The State of Chicago Public High Schools: 1993 to 2000

STUDENT PERFORMANCE:
Course Taking, Test Scores, and Outcomes

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May 2002

CONSORTIUM ON CHICAGO SCHOOL RESEARCH

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Student Performance: Course Taking, Test Scores, and Outcomes

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Series Summary
The State of Chicago Public High Schools: 1993 to 2000

THE WAVE OF REFORMS THAT FIRST HIT THE CHICAGO Public Schools in the late 1980s focused primarily on greater local control over schools. During this period (Phase I), there was considerable improvement in Chicago public elementary schools. Change in the high schools, however, was minimal.

Beginning in 1995, a second wave of reform (Phase II) focused on strong mayoral control, high stakes accountability, and increased attention from system administrators. Phase II included the systemwide redesign of high schools.

This series tracks the performance of Chicago public high school students from 1993 to 2000 using data from the last two years of Phase I reform as a baseline for looking at the first five years of Phase II. Each report in *The State of Chicago Public Schools: 1993 to 2000* series makes up part of a comprehensive picture of how high schools changed under Phase II. This report looks at student performance. *Declining High School Enrollment: An Exploration of Causes* tracks changes in high school enrollment and explores possible causes. *Changing Special Education Enrollments: Causes and Distribution among Schools*, examines the increase in the percent of students eligible for special education services and their distribution across schools.

Student Performance

Student Performance: Course Taking, Test Scores, and Outcomes shows that in recent years high school eligible students in Chicago's public schools improved on a number of measures. These trends exist even though we include in our analyses the students who dropped out of school between eighth and ninth grade, or were sent to Academic Preparatory Centers. More students were on track their first year after elementary school (received no more than one failing grade in a core course and had enough credits to assume sophomore status on time), passed the algebra/geometry sequence by the end of their second year, and passed an honors class sometime in their first year. Somewhat more students also completed a college preparatory program and passed an honors or advanced placement course over four years. The percent of students graduating by age 18 rose slightly, and the percent of students dropping out by age 18 fell slightly. Finally, the average score on the Tests of Achievement and Proficiency (TAP) rose substantially for the subset of students who enrolled in the ninth grade.

Overall, this is good news for Chicago public high schools—students' likelihood of succeeding in school has increased. At the same time, this "good news" is qualified by the fact that student performance itself, even by 2000, was still very poor on most measures. Fewer than half of all students graduated, barely half were on track after their freshman year, and the dropout rate remained above 40 percent.

When measuring the effects of high school reform policies, the news is mixed. Policies aimed at bringing in better-prepared students appear to have worked well and account for much of the improvement in student performance. The system's redesign of high schools in 1997, however, appears to have had only a modest impact on increasing the rate of the development of students' skills. The rates at which students graduated, stayed on track, passed the algebra/geometry sequence, and completed a college preparatory program appear to be, in part, due to something besides better-prepared students. On the other hand, the increase in the frequency with which students took honors and advanced placement courses seems to have occurred primarily as a result of students leaving elementary school better prepared for high school.

No particular *type* of school (neighborhood, vocational, charter or small, extended elementary, or selective admissions) was especially effective at improving students' performance on the TAP; individual schools from each category stood out. When looking at dropout rates, however, there is a noticeable pattern. Charter schools had substantially lower dropout rates after controlling for the characteristics of their incoming students. Selective admissions schools also did well. While Academic Preparatory Centers (APCs) generally had mixed results, a few had more success than expected in keeping their students from dropping out.

Other Reports in the Series

Declining High School Enrollment

Declining High School Enrollment: An Exploration of Causes documents changes in high school enrollment from 1993 to 2000 and examines why they occurred. Analysis shows that the introduction of the promotion gate policy to CPS elementary schools in the 1995–96 school year had a profound effect on high school enrollment. As lower achieving eighth-grade students were retained or sent to APCs, the size of ninth-grade cohorts shrank. Successive grades were affected as smaller cohorts moved through high school. The better-prepared students who did make it to grade nine were less likely to spend more than four years in high school than in the past, thereby further depressing enrollment. As a result of this reduction in high school course repetition, the increase in eighth-grade retention was not accompanied by a decline in graduation rates by age 18.

Enrollment and Distribution of Special Education Students

Changing Special Education Enrollments: Causes and Distribution among Schools examines in detail the upward trend of special education enrollment in high schools. The enrollment of students with disabilities in ninth grade increased substantially over the period of our study, from 11.5 percent in the 1993–94 school year to 16.4 percent in 1999–00. During this period, a larger percentage of elementary students were identified as having learning disabilities, particularly in the later grades. Although the proportion of students with disabilities that was retained only rose slightly, the proportion of general education students that was retained or sent to an APC rose dramatically. Moreover, students with disabilities were heavily concentrated in neighborhood high schools (rather than selective admissions, charter, small, or extended elementary schools). Eleven neighborhood high schools, all on probation and located in areas with disproportionately high levels of low-income residents, experienced an especially large increase in their enrollment of students with special needs—from 16.3 percent in the 1993–94 school year, to 30.1 percent in 1999–00. The overall growth of special education enrollment across the system resulted in the increased separation of students with learning disabilities from general education students in high school classrooms, especially in schools where a larger proportion of students with disabilities was served.

The Unexpected Consequence of Reform Policies

Looking across the reports, we see that some of the most dramatic changes in CPS high schools between 1993 and 2000 were the consequences of changes in CPS elementary schools. This is especially pronounced when looking at the long-term impact of the eighth-grade promotion gate adopted by the system in 1995–96.

One of the anticipated consequences of the policy to end social promotion was a student population better prepared to cope with the demands of high school. In *Student Performance*, trends in graduation, course-taking, and test scores all show improvement, much of which is attributable to better-prepared students in the high schools. On the other hand, *Declining High School Enrollment* shows that high school enrollment declined substantially between 1993 and 2000 due in part to fewer students passing the promotion gate and, because those who did enroll were better prepared and less likely to repeat a grade, students moved through the system more quickly. In *Changing Special Education Enrollments*, we see that although the general education students who enrolled in high school were better prepared, they comprised a smaller percentage of incoming ninth graders. Because relatively fewer general education students were being promoted, high schools enrolled a greater concentration of students with disabilities. This is especially true for those high schools whose traditional enrollment was made up of mostly low achieving students who were not passing the promotion gate. The higher concentration of students with disabilities made their inclusion in general education classrooms more complex and difficult.

The reverberating effects of the eighth-grade promotion gate show that before the system adopts a policy to prompt change in the elementary schools, it should be considered in light of its possible long-term effects on high schools.

New Information on CPS High Schools

Outcomes for the 2000–01 school year show no substantial difference from the trends presented in these reports, with the exception of the distribution of students with disabilities being significantly less focused on neighborhood high schools. Updated data for 2000–01 will be posted on the Consortium's website (www.consortium-chicago.org). A planned fourth report in this series will look more specifically at the climate inside high schools. The projected date for this report's publication is January 2003.

I. Introduction: Context for Analysis

OVER THE COURSE OF THE 1990s, CHICAGO PUBLIC schools were the subject of a great deal of public attention, broadly scaled reforms, and sweeping changes. Under the decentralization reforms of the first half of the decade, a significant number of elementary schools made well-documented progress in improving school organization, instruction, and student performance.

High schools, on the other hand, showed few signs of improvement during this period. In *Charting Reform in Chicago: The Students Speak* (1996), Consortium researchers reported that most high schools were "designed for failure" and that few students were prepared to participate in the labor market or enter higher education. Over the second half of the decade, the Chicago Public Schools (CPS) tried to spur change in the high schools by implementing targeted reforms and systemwide redesign.[1] Other policy changes, especially the ending of social promotion in elementary schools, had major implications for high schools as well.

Although other researchers have carefully documented and evaluated specific reform strategies (Hess and Cytrynbaum, forthcoming), this report looks at broad indicators of improvement in high school student performance from 1993 to 2000. We address three issues: What improvement, if any, has there been in student performance? What is the absolute level of performance? Is improvement the result of real changes in the high schools, or only a consequence of having better-prepared students? We analyze traditional performance indicators such as standardized test scores and graduation and dropout rates, and new indicators such as measures of whether students are "on track" to graduate one year after elementary school and whether they complete a college preparatory program or pass any honors courses (see Table 1). In addition, we also look at how standardized test scores and two-year dropout rates compare among the different types of CPS high schools. (See Appendix I for descriptions of our sample group for each analysis.)

High School Redesign

CPS high school redesign centered on four distinct sets of policies. Although these were implemented in individual schools to widely varying degrees, their major provisions were the same across the system:

- Improve the quality of students entering high school.
- Mandate more challenging work.
- Help students meet the demands of higher standards.
- Focus resources and penalties on extremely low performing schools.

Table 1: Outcomes Included in this Study

Outcome Type	Length of Time Measured	
	One and Two Year	Four Year
Basic Measures *(adequate performance)*	On track	Graduation Dropout
Course-Taking *(moderate performance)*	Algebra-geometry sequence	Full college sequence College sequence without foreign language
Advanced Course-Taking *(advanced performance)*	At least one honors course in the first year	At least one honors course At least one AP course
Achievement Scores	TAP reading TAP math	

Better Prepared Students

A strong push to improve the quality of students entering high school entailed a systemwide policy requiring students to meet specified performance levels *before* they could matriculate. This directly addressed a claim long made by CPS high school teachers that they would have more success in the classroom if students came to high school better prepared.

Reform efforts in the elementary schools resulted in several years of rising eighth-grade scores on the Iowa Tests of Basic Skills (ITBS).[2] Eighth graders who did not meet a specified ITBS cut-off score were generally retained in elementary school instead of promoted to ninth grade, or if a student would be turning 15 by December 1 of the following academic year, he or she was sent to an Academic Preparatory Center (APC), ideally until the ITBS cut-off score was met. APCs were designed to help students with weak skills make the transition from elementary to high school by providing additional academic and social support. With the implementation of the ITBS promotion gate and the creation of APCs, Chicago public high schools enrolled fewer students with weak basic skills and, as a result, classrooms were filled with higher achieving students.

In addition to the above initiatives, CPS worked to attract and retain more able students. In order to achieve this, the system planned a college preparatory selective admissions high school for each of the city's six regions (at the time of publication, all but one was open). These schools were quite successful in encouraging better-prepared students to remain at, or enroll in, CPS high schools.[3] The system also developed a wide range of magnet programs inside existing neighborhood high schools to attract students who might have otherwise enrolled in a selective admissions school or left the system altogether.

A More Rigorous Curriculum

Research suggests that without stiff requirements, students often shy away from taking a heavy course load or more challenging classes. And yet, when they are required to take these classes, their standardized test scores rise and their dropout rates decrease.[4] The impact of a tougher academic program on minority students is even greater—they earn higher wages after high school, and the racial divide in standardized test scores and graduation rates diminishes.[5]

Starting with the freshman class of 1997–98, CPS students are required to complete a rigorous program of study that meets the entrance requirements of competitive colleges like the University of Illinois at Urbana-Champaign: four years of English, three years of math (algebra, geometry, and advanced algebra/trigonometry), three years of social science, and two years of foreign language. Non-academic classes such as fine arts, physical education, and career exploration are also required.[6] These new graduation requirements are comparable to the "New Basics" recommended in *A Nation at Risk* (1983). In fact, with its foreign language requirement, CPS's mandated curriculum actually exceeds the New Basics.

Increased Student Support

To counter a possible increase in the number of dropouts brought about by the more challenging curriculum, CPS introduced a range of initiatives

to help students through high school. Some schools were reorganized into extended elementary schools so students could complete ninth grade in a smaller, more familiar environment. Junior and senior academies were set up within high schools to smooth the transition from elementary school for ninth graders and establish more intimate and personable learning communities. All schools were required to launch an advisory program to provide students with a teacher-advisor to whom they could turn for advice and guidance. Recovery programs were implemented to help students who failed a course in the fall semester pass in the spring, and evening high school programs were opened for students to make up credits needed for graduation. Each school's commitment to these initiatives, and the extent of their implementation, varied greatly.[7]

Attention for Low Performing Schools

CPS imposed a combination of penalties and increased resources on extremely low performing high schools through the processes of remediation, probation, reconstitution, reengineering, and intervention. For the period of this study, high schools that were performing poorly could be placed under remediation and required to submit annual school improvement plans to the CPS Central Office. Schools in which less than 15 percent of students met national norms on the Tests of Achievement and Proficiency (TAP) faced probation. Schools on probation were monitored until test scores exceeded the threshold or they showed significant improvement in five essential areas: school leadership, professional development and training, instructional program, learning environment, and parent and community relations.[8] Probation schools received approximately $100,000 in additional funds and were assigned an external partner from the educational community. In some cases, a business manager was appointed to help manage day-to-day affairs so that the principal could focus on other tasks.

Schools failing to make adequate progress under probation faced reconstitution, reengineering, or intervention. Under these designations, all teachers, principals, and Local School Council members at these schools were placed under the threat of dismissal. In addition, the schools were assigned external partners and received $500,000 in additional funding.

II. Preparation of Students Leaving Elementary School: Adjusting for Student Characteristics

UNDER THE SECOND PHASE OF REFORM IN THE LATE 1990s, the Chicago Public Schools mounted an aggressive campaign to improve its high schools. This campaign had four goals: improve the quality of entering ninth-grade students; increase the rigor of the academic program; provide more support for students; and focus increased attention on extremely low performing schools.

The first of these, improving the quality of incoming students, was greatly affected by the system's implementation of the policy to end social promotion that took effect in the 1995–96 school year. Under this policy, eighth graders who did not meet a specified cut-off score on the ITBS typically were retained or sent to an APC.

Obviously, this policy had a substantial impact on the characteristics of students entering high school and has made more difficult the problem of measuring accurately the impact of the system's other high school reforms, especially in a study of trends over time. Once the weakest students are removed, the performance of those who do go on to high school improves by default—higher achieving students are the only ones being measured. To address this, in this study we distinguish between two groups of students: those who enroll in ninth grade and *all* students who leave elementary school (or all "high school eligible" students). This second group includes students who enroll in ninth grade, APCs, or drop out between eighth and ninth grade.

We include both groups—all high school eligible students—in our measures of improvement (neither APC nor eighth-grade students take the TAP so we can not include them in our calculations of scores). In doing so, we ensure that we track a similar population over time and are better able to determine whether improvements are the result of better-prepared entering students or of changes in the high schools. To adjust for changes in incoming students, we control for race/ethnicity, gender, socio-economic status, special education classification, age, if a student took the ITBS, if a student was returning to CPS from outside the system or entering the system anew, and eighth-grade ITBS scores.[9] These are our adjusted outcomes. (See Appendix II for a discussion of how we adjusted ITBS and TAP scores to calculate accurate means.)

Rising ITBS Scores and Declining Leave Rates: Improving the Pool of Entering Students

Of all the characteristics we control for, the only one with substantial change was student preparation as measured by eighth-grade ITBS scores. With the weakest students being retained, enrolling in APCs, or dropping out, one could assume that students entering ninth grade after the implementation of the promotion gate had higher scores. Indeed, ITBS reading scores for entering ninth graders rose from an average of 7.7 grade

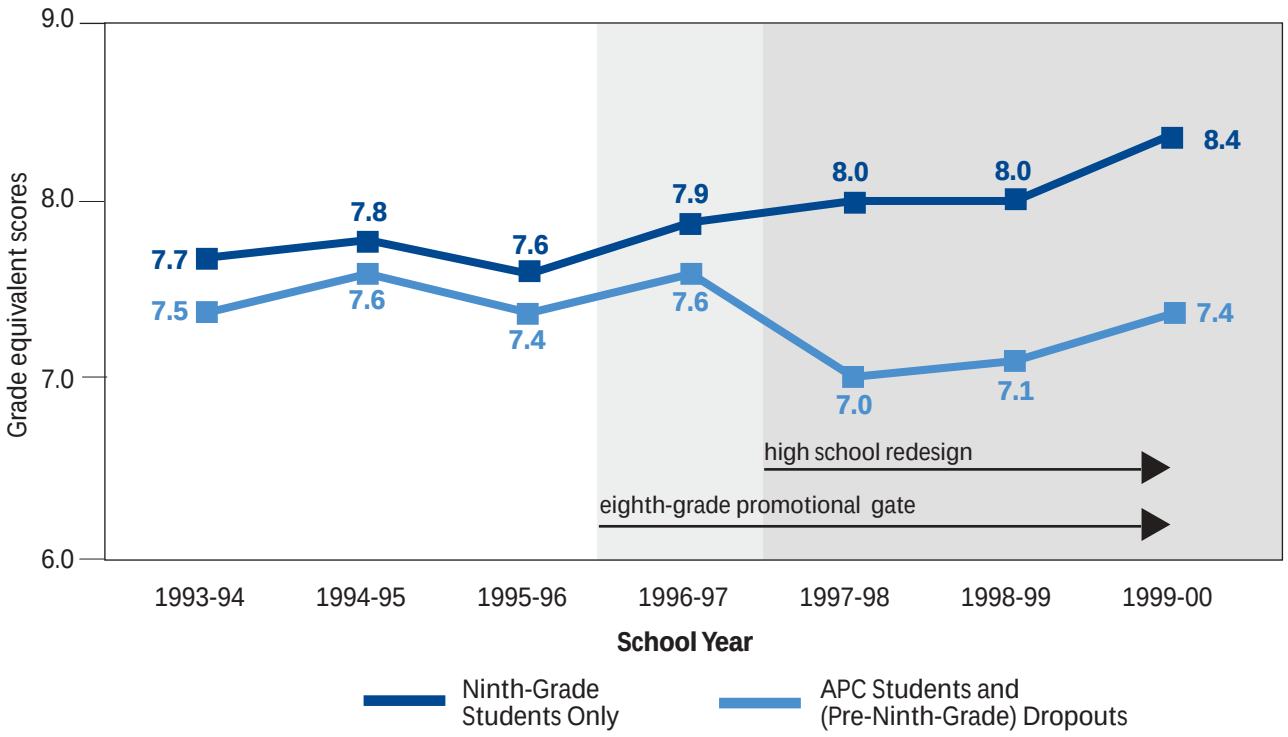
equivalents (GEs) in 1993–94 to 8.4 in 1999–00 (see Figure 1).[10] In math, scores rose from 7.6 to 8.7 (see Figure 2). For those students who left eighth grade but did not enroll in high school (i.e., went to an APC or dropped out), scores declined sharply after the policy's adoption. Math scores recovered the following year, but reading scores only regained their 1993–94 levels in the last year of our study. (The average scores for all high school eligible students between 1993 and 2000 were the same as scores for the ninth-grade only population because the number of entering ninth graders far exceeded the number of APC students and eighth-grade dropouts.) On average, CPS students were leaving elementary school better prepared.

There was also an increase in the percent of high achieving students going on to CPS high schools. In general, high achieving students were still more likely than others to leave the system after elementary school. However, between the 1995–96 and 1999–00 school years, the proportion of high achieving students who transferred out decreased by 30 percent, from 21.1 to 14.8 (see Figure 3).[11] By the fall of 1999, the leave rate among students in the top quartile was only slightly higher than that of students in the other three quartiles. This decline may be attributed in some part to the opening of several new selective admissions schools.[12] It is also important to note that leave rates for students in the bottom two quartiles increased slightly during this same period.

Figure 1

ITBS Reading Scores Rise for Entering Ninth Graders, Not for APC Students or Pre-Ninth-Grade Dropouts

Last year of elementary school

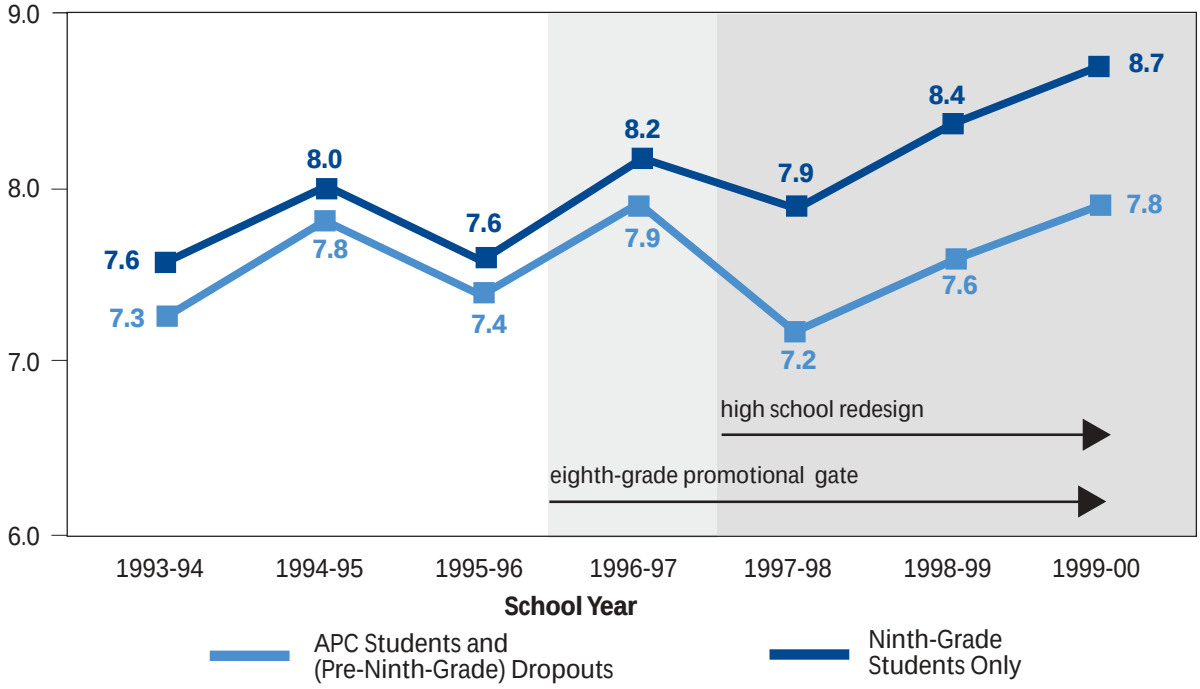


Note: Figure does not include bilingual students or students with disabilities; these populations are traditionally excluded from public reporting on the ITBS.

ITBS Math Scores Rise for Entering Ninth Graders, Not for APC Students or Pre-Ninth-Grade Dropouts

Figure 2

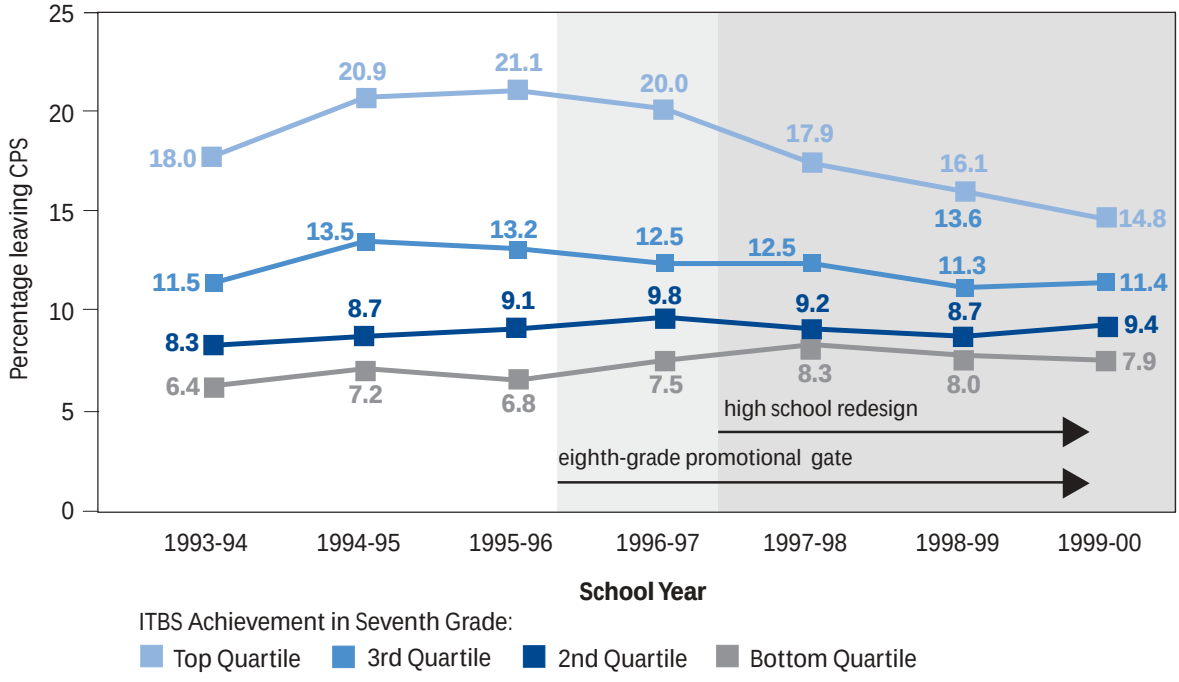
Last year of elementary school



Note: Figure does not include bilingual students or students with disabilities; these populations are traditionally excluded from public reporting on the ITBS.

