There were only small differences in graduation rates by race/ethnicity and gender among students with similar high school preparation, but larger differences appear when comparisons are made among students with similar preparation within the same college



Across institutions, most of the differences in graduation rates by race/ethnicity and gender disappear when we compare students with similar high school preparation and economic status. The left half of Figure 3-13 compares the graduation rates of students from each racial/ethnic and gender group with the unweighted average across groups, adjusted to remove differences resulting from different levels of high school preparation and economic status among the groups. Only Latino male students had an average graduation rate that was significantly lower than the overall average, once the statistical adjustments were made for differences in high school preparation, and this difference was fairly modest.

However, there were significant differences in graduation rates by race/ethnicity and gender among students attending the same college. Because African-American students were

more likely than other students to go to less-popular colleges, and were the only students to attend out-of-state colleges in significant numbers in the 1998 and 1999 classes, their college graduation rates were boosted the most by college selection. When we only compare students who attended the same college and had similar high school preparation (see the right half of Figure 3-13), both African-American and Latino male students show lower graduation rates than other students at their college with similar high school preparation. It is only because African-American male students attended a wider range of colleges that their graduation rates were similar to those of other students in comparisons that do not take into account college choice. Why African-American male students were less likely to graduate than other students at the same college with similar preparation is another topic that demands further study.

What We Have Learned

The low ACT scores and GPAs with which many CPS students graduate, presented in Chapter 2, are not just a barrier to students' entry to selective colleges, they are also a serious barrier to graduating. Of CPS students who enroll in a four-year college within a year after high school, just over one-third obtain a degree from a four-year college within six years. This is substantially below the 64 percent college-completion rate of the national comparison group, and well below the completion rates of national samples of African-American and Latino college students. African-American and Latino CPS students, particularly male students, are especially unlikely to obtain a four-year college degree. These differences in graduation rates by race/ethnicity and gender are mostly explained by differences in the preparation with which students leave high school, also described in Chapter 2. Too few male African-American and Latino students are graduating with the preparation to do college-level work. This chapter emphasizes the two main reasons college graduation rates are low among CPS alumni.

First, students who perform poorly in their high school classes are unlikely to succeed once they get to college. Grades were the best measure of high school preparation for predicting college graduation. However, test scores also differentiated graduation rates among students with similar grades. Students were unlikely to graduate unless they had both good grades—above a 3.0 GPA—and above-average standardized test scores. Because so many CPS students graduate with very poor grades and low levels of skills needed to succeed in college, college graduation rates for CPS graduates are very low.

Second, the colleges chosen by the largest numbers of CPS graduates also seem to be the colleges from which CPS students are least likely to graduate. CPS students tend to enroll

in colleges that have low institutional graduation rates compared to colleges with similar levels of selectivity. And at even the most selective institution attended by large numbers of CPS students—the University of Illinois at Urbana-Champaign—CPS students are much less likely to graduate than average. These low graduation rates result, in part, because of the low levels of qualifications of many entering students. However, even when we compare students with similar levels of high school preparation and economic background, those who attend one of the colleges most popular with CPS students are about half as likely to graduate as similarly prepared CPS alumni who enroll elsewhere. There are also substantial differences in graduation rates among the most popular colleges. For example, of the CPS students who graduated with a 3.5 high school GPA and went to Northeastern University, only 20 percent graduated within six years, compared to 37 percent at Chicago State University, 49 percent at Urbana-Champaign, and 56 percent at the University of Illinois at Chicago. Yet graduation rates were still higher at less-popular institutions; for example, 72 percent of students with a 3.5 GPA who attended Loyola graduated in six years.

Why there are such dramatic differences in graduation rates deserves further study. These differences cannot be explained by differences in enrollment across colleges or by common measures of structural features of the colleges. The large differences across colleges in graduation rates among students with similar high school preparation suggest that students should pay attention to institutional graduation rates when choosing a college.¹⁸ Improving students' preparation in high school will be insufficient to substantially raise college graduation rates if even students with good high school academic records attend schools where they are unlikely to graduate.

Endnotes

¹ The graduation rates presented in this chapter could be considered either an underestimate or an overestimate of total graduation rates, depending on the group of students considered for inclusion. Because we only look at six years after high school graduation, we slightly underestimate the proportion of CPS graduates who ultimately get a degree. At the same time, this is a “best case” in that we only look at students who enrolled in a four-year college full-time by the spring after high school. For national comparisons we only include students who enrolled by October after graduation. Even though they may have had the intention of obtaining a four-year degree within six years, we did not consider students who delayed enrollment in college by more than a year, those who began college as part-time students, or those who enrolled in a two-year college—unless they transferred to a four-year college within their first year. In addition, as in the previous chapters, we limited our analysis to students who graduated from regular (non-alternative) high schools who were not eligible for special education services.

² This percentage only includes the students for which we have graduation information (5,492 students). Students who transferred from their original college and graduated from a different four-year college for which we have graduation information are counted as graduates. Students who transferred from their original college and enrolled in a college that does not report graduation information to the NSC were removed from the analysis, regardless of whether they returned to their original school, graduated, or remained at the second school. If we included students who enrolled in the spring semester after high school graduation (for a total of 5,601 students), the college graduation rate for CPS students would be 34 percent. The completion rate among students who began in the spring semester is much lower (21 percent), but because few students begin a four-year college in the spring semester (just 4 percent of the total beginning within a year after high school) their inclusion does not substantially affect the overall graduation rate.

³ Of the students who began high school in 1994 and did not transfer out of CPS, 48 percent graduated by 1998. An additional 5 percent graduated the following year, making the total high school graduation rate 53 percent (Allensworth, 2005).

⁴ U.S. Dept. of Ed., National Center for Education Statistics (2002).