Fewer High Achieving Students Leave CPS between Eighth and Ninth Grades

Figure 3



Note: We look at seventh grade performance on the ITBS because selective enrollment high schools use these scores for admissions decisions.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III. Looking at Students' Full Experience in High School: Long-Term Indicators

OUR EXAMINATION OF IMPROVEMENTS IN CHICAGO public high schools uses two sets of indicators: those that look at the full high school experience, and those that look at short-term outcomes. The first group includes graduation and dropout rates, percent completing a college preparatory curriculum, and percent passing at least one honors course over four years.

Each is a cohort variable: for graduation and dropout rates, we track students starting at age 13, the year before the average student enters high school, until they exit the system either by graduating, dropping out, or transferring to a school outside of the system; for the others, we track students from the year they become high school eligible over four years. We adjust for student characteristics on every measure to determine whether improvements, if any, might be attributed to reform in the high schools, or are a result of better-prepared students.

The indicators that make up the short-term outcomes span fewer years. These include the percent of students on track for graduation, percent passing the algebra/geometry sequence by the end of tenth grade, and percent passing an honors course in the first year. These short-term measures help us get a more current picture of student performance. As with the long-term measures, we adjust for student characteristics for each to see if improvements were simply the result of better-prepared students.

Indicators of Basic Performance

A high school diploma is the threshold requirement for most post-secondary options; it is needed to enroll in college, enlist in the armed forces, and secure higher-paying jobs. In comparison to graduates, dropouts fare significantly worse in terms of their employment eligibility, income potential, and likelihood of incarceration.[13] Whether or not a student graduates or drops out is the most basic performance measure for high school.

For our measures of graduation and dropout rates, we use the procedure outlined in the Consortium's 2001 report, *Calculating a Cohort Dropout Rate*.[14] We track a cohort of students for six years, from the fall of the school year they are 13-years old (the age most students are in eighth grade) until they are age 19. In this way, we account for students who drop out between eighth and ninth grade, not just for those that enroll in high school.

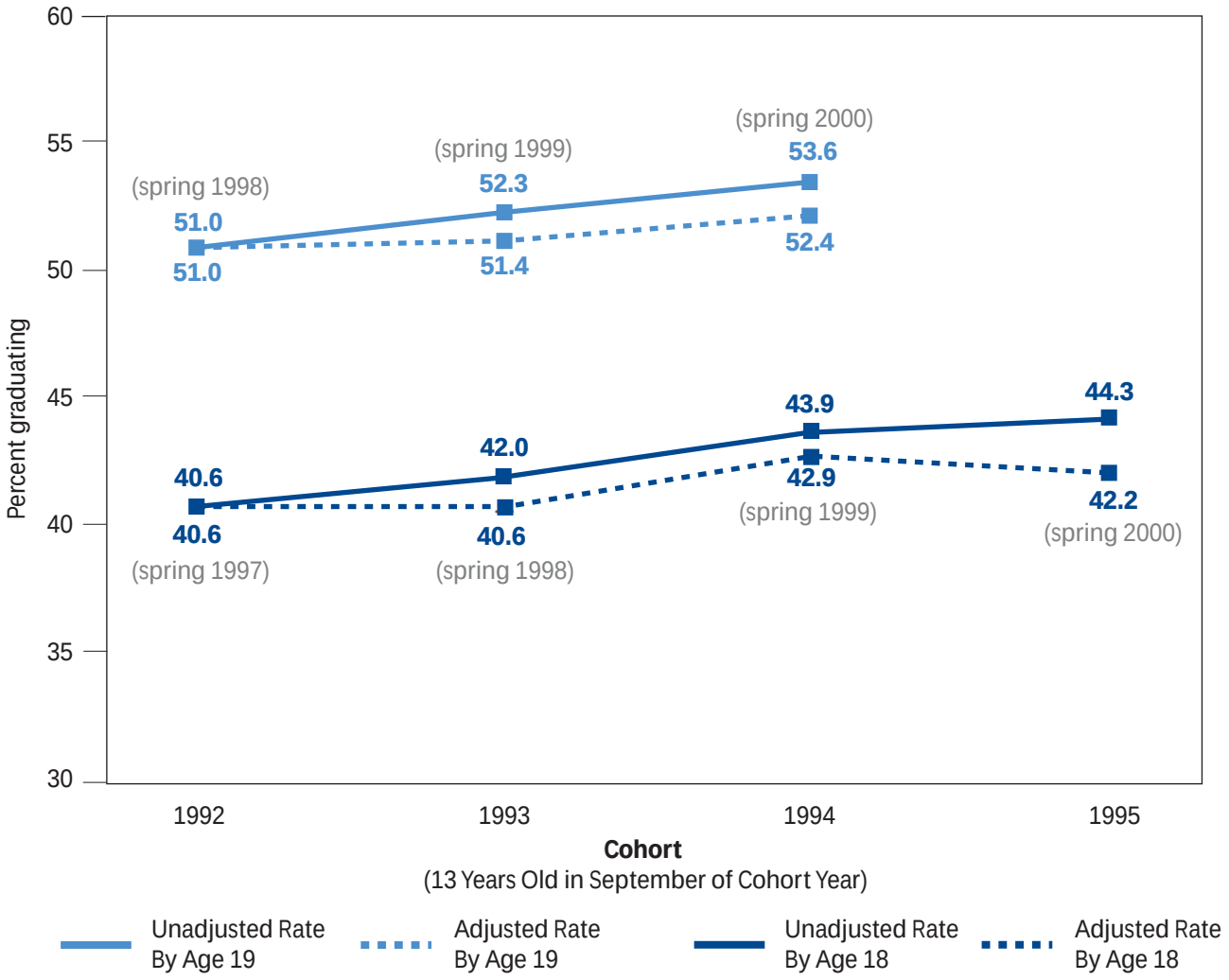
Graduation Rates Rise Slightly

Although graduation rates remained low, they did improve slightly from 1993 to 2000 (see Figure 4). Of the CPS students who were 13-years old in the fall of the 1995–96 school year, 44.3 percent graduated by age 18 in the spring of 2000. This is an increase of 3.7 percent over the graduation rate for the 1992–93 cohort of 13-year-olds (40.6). Although we can track graduation rates to age 19

Figure 4

Graduation Rates Rise Only Slightly after Adjusting for Changes in Student Composition

Followed from age 13



for only three cohorts, we do see an upward trend, from 51.0 percent for the 1992–93 cohort to 53.6 percent for students who were 13 in the fall of 1995.[15]

Even though this improvement is promising, the increase is cut in half when we adjust for the composition of incoming students. With an increase of only 1.6 percent, the upward trend in adjusted graduation rates by age 18 is substantially smaller than the unadjusted one. Similarly, the adjusted trends for graduation by age 19 show improvement of only 1.4 percent, compared to 2.6 for the unadjusted one. **These adjustments indicate that only slight improvements in graduation rates can be attributed to changes in the high schools**.

Slight Decline in Dropping Out Primarily a Result of Better Prepared Students

Although the overall dropout rate for Chicago public high schools remains above 40 percent, there was a slight decline over the period of our study. By the fall of 2000, 41.8 percent of the 1995–96 cohort had dropped out of school. This

compares with 42.9 percent for the 1994–95 cohort and 43.6 percent for 1993–94 (see Table 2).[16]

We could only calculate partial rates for the more recent cohorts. That is, we could follow students for two to five years, but not for six. Here we see a slight downward trend in dropping out by age 18 (from 38.9 for the 1993–94 cohort to 37.5 for 1996–97). Dropout rate trends for students under 18 are less clear. They show neither the consistent pattern of decline that we see in the complete cohort rates, nor a pattern of increases.

Research has shown that retention makes students more likely to drop out in later years.[17] Since the system's adoption of the social promotion policy in 1995–96, CPS high schools have received larger percentages of students who were retained prior to ninth grade. In assessing the role of high schools on graduation and dropout rates, it is necessary to adjust these rates for students' incoming achievement levels and also adjust for the proportion of students that were held back in eighth grade or in APCs. Therefore, we include whether a student was retained in eighth grade with our other controls for student characteristics. With this adjustment, we see only slight differences among the cohorts in dropout rates (see Table 3). This indicates that the slight decrease in

Table 2: Percent of Students Dropping Out by Age and Cohort

Dropped Out by Age	Cohort (school year expected to enter high school)						
	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00
14	4.4	4.6	4.4	3.9	3.9	4.2	4.0
15	8.8	8.7	8.0	7.7	7.7	7.9	7.3
16	18.0	17.5	16.8	18.0	18.1	17.2	
17	29.3	29.4	28.4	29.3	28.8		
18	38.9	38.6	37.9	37.5			
19	43.6	42.9	41.8				
Final Year Fall	1998	1999	2000	2000	2000	2000	2000

Table 3: Adjusted Dropout Rates by Age and Cohort

Dropped Out by Age	Cohort (school year expected to enter high school)						
	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00
14	4.4	4.7	4.5	3.6	3.2	3.5	4.0
15	8.8	8.8	8.2	7.4	7.4	7.6	7.6
16	18.0	18.0	17.5	18.4	19.0	18.7	
17	29.3	30.2	29.5	30.8	31.2		
18	38.9	39.5	39.1	39.4			
19	43.6	43.9	43.1				
Final Year Fall	1998	1999	2000	2000	2000	2000	2000

How to Read Tables 2 and 3

To read Tables 2 and 3, follow one cohort down a column until its final year. A cohort is identified by when its members turn 13 years old—this is the year most students are in eighth grade. We begin tracking the cohort's dropout rate starting one year later, when members turn 14. The dropout rate is given as a percentage and followed down a column.

Following the 1993 cohort in Table 2. In the fall of the 1993–94 school year at age 14—one year after we began following this cohort—4.4 percent had dropped out. The following year, at age 15, 8.8 percent had dropped out. By the fall of 1995 at age 16, 18.0 percent dropped out; 29.3 percent by the fall of 1996 at age 17; 38.9 percent at 18; and 43.6 percent had dropped out by the fall of 1998–99 at 19.

dropout rates is mostly the result of better-prepared students.

Indicators of Higher Levels of Student Performance

Students' performance *in* high school is equally as important an indicator as graduation and dropout rates.[18] Graduation rates describe only how many students meet the bare minimum of what we expect from high schools. To measure whether students meet more demanding expectations, we have created indicators of higher levels of school performance. One such indicator measures whether students are accumulating the appropriate credits to be accepted into a competitive college like the University of Illinois at Urbana-Champaign (UIUC). UIUC requires that entering students have four years of English, three years of math, three years of social science, three years of science, and two years of foreign language—the same requirements as those adopted by CPS in the 1997–98 school year with its redesign of high schools.

Another indicator of higher levels of performance is the percentage of students that attempt and pass an honors course during their high school careers.[19] Chicago public high schools offer more demanding courses for students who are willing and able to accept additional academic challenges.[20] While we have little guarantee that honors classes are of comparable quality from one school to the next, we are reasonably sure that within any one school, honors classes are more demanding than the general curriculum. We confirm the trend in honors course-taking by looking specifically at students who attempt and pass advanced placement (AP) courses.

When looking at both of these indicators, we track our cohorts for four years, from the time they become high school eligible until the time an "on track" student would graduate.

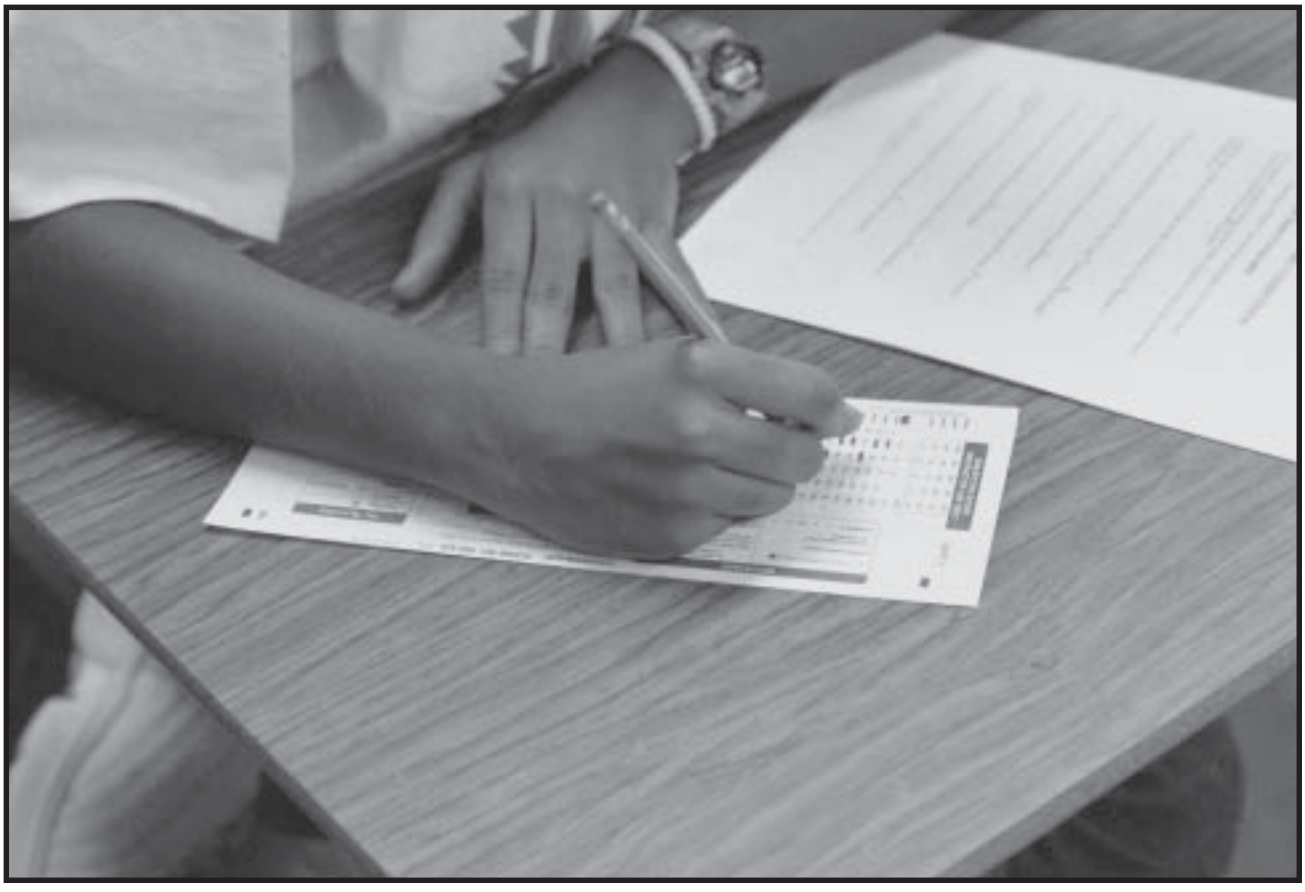
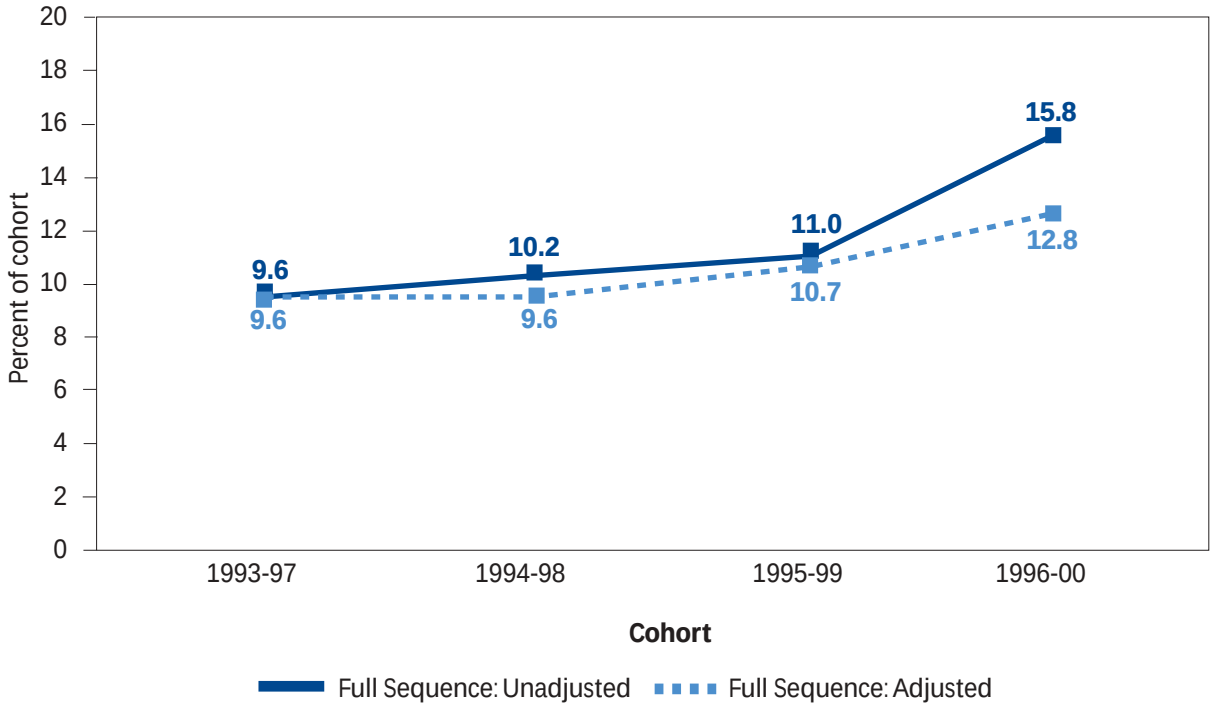


Figure 5

More Students Pass College Sequence Even after Adjusting for Changes in Student Composition
Four years after elementary school



Note: The full college sequence includes four English, three math, three science, three social science, and two foreign language credits.

Small but Growing Number of Students Pass the College Preparatory Sequence

Compared to all high school eligible students in the cohort we followed from 1993 to 1997, the percent of the 1996–2000 cohort that passed the full college sequence in four years rose from 9.6 percent to 15.8, with the largest increase occurring in the final year (see Figure 5). One might argue that these numbers are artificially low because we include both dropouts and enrolled students who did not graduate in four years (students who transfer out of the system are not included). Of all *four-year graduates*, almost one-third successfully completed the college preparatory sequence (30.1 percent), up from about one-fifth (12.1 percent). Nonetheless, although there has been substantial improvement on this measure, the vast majority of students still did not complete the sequence.

When we adjust for student characteristics, the percent of students who became high school eligible in 1996 that took a full college sequence by 1999–00 is only 12.8 percent, up from 9.6 percent for the 1993–97 cohort. This suggests that of the 6.2 percent increase in the unadjusted rate, 25 percent is due to the change in student composition and 75 percent is due to other factors (such as increased requirements).

Completion of a moderated college preparatory sequence. We also looked at the percent of students who completed the college sequence with the exception of the foreign language requirement. This is an academic program acceptable for admission to less selective colleges like Chicago State University. A higher and rising percentage of students met these requirements, from 15.2 of the 1993–97 cohort up to 23.5 percent of the 1996–00 cohort (see Figure 6). Among CPS students who graduated in

2000, we see the biggest jump with a full 45.2 percent meeting these reduced requirements. Even after adjusting for changes in student composition, we still see a 5.6 percent increase, up from 31.6 for the 1993–97 cohort. Again, this increase suggests that most of the improvement is not simply a result of changes in enrollment.

More Students Pass an Honors Course in Four Years

Over the period of our study, a substantial and rising percentage of CPS students took and passed honors courses at some point during their high school careers (see Figure 7).[21] For the most recent cohort (those who became high school eligible in 1996 and expected to graduate in 2000), over one-fourth of students (25.9 percent) took and passed at least one honors course in four years, up slightly from 22.9 percent. Of the students from this cohort who did graduate within four years (rather than transfer, drop out, or not graduate), 44.3 percent took and passed at least one honors course.[22]

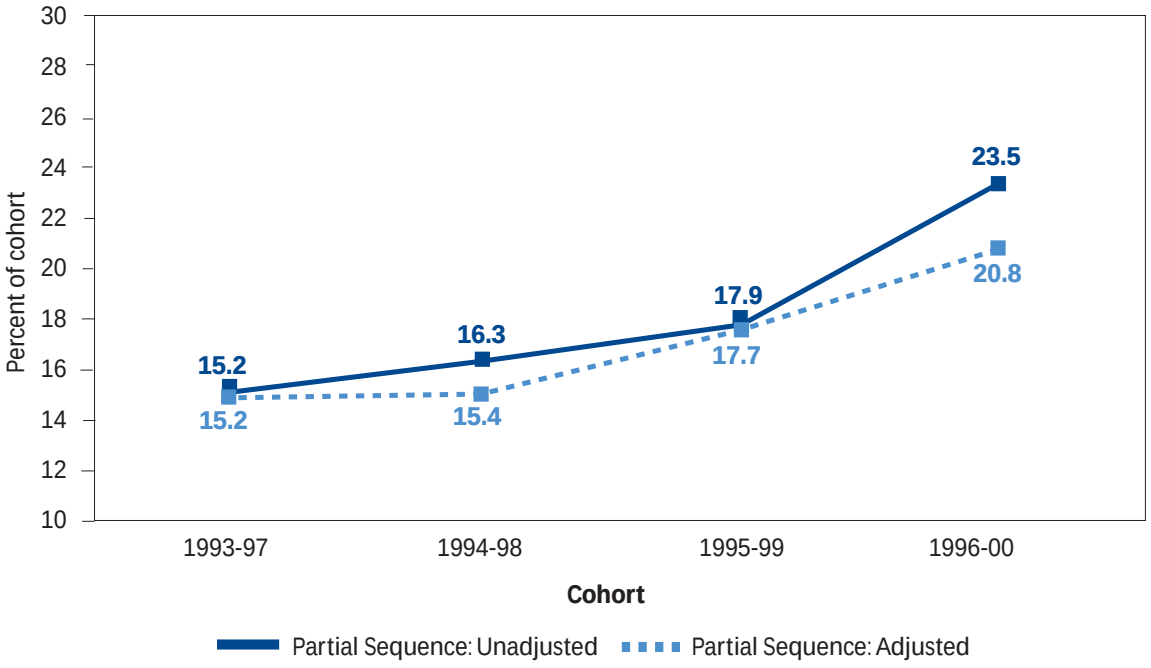
When we adjust for student composition, there is virtually no change between the percent of students in the 1993–97 cohort who passed an honors course and the percent of the 1996–00 cohort that passed. The adjusted rate for all cohorts hovered at around 22 percent. This indicates that the rising percentage of students taking an honors course is due primarily to better-prepared students.

A similar pattern with AP courses. Because the meaning and challenge of honors courses can vary widely across schools, we look in particular at the trend of students taking and passing AP courses. AP courses are more elite than honors classes and are aligned to the national AP exam. We found a similar pattern: a slight increase in the number of students who attempted and passed an AP course (from 6.4 percent of the 1993–97 cohort to 8.0 percent for the 1996–00 one). Adjusted trends show no improvement, remaining steady at about 6.5 percent. Since 98.9 percent of all students who passed an AP course either transferred out of the system or graduated, looking only at the students who graduated from a CPS high school raises this percent, from 13.3 percent for the graduating class of 1997 to 15.2 for the graduating class of 2000.

Figure 6

More Students Pass College Sequence without Foreign Language Even after Adjusting for Changes in Student Composition

Four years after elementary school

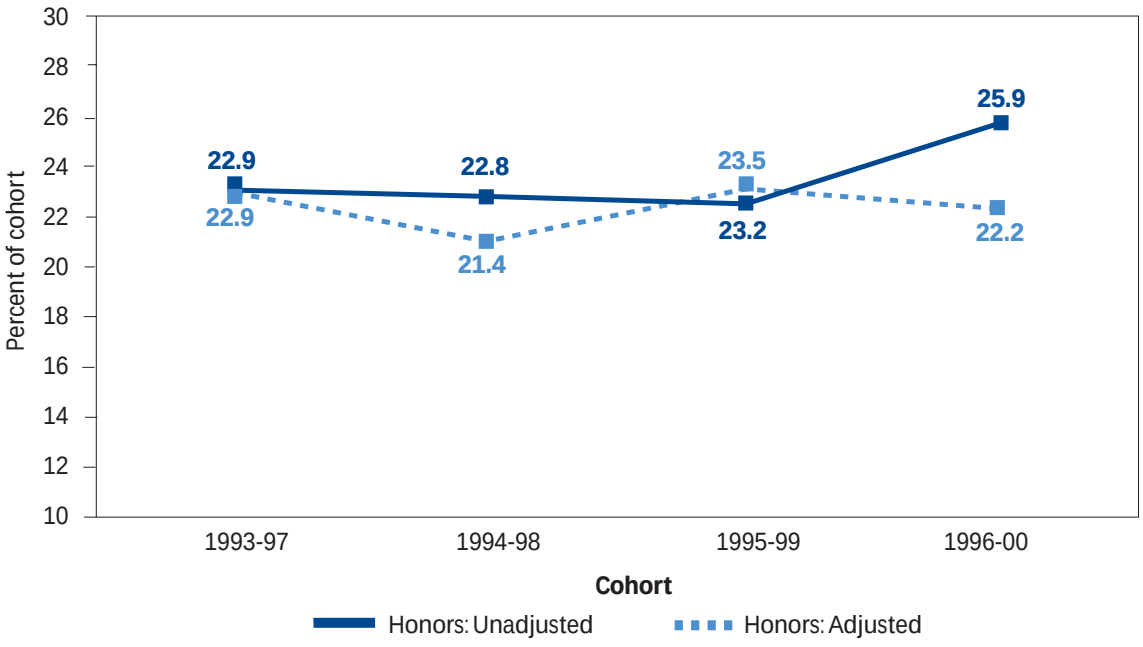


Note: The partial college sequence includes four English, three math, three science, and three social science credits.

Figure 7

Slightly More Students Pass Honors Course, but not after Adjusting for Changes in Student Composition

Four years after elementary school



Note: Honors courses include honors, telescoped honors, International Baccalaureate, and advanced placement courses.

IV. A More Current Snapshot: Short Term Indicators

THE INDICATORS WE HAVE LOOKED AT THUS FAR describe student performance over the course of a full high school career. One disadvantage of these cumulative measures is that because they take place over a long time period they are relatively insensitive to even large changes in policies and practices.

To understand more current trends, therefore, we must also look at short-term outcomes. These include students' success in their first year after elementary school and whether they are passing more challenging coursework.

More Students On Track to Graduate after Ninth Grade

Students' performance in their first year after elementary school is critical to the overall success of their high school careers. We created a baseline indicator of first-year success that determines whether a student is "on track" or not. **To be on track, a student must earn enough credits to assume sophomore status on time and have received no more than one failing grade in a core course (English, math, science, and social science). Students who are sent to APCs or drop out are automatically off track.** Being on or off track is highly correlated with long-term performance; students who are off track after their first year have tremendous difficulty catching up and graduating within four years. In the 1996–97 school year, 78 percent of high school eligible students who were on track one year after elementary school graduated within four years. Only 15.6 percent of off-track students graduated within this same period.

The on-track measure is sensitive to changes in its two key components: how many courses students take, and how well they do in them. By counting credits we learn whether students take and pass an adequate course load to graduate within four years. We identify unacceptable performance by counting the number of failing grades students receive in core courses. Together, we get a baseline indicator of acceptable (but not necessarily strong) academic performance for high school eligible students.

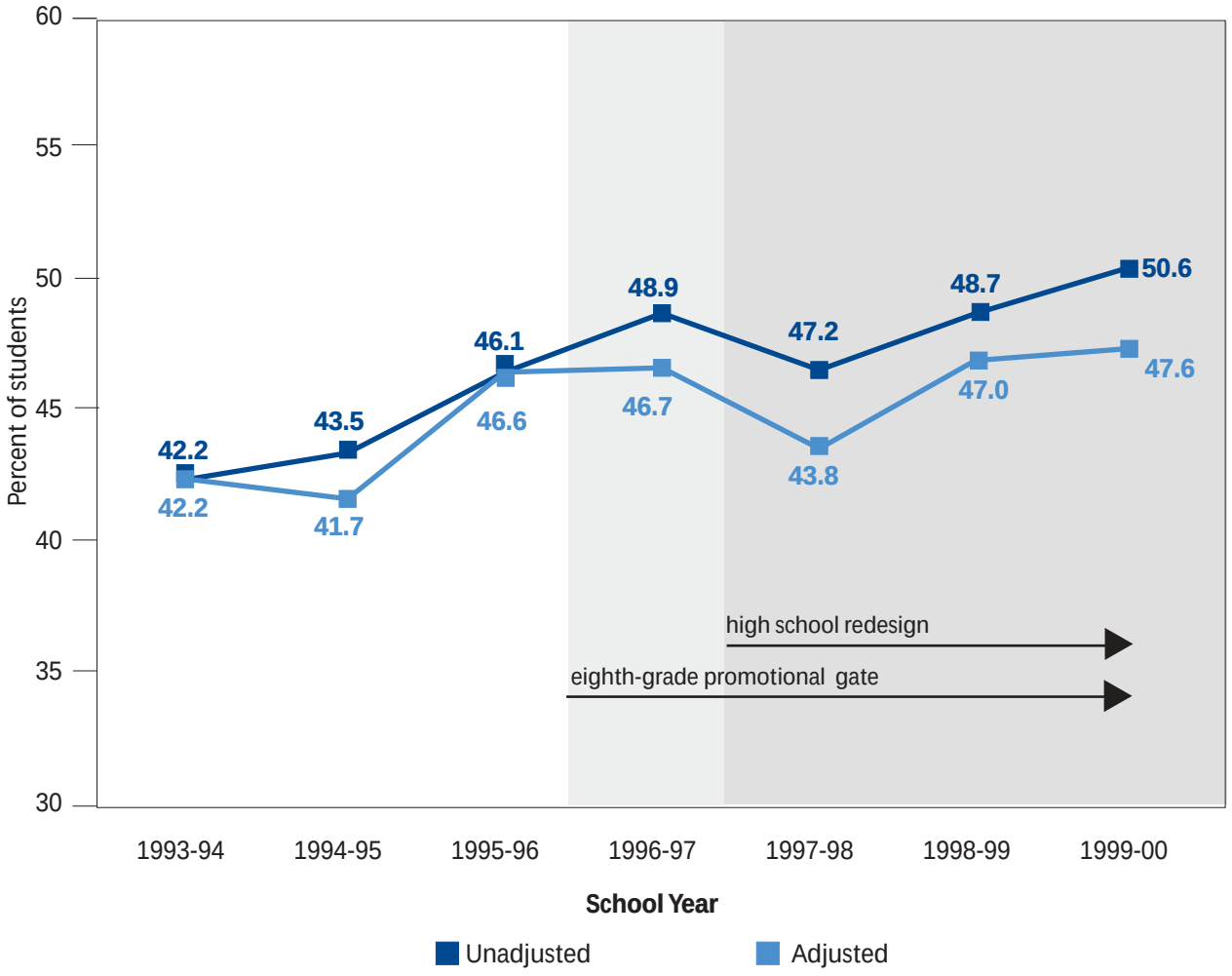
Despite Steady Improvement, Only Half of Ninth Graders On Track in 1999–00

In the 1999–00 school year, 50.6 percent of all high school eligible students were on track to graduate within four years. Although this percentage is low, it is still a substantial improvement since 1993–94, when only 42.2 percent of high school eligible students were on track (see Figure 8).

Figure 8

More Students On Track Even after Adjusting for Changes in Student Composition

One year after elementary school

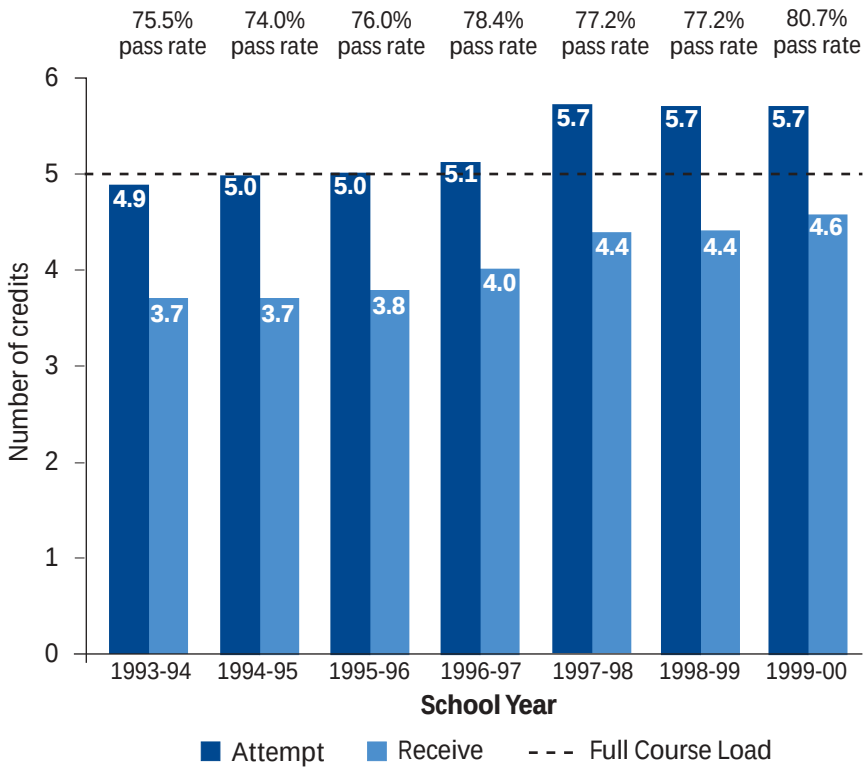


After adjusting for changes in student composition, 5.4 percent more students were on track (from 42.2 percent in 1993–94 to 47.6 percent in 1999–00). This suggests that slightly less than half of the improvement in on-track rates is the result of better-prepared students entering high schools; more than half is due to other factors.

The improvement in on-track rates is the result of two factors: students enrolled in many more courses and they passed them at a slightly higher rate (see Figures 9 and 10). In 1993–94, the average student attempted 4.9 credits, slightly under the five needed to matriculate to tenth grade. With the system's high failure rates, students received even fewer credits. By the 1999–00 school year, students attempted an average of 5.7 credits. This increase, coupled with a decrease in failure rates, resulted in more students being on track. In the 1999–00 school year, the average student received 4.6 credits, up from 3.7 in 1993–94, almost a full course more.

Figure 9

Students Attempt and Receive More Credits
One year after elementary school



Note: Five credits is a full course load for a first year high school student.

Off-Track Students Have Difficulty Recovering

Can off-track students get back on track? Not very easily. For students who were off track after their first post-elementary school year in 1993–94, only 6.1 percent were able to get back on track by the end of the tenth grade—or had enough credits to matriculate to the 11th grade and received no more than one failing grade in a core course that year (see Figure 11). This number rose to 8.9 percent for students off track in 1997–98 (starting with the summer of 1997 we include credits earned in summer school), but dropped again to 6.1 after the number of credits required to move to the 11th grade increased from 10 to 11. In general, students remained off track because they did not have enough credits rather than because of high failure rates.

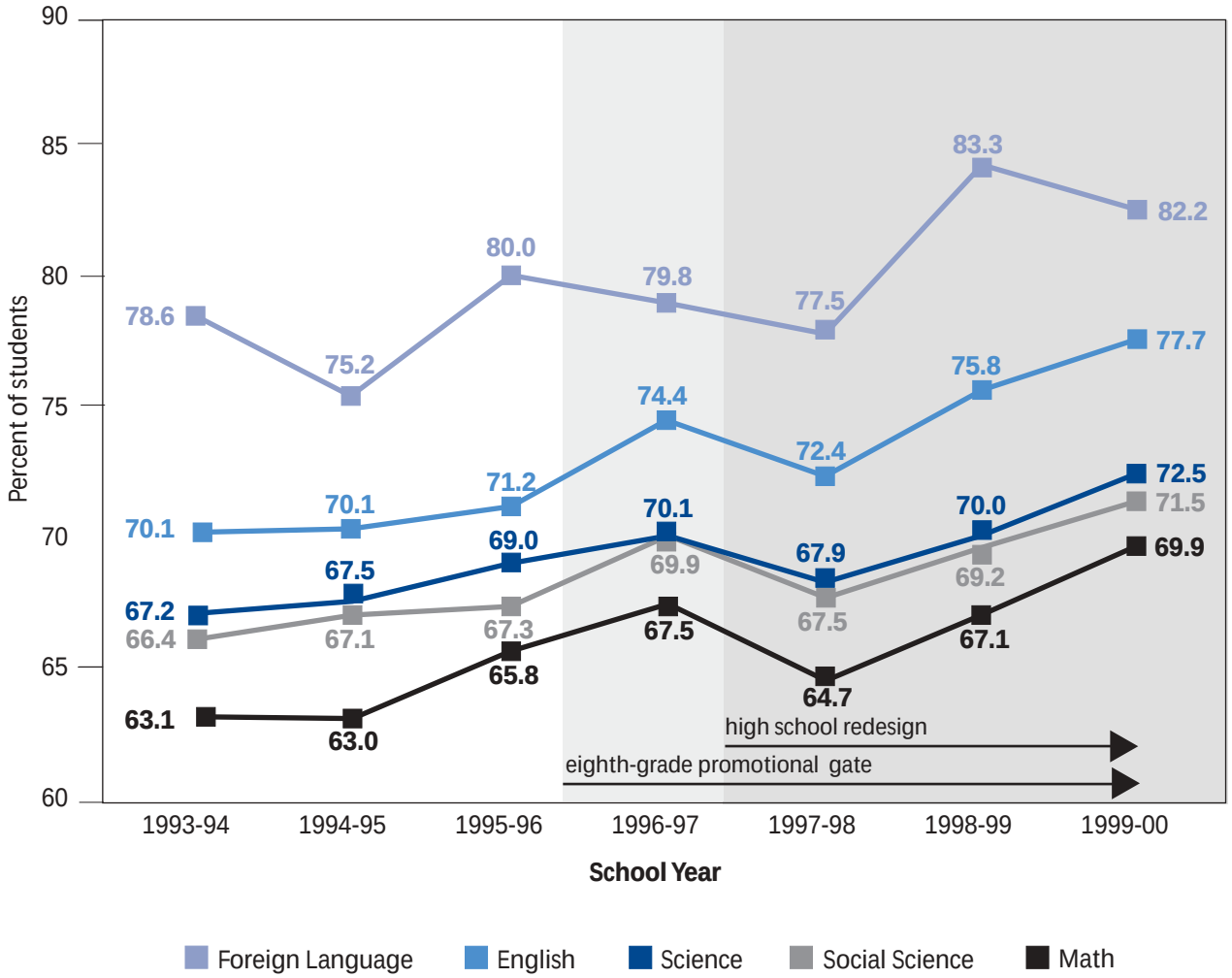
Percent of Students Pursuing More Challenging Course Work Rises

As with long-term indicators of moderate and advanced student performance, the percent of students pursuing more challenging course work on similar short-term measures also rose from 1993 to 2000. More high school eligible students attempted and passed the algebra/geometry math sequence by the end of the tenth grade, and more attempted and passed an honors course their first year after elementary school. This suggests that the long-term

Figure 10

Passing Rates Rise

One year after elementary school



trend of students passing honors courses and completing a college preparatory curriculum over their full high school careers will continue to rise.

More Students Passing Algebra/Geometry Sequence

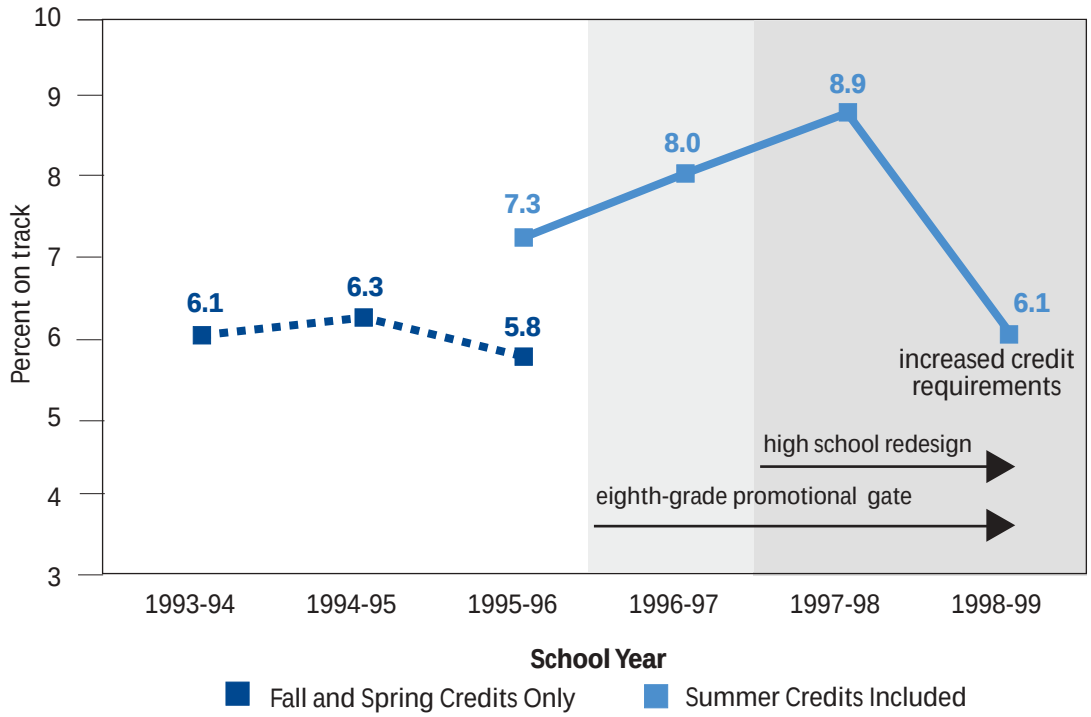
The algebra/geometry sequence has been documented in research literature as a gatekeeper for college enrollment.[23] From 1993 to 2000, there was a steady increase in the percent of CPS students attempting and passing these courses, especially after they were made a requirement for graduation in the 1997–98 school year (see Figure 12).[24] In the 1993–95 school year, 36.5 percent of all high school eligible students passed the sequence two years after graduation from elementary school. By 1998–00, that percent had risen to 49.7.

When we adjust for the characteristics of incoming students, the trend is still up substantially. For the 1998–00 cohort, 50 percent of students passed the sequence, compared with 37 in 1993–95. This suggests that changes in incoming students account for only 17.8 percent of improvement, while other changes, possibly curricular reforms in the high schools, account for the bulk of the improvement (82.2 percent). As we will show later in this report, this rise is consistent with improved student performance on

Figure 11

Few Off-Track Students Get Back On Track

Two years after elementary school

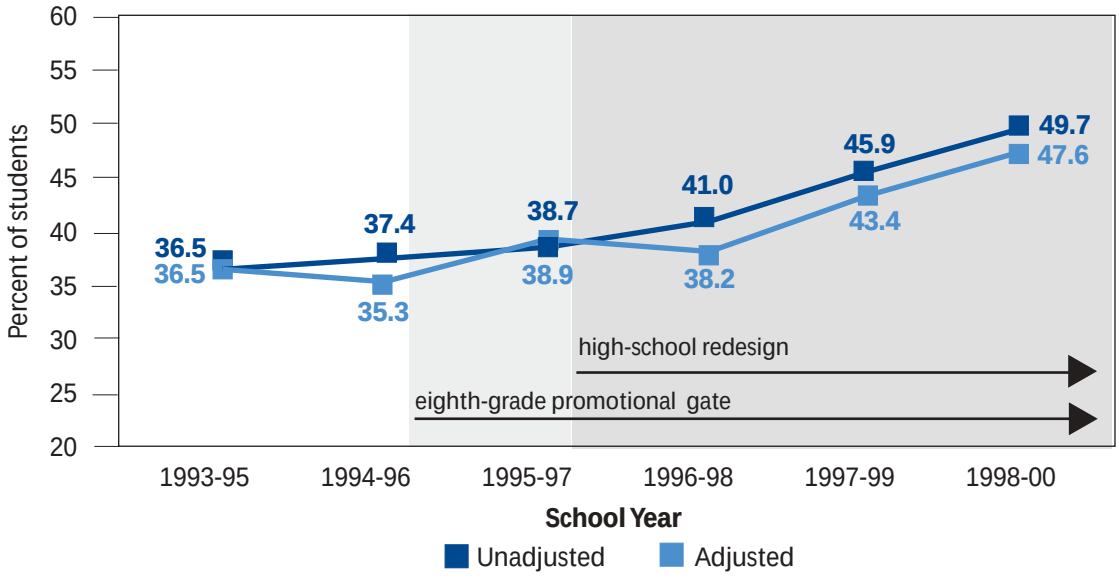


Note: In the 1998-99 school year, credit requirements increased from 10 to 11 for sophomores. Summer school transcripts became available only in 1995-96

Figure 12

More Students Pass Algebra and Geometry Even after Adjusting for Changes in Student Composition

Two years after elementary school



What Courses Are Students Taking?

Over the course of this study, high school eligible students were taking and passing more courses in core subjects. However, in English and math, arguably the subjects with the most emphasis, there was actually a slight decline in the percent of students attempting courses and only a slight increase in the percent passing them. The biggest increase was actually in social science and science courses. In the 1993–94 school year, only 55 percent of students attempted a social science course and 35 percent passed. By 1999–00, 75 percent of students, a full 20 percent more, attempted a social science course and 53 percent passed it. The trend for science is similar—in the 1993–94 school year, 62 percent of students attempted a science course and 42 percent passed; that percentage rose to 78 percent attempting and 56 percent passing in 1999–00.

Although the improvement in course-taking trends began before the imposition of the new graduation requirements, there was a substantial bump in 1997–98 when they went fully into effect. Despite the new requirements, however, there was virtually no change in the percent of high school eligible students attempting foreign language classes in their first year, which hovered around 12 percent for the entire period of our study. Since this is only a two-year requirement, however, not taking a foreign language class in a student's first year after elementary school is not necessarily problematic. See Appendix III for figures showing the percentage of first-year students taking core courses from 1993 to 2000.

the math section of the TAP. While there is always the possibility that schools are changing the names of math courses without actually changing the content, the increase in adjusted TAP scores suggest some real gain in mathematics learning in high schools (see Figure 15 on page 30).

Although this improvement is substantial, for students graduating by the year 2001, both the algebra/geometry sequence *and* advanced algebra/trigonometry are requirements for graduation. In this light, a 51 percent passing rate still means that half of all high school eligible students are behind in their math requirements two years after elementary school.