⁵ From the classes of 1998 and 1999, only six American Indian students enrolled in a four-year college immediately after high school, so graduation rates for these students are not displayed to protect confidentiality.

⁶ U.S. Dept. of Ed., National Center for Education Statistics (2002).

⁷ The strong relationship of GPA is consistent with other work that has shown even self-reported grades are better predictors of graduation than ACT scores (Noble and Sawyer, 2002; Braddock and Dawkins, 1981).

⁸ The GPA-graduation relationship was consistent regardless of the high school that students attended.

⁹ This is consistent with research showing that students taking more rigorous coursework demonstrate more improvement than students with

less rigorous coursework on ACT’s Educational Planning and Assessment system between the ninth and eleventh grades (Woodruff, 2003).

¹⁰ Not all students fall into these three groups. The groups were chosen to highlight general trends.

¹¹ Noble and Sawyer (2002).

¹² Data are collected by the Graduation Rate Survey (GRS) through which institutions provide data about themselves. GRS graduation rates are based on the percentage of first-time, full-time, degree-seeking freshmen who earn a bachelor’s degree from the institution where they originally enrolled (The Education Trust, 2005a).

¹³ Adjustments are made through two-level hierarchical linear models, with students nested within colleges ($n=103$ colleges). Graduation rates were adjusted at level 1 with students’ GPA, TAP score, honors and AP courses in high school, extra advanced math courses, economic status, race/ethnicity, and gender. No variables were entered at level 2, so the adjustments do not compensate for compositional effects. For details on the statistical models, see Appendix 4.

¹⁴ Research on college completion suggests that living at home reduces the likelihood of completion (Astin, 1993), as does having children or elderly dependents (U.S. Dept. of Ed., National Center for Education Statistics, 1995).

¹⁵ Definitions of these indicators are available on the web site of the Education Trust (The Education Trust, 2005b).

¹⁶ Controlling for demographic characteristics and high school preparation at the student level, and controlling for median SAT, per-pupil student expenditures, and the percentage of students over 25 years old, the most popular six schools still show graduation rates that are significantly ($p < .05$) lower than other colleges, with a difference of 23 percentage points for a student with typical characteristics and high school preparation.

¹⁷ About 18 percent of the African-American students attended out-of-state colleges, compared to only 7 percent of white students, and 3 percent of Asian and Latino students.

¹⁸ Institutional graduation rates are not a perfect measure of how well a college does in graduating its students because they are determined in large part by the characteristics of students enrolling in the college, and because they may be based on students with sociodemographic characteristics very different from the typical CPS student. For example, the institutional graduation rate at the University of Illinois at Urbana-Champaign is high, yet CPS students have a low probability of graduating from this school compared to CPS students with similar academic records at other colleges. However, institutional graduation rates are better than other indicators of college quality in predicting graduation rates for former CPS students and can be used to guide choices about college. Unlike the other indicators of college quality, institutional graduation rates remain a significant predictor of graduation among CPS students if entered into any of the three models shown in Figure 3-11.

Interpretive Summary



Over the past decade, two important trends have shaped the skills and aspirations that freshmen in Chicago bring to high school. First, responding to a changing economy, increasing numbers of students have entered high school with aspirations to attend college. Second, improvements in Chicago's elementary schools have resulted in freshmen entering high school with substantially higher achievement than in the past. Because we have only just begun to track students' college going, we do not know whether these changes have resulted in increasing numbers of Chicago public school graduates going to college. We do know that the gap between students' aspirations to attend college and their actual college participation and degree attainment remains large, as is so vividly documented in this report. The central question for high school reform, then, is this: what needs to change in order for high schools to close this gap?

CPS has committed itself to meet the challenge of closing the college aspiration-attainment gap. In its 2002 Education Plan and in its more recent high school reform initiative, CPS set the goal of ensuring that *all* students in all high schools graduate and are prepared for postsecondary education. This is the first report from a new research effort at the Consortium on Chicago School Research that is designed to support CPS's efforts by looking closely at the issues that are critical for high schools in accomplishing that goal. As we noted in the introduction, this report is not intended as an evaluation of Chicago's new efforts to improve postsecondary preparation and support for its students. Rather, this

that enables CPS high schools to focus on improving their schoolwide test scores while simultaneously increasing their students' access to four-year and selective colleges.

However, little attention is being paid to grades. Grades, particularly A's and B's, do matter. We find that grades are a central determinant of college access and completion. Students who leave CPS with average GPAs lower than 3.0 are very unlikely to graduate from college. Unfortunately, few CPS students graduate high school with high GPAs. The low graduation rates of CPS students in four-year colleges, then, should come as no surprise. We cannot expect that students with consistent patterns of poor performance

Students who leave CPS with . . . GPAs lower than 3.0 are very unlikely to graduate from college.

report is intended to be a baseline look at the status of the school system prior to the new postsecondary initiative. It is a first attempt to identify the issues and indicators that the school system must recognize and address. We focus specifically on how students' levels of preparation may shape their college access and performance. We also examine where CPS graduates are currently attending college and whether those college choices shape their likelihood of attaining a four-year degree. To conclude, we highlight five policy-relevant areas that our research suggests are critical.

1. The low GPAs and ACT scores of Chicago students are constraining their access to college and are seriously undermining their chances of being successful once enrolled.