Number of Students Passing an Honors Course Rises Substantially

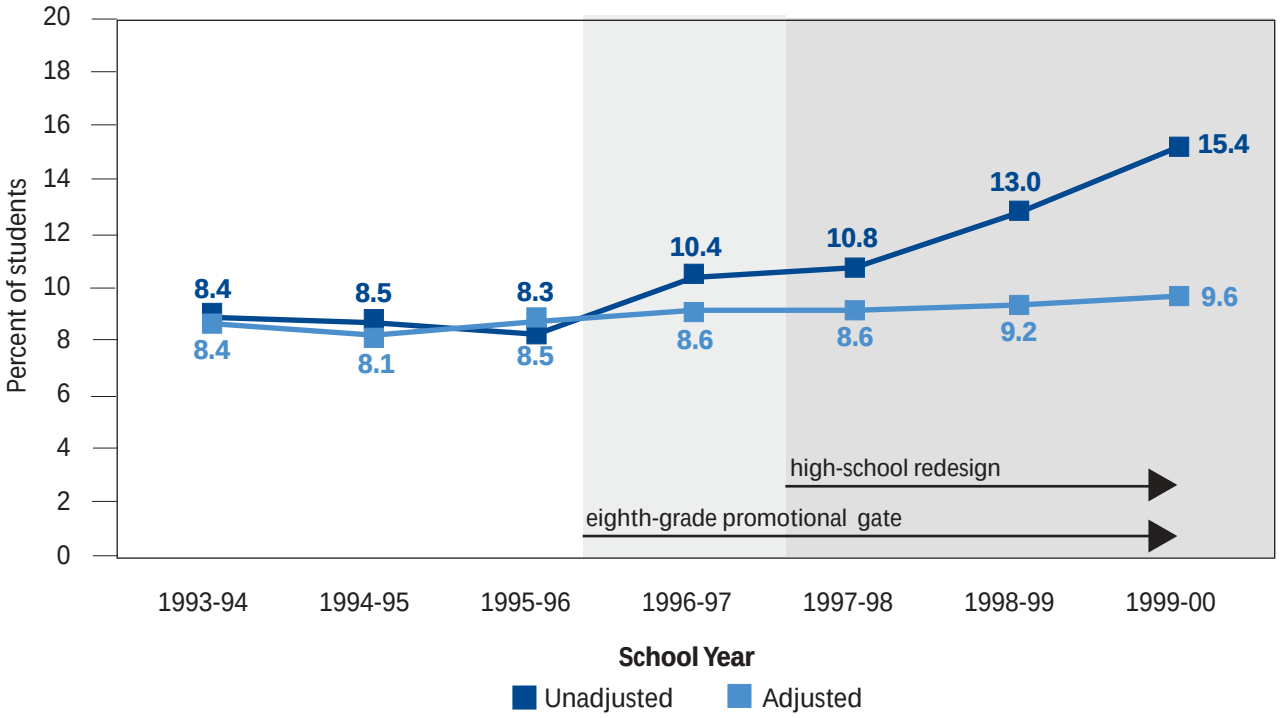
Earlier we saw an upward trend in students enrolling in honors courses across a standard high school career (see Figure 7 on page 19). Here too there is a similar trend. In the first three years of our study, about 8.4 percent of first-year students passed at least one honors course. In 1996–97 however, this increased to 10.4 percent, and it continued to rise for the next three years (see Figure 13). By 1999–00, 15.4 percent had passed an honors course. This corresponds to the increase in students attempting these courses, which rose from 9.2 percent in 1993–94 to 16.6 percent in 1999–00.

Once we adjust for changes in student composition however, we see only a small increase in the percent of students passing an honors course, from 8.4 percent in 1993–94 to 9.6 in 1999–00 (see Figure 13). From these more modest gains, we can assume that most of the growth is the result of the demographics of incoming students, particularly their higher ITBS scores, rather than changes in the high schools.

Figure 13

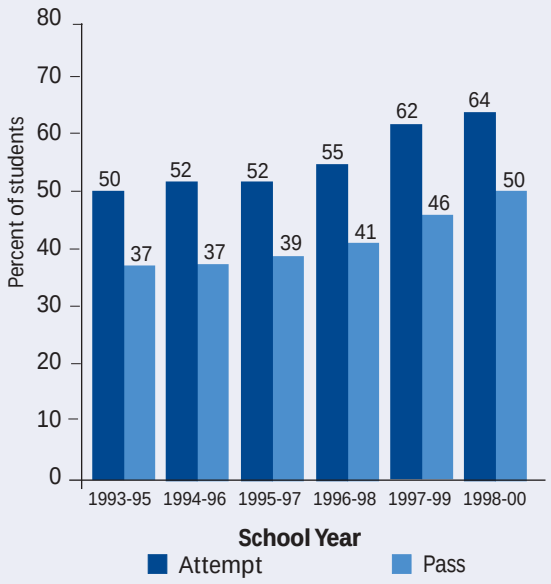
More Students Pass At Least One Honors Course Even after Adjusting for Changes in Student Composition

One year after elementary school



What Percent of Students Attempt and Pass Algebra and Geometry?

Two years after elementary school



The increase in students passing algebra and geometry seems driven by an increased number of students attempting the sequence, possibly as a result of the new graduation requirements. From the 1993–95 school year to 1995–97, the attempt rate hovered at around 52 percent. In 1996–98, however, it began to rise, and by 1998–00 nearly two-thirds of all students attempted the sequence.

V. Tests of Achievement and Proficiency

EVEN AFTER WE ADJUST FOR THE CHARACTERISTICS OF students taking the Tests of Achievement and Proficiency (TAP), we still find marked improvement over time. Standardized TAP scores allow us to compare the performance of CPS students to other students across the country.

Nationally, the average grade equivalent (GE) score for the ninth grade is 9.8. A student with this score performs like an average ninth grader in the eighth month of the school year. Among CPS ninth graders who took the test, there was enormous improvement from 1993 to 2000, especially after the 1997–98 school year (unlike the other indicators in this report, we examine TAP score trends for ninth-grade students only, not for all students leaving elementary school).

TAP Scores Rise to National Averages

TAP Scores rose substantially after the implementation of the promotion policy in 1996. Average scores in reading improved from 8.2 GEs in 1993–94 to 9.8 GEs in 1999–00. In math, scores rose from 8.3 GEs in 1993–94 to 10.0 in 1999–00 (see Figures 14 and 15). Chicago's average is now comparable to the national average in reading and slightly above the national average in math.

About Half of the Improvement Due to Better Prepared Students

Even after adjusting for differences in student composition over time, we still find a significant upward trend. In reading, adjusted scores rose from 8.2 to 9.1, or 0.9 GEs, and in math they rose from 8.3 to 9.1, or 0.8 GEs. This amounts to nearly a year's additional learning in both subjects. Both unadjusted and adjusted trends show strong improvement in ninth graders' basic skills. This indicates that only part of the improvement from 1993 to 2000 is a result of the enrollment of better-prepared students in high schools.

Was Improvement Affected by Excluding Students?

Our adjusted trends suggest that about half of the improvement in student achievement is due to changes in the characteristics of students entering ninth grade. We can see this directly when we look at the percent of students taking the TAP who scored in each ITBS quartile in eighth grade. Here we see that while the percent of students who took the TAP who had ITBS scores in the top three quartiles increased, the percent from the bottom quartile fell from 32.8 to 17.1. This decline began immediately after the implementation of the promotion gate policy in the 1995–96 school year (see Figure 16). Absolute numbers declined in a similar fashion, with a drop of over 3,000 students

Figure 14

Ninth-Grade TAP Reading Scores Rise Even after Adjusting for Changes in Student Composition

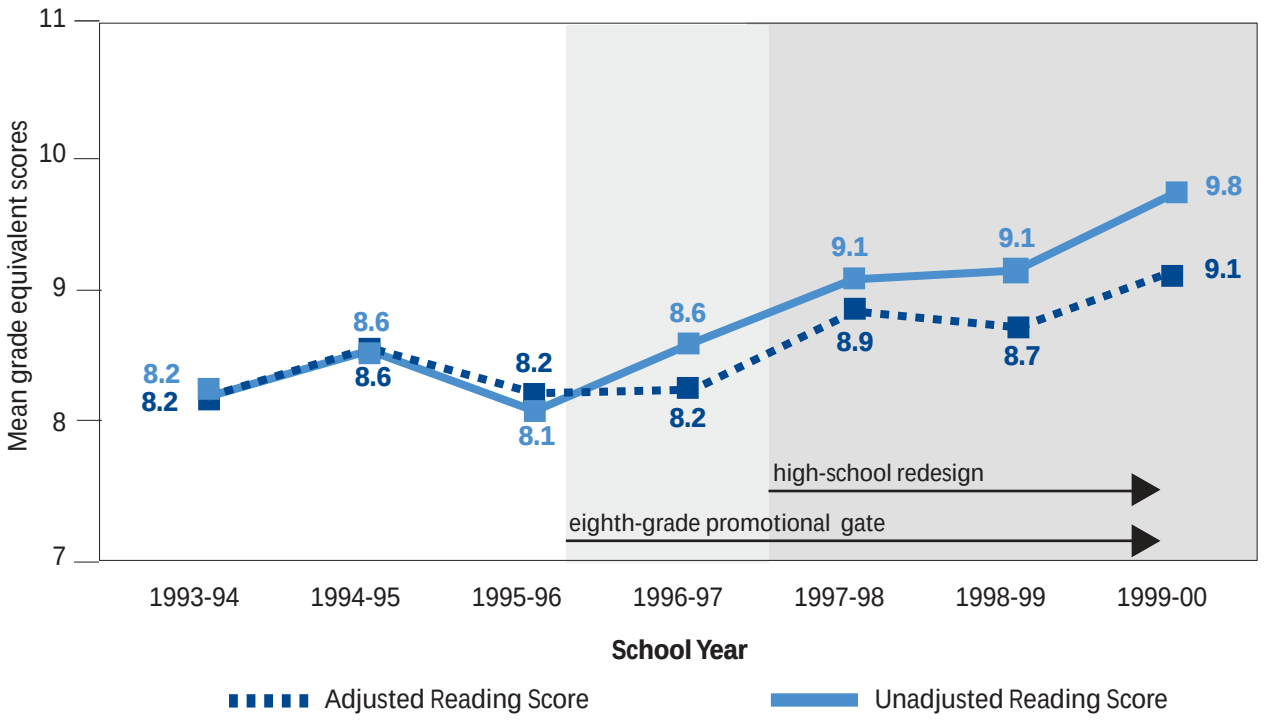
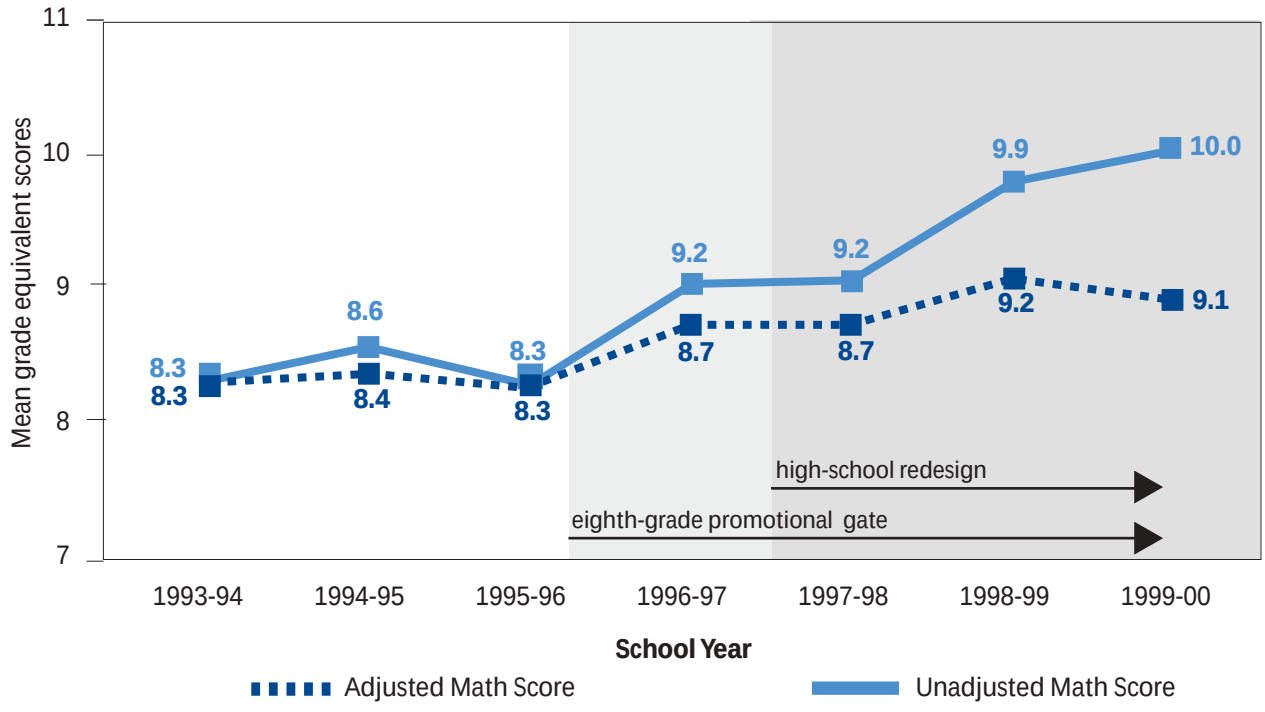


Figure 15

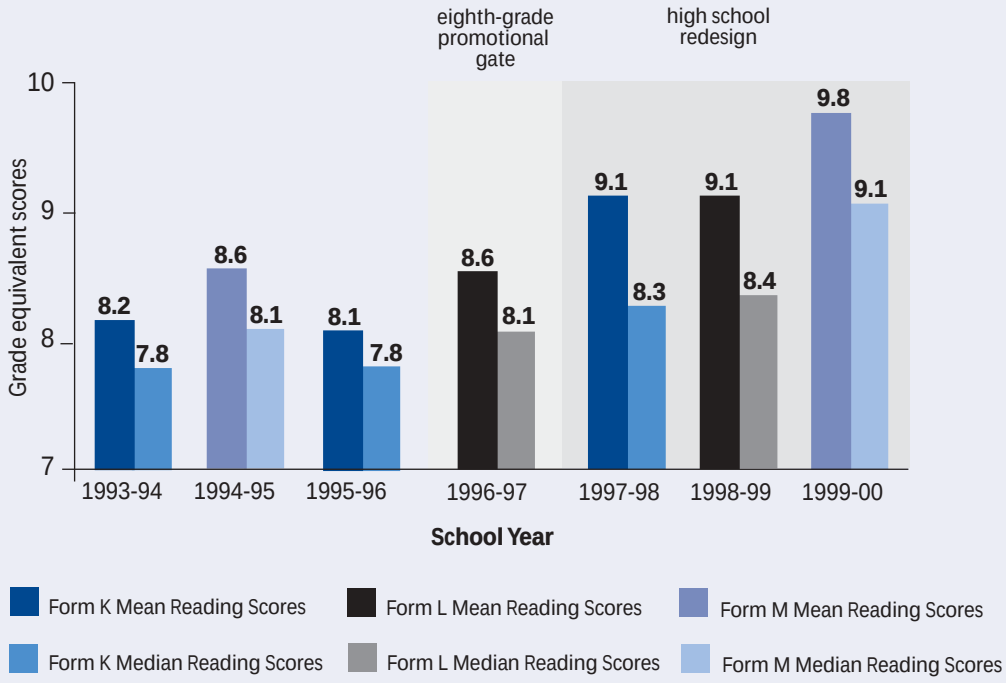
Ninth-Grade TAP Math Scores Rise Even after Adjusting for Changes in Student Composition



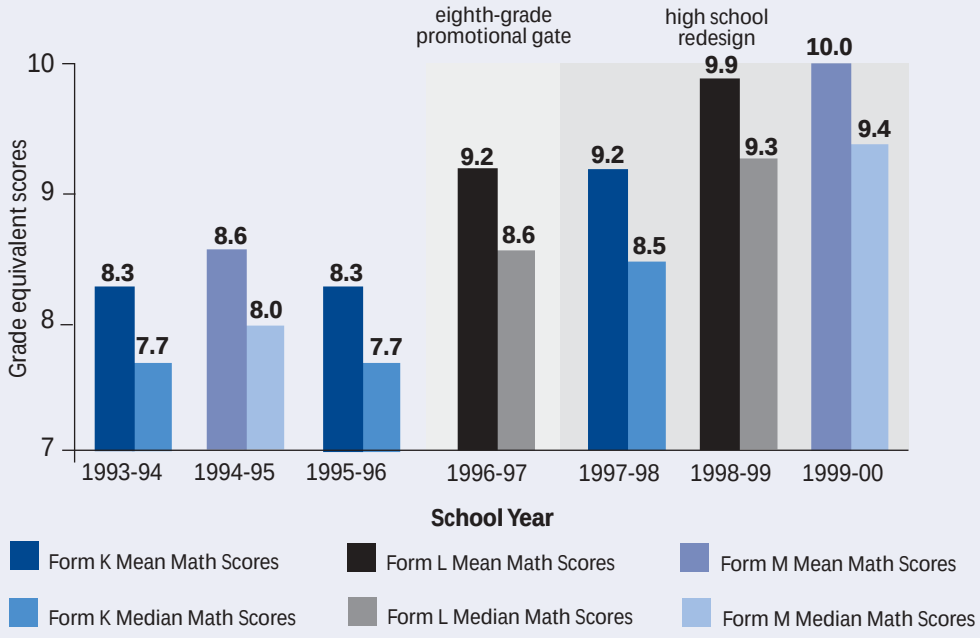
Means Versus Medians

This report uses average TAP scores over time. CPS reports medians. Although the scores are lower when using TAP median scores to assess change over time, the overall trend remains the same. Because some year-by-year increases in TAP scores may be due to variations in the test form, these figures compare the years in which students took the same form of the test. Looking across time by test form (color-coded on the graphs), we still see strong gains over time.

Ninth-Grade TAP Median Reading Scores Rise



Ninth-Grade TAP Median Math Scores Rise



from the lowest quartile and increases in the other three quartiles (see Appendix IV).

The improvement in TAP scores does not appear to be a result of high schools discouraging more (low achieving) students from taking the TAP. The percent of first-time ninth graders whose TAP scores are included for reporting actually rose slightly, from 66.4 to 68.8 percent between the 1993–94 and 1999–00 school years (see Figure 17). Although there was a slight increase in the percent of students not taking the TAP at all (from 20.2 to 21.0 percent), there was a bigger decrease in the percent of students who took the TAP, but were not included in reporting (from 13.4 to 10.2 percent).

Figure 16

Fewer Entering Ninth Graders Score in Bottom Quartile on Eighth-Grade Reading

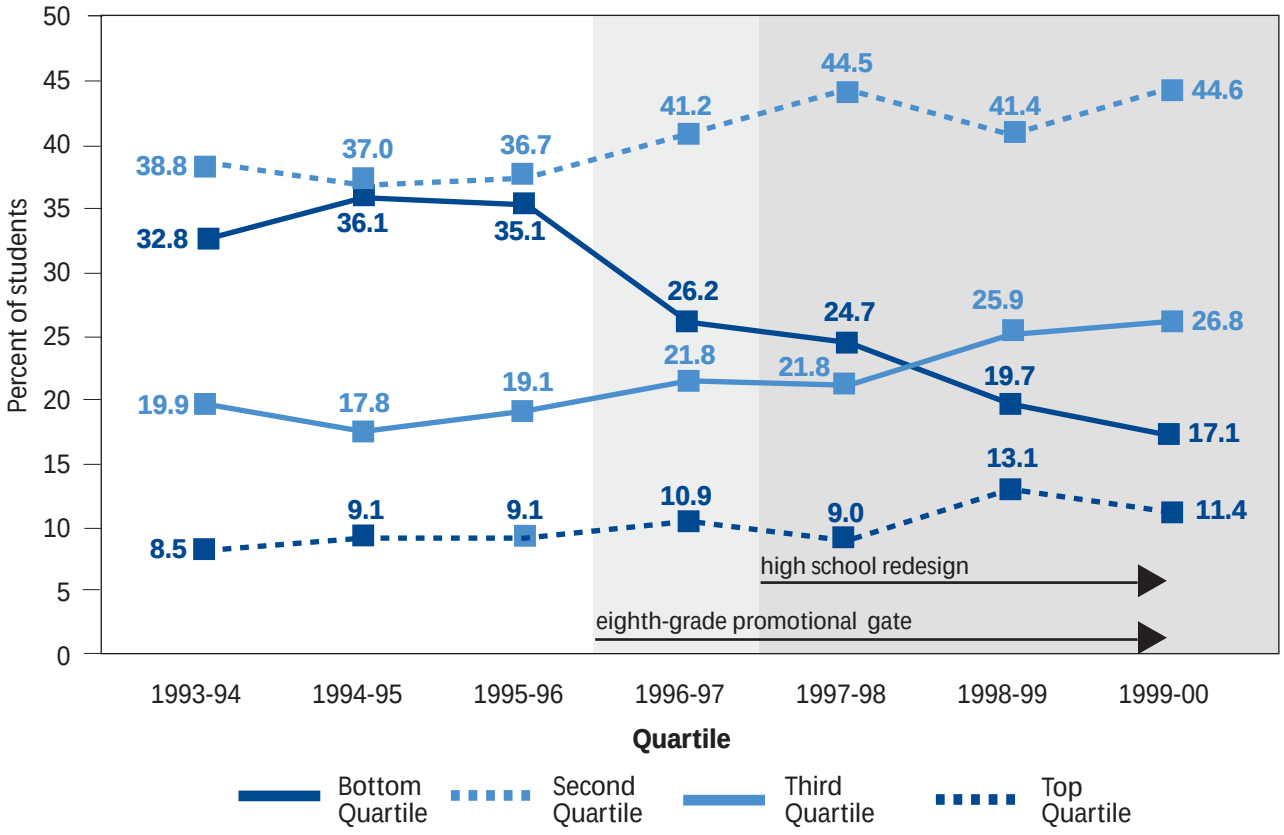
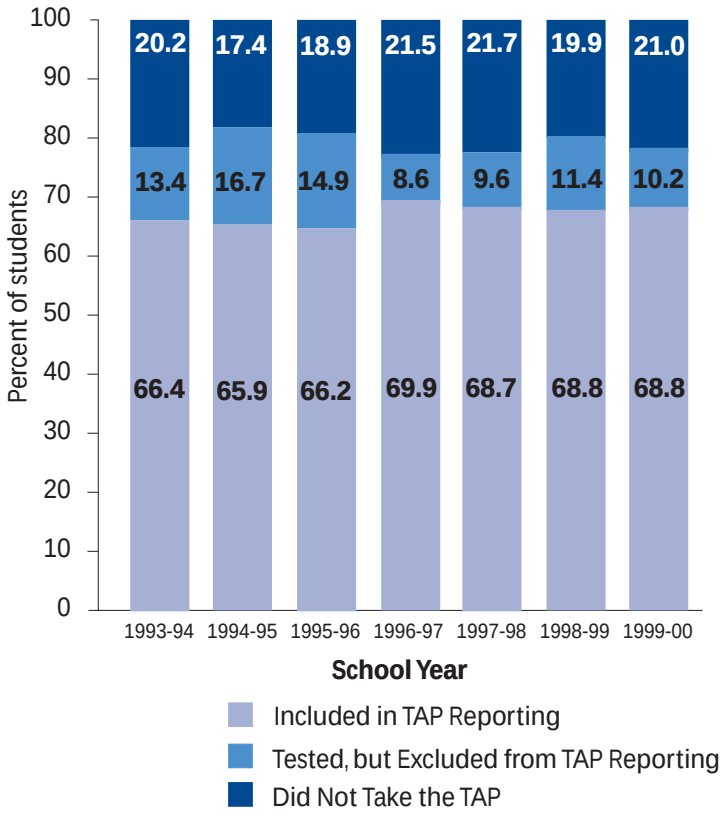


Figure 17

More First-Time Ninth Graders Take the TAP



VI. School-by-School Performance

FROM 1993 TO 2000, STUDENT PERFORMANCE IN CPS high schools improved, if only slightly, on every indicator. At the same time, this improvement did not occur uniformly across high schools—some saw dramatic improvement while others continued to lag behind. Was there a pattern of success among the different types of schools?