Getting students to college is important. The focus of high school reform, however, must be on ensuring that students have access to four-year colleges, particularly to selective colleges, and are successful once they matriculate. In this era of accountability, Chicago high schools are focused on test scores. In Illinois, the ACT college entrance examination is taken by nearly all students in the spring of their junior year. This is a unique and important policy choice

in high school will perform well in their college classes. Students who have focused on passing their classes, rather than succeeding in them, have not developed the kinds of study skills, effort, and mastery of material that they will need in order to handle new academic demands in college. It appears as though too many students in Chicago are "just getting by" in this manner, which seriously constrains their choices and futures. There appears to be a culture of *passing* classes rather than succeeding in them in Chicago public high schools.¹ Students know that failing classes will prevent them from graduating from high school, but it appears that CPS high schools have not paid sufficient attention to developing incentives for student performance and strong norms that good grades matter: that grades will matter for college and that mastering coursework and developing skills will be critical for the future. C's and D's may get students to graduation, but they are not grades that get students into four-year colleges or to the successful completion of a bachelor's degree. Students need to know this and be pushed to higher performance.

Students do seem to have a strong understanding of the difference between earning a D and earning an F: it is the difference between going to class and not going to class. However, they seem less certain about the difference between

a B and a C, and particularly between an A and a B, which requires the effort of doing homework and engaging in the material in class enough to master and excel in it. This is the difference between developing and not developing the kinds of non-cognitive academic skills, such as the ability to work independently, study, and engage deeply with problems that are critical for academic success.² It is not surprising then, that GPA has emerged in our work as perhaps the most important determinant of students' access to college and likelihood of college graduation.

GPA is not just important in predicting college access and performance; it is equally as important in explaining a key

high school and classroom environments are working to engage young men in their schooling and in their learning and providing high levels of academic expectations and support for males.

This is not a call for grade inflation. Good grades without skills will not help. **Test preparation strategies that increase test scores without developing students' skills or ensuring that students are growing as learners will not help either.** Guidance is also critical in informing students from the beginning of high school that grades matter for college access and completion.

GPA is not just important in predicting college access and performance; it is equally as important in explaining . . . gender differences in college participation and completion rates.

difference we observe in student outcomes in CPS: gender differences in college participation and completion rates. It is grades rather than test scores that explain the lower college attendance and completion rates of male students. The fact that male students are struggling in CPS high schools is not news. A recent Consortium report on high school completion identified the high dropout rates among male students as a particular concern.³ What is news is the fact that those male students, particularly African-Americans and Latinos, who survive to graduation also appear to be disengaged from and struggling in CPS high schools. This must be a wake up call to our high schools. In this report, we find that this performance gap cannot be explained by the fact that male students who eventually graduate from high school started off lower performing: in fact, male and female CPS graduates entered ninth grade with similar test scores. This performance gap is largely driven by differences in male and female students' performance within their classes and is reflected in the large differences in their GPAs. While we do not know the extent to which differences in classroom performance rather than test performance were already occurring before high school, it is clear that high schools must begin to consider seriously the extent to which

2. **Coursework matters, particularly in shaping access to more selective colleges among CPS students. Yet, despite significant investments in expanding Advanced Placement and advanced coursework, most CPS schools lag behind.**

There has been one significant and comprehensive reform effort in Chicago high schools over the past decade. In the mid 1990s, CPS significantly raised the requirements for graduation so that **all students must take a sequence of courses that will allow them to meet most college entrance requirements for coursework.** As part of this initiative, CPS significantly expanded offerings of Advanced Placement (AP) classes and opened new International Baccalaureate (IB) programs in neighborhood high schools. Offering more rigorous coursework is a step in the right direction. Perhaps the most consistent finding in research that examines the effects of high school preparation on college outcomes is that students who take more rigorous courses in high school have higher test scores, are less likely to be placed in remedial college courses, **and are more likely to graduate from college.** Our own analysis largely confirms these results. We need to be careful in interpreting the results in this report, because at present, **we do not know the extent to which students in**

these advanced courses would have been more focused on college than students not in these courses to begin with. In our analysis of the 1998 and 1999 graduating CPS cohorts, we found that much of the higher graduation rates associated with taking advanced courses could be explained by the fact that participation was limited in this earlier cohort to a very small and select group of students who may have already been high performing and highly motivated. It is possible that the most recent increases in students taking advanced coursework will have different effects. We do find that graduates in the more recent 2002 and 2003 cohorts who took advanced coursework were more likely to enroll in selective and very selective four-year colleges. Our results are preliminary, and we will investigate the effects of coursework in these later cohorts more rigorously in subsequent reports. These early results do suggest, however, that investments in increasing the rigor of students' coursework may pay off.

The expansion of AP and more rigorous college-oriented programs of study has not been evenly distributed across

In recent discussions of Chicago public high schools, CEO Arne Duncan has consistently emphasized that CPS has some excellent high schools. We agree. Indeed, the high college-participation rates and excellent performance of the city's best high schools, including some neighborhood high schools, currently drive the system average. On average, 20 percent of CPS students leave high school with the GPAs and ACT scores they will need to attend selective colleges, such as University of Illinois at Chicago and DePaul University. However, half of these well-prepared students come from only five high schools. Most high schools are simply not up to standards in producing graduates ready for college. Thus, if students are not lucky enough to attend one of the top schools in the city, they appear to have little chance of graduating with access to a selective college or with the GPAs, test scores, and coursework that would predict that they will be successful in college once enrolled.

Low ACT scores are a significant problem, and the low ACT scores of most high schools in the system are not a

Contrary to popular perception, it is not easy to get straight A's in a low-performing high school; in fact, students in higher-performing schools are much more likely to get high grades.

high schools. Neighborhood high schools like Morgan Park and Lincoln Park have raised the bar for neighborhood high schools in Chicago. Morgan Park was recently recognized for the strong performance of its students on the AP English Language and Composition exam, and Lincoln Park was recently recognized as one of the top 100 high schools in America by *Newsweek* magazine.⁴ These high schools have special programs that serve academically advanced students, engaging them in more rigorous coursework, including sequences of honors and AP courses. This is not the norm. In many high schools, few students have access to rigorous programs of study.

3. The impressive performance of a few high schools is driving system averages. The majority of CPS high schools are not up to standards in their course offerings and in the levels of preparation demonstrated by even their top students.

surprise. However, we continue to stress the fact that low GPAs are a greater concern. Contrary to popular perception, it is not easy to get straight A's in a low-performing high school; in fact, students in higher-performing schools are much more likely to get high grades. Too few high schools are pressing students, even their top students, to set and achieve high academic standards for themselves. Moreover, while we do not yet have evidence for this, low grades may also be an indication of the quality of instruction and learning environments in our high schools. Having instructional environments in which students get A's and B's may mean having classes that are organized, hold high and clear expectations for students, have high quality teachers, and use a curriculum that deeply engages students in learning so that they are motivated to excel. Classes in which students seldom get homework, in which students do not know what the homework is or when it will be collected, in which topics seem random and disconnected, and in which students are never asked to grapple with material

and push themselves to do better are not classes in which students can easily get high grades. Thus, the GPAs of the graduates of many CPS high schools suggest that there may be deep problems in the norms and quality of learning in high school environments.

4. High schools must pay attention to guidance and support if students are to translate qualifications into college enrollment.

Latino students in CPS are much less likely to attend college, even among students who have grades and achievement test scores comparable to their classmates. A recent Consortium report found that increasing numbers of Latino students in CPS are graduating from high school. This is good news. It is also good news, as we discuss in Chapter 1 and will emphasize in our next report, that Latino students are aspiring to college and that their parents share those aspirations. Thus, the lower college enrollment rates of CPS

selective four-year colleges. Thus, as CPS works to increase their graduates' qualifications, there must be an equivalent attempt to ensure that students are searching and aspiring to colleges that demand those qualifications, and that students are getting the concrete supports they will need to translate those qualifications into access.

5. College choice matters, especially among students prepared to do college-level work.

CPS students tend to stay in Illinois, particularly Chicago, for college, and they are concentrated in a small number of local institutions with lower-than-average graduation rates. It is not just that local institutions receive the least qualified CPS alumni. To the contrary, even well-prepared CPS graduates are unlikely to graduate at some of the most popular local universities. This report is a first look at college graduation outcomes for CPS students, and while we find that CPS graduates tend to be concentrated in schools

Why are Latino students less likely to attend college than students of other races and ethnicities? This is a question that we have not resolved . . .

Latino students compared to similarly prepared graduates cannot be fully explained by a difference in aspirations.

Why are Latino students less likely to attend college than students of other races and ethnicities with comparable preparation, even though Latino students have similar aspirations? This is a question that we have not resolved in this report and will pursue throughout this project. We know that first-generation college students are especially dependent upon their teachers and other school personnel in making college enrollment decisions and negotiating the college application process.⁵ This suggests an important role for high schools in making sure that Latino students are getting information, guidance, and concrete support to attend college.

The importance of guidance is not limited to the Latino population. There are many high schools in CPS where we see a significant gap between the proportion of students who go to college and the proportion of students who have the qualifications to attend somewhat selective or more

with lower-than-expected graduation rates, we do not know what causes that result. We need to understand why students whose high school records suggest that they are very prepared for college choose to go to nonselective and somewhat selective local colleges, and why these students are not successful once they enroll. It could be that the types of students who enroll in local colleges are quite different than students who enroll elsewhere, perhaps in ways that we cannot measure (e.g., differences beyond high school GPA, test scores, and coursework). For example, they may have local obligations that prevent them from focusing on college. We cannot say to what extent the extreme differences in graduation rates among these local colleges may be due to unmeasured factors.

These large differences in graduation rates across colleges, however, suggest that high schools need to pay attention to where their students are going to college and students' performance once they are there. One way to increase students' chances of success in college is to ensure that they are better

prepared to handle college-level work. Another way is to encourage students to attend colleges that offer high levels of support and environments conducive to student learning, particularly for underrepresented minorities.

The high concentration of CPS students in local colleges and their poor performance in these institutions does, however, offer an opportunity for CPS to begin working more closely with the colleges attended by large numbers of CPS graduates. Even students graduating with strong high school academic records are unlikely to graduate from some of the most popular local universities. Why these students fail to graduate should be of utmost concern to both CPS and the postsecondary institutions. For these students, high school preparation is not the reason for low college graduation rates.

Many other students, however, are entering our local universities unprepared to do college-level work. Large numbers of CPS students who graduate with lower-than-average ACT scores and poor grades are going to college. In order to be successful, these students will need more support, as well as more structure and guidance to help them manage competing demands and become more fully integrated into the college experience. While it is a daunting challenge, the concentration of CPS students in just a few local institutions may provide an opportunity for high schools and colleges to work together on strategies to not only improve the preparation of students coming out of high school, but also to support them once in college.

Concluding Comments

We began this report with CPS students' explanations of the importance of college. Rising ambitions create an enormous opportunity for high schools in Chicago and across the nation. While promising, these changes in aspirations are also creating an entirely new set of expectations and demands on high school communities and educators; expectations that only the most selective high schools have previously been expected to meet. The task is clear. It is to build instructional environments that provide strong structures of support and guidance while engaging students in a set of academic experiences that will build their skills

and allow them to translate aspirations into achievement. This is at the same time a daunting challenge. A first step in facing this challenge is for educators and high school communities to begin to see postsecondary preparation and participation as a critical goal, but addressing these challenges requires a much greater effort. It requires that we develop a better understanding of the determinants of students' postsecondary success and the indicators that need to move if students' college access and college graduation rates are to improve. The purpose of this report is to provide a baseline for this effort. The goal is not to expose or embarrass. The goal instead is to identify the challenges and bring into focus the range of issues with which high school educators, policymakers and community members must grapple as they begin to develop effective approaches to improving students' college outcomes.