In recent years, there has been a proliferation in high school choices for students. We compared TAP scores and two-year dropout rates for six different types of schools that existed in the 1999–00 school year: extended elementaries, charter and small schools, selective admissions, schools on probation, APCs, and neighborhood and vocational schools.[25]

TAP scores provide a measure of students' basic skills in reading and math by the end of the ninth grade. It is important to recognize, however, that the proportion of students who make it through ninth grade affects the average scores for each school. Schools with higher proportions of students dropping out prior to the TAP will have higher scores than similar schools where these students remain. To balance this, we also examine two-year dropout rates. For each measure, we first look at the unadjusted performance of each school. Then we look at the value added by each school in each category. Because schools serve very different populations of students, we control for student characteristics to determine the average amount each school adds to its students' TAP scores and the school's impact on the likelihood of a student dropping out within two years.

TAP Scores by School

The observed (unadjusted) reading and math TAP scores by school category are not too surprising. (See page 40 for a description of school categories.) We see that selective admissions schools had the highest overall TAP scores and probation schools had the lowest (see Figures 18 and 19). But school means tell us little about how much schools contribute to students' learning. Students that enroll in probation schools are not always very well prepared, whereas selective admissions schools receive the academic cream of the crop.

To examine the value added by high schools, we created a model that shows us how well schools performed in comparison to what we would expect given the characteristics of their incoming students. The most important factor in this adjustment was students' incoming ITBS scores. (See Appendix II for a full discussion of how the adjustments were made.) The average value added of *all* the schools is zero. Therefore, if a school had a score above zero, it performed better than expected given the population of students it served; if it had a score below zero, it performed worse (see Figures 20 and 21). While all of the schools together have an average score of zero,

Figure 18

1999-00 TAP Reading Scores for Ninth Graders

Not adjusted for any change in student composition

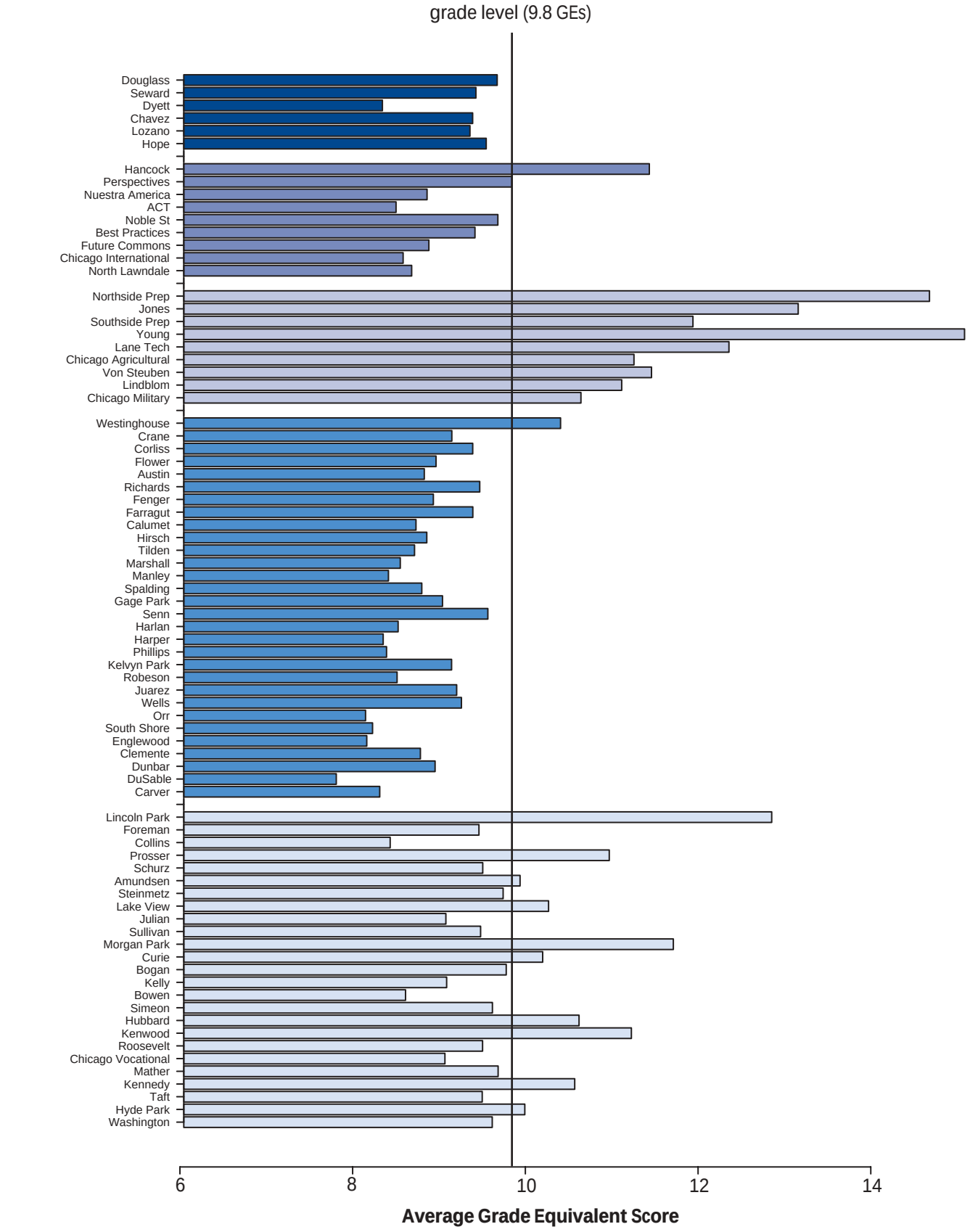


Figure 19

1999-00 TAP Math Scores for Ninth Graders

Not adjusted for any change in student composition

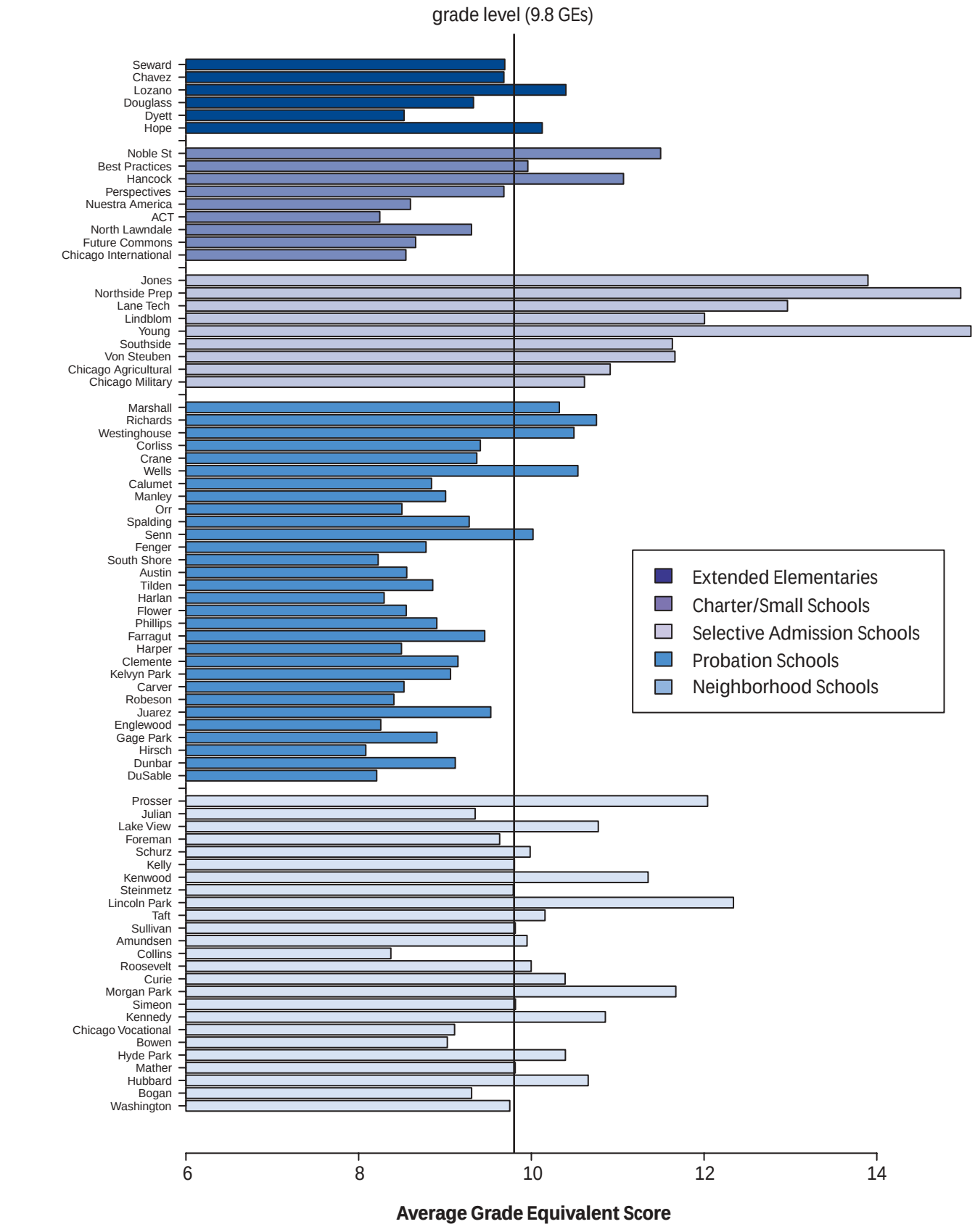


Figure 20

1999-00 TAP Reading Scores for Ninth Graders

Adjusted for changes in student composition

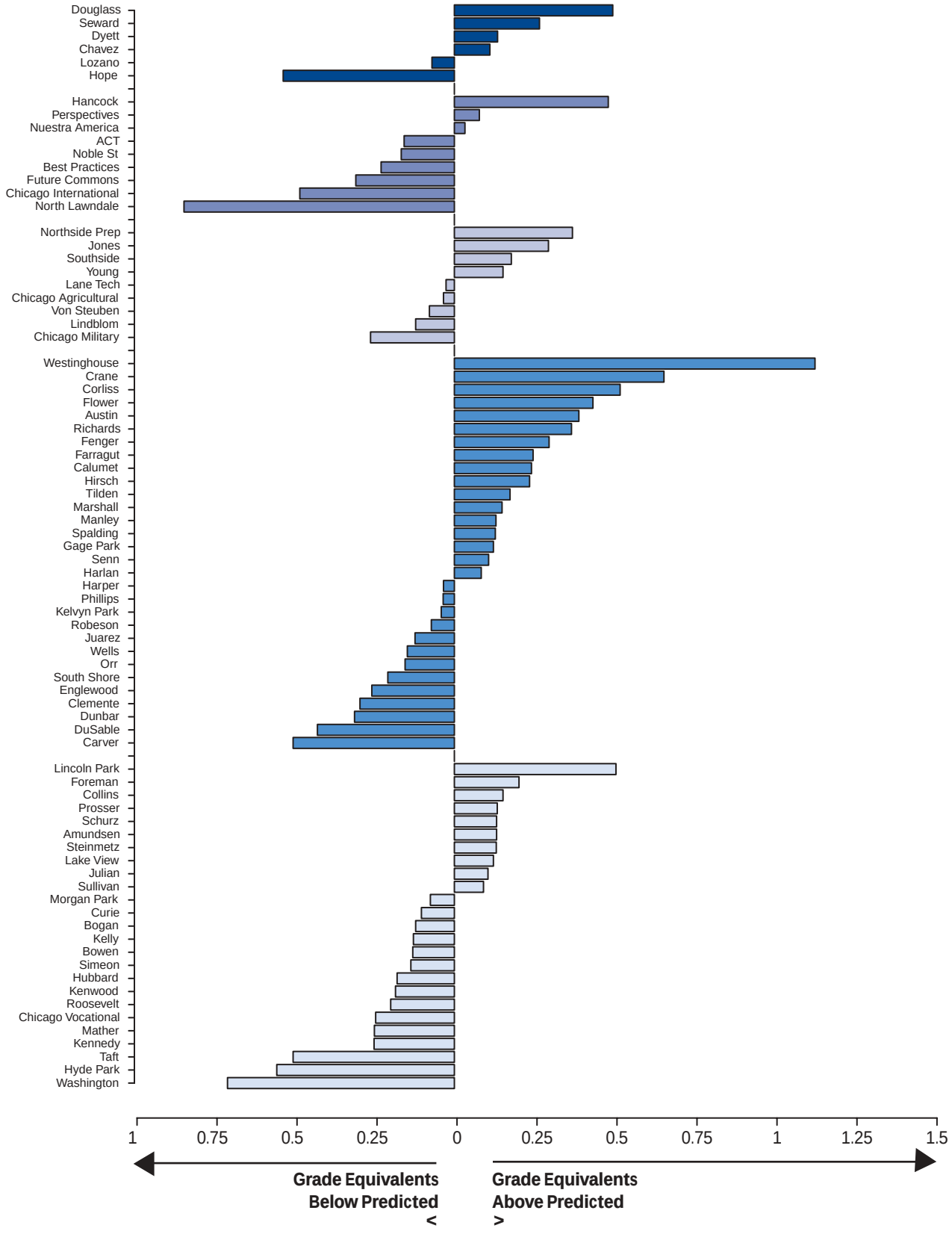
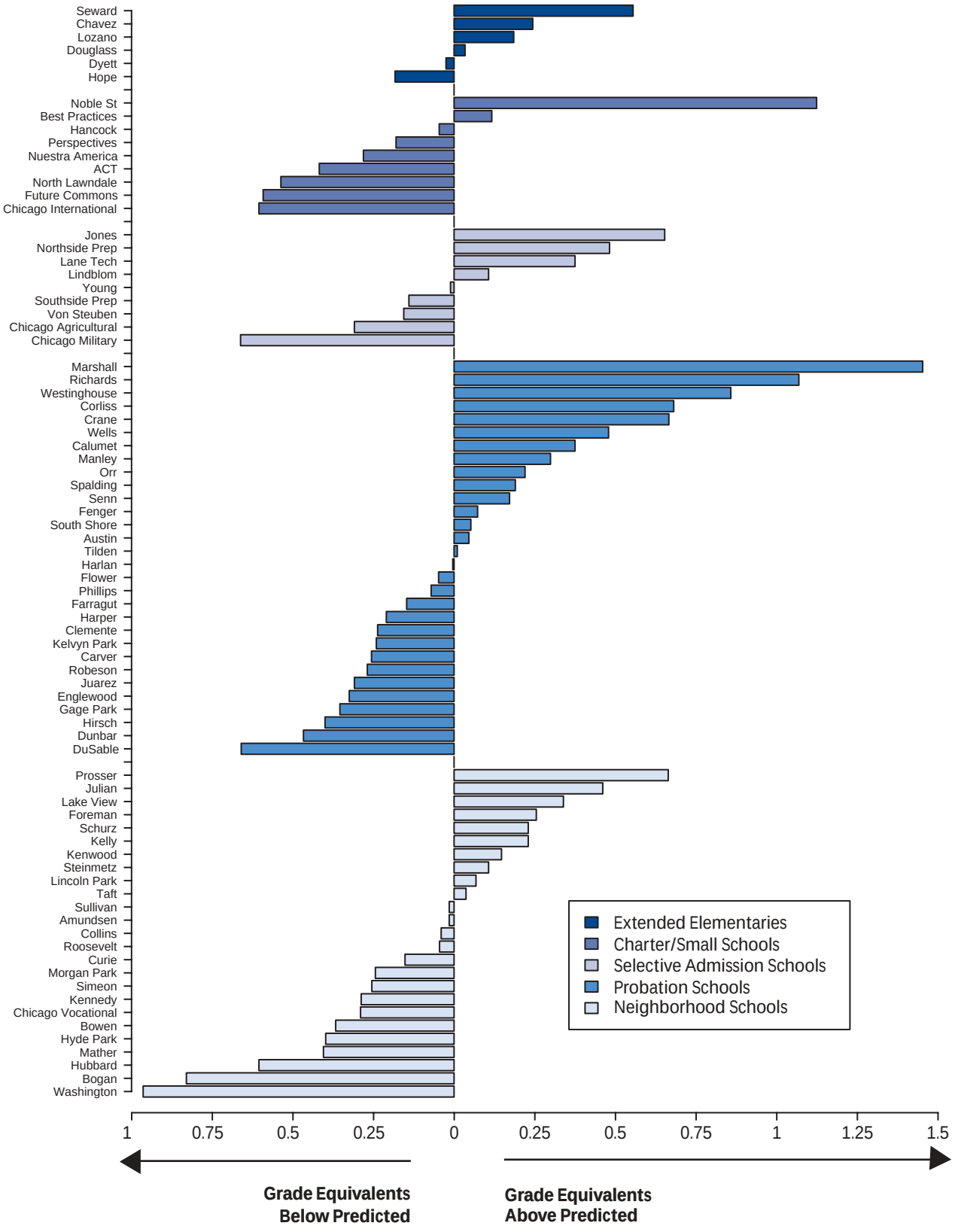


Figure 21

1999-00 TAP Math Scores for Ninth Graders

Adjusted for changes in student composition



The Different Types of CPS High Schools

Extended Elementary Schools are grade schools that include a ninth grade; they generally enroll freshmen from their own eighth-grade classes. Extended elementaries are meant to ease students' transition to high school.

Charter Schools are exempt from many of the restrictions placed on regular CPS high schools, but they are not allowed to use selection criteria in their admissions. Each school develops its own mission and serves somewhat different populations.

Selective Admissions High Schools were established to attract and retain the best students in the system. Enrollment is academically selective.

Probation High Schools are neighborhood (general admission) high schools placed on probation because the bulk of their students (85 percent or more) failed to score at or above national norms. Even though these schools are under the threat of sanctions, they also receive extra resources to finance improvement efforts and facilitate partnerships with external partners.

Academic Preparatory Centers (APCs) prepare very low scoring eighth graders for high school. Although APC students do not take the TAP, we can compare their two-year dropout rates.

Neighborhood High Schools serve the general population and primarily enroll students from their own geographic area. Vocational High Schools have a specific mission to prepare students for a particular career. They also generally enroll students from the surrounding area. These two types of schools are combined in our analyses. None of these schools were on probation in 1999–00.

Note: Some schools may use criteria for admission that are not controlled for in our analyses, such as recommendation letters and elementary school attendance. In these cases, their students' outcomes may appear better than those of students in other schools simply because of this selection bias.

categories of schools can be positive or negative. For example, Hyde Park Academy's unadjusted ninth-grade TAP reading scores were above the norm for ninth graders at 10.0 GEs, but they were actually 0.6 GEs lower than we would expect given the students enrolled there. By comparison, Crane High School's average TAP reading scores were 0.6 GEs below the national norms at 9.2, but they are 0.6 GEs higher than we would expect given the students it enrolled.

For reading, schools' value added ranged from 0.8 GEs lower than we would expect given their incoming population (North Lawndale High School), to 1.2 GEs above the expected score (Westinghouse). In math, value added ranged from nearly 1.0 GEs below expected performance (Washington), to 1.5 GEs above (Marshall).

Many of the schools whose value added was substantially worse than expected test a higher percentage of their students than those with a high value added. For example, North Lawndale tested 100 percent of its students in reading and 99 percent in math, while Marshall only tested 89 percent of its students in each subject (see Table 4).

After adjusting for student background, each *type* of school showed mixed results. Nevertheless, there are some notable findings within each of the

Table 4: Percent of Students Taking the TAP in 2000

School	Reading	Math	School	Reading	Math
Extended Elementary Schools			Hirsch	86	86
Hope Community	96	98	Kelvyn Park	78	74
Lozano Bilingual	100	100	Manley	81	81
Chavez	79	79	Marshall	89	89
Seward	92	92	Phillips	82	81
Douglass	84	80	Senn	85	82
Dyett Middle	90	88	South Shore	84	80
Charter/Small Schools			Tilden	74	74
Best Practices	89	89	Wells	85	83
North Lawndale	100	99	Spaulding	96	96
Hancock	95	95	Englewood	81	81
Future Commons	94	94	Orr	81	81
ACT	91	91	Clemente	88	87
Nuestra America	86	86	Carver	86	83
Noble Street	94	94	Corliss	85	87
Perspectives	100	100	Juarez	79	79
Chicago International	64	64	**Neighborhood Schools**		
Selective Schools			Chicago Vocational	89	89
Jones	100	100	Prosser	96	95
Lane Technical	96	96	Simeon	93	93
Lindblom	92	93	Amundsen	84	84
Southside Prep	94	94	Bogan	87	87
Von Steuben	94	94	Bowen	76	76
Northside Prep	97	98	Foreman	81	81
Chicago Agricultural	99	99	Hyde Park	94	94
Chicago Military	97	97	Kelly	77	76
Young Magnet	98	98	Kennedy	91	91
Probation Schools			Lake View	91	89
Dunbar	92	92	Mather	88	88
Flower	90	90	Morgan Park	95	95
Richards	88	90	Roosevelt	82	81
Westinghouse	95	96	Schurz	84	84
Austin	78	78	Steinmetz	86	86
Calumet	72	72	Sullivan	76	75
Crane	84	83	Taft	85	84
DuSable	82	82	Lincoln Park	90	91
Farragut	81	81	Washington	84	85
Fenger	84	84	Hubbard	94	94
Robeson	86	86	Kenwood	92	92
Gage	87	87	Curie	94	94
Harlan	84	82	Julian	83	83
Harper	82	81	Collins	82	84

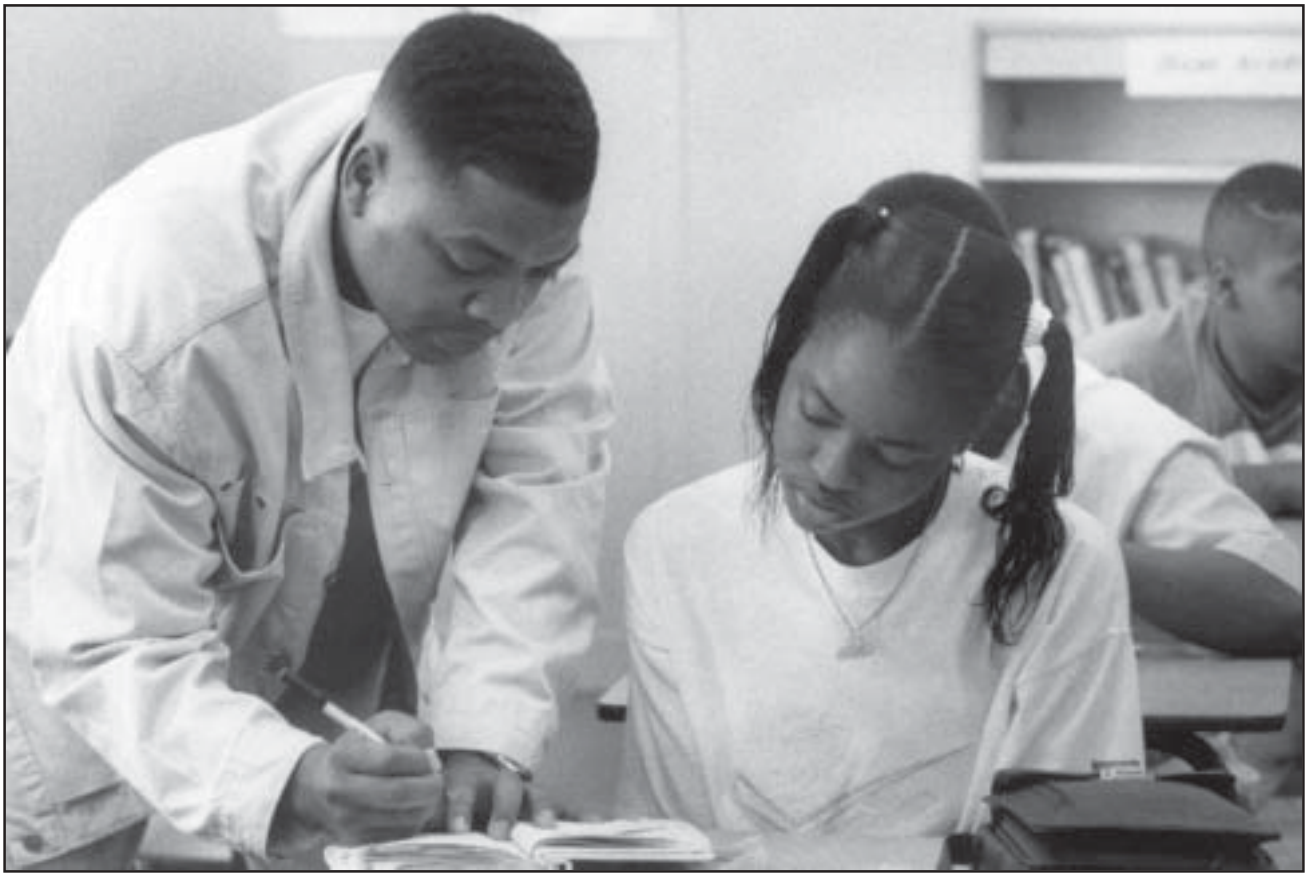
groupings. In many selective admissions schools, ninth graders scored even higher than we would expect given their incoming students' already advanced abilities. Most of the newly created regional magnets performed especially well. However, Chicago Military Academy performed worse than expected, especially in math, given the background of its ninth graders.

The value added by probation schools was higher than for some neighborhood schools, after taking differences in incoming population into account. In Figure 21, when we look at the number of schools with better than expected achievement (those to the right of the line) and those with worse than expected achievement (those to the left of the line), we see that over half of the probation schools performed better than expected in reading and about half of them did so in mathematics. Just over a third of neighborhood schools showed better than expected scores in reading or math. Many charter and small schools performed somewhat worse on the TAP than one would predict given their student population (see Appendix IV).

The extended elementaries had mixed results, suggesting that the format worked effectively in some schools but not in others. The evidence certainly does not indicate that keeping ninth graders in the smaller, more protected environment of elementary education is a foolproof method of increasing learning. The mixed results within each category demonstrate that none of the models give us a clear blueprint. Rather, the particular workings of individual schools account for their success or lack thereof.

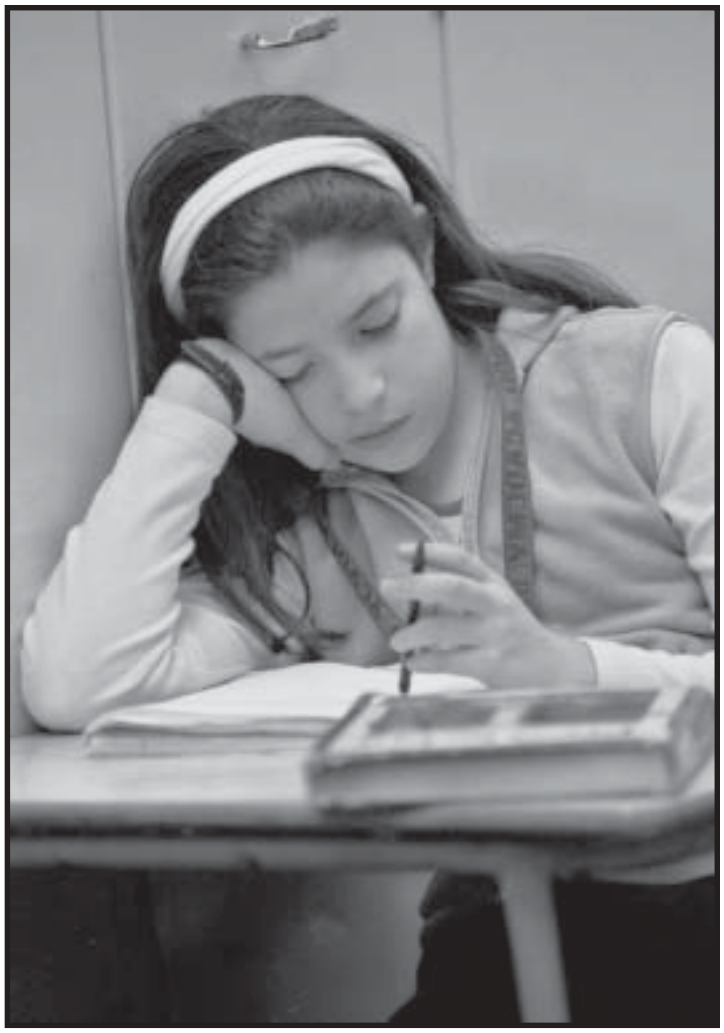
Dropout Rates

Turning to two-year unadjusted dropout rates, we find APC dropout rates were extremely high (see Figure 22). Extended elementaries, neighborhood schools, and schools on probation had mixed results, although probation schools reported a higher dropout rate than other neighborhood high schools. Selective admissions schools had



very low dropout rates, and charter schools' rates were also low.

Adjusted dropout rates present a very different pattern than the TAP scores after we control for the populations the schools served. Some with relatively high absolute dropout rates actually kept more students enrolled than we might expect once we take into account the characteristics of their incoming students. For example, Hayes APC had a two-year dropout rate of nearly 44 percent, but it actually kept about 6 percent more students than we would expect (see Figure 23). Similarly, some schools with low dropout rates had slightly higher dropout rates than we would expect given the population they enroll. For example, Lincoln Park had a two-year dropout rate of about 13 percent, but had about 12 percent more students drop out than we would expect. (Please note that a *lower* dropout rate is better.)



One of the most noticeable patterns is that most selective admissions schools and most charter and small schools had lower dropout rates than we might expect given their student population. This is especially significant for the charter and small schools, many of which have made preventing students from dropping out part of their core missions. It is also noteworthy that while the APCs as a group had extremely high overall dropout rates, some of the APCs, especially Hayes, Partee, and Dorsey, kept more students enrolled than we might expect. Neighborhood and probation schools showed a somewhat mixed set of outcomes, although probation schools did not look significantly worse than other neighborhood schools once we controlled for their student composition.

Figure 22

Two-Year Dropout Rates: Fall 1998 to Fall 2000

Not adjusted for any change in student composition

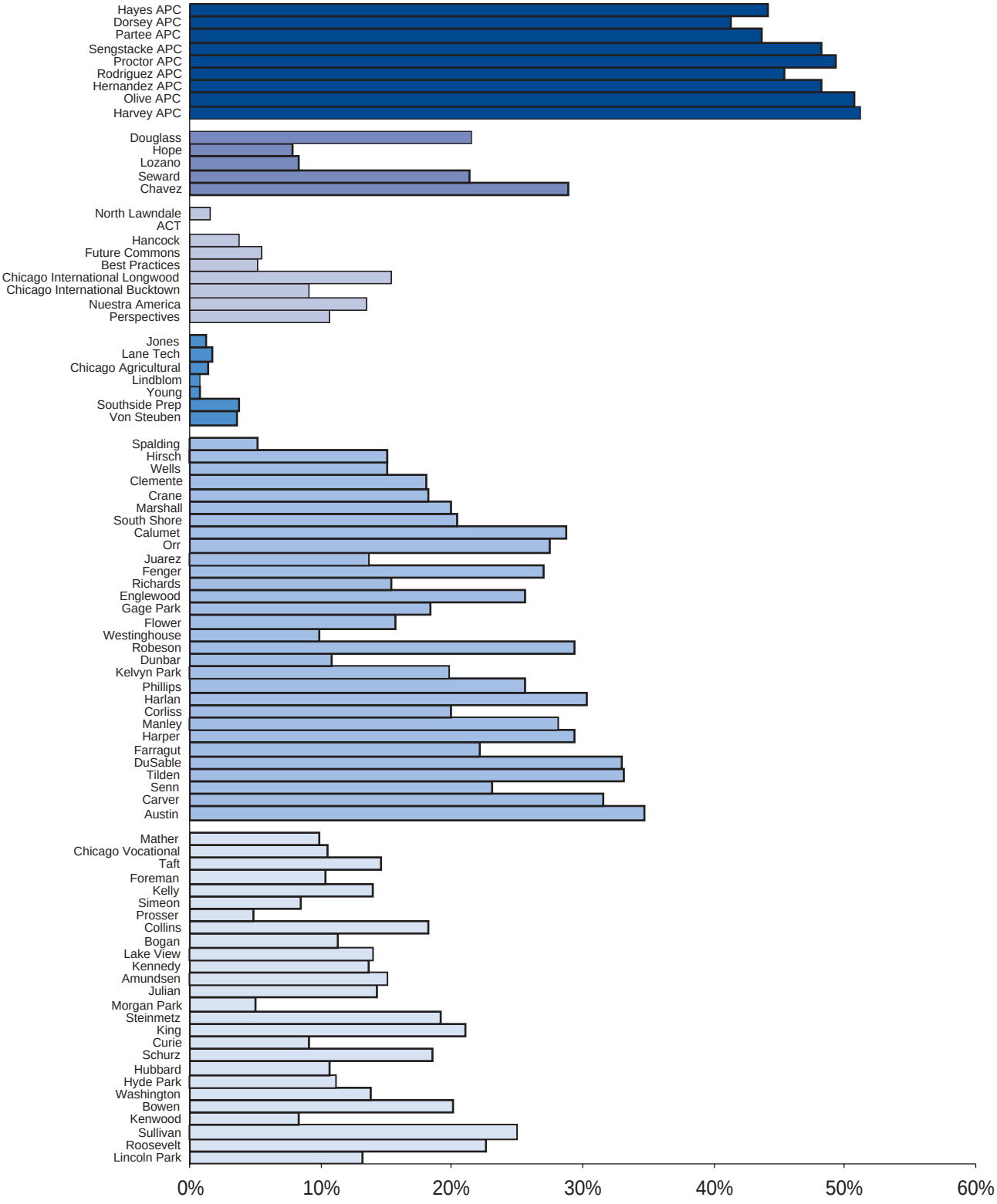
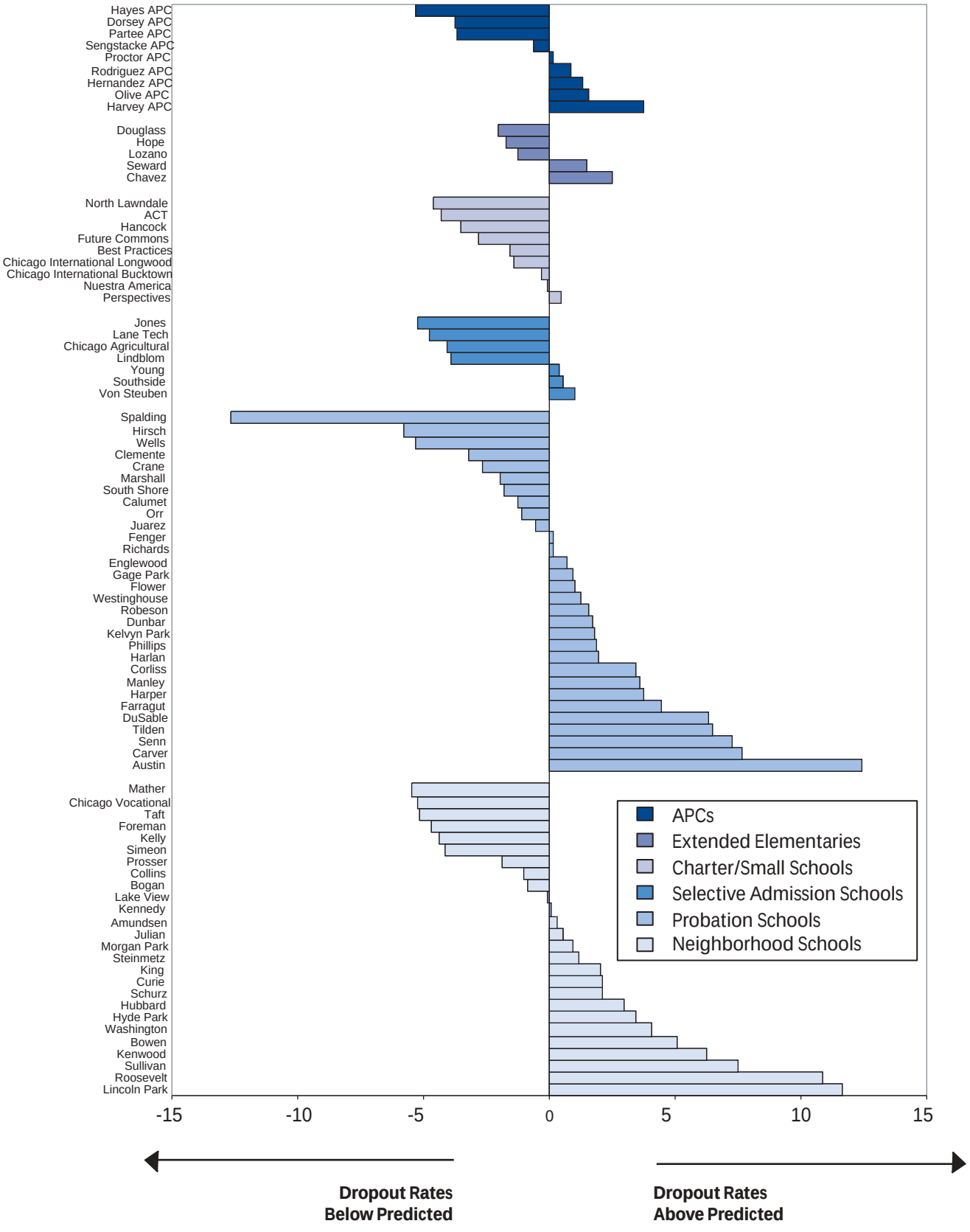
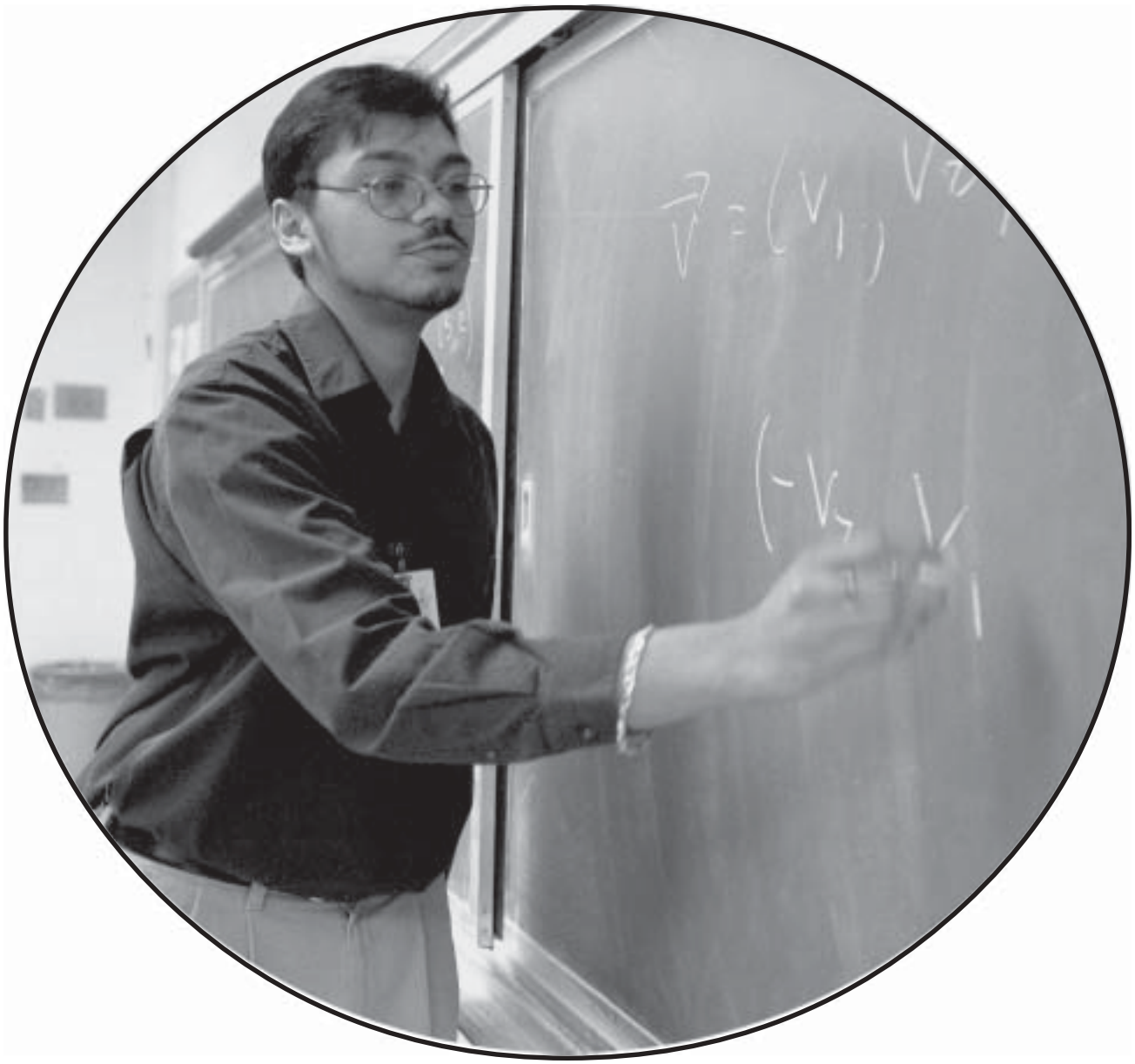


Figure 23

Two-Year Dropout Rates: Fall 1998 to Fall 2000
Adjusted for changes in student composition





VII. A Closer Look at Academic Preparatory Centers

WHEN ACADEMIC PREPARATORY CENTERS (APCs) WERE established in the 1997–98 school year, there were conflicting opinions about the effects they would have. Their purpose was to help transition to high school those students who were too old for elementary school but had yet to meet the ITBS achievement thresholds required for graduation from eighth grade.

Ideally, these students would benefit from a curriculum specially designed to prepare them for the rigors of high school (somewhat like the Summer Bridge program in elementary school) and students who enrolled directly in high school from the eighth grade would benefit from a more challenging classroom environment.[26] On the other hand, some worried that APCs would only be a "cooling out" place for low-performing students to go until they tired of school and dropped out. Our evidence suggests that APC performance fell somewhere in the middle of these opposing views.

What is the Typical Educational Experience of APC Students?

Approximately 1,000 students enroll in APCs for the first time each year.[27] The curriculum focuses primarily upon remedial math and English; students do not receive high school credit for this coursework, although other classes are offered for credit. In the 1999–00 school year, the average APC student enrolled in 2.9 credit-granting (non-remedial) courses and earned 2.2 credits—about half of the typical course load for a first-year high school student (see Figure 24; for a comparison to all high school eligible students, see Figure 9 on page 23). Less than 5 percent attempted a full course load and over 65 percent failed at least one course.

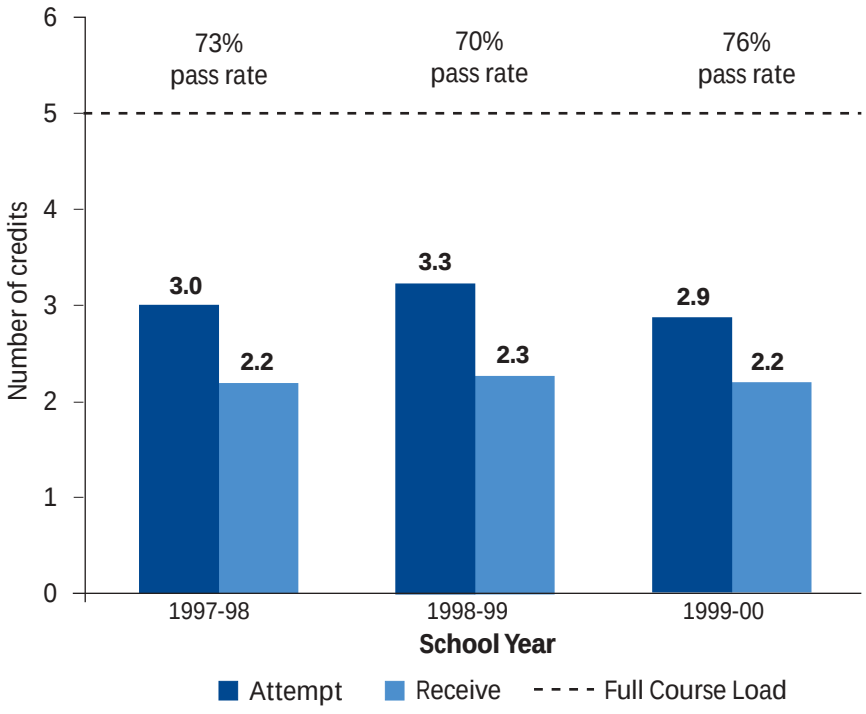
In 1999–00, only 17 percent of APC students attempted high school English and 26 percent attempted high school math (the rest generally enrolled in remedial math and English classes, which are not offered for credit). Very few enrolled in science or foreign language courses—less than 5 percent each year. The only high school-level core course that was common among APC students was social science, 70 percent attempted it in 1999–00. For the low percentage that took high school core courses, an even smaller percent passed (see Figure 25; for a comparison to all high school eligible students, see Appendix III on page 60).

Dropout Rates Especially High

Since their establishment in 1997–98, roughly a quarter of all APC students drop out in their first year. For the 1997 cohort, the dropout rate was 28 percent; 25 percent for the 1998 cohort; and 24 percent for 1999. Two years after the 1997 cohort enrolled in an APC, 48 percent had dropped out

Figure 24

APC Students Do Not Attempt or Pass a Full High School Course Load



Note: Five credits is a full course load for a high school student.

(see Figures 26, 27, and 28). This compares to a 15 percent dropout rate for the 1998–99 cohort of all students who entered ninth grade. Still, some of the APCs had fewer dropouts than we would expect given the characteristics of their incoming students (see Figure 23 on page 45).[28]

Enrollment in High School

During the period of our study, about half of first-time APC students went on to high school after one year; 41 percent of the 1997–98 cohort, 58 percent of the 1998–99 cohort, and 57 percent of the 1999–00 cohort. Correspondingly, in each of these three years, a substantial group that did not drop out also failed to make enough progress to move on to high school. These students were retained in APCs for a second year. In 1997–98, 22 percent of students were retained after one year and 11 percent were retained in each of the following two years.

How Do APC Students Perform in High School?

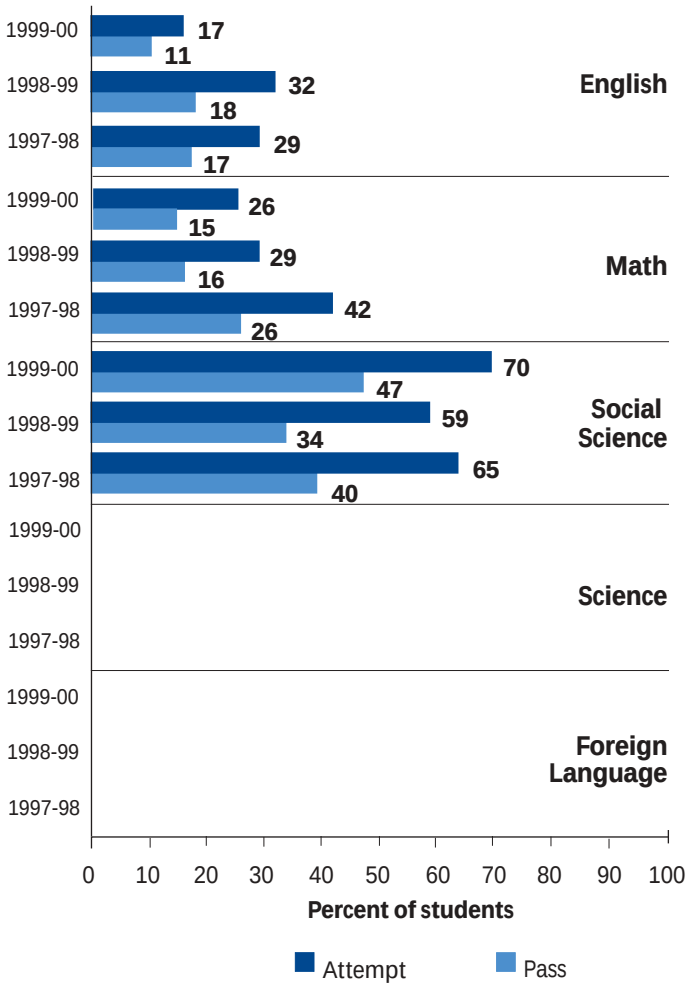
When APC students did enroll in high school they had difficulty getting and staying on track. Of the 1997–98 cohort that enrolled in a CPS high school after one year in an APC,

only 30.8 percent were on track by the end of their freshman year.[29] Students from the 1998–99 cohort that enrolled in high school in 1999–00 attempted 6.1 credits their freshman year (more than they needed to achieve sophomore standing), but received credit for only 4.0. At 65.6 percent, their passing rate was considerably lower than that for all high school eligible students, which was 80.7 percent in 1999–00 (see Figure 29).