In this report, we focus largely on the extent to which students' qualifications shape their college access and success. In the end, we agree with the conclusion that William Bowen, Martin Kurzweil, and Eugene Tobin came to in their larger-scale analysis of the determinants of college access and performance among low-income and minority students: increasing qualifications is the single most important strategy to improve college-participation rates, access to the most selective colleges, and college graduation rates of low-income, minority, and first-generation college students.⁶ Unfortunately, in Chicago, the gap between the qualifications students need and their current levels of performance is wide and must be the central focus of reform.

Our analysis also suggests that colleges are not absolved of responsibility for low graduation rates, nor can high schools simply assume that if students are qualified and want to go to college that they will be able to effectively manage the college application, search, and selection process. We will follow up on both of these issues more rigorously in subsequent reports. In the meantime, we hope that this report will allow high school communities to engage in discussion of not only what it will take to increase students' qualifications, but what kinds of colleges they would like their students to be qualified for, and what colleges may best meet the needs of their diverse student bodies.

Endnotes

¹ Roderick (2006).

² Heckman and Krueger (2003); Roderick (2006).

³ Allensworth (2005).

⁴ College Board (2006); Kantrowitz (2006).

⁵ Howard (2003); McDonough (1997); Stanton-Salazar (2001); Wimberley (2002).

⁶ Bowen, Kurzweil, and Tobin (2005).

Appendices

Appendix 1: CPS Graduates with Disabilities and Graduates of Alternative Schools

In this report, we have not included CPS graduates placed in special education, because their postsecondary preparation and outcomes differ from other graduates. We did not feel that we could adequately examine their preparation and outcomes in this report. Students with disabilities constitute a substantial proportion of CPS graduates. More than 20 percent of African-American male graduates are in special education. In the classes of 2002 and 2003, on average 12 percent of special education students graduated from special education schools and another 4 percent graduated from alternative schools.

We also excluded graduates of alternative schools and the Youth Connections Charter School from our analysis, because the students who graduate from these schools have rarely spent an extended period of time enrolled. More than 96 percent of the 1,375 CPS graduates excluded from our analysis who were not in special education were graduates of Youth Connections. The 2002 and 2003 graduates of Youth Connections were about 72 percent African-American and 23 percent Latino. About 35 percent of these Youth Connections graduates had enrolled in a postsecondary institution by spring.

Graduates grouped by race/ethnicity and gender	Percentage of CPS graduates in special education	
African-American, female	10.4	
African-American, male	21.5	
Latino, female	8.1	
Latino, male	13.2	
White, female	8.3	
White, male	12.8	
Asian, female	1.9	
Asian, male	4.1	
Total	12.1	
Graduates grouped by race/ethnicity and gender	Percentage of CPS special education graduates that are:	
	<i>Learning disabled</i>	<i>Other</i>
African-American, female	59.8	40.2
African-American, male	59.7	40.7
Latino, female	73.8	26.3
Latino, male	70.7	29.3
White, female	61.3	38.7
White, male	52.9	47.1
Asian, female	66.7	33.3
Asian, male	56.8	43.2
Total	62.8	37.3
	<i>Special education graduates</i>	<i>Non-special education graduates</i>
Average unweighted GPA	1.9	2.3
Average ACT score	12.6	17.1
Percentage enrolled in college	30.9	58.6
Percentage enrolled in a four-year college	6.5	34.4

Appendix 2: Description of Selectivity Ratings Used in This Report

Very selective	Most competitive	Admit fewer than one-third of applicants Average freshman: top 10 to 20 percent of high school class; GPA of A or B+; 29 or higher on ACT	2
	Highly competitive	Admit one-third to one-half of applicants Average freshman: top 30-35 percent of their class; GPA of B+ or B; median ACT of 27 or 28	7
Selective	Very competitive	Admit one-half to three-fourths of applicants Average freshman: top 35-50 percent of high school class; GPA mostly B-, median ACT between 24 and 26	18
Somewhat selective	Competitive	Admit 75 to 85 percent of applicants Average freshman: top 50-65 percent of high school class; GPA mostly B-, with some C or C+; median ACT between 21 and 23	18
Nonselective	Less competitive	Admit 85 percent or more of applicants Average freshman: top 65 percent of high school class; GPA below a C; median ACT below 21	9
	Noncompetitive	Students must have graduated from an accredited high school with minimum high school requirements. College with higher than a 98 percent admittance rate automatically fall in this category. Some colleges have no requirements for state residents, but some have requirements for out-of-state residents. Some colleges require students to take placement examinations to place into college-level courses.	8
Two-year college	Not rated by Barron's	Some colleges have open enrollment. Students must take placement examination to place into college-level courses.	38
Special		These colleges have specialized programs of study and/or are professional schools of art, music, nursing and other disciplines. Admission usually requires evidence of the talent or special interest. Colleges that serve working adults are also assigned to this level.	0.2

Appendix 3: Linking SAT and ACT Scores

Students in the Midwest tend to take the ACT, but to place the scores in context, the following table shows SAT and ACT scores that have been linked using the equipercentile method.¹

ACT composite	SAT I verbal and math
35-36	1600
35	1560-1590
34	1510-1550
33	1460-1500
32	1410-1450
31	1360-1400
30	1320-1350
29	1280-1310
28	1240-1270
27	1210-1230
26	1170-1200
25	1130-1160
24	1090-1120
23	1060-1080
22	1020-1050
21	980-1010
20	940-970
19	900-930
18	860-890
17	810-850
16	760-800
15	710-750
14	660-700
13	590-650
12	520-580
11	500-510

¹ The SAT and ACT are two distinct tests that measure related, but different, constructs. Moreover, each test measures scholastic achievement on a different scale (e.g. for SAT, 200-800; for ACT 1-36). Thus, it is impossible to equate SAT and ACT scores with complete precision. However, both tests are designed to make similar inferences, to be used with similar populations, and to be administered under similar conditions, which may justify linking the two scores (Kolen, 2004). In the above table, Dorans, Lyu, Pommerich, and Houston (1997) used the equipercentile method to calculate equivalent scores. Each student in the sample took both the SAT and the ACT, and then the scores that had the same percentile rank in the sample were set equal.

Appendix 4: Models Used in This Report

Chapter 2 Models

For our analyses, we used two-level hierarchical linear modeling, with students at level-1 and schools at level-2. Since all of our analyses used models with binary outcomes, our HLM analyses use a binomial sampling model with a logit link.

To provide a baseline for later analyses, our base model contained only demographic information and eighth-grade ITBS scores. The base model, which is used for the HLM analyses in Chapter 2, is shown below in the “Pre-high school achievement model.” It models the probability of attending college, controlling for the other variables; however, identical models were analyzed for the probability of attending a four-year versus two-year college, given that a student attended college, and the probability of attending a selective or very selective college, given that a student attended a four-year college. Each of the variables in the base model was grand mean centered in order to allow the intercept to represent the value for an “average” CPS graduate. Subsequent variables were either grand mean centered or uncentered.

The equations below show both the Level-1 and Level-2 models. In the Level-1 model, “Distance from HS” is a measure of how far, in miles, a student lives from the high school the student attends (whether a student is likely to have made the decision to attend a high school outside of his or her neighborhood); “Freshman Age” refers to a student’s age at the beginning of the freshman year of high school; “male,” “white,” “Latino,” and “Asian” are dummy variables indicating a student’s gender and race/ethnicity (African-American is the omitted category); and “Neighborhood Poverty” is a measure of the concentration of poverty in the students’ census block group; “Neighborhood SES” is the mean social status, without income, of students’ census block group; “Average ITBS” is the average of a student’s latent reading and math eighth-grade scores on the Iowa Tests of Basic Skills; “Average ITBS²” is the square of the Average ITBS variable to account for non-linearity; “No ITBS” is an indicator for students for whom eighth-grade ITBS scores were not available (to avoid significantly reducing sample size, and possibility biasing the results, students without ITBS scores were assigned the sample average); and “No Freshman Age” is an indicator for students for whom freshman ages were not available.

In the Level-2 model, “Average School SES” is the average of the students’ Neighborhood SES values (not the average SES of the area in which the school is located); “Average School ITBS” is the average of the students’ eighth-grade latent ITBS scores; “Primarily Latino School” refers to a school in which 70 percent or more students are Latino; “Integrated School” refers to a school in which 30 percent or more of students are white or Asian; and “Mixed School” refers to a school in which less than 30 percent of the students are white or Asian and the percentages of African-American and Latino students are less than 70 percent.

Level-1

$$\text{Prob}(\text{College} = 1) = \phi_{ij}$$

$$\text{Log}[\phi_{ij} / (1 - \phi_{ij})] = \eta_{ij}$$

$$\eta_{ij} = \beta_{0j} + \beta_{1j}(\text{Distance from HS})_{ij} + \beta_{2j}(\text{Freshman Age})_{ij} + \beta_{3j}(\text{Male})_{ij} + \beta_{4j}(\text{White})_{ij} + \beta_{5j}(\text{Latino})_{ij} + \beta_{6j}(\text{Asian})_{ij} + \beta_{7j}(\text{Neighborhood Poverty})_{ij} + \beta_{8j}(\text{Neighborhood SES})_{ij} + \beta_{9j}(\text{Average ITBS})_{ij} + \beta_{10j}(\text{Average ITBS}^2)_{ij} + \beta_{11j}(\text{No ITBS})_{ij} + \beta_{12j}(\text{No Freshman Age})_{ij}$$

Level-2

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Average School SES})_j + \gamma_{03}(\text{Average School ITBS})_j + \gamma_{04}(\text{Primarily Latino School})_j + \gamma_{05}(\text{Integrated School})_j + \gamma_{06}(\text{Mixed School})_j + u_j$$

Building on the base model, in Chapter 2 we included students' ACT scores, unweighted GPAs, and a measure of the rigor of the coursework they completed while in high school into Level-1 of the model in order to determine these variables' effects on the probability of attending college, enrolling in a four-year college (given that the student attended college), and enrolling in a selective or very selective college (given the student attended a four-year college). The ACT score included in the analyses is the student's ACT composite score. Most students in CPS take the ACT as a part of the Illinois state achievement test, the Prairie State Achievement Examination (PSAE). Thus, students' ACT test results are not self-reported, and because they are not obtained from ACT, may not reflect a student's highest ACT score if a student opted to retake the ACT.

In some analyses, ACT scores were left in their original metric. In others, ACT scores were broken down by deciles, based on the scores of the CPS students in our sample, or they were broken down into the following categories: less than or equal to 14, 15-17, 18-20, 21-23, 24-26, and 27 and above. Students for whom ACT scores were not available were assigned the mean ACT score for CPS students, 17.1, in order to prevent a sizable reduction in sample size (ACT scores were not available for approximately 20 percent of students) and possible bias. When ACT scores were included in a model, a "No ACT" dummy variable was included.

The unweighted GPAs were computed based on students' grades in core courses: mathematics, English, science, social science, and foreign language. Students for whom GPAs were not available were not included in the analyses with GPA in the model. Like ACT scores, GPAs were included in the models in their original metric, as deciles, based on the GPAs of the CPS students in our sample, or as categories: less than or equal to 2.0, 2.1-2.5, 2.6-3.0, 3.1-3.5, and 3.6-4.0.