On average, former APC students did attempt a full course load once they enrolled in high school, but were more than a full credit short of officially passing out of ninth grade (see Figure 30). Further analyses show that those students who were on track at the end of their first year were able to do so primarily because they had already earned some high school credits in the APC and in summer school. This raises questions about whether these students will be able to remain on track in later years. Only after two full school years (one in an APC and one in high school) and one summer were these students able to earn enough credits to be on track after their first year.

Figure 25

What Percent of APC Students Attempt and Pass High School Core Courses While in an APC?



Note: Numbers for 5 percent or less are not shown.

Figure 26

Progress of First-Time APC Students: Starting Fall 1997

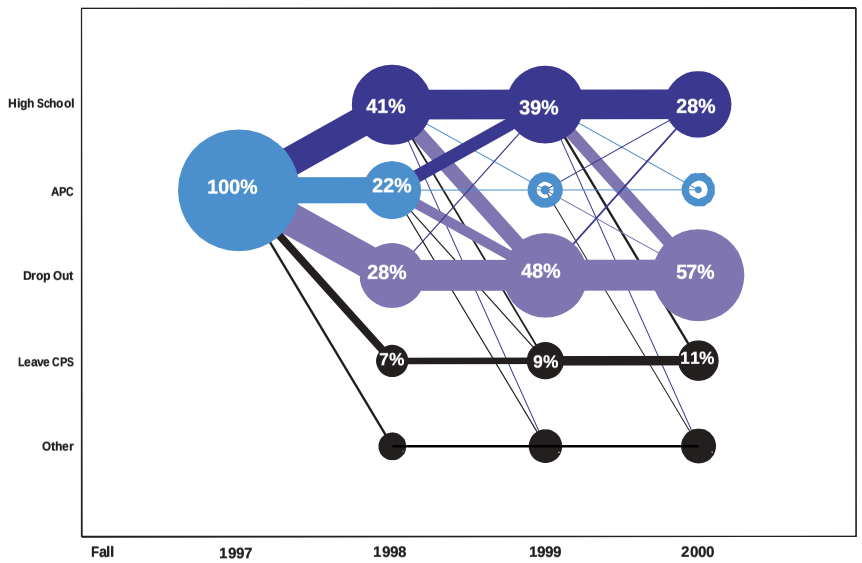


Figure 27

Progress of First-Time APC Students: Starting Fall 1998

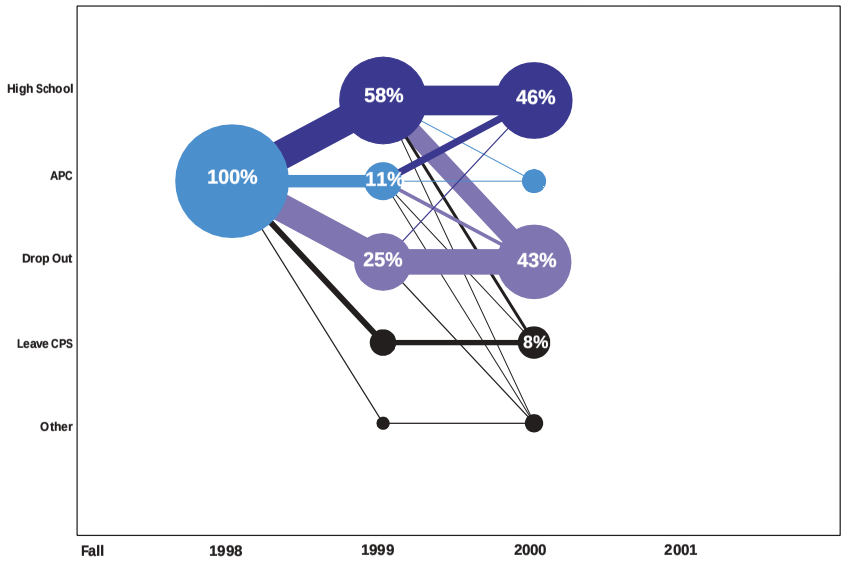
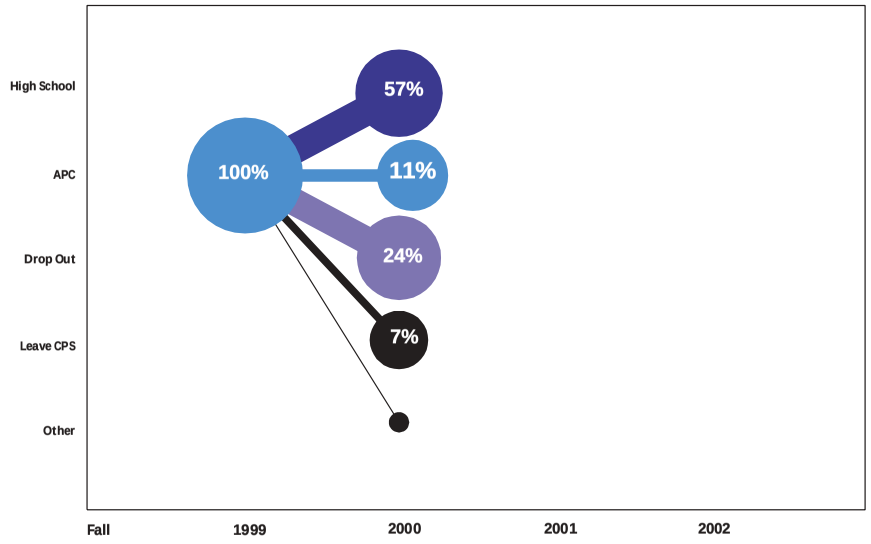


Figure 28

Progress of First-Time APC Students: Starting Fall 1999



- Enrolled in Academic Prep Center
- Enrolled in CPS High School
- Drop Out
- Leave or Irregular Classification

Note: Paths for drop out, leave CPS, and other active groups are not displayed unless they represent more than 1 percent of students; numbers for 5 percent or less are not shown.

Figure 29

Former APC Students Attempt but Do Not Pass a Full Course Load

Students promoted to high school after one year

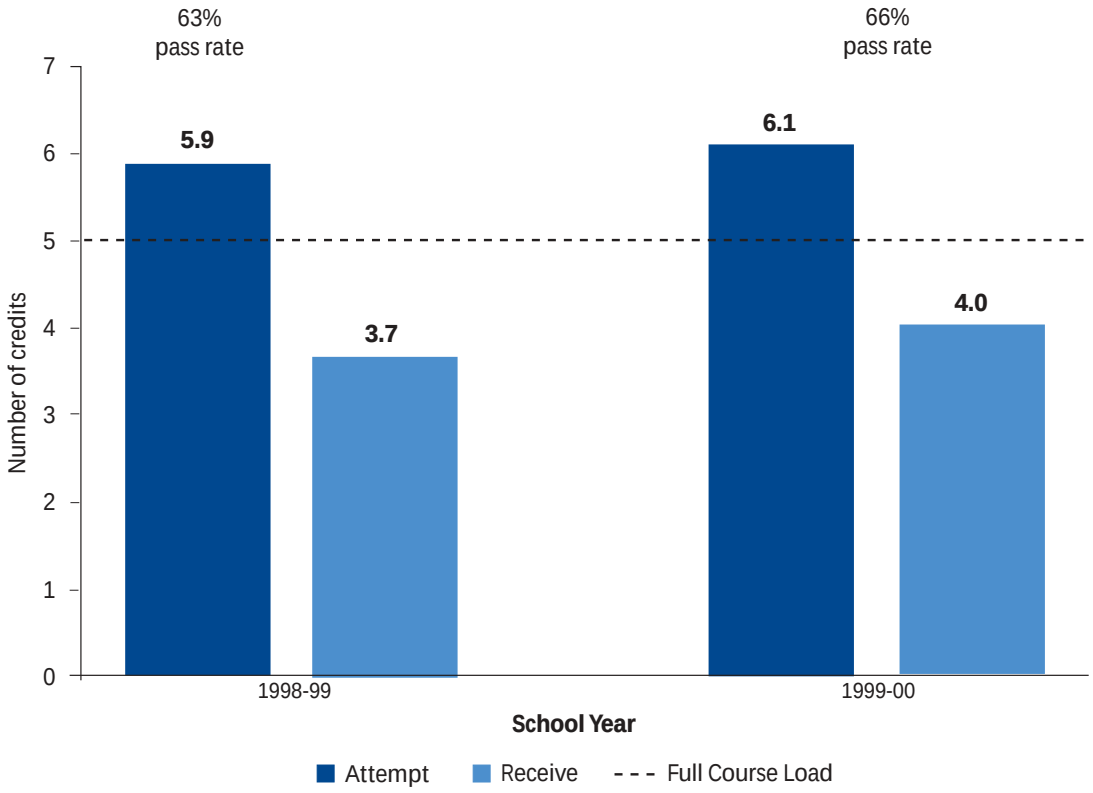
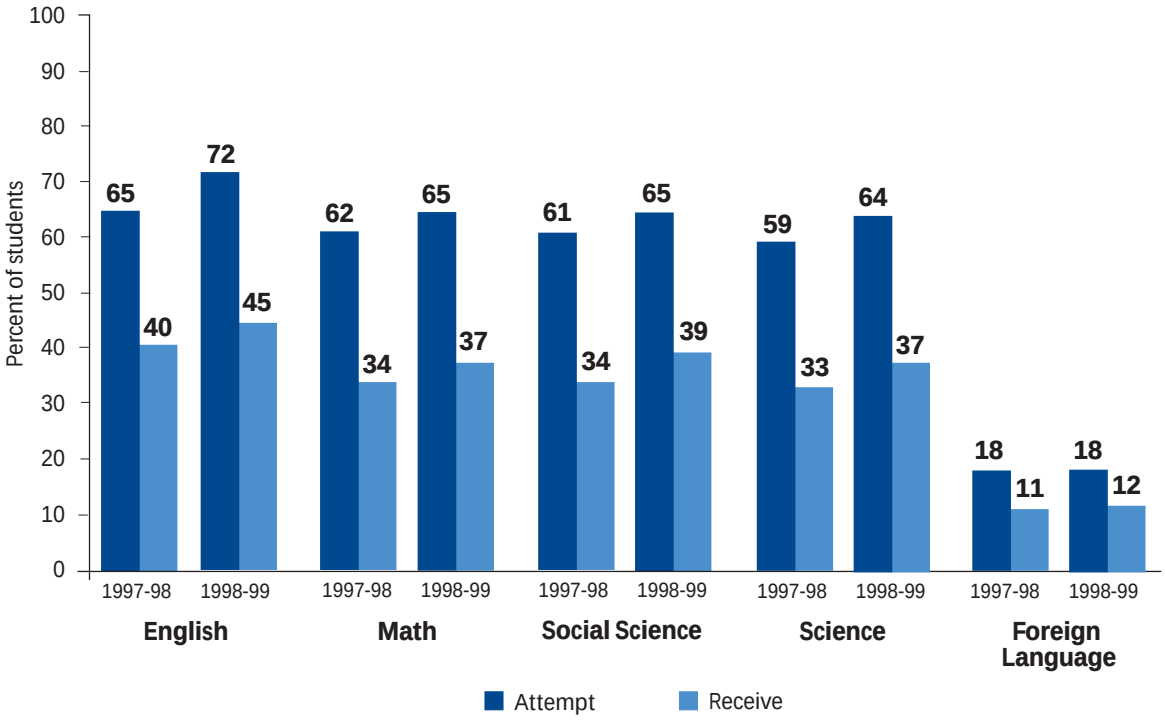
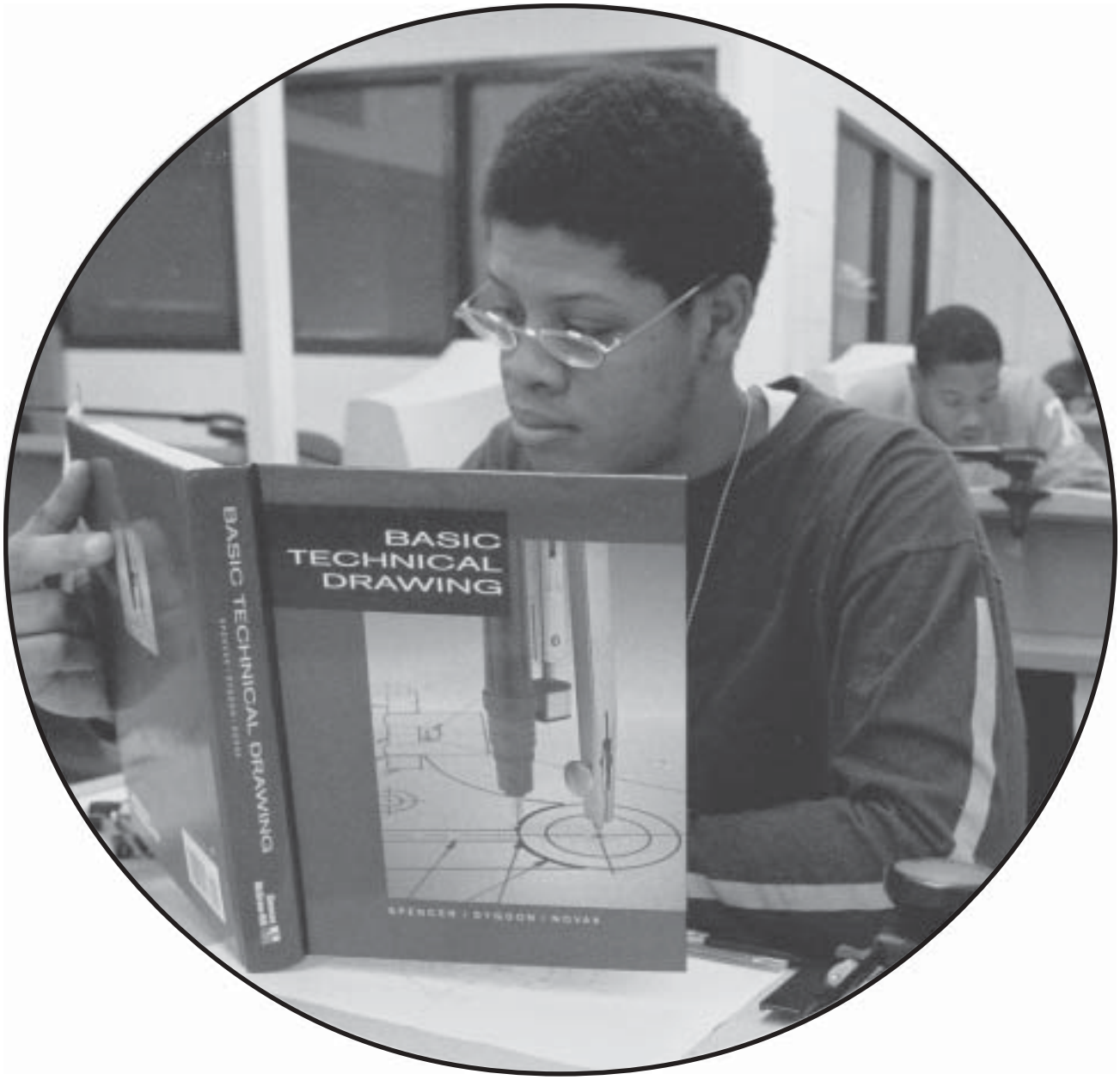


Figure 30

What Courses Do Former APC Students Attempt and Pass?

Students Promoted to high school after one year




BASIC TECHNICAL DRAWING
BASIC TECHNICAL DRAWING

VIII. Interpretive Summary

IN THIS REPORT WE EXAMINE THE PERFORMANCE OF CPS high school students from the 1993–94 school year to 1999–00 on a variety of measures. Overall, outcomes improved—greater numbers of students graduated, stayed on track after their freshman year, and passed a more challenging course load.

We found, however, that much of these improvements were the result of students leaving elementary school better prepared for high school. More high achieving students were staying in the system for high school. And, at the same time, thousands of low achieving students were being retained in eighth grade. Other than improvements in student course-taking spurred by the revision of systemwide graduation requirements, no high school reform had any discernable effect.

Despite real progress, there is still concern about the quality of CPS high schools. Even in light of the improvements noted above, student performance remains generally low. Barely 50 percent of students graduated or even got started on the right foot in their first year. Nor did sufficient numbers actually pass the more challenging courses required by CPS—even by the 1999–00 school year, not quite half of students passed the algebra/geometry sequence within two years, and fewer than one-quarter passed the college preparatory sequence within four.

What can we learn from these results to improve student performance in the future? First, preparing students well *before* they enter high schools is clearly of critical importance. Success in the elementary schools breeds success in the high schools. Second, the only provision of the 1997 high school redesign that can be clearly associated with improvement in student performance were policies that mandated a more rigorous curriculum, emphasizing the difficulty of changing performance through systemwide initiatives. Third, school-by-school analyses show that there was some success in each type of high school. This suggests that it is individual schools rather than any particular type of school that play the biggest role in whether students exceed expectations (although charter and small schools do appear to have especially low dropout rates given their student populations). We must look more closely at successful schools to see why they are making a difference.

This report establishes a baseline for important indicators, a baseline that takes into account changes in the characteristics of high school students. Going forward, we must continue to monitor these indicators and chart the progress of high school reforms. In future work, we will explore the environment inside high schools to see why some do better than others, taking into account their students' level of preparation.

Appendix I: Sample for Each Analysis

	Sample	Reason
Graduation Rates and Movement Through the System	Students who were age 13 in September	Sample is not affected by changes from the retention policy. [1]
Cohort Course Outcomes	Students who were eligible for high school for the first time and stayed in CPS, dropped out, or graduated over the next four years	Sample is not affected by the creation of APCs or possible increases in the number of eighth-grade graduates who drop out before enrolling in high school. Excludes retained students so that the same students are not counted in multiple years.
Cohort Course Outcomes, Graduates Only	Four-year high school graduates only	Sub-sample shows how CPS performs with students who make it through the system in four years. These analyses show what happens to the "best" students.
One and Two Year Outcomes	Students who were eligible for high school for the first time	Sample is not affected by the creation of APCs or possible increases in the number of eighth-grade graduates who drop out before enrolling in high school. Excludes retained students so that the same students are not counted in multiple years.
School Level Outcomes	Students who entered high school in the 1999-00 school year	Uses only one school year, as the clearest comparisons are made across a single school year because of variation in the number of schools that exist in any given year.

[1] In 1996, the first year of the new promotion policy for the eighth graders, about 1,800 students were retained in eighth grade for poor performance on the Iowa Tests of Basic Skills. This was about three times the retention rate of the previous year. As a result, about 1,200 students who would have been part of the ninth-grade cohort in 1996 were excluded. We would expect the academic outcomes for the 1996 cohort to be better simply because the students with poor academic performance did not become part of the cohort, although our adjusted trends account for changes in incoming student composition. Furthermore, since 1996, each new cohort has had a slightly larger percent of students held back from entering high school than the previous one. In the first three years of the policy, increasing numbers of students were retained in eighth grade or enrolled in APCs rather than promoted to high schools. Therefore, each incoming ninth-grade class experienced more holding back of low achieving students than the previous one. A subset of those retained students never entered high school (i.e., were never included in a ninth grade cohort) either because they dropped out or left the system. The remaining students eventually became part of a cohort, some entering one year later, others two or three years later. While the number of eighth-grade retentions stopped growing after the first three years of the policy (1996, 1997, and 1998), sixth-grade retention began to affect subsequent ninth-grade classes. The effects of third-grade retentions will be seen later, as will the recent increases in first- and second-grade retentions. Each incoming ninth-grade class will have had more low achieving students removed from its cohort than in the previous year, and this pattern will continue for many years.

Appendix II: Technical Notes on ITBS and IAP Scores

ITBS

Controlling for students' prior achievement in our analyses allows us to estimate what high schools add to their students' education. Without such a control, schools that attract high performing eighth graders appear more effective because their students start out ahead. Likewise, schools that attract low performing students appear worse because their students start the ninth grade behind. Results for the system are similarly affected.

A simple solution would be to control for students' eighth-grade scores on the Iowa Tests of Basic Skills (ITBS). However, a single year of test score data is not a precise measure of true ability—students may experience a bad test day, or simply miss one or two questions due to carelessness that significantly effect their score. In addition, because the Chicago Public Schools uses eighth-grade ITBS scores as the basis upon which students are promoted to high school or not, these scores probably do not reflect true student ability. As students are required to pass a threshold, those near the threshold are motivated to perform at a higher level in order to avoid summer school and those who are well beyond the threshold have no special motivation to score well on the test. As a result, some scores might underestimate students' true ability, others might overestimate them and, the error in the estimates would not be random.

To more accurately represent the students' true achievement levels at the end of the eighth grade, we ran a two-level HLM using all of the test score data for each student for every year they were enrolled in CPS. From this we produced a measure of the *latent* eighth-grade ability. We included only those eighth graders whose test scores were officially included by the school system, and only included previous test score data if it was officially included in school system figures. We ran this analysis on cohorts from 1992 to 2000 simultaneously using test data from 1987 to 2000. The cohort variable indicates the year the student was in eighth grade.