The final models also included indicators of the rigor of students' coursework. Based on the number of AP and honors courses students took, we placed students into the following categories: standard curriculum, limited honors/AP, honors track, honors with one AP, and advanced track. Students designated as taking the standard curriculum had not taken honors or AP classes at any point during high school. Students categorized as being in the honors track took four or more honors classes while in high school. Students placed into the limited honors/AP category took fewer than four honors

classes and not more than one AP class throughout high school. Students in the honors with one AP category took four or more honors class and not more than one AP class. Finally, students designated as being in the advanced track took six or more honors courses and at least two AP courses while in high school. These variables were included in the analyses as dummy variables.

Chapter 3 Non-Nested Models

Logistic regression models predicting students' probability of college graduation with student characteristics were used for Figures 3-3, 3-7, 3-12 and the left side of Figure 3-13. These models predicted the log-odds of graduating from college with a series of variables (X) representing student characteristics, as described below.

$$\text{Prob (College Graduation = 1)} = \varphi$$

$$\text{Log}[\varphi / (1 - \varphi)] = \eta$$

$$\eta = \beta_0 + \sum_{q=1}^Q \beta_q X_q + e$$

For Figure 3-3, unique relationships were found by simultaneously entering all three indicators of high school preparation together as predictors of college graduation. An additional model was run entering just GPA and coursework as predictors of college graduation to determine whether coursework affected graduation through its relationship with test scores.

For Figure 3-7, college graduation was predicted with three dummy variables representing students with: 1) low TAP scores and no honors courses; 2) average TAP scores and 1 to 3 honors or AP courses; and 3) high TAP scores and four or more honors or AP courses. These dummy variables were not inclusive of all students, but were chosen to represent three common types of course preparation. Included in this model with the dummy variables were unweighted GPA, and interaction terms of GPA with each of the three dummy variables.

Figure 3-12 was created by running logistic regression models separately for students at each of the most popular colleges. Only unweighted GPA was used as a predictor of graduation. This produced unique coefficients for each college, which were used to calculate the probability of graduation at each level of GPA within each college. Graduation rates were shown on the graph for each 0.5 increment of GPA for each college if at least 20 students at the college had a rounded GPA at that level.

The model for the left side of Figure 3-13 included each of the high school preparation indicators (TAP score, unweighted GPA, total number of honors or AP courses), along with effect-coded variables for each race-gender group (white female students excluded). The difference from the unweighted group mean was then calculated for each racial/ethnic and gender group from the model coefficients.

Chapter 3 Nested Models

Hierarchical generalized linear models with students nested within colleges were used for Figures 3-9, 3-10, and 3-11, and the right side of Figure 3-13. All models predicted the log-odds of graduating from college. At level 1, all models included predictor variables representing students' high school preparation (TAP score, unweighted GPA, total number of honors and AP courses), along with dummy variables representing race/ethnicity and gender, and two variables representing students' economic status. The economic status variables were based on information from the 2000 census on conditions in the students' residential block group. Census variables were combined into a measure of poverty based on the percentage of families below the poverty line and the percentage of men unemployed, and a measure of social status based on the median family income and the average level of education among adults over age 25. The models were of the following form:

$$\eta_{ij} = \beta_{0j} + \sum_{q=1}^{q=9} \beta_{qj} X_{qij}$$

Where X= TAP score, unweighted GPA, total number of honors/AP courses, male, African-American, Asian, Latino, poverty, and social status.

$$\beta_{0j} = \gamma_{00} + \sum_{p=1}^p \gamma_{0p} Z_{0pj} + u_{0j}$$

Where Z depends on the analysis.

$$\beta_{qj} = \gamma_{q0}$$

For $q > 0$.

For Figure 3-9, no variables were entered at level 2. College graduation rates were calculated from the level-2 residual file. For Figure 3-10, two dummy variables were entered at level 2 representing out-of-state colleges, and the top six most popular colleges. This model was also used for the right side of Figure 3-13. For Figure 3-11, each variable representing a college characteristic was entered by itself at level 2. These models were repeated a second time with a reduced dataset, with only students who did not attend one of the most popular six colleges.

Appendix 5

Colleges and Students Excluded from the College Graduation Analysis

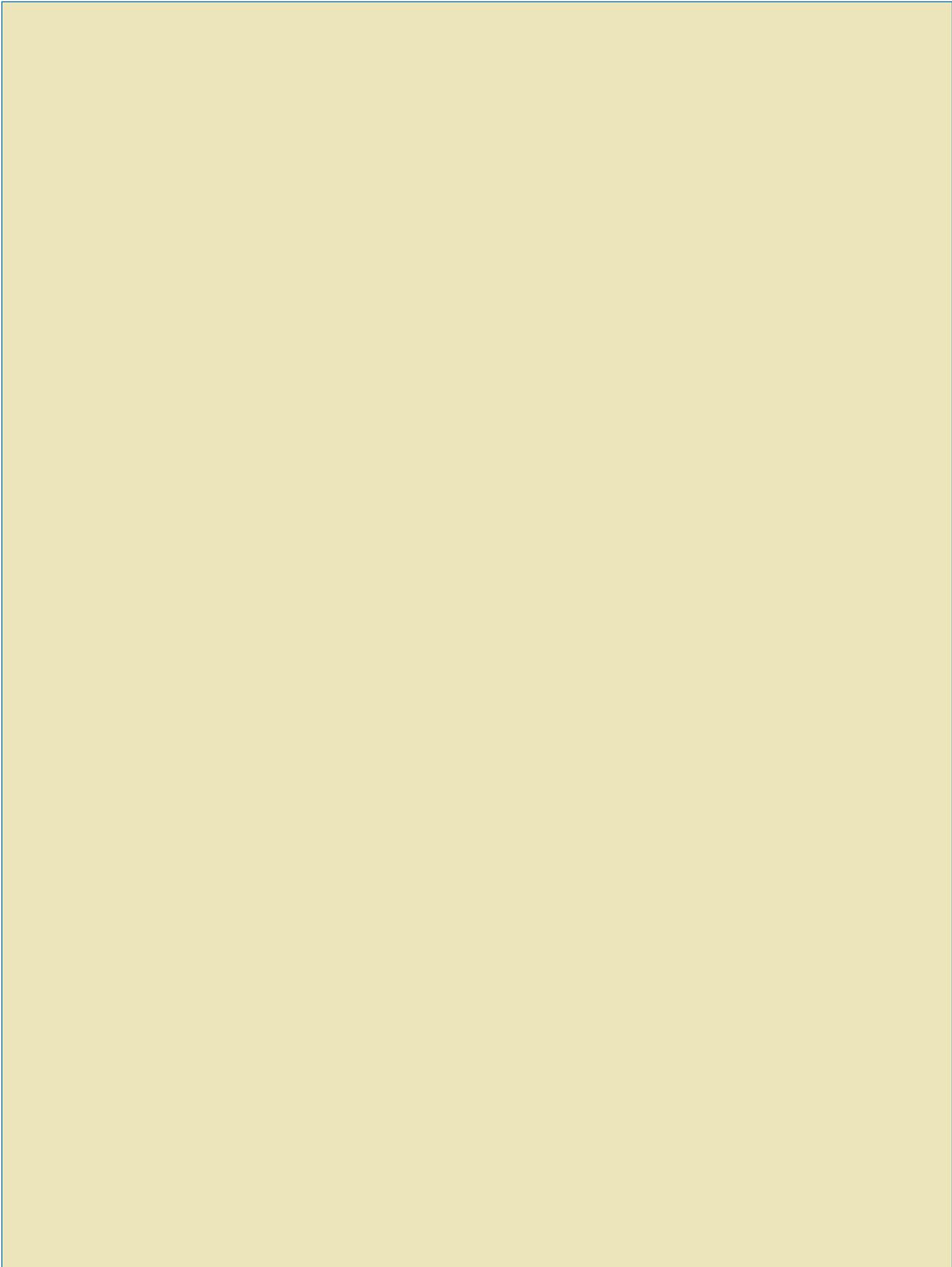
Background characteristics of students in the analyses compared to those taken out

	Students included in our analyses		Students enrolled at colleges for which we do not have graduation data	
	N	Mean (standard deviation)	N	Mean (standard deviation)
Unweighted GPA	5,490	2.92 (0.55)	1,930	2.90 (0.53)
Male (percent)	5,491	0.39 (0.49)	1,930	0.34 (0.47)
White (percent)	5,492	0.16 (0.37)	1,930	0.16 (0.37)
African-American (percent)	5,492	0.46 (0.50)	1,930	0.55 (0.50)
Asian (percent)	5,492	0.14 (0.35)	1,930	0.10 (0.31)
Latino (percent)	5,492	0.24 (0.43)	1,930	0.18 (0.38)
Concentration of poverty in the student's census block group (standard deviation)	5,396	-0.01 (0.64)	1,894	0.02 (0.67)
Mean social status (without income) of student's census block group (standard deviation)	5,397	-0.01 (0.70)	1,894	0.04 (0.74)
Number of honors or AP classes taken	5,490	4.84 (5.37)	1,930	4.84 (5.23)
Number of AP classes taken	5,490	0.65 (1.32)	1,930	0.60 (1.25)
Took one or two honors classes in senior year (percent)	5,492	0.35 (0.48)	1,930	0.35 (0.48)
Took three or more honors classes in senior year (percent)	5,492	0.24 (0.43)	1,930	0.23 (0.42)
TAP (standard deviations)	4,827	0.75 (0.91)	1,730	0.78 (0.89)
Took extra advanced math course (percent)	5,492	0.47 (0.50)	1,930	0.48 (0.50)
Took math in senior year (percent)	5,487	0.54 (0.50)	1,929	0.54 (0.50)
Began college in spring (percent)	5,492	0.04 (0.20)	1,930	0.03 (0.17)
Rank (percentile)	5,490	0.31 (0.25)	1,930	0.32 (0.24)

Characteristics of colleges in the analyses and colleges taken out

	Our college sample N=98 ¹ (standard deviation)	Colleges for which we do not have graduation data N=84 (standard deviation)
Out of Illinois	74% (44%)	93% (26%)
Very selective—Barron’s most and highly competitive groups	32% (47%)	10% (30%)
Selective—Barron’s very competitive group	24% (43%)	15% (36%)
Somewhat selective—Barron’s competitive group	29% (45%)	55% (50%)
Nonselective—Barron’s less and non-competitive	14% (35%)	20% (40%)
Historically Black College or University	12% (33%)	10% (30%)
Estimated median SAT	1127.82 (164.84)	1050.21 (122.28)
Student and related expenditures (per FTE undergraduates)	\$16,407.47 (10,654.71)	\$10,869.52 (4,733.75)
Average federal grant aid per receiving student	\$3,434.47 (923.53)	\$3,131.67 (826.89)
Full-time undergraduates/ full-time faculty	13.32 (6.45)	15.88 (7.22)
Six-year graduation rates	63% (20%)	53% (16%)
First-year degree-seeking applicants who were admitted	61% (20%)	72% (14%)
Undergraduates receiving Pell Grants	26% (17%)	30% (15%)
Part-time undergraduates	12% (11%)	15% (11%)
Full-time faculty	71% (19%)	70% (20%)
Full-time undergraduates age 25 or older	13% (12%)	17% (14%)

¹ Students from the 1998 and 1999 cohorts actually enrolled in 103 colleges for which graduation information is available, however five colleges do not have data in the Education Trust database which was used for some college information.



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