Using students' test scores as the outcome, the first level of the HLM is the test level. At Level 1, we included predictors for the student's grade (centered around sixth grade), the student's grade squared (centered around sixth grade), a dummy variable indicating whether or not this is a repeated year for the student in grades one through seven, and a separate dummy variable indicating whether or not this student repeated eighth grade. Thus, the equation at Level 1 was:

$$\text{ITBS score} = ß_0 + ß_1(\text{Grade}) + ß_2(\text{Grade squared}) + ß_3(\text{Repeat}) + ß_4(\text{Repeat8}) + r$$

At Level 2, the student level, we modeled the intercept and each slope with dummy variables for each cohort year. In addition, because students coming out of bilingual education programs often have a faster learning curve than others, we included a dummy variable indicating whether the student had been in a bilingual program. The 1992 cohort was the omitted category. The equations at Level 2 were as follows:

$$ß_0 = \gamma_0 + \gamma_1(\text{Bilingual}) + \gamma_2(1993\ \text{Cohort}) + \gamma_3(1994\ \text{Cohort}) + \gamma_4(1995\ \text{Cohort}) + \gamma_5(1996\ \text{Cohort}) + \gamma_6(1997\ \text{Cohort}) + \gamma_7(1998\ \text{Cohort}) + \gamma_8(1999\ \text{Cohort}) + \gamma_9(2000\ \text{Cohort}) + u_0$$

$$ß_1 = \gamma_0 + \gamma_1(\text{Bilingual}) + \gamma_2(1993\ \text{Cohort}) + \gamma_3(1994\ \text{Cohort}) + \gamma_4(1995\ \text{Cohort}) + \gamma_5(1996\ \text{Cohort}) + \gamma_6(1997\ \text{Cohort}) + \gamma_7(1998\ \text{Cohort}) + \gamma_8(1999\ \text{Cohort}) + \gamma_9(2000\ \text{Cohort}) + u_1$$

$$ß_2 = \gamma_0 + \gamma_1(\text{Bilingual}) + \gamma_2(1993\ \text{Cohort}) + \gamma_3(1994\ \text{Cohort}) + \gamma_4(1995\ \text{Cohort}) + \gamma_5(1996\ \text{Cohort}) + \gamma_6(1997\ \text{Cohort}) + \gamma_7(1998\ \text{Cohort}) + \gamma_8(1999\ \text{Cohort}) + \gamma_9(2000\ \text{Cohort}) + u_2$$

$$ß_3 = \gamma_0 + \gamma_2(1993\ \text{Cohort}) + \gamma_3(1994\ \text{Cohort}) + \gamma_4(1995\ \text{Cohort}) + \gamma_5(1996\ \text{Cohort}) + \gamma_6(1997\ \text{Cohort}) + \gamma_7(1998\ \text{Cohort}) + \gamma_8(1999\ \text{Cohort}) + \gamma_9(2000\ \text{Cohort})$$

$$ß_4 = \gamma_0 + \gamma_2(1993\ \text{Cohort}) + \gamma_3(1994\ \text{Cohort}) + \gamma_4(1995\ \text{Cohort}) + \gamma_5(1996\ \text{Cohort}) + \gamma_6(1997\ \text{Cohort}) + \gamma_7(1998\ \text{Cohort}) + \gamma_8(1999\ \text{Cohort}) + \gamma_9(2000\ \text{Cohort})$$

Separate models were run for reading and mathematics. We used the empirical Bayes estimates for the intercept, the grade slope, and the grade squared slope from the residual files to create a measure of latent student ability. Ideally, we would have liked to center our grade and grade squared variables around eighth grade so that the intercept would have:

Latent score = (fitted value, intercept + EB residual, intercept) + 2(fitted value, grade6+ EB residual, grade6) + 4(fitted value, grade6sq+ EB residual, grade6sq) [+ (fitted value, repeat8) *if student repeated eighth grade*]

TAP

To not penalize schools that work to prevent low achieving students from dropping out and encourage attendance on test day, we imputed test scores for students who were enrolled in the fall but did not have a spring TAP score. In this way, schools that do not make the above efforts and have fewer low achieving students taking the TAP do not have any unfair advantage.

HLM Results for Latent Ability Models

Intercept	Reading	Math	Intercept	Reading	Math
Intercept	0.1823***	0.5454***	**Repeat**		
Bilingual	-0.3401***	-0.0929***	Intercept	0.0364	0.1116***
1993 Cohort	-0.1110***	-0.0994***	1993 Cohort	0.0095	0.1031**
1994 Cohort	-0.1060***	-0.1184***	1994 Cohort	0.1221**	0.1242***
1995 Cohort	-0.1249***	-0.0118	1995 Cohort	0.0820*	0.1394***
1996 Cohort	-0.0669***	0.0210*	1996 Cohort	0.1005**	0.2182***
1997 Cohort	0.0498***	0.1410***	1997 Cohort	0.2261***	0.3216***
1998 Cohort	0.0605***	0.1501***	1998 Cohort	0.1897***	0.3022***
1999 Cohort	0.1097***	0.1914***	1999 Cohort	0.2126***	0.3698***
2000 Cohort	0.2023***	0.2366***	2000 Cohort	0.1785***	0.3584***
Grade, centered on 6th			**Repeat 8**		
Intercept	0.2438***	0.4748***	Intercept	0.0828	0.0131
Bilingual	0.0292***	0.0313***	1993 Cohort	0.0013	0.1986**
1993 Cohort	0.2226***	0.0529***	1994 Cohort	-0.1067	0.1142
1994 Cohort	0.2452***	0.1006***	1995 Cohort	0.085	0.0847
1995 Cohort	0.2522***	0.0737***	1996 Cohort	-0.0393	0.0844
1996 Cohort	0.2902***	0.0939***	1997 Cohort	0.1437*	0.1247*
1997 Cohort	0.2861***	0.0765***	1998 Cohort	0.2025***	0.2803***
1998 Cohort	0.2946***	0.1028***	1999 Cohort	0.1956***	0.0857
1999 Cohort	0.3001***	0.1238***	2000 Cohort	0.1514*	0.1944***
2000 Cohort	0.3014***	0.1131***			
Grade Squared					
Intercept	0.1581***	-0.0534***			
Bilingual	-0.0013**	-0.0081***			
1993 Cohort	-0.1387***	0.0300***			
1994 Cohort	-0.1443***	0.0413***			
1995 Cohort	-0.1555***	0.0078**			
1996 Cohort	-0.1519***	0.0262***			
1997 Cohort	-0.1689***	0.0219***			
1998 Cohort	-0.1715***	0.0265***			
1999 Cohort	-0.1614***	0.0378***			
2000 Cohort	-0.1584***	0.0391***			

*** $p < .001$
** $p < .01$
* $p < .05$

To impute TAP scores, we used students' gender, age, SES, race, and latent reading and math ITBS scores for the entire sample. Using a latent variable regression in HMLM, we were able to use the data from both students missing TAP scores and those with TAP scores. However, as we were unable to model the school effects at Level 2 and produce a latent variable regression at Level 2 in the current version of HMLM, we centered all variables around their school means outside of the HMLM program.

In this analysis, the Level 1 data files are arranged with one record per variable. All observed data are copied into a single variable, "outcome." This "outcome" is linked to a set of indicataors that identify which specific variable this is. At Level 1, all indicator variables are entered into the equation to predict the "outcome" along with a variance component. There is no intercept at Level 1.

$$Y = \sum ß_p X_p + r$$

Where Y is the "outcome" and X_p are the indicator variables, *p* ranging from 1 to 17 in this analysis (see the table "HMLM Results for Estimating TAP Scores"). If data are missing on some "outcome," those records are just absent.

The Level 2 equations are simply the coefficients associated with the indicator variables predicted by the intercept. These coefficients represent the latent values for each student on each variable (whether actually observed or not).

$$B_p = \gamma_{p0}$$

HMLM Results for Estimating TAP Scores

Latent Variable Regression on TAP Score	Reading	Math
Intercept	-0.0404**	-0.0588**
Student SES	0.0868***	0.0066
Old for grade	-0.3769***	-0.3234***
Very old for grade	-0.2551	-0.1536
Male	-0.0876**	0.1992***
White	0.3638***	0.5155***
Asian	-0.109	0.4751***
Latino	0.1163*	0.1550***
8th grade reading ITBS score	1.1430***	0.0408
7th grade reading ITBS score	1.1224***	0.2019***
8th grade mathematics ITBS score	0.2017***	1.3653***
7th grade mathematics ITBS score	0.3129***	1.1976***
8th grade reading score missing	0.5183	-0.455
8th grade mathematics score missing	-0.7725	-0.1539
7th grade reading score missing	-0.5953	0.2487
7th grade mathematics score missing	0.7297	-0.1451
Student SES missing	-0.0016	-0.1291

*** p < .001
** p < .01
* p < .05

In a latent variable regression, any Level 1 parameter, $ß_p$, can become either the outcome or a predictor in a structured model. We use this method to make one of our indicator variables the outcome and the others the predictors. The latent variable output then gives us fixed effects for the predictors on whichever outcome we choose. The results from the reading and mathematics HMLM analyses are shown below. (For a further discussion of the general HMLM methodology, see Raudenbush and Bryk (2002).)

The coefficients from the table at the left were multiplied by the original school-mean-centered data and summed across variables. To this was added the original school means of those variables to produce the imputed scores for those missing TAP data.

Overall, our imputed scores may be higher than expected for students with missing scores because the model assumes that the student missing a TAP score is the same as a student with the same SES, race, and ITBS scores who took the TAP. However, if the student is missing a TAP score because he has dropped out, it is more likely that he is lower performing than the student who is still in school. In this sense, our model produces conservatively estimated imputed scores.

School-Level Adjusted TAP Scores

To predict the high school adjusted mean TAP scores, we ran a two-level HLM using TAP scores as the outcome, including imputed TAP scores for those students missing scores. At Level 1, the student level, we used gender, race, age, SES, and the latent eighth-grade ability in reading and mathematics as predictors. We also included a dummy variable to indicate if the student attended a summer bridge program after eighth grade. In addition, we included dummy variables for students entering high school from private elementary schools, from public schools outside the CPS system, or who were once in the system but left and are now reentering. At Level 2, the school level, we included predictors for the high school's mean SES, percent of special education students in the school, and percent mobility. We also included indicators of the racial composition of the student body and a mean of the latent reading and mathematics ability of the entering ninth-grade class of students. All of the Level 2 predictors were uncentered. The equations for these analyses appear below:

Level 1

$$\text{TAP score} = ß_0 + ß_1(\text{Male}) + ß_2(\text{White}) + ß_3(\text{Asian}) + ß_4(\text{Latino}) + ß_5(\text{Private}) + ß_6(\text{From CPS}) + ß_7(\text{Outside}) + ß_8(\text{Old for Grade}) + ß_9(\text{Very Old for Grade}) + ß_{10}(\text{SES}) + ß_{11}(\text{Latent Reading}) + ß_{12}(\text{Latent Math}) + ß_{13}(\text{Bridge}) + r$$

Level 2

$$ß_0 = \gamma_0 + \gamma_1(\text{High School SES}) + \gamma_2(\text{Percent Special Education}) + \gamma_3(\text{Percent Mobility}) + \gamma_4(\text{Predominately Latino}) + \gamma_5(\text{Integrated}) + \gamma_6(\text{Racially Mixed}) + \gamma_7(\text{Predominately Minority}) + \gamma_8(\text{Mean Latent Achievement}) + u_0$$

HLM Results for Estimating the Adjusted School TAP Score Means

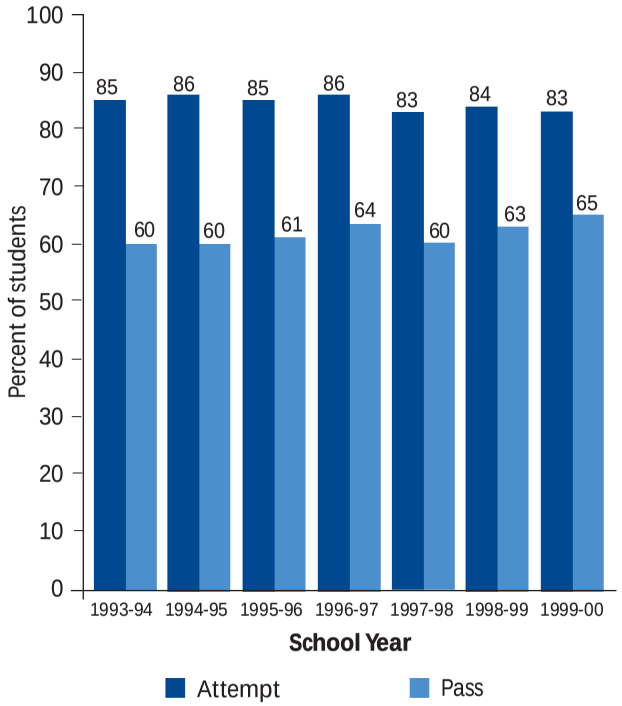
Intercept	Reading	Math
Intercept	9.6569***	9.9291***
High school SES	-0.1473	-0.2705
Percent special education	0.0847	-0.3234***
Percent mobility	1.3726	2.225
Predominantly Latino	0.0489	0.1413
Integrated	-0.036	0.1423
Racially mixed	-0.1158	0.011
Predominantly minority	0.0121	0.3632*
Mean latent achievement	1.2002***	1.4201***
Male	-0.0367	0.1907***
White	0.6006***	0.7244***
Asian	0.1073	0.6285***
Latino	0.3016***	0.2480***
Attended private elementary school	1.0174***	0.4188***
Left CPS and returning to the system	0.0036	-0.1774**
From public elementary school outside the system	0.2413**	-0.0286
Old for grade	-0.3086***	-0.3203***
Very old for grade	-0.6822***	-0.5460***
Student SES	0.0643**	-0.0066
Latent 8th grade reading ability	2.3726***	-0.0703*
Latent 8th grade mathematics ability	0.2010***	2.8402***
Attended Summer Bridge	-0.0968*	0.0747*

*** $p < .001$
** $p < .01$
* $p < .05$

$ß_1 = \gamma_1$
$ß_2 = \gamma_2$
$ß_3 = \gamma_3$
$ß_4 = \gamma_4$
$ß_5 = \gamma_5$
$ß_6 = \gamma_6$
$ß_7 = \gamma_7$
$ß_8 = \gamma_8$
$ß_9 = \gamma_9$
$ß_{10} = \gamma_{10}$
$ß_{11} = \gamma_{11}$
$ß_{12} = \gamma_{12}$
$ß_{13} = \gamma_{13}$

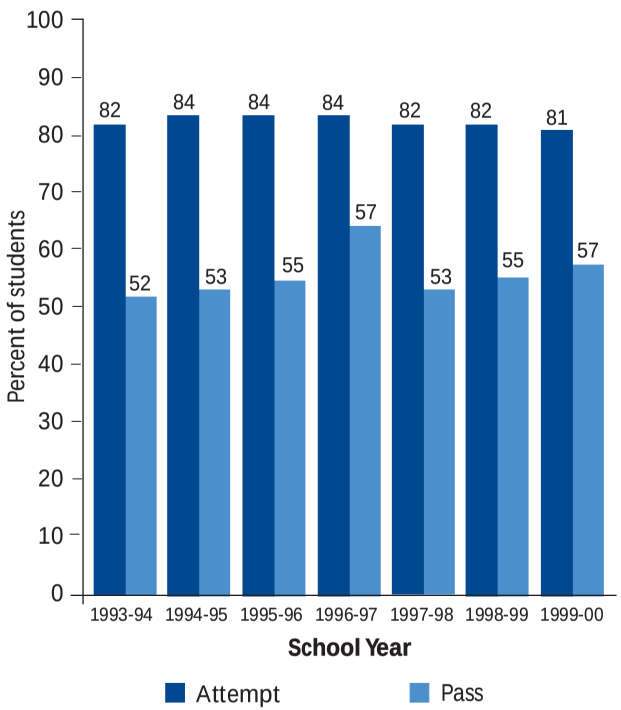
Appendix III: First-Year Student Course-Taking

What Percent of Students Attempt and Pass an English Course?
One year after elementary school

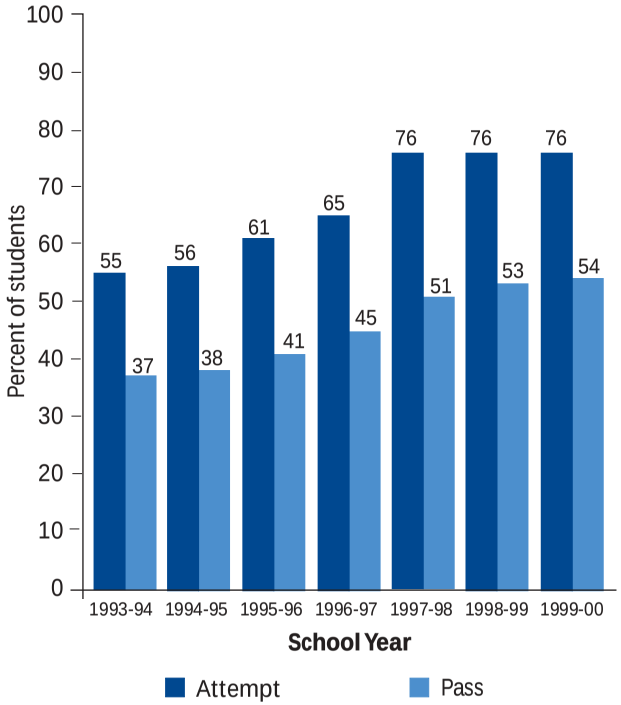


Note: Nearly all students who enrolled in high school attempted an English class. Dropouts, students enrolled in APCs, and students classified as special education make up the bulk of students not taking high school level English.

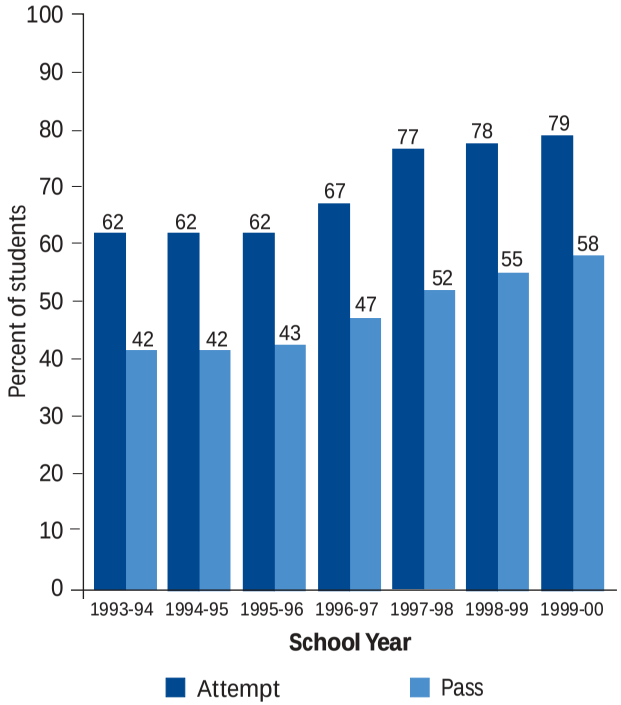
What Percent of Students Attempt and Pass a Math Course?
One year after elementary school



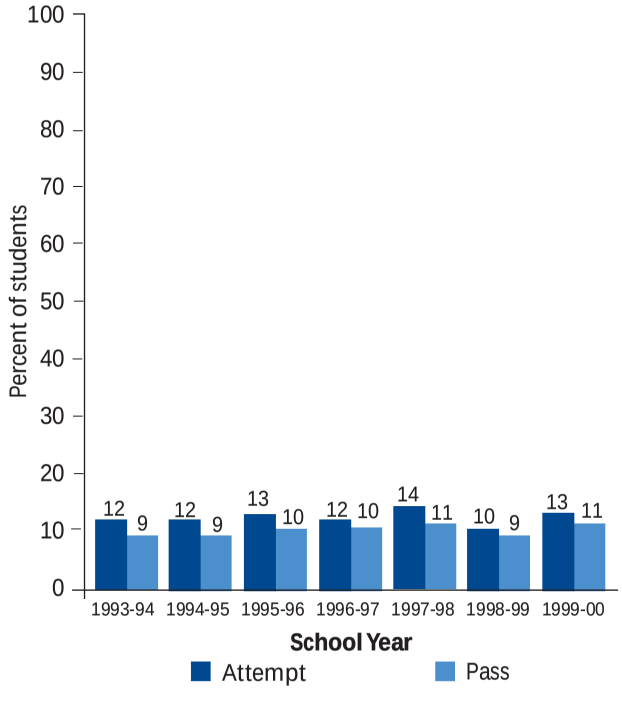
What Percent of Students Attempt and Pass a Social Science Course?
One year after elementary school



What Percent of Students Attempt and Pass a Science Course?
One year after elementary school



What Percent of Students Attempt and Pass a Foreign Language Course?
One year after elementary school



Appendix IV: Change in Students Taking the TAP by Performance on Eighth-Grade ITBS

Although the percent of students taking the TAP did not change from 1993 to 2000, the composition of students who took the test did. Considerably fewer students with very low eighth-grade ITBS reading scores took the TAP in the 1999-00 school year compared to 1993-94.

Fewer Students Scoring Low on ITBS Reading Take the TAP the Following Year

	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	Change
Lowest Quartile	6,173	6,542	6,054	4,573	4,248	3,511	2,982	Down 3,191
Second Quartile	7,289	6,703	6,332	7,196	7,646	7,386	7,779	Up 490
Third Quartile	3,742	3,235	3,292	3,803	3743	4,618	4,676	Up 934
Highest Quartile	1,591	1,658	1,562	1,898	1,544	2,342	1,991	Up 400

Endnotes

[1] Bryk et al. (1998); Sebring et al. (1996); Chicago Public Schools (1997).

[2] Easton et al. (2001).

[3] Allensworth and Rosenkranz (2000).

[4] Bishop and Ferran (1999); Chaney, Burgdorf, and Atash (1997).

[5] Bishop and Ferran (1999); Adelman (1999); Schmidt (1999).

[6] Chicago Public Schools (2000), Board Report 00-0726-P02.

[7] Hess and Cytrynbaum (forthcoming).

[8] This was the official CPS policy as cited on its website (www.cps.k12.il.us/Schools/probation/qna.html). As far as we know, no school was removed from probation for any reason other than increasing its test scores above the threshold.

[9] Estimates were produced using logistic regression (with the exception of TAP scores, which were produced through OLS regression)—see Appendix II for a technical discussion of how we adjusted ITBS and TAP scores to get true scores. Adjustments for graduation and dropout rates were performed separately for each age to allow for changing relationships between characteristics and outcomes.

[10] We used the Rasch Model to make ITBS scores equivalent across different forms of the test. These were then transformed into approximate GEs using a regression analysis within each form whereby GE=intercept + Rasch measure.

[11] Students who were retained in eighth grade the following year were not included in calculations. Similar leave rates and trends would have been produced if retained students were followed for an additional year (the year they left eighth grade) and included in calculations with their original cohort. (Students who dropped out were considered differently from those that left.)

[12] For further details, see Allensworth and Rosenkranz (2000).

[13] See National Center for Education Statistics, *The Condition of Education 1998* (1998), and *The Condition of Education 1999* (1999); Bureau of Justice Statistics (1991).

[14] Allensworth and Easton (2001). This report describes the method developed by the Consortium to calculate dropout rates and shows the effects different methods have on final calculations.

[15] If the students that were still enrolled at age 19 were not included in the calculations as non-graduates, the percent of students that graduated would be 46.1, 45.1, and 43.8 for the 1992–93, 1993–94, and 1994–95 cohorts, respectively.

[16] If the students still enrolled at age 19 were not included in the calculations as non-dropouts, dropout rates at age 19 would be 46.1, 45.1, and 43.8 percent for the 1992, 1993, and 1994 cohorts, respectively.

[17] Roderick (1994).

[18] Miller (1998).

[19] Some would argue against honors courses as part of a system of tracking. See Oakes (1985).

[20] All regular high schools offer students at least one honors course over a four-year high school career, although many do not offer them in the ninth grade. Special education and alternative schools generally do not provide honors courses.

[21] We use the term “honors” to include those courses designated as “honors,” “telescoped honors,” and “advanced placement.”

[22] Placement in at least one honors course while in the ninth grade is a way to identify bright and persevering students. Of the students who passed an honors course in the ninth grade in 1996–97, 77.6 percent graduated within four years. For those who did not take an honors class in their first year, only 42.7 percent graduated within four years. Nonetheless, this early identification is not a rigid track or a perfect predictor of student performance. About half of the students in the 1996 cohort that did not pass an honors class in their first year went on to take an honors course later in their high school careers. Furthermore, about 12 percent of students who passed an honors course in the ninth grade dropped out of high school within four years.

[23] Pelavin and Kane (1990).

[24] Students are considered to have passed the algebra/geometry sequence if they pass a full credit of algebra in the ninth grade and a full credit of geometry by the end of the

tenth. Students also fulfill this requirement if they take any higher-level math course in the ninth grade, including geometry, algebra II, or participate in the Integrated Math Program.

[25] Because many of the new schools have not existed long enough to have four-year outcomes and charter schools are not required to submit course-taking information to CPS, we are limited in the outcomes we can compare.

[26] A study of the Summer Bridge program by the Consortium on Chicago School Research is scheduled to be published summer 2002.

[27] More students are enrolled in APCs, but our sample does not include students retained in an APC for more than one year.

[28] Some students who are counted as dropouts from APCs never actually enrolled there. These are called "no shows." T his problem is less prevalent in APCs than in high schools, however.

[29] To determine on-track status, we included all credits students earned in the APC, over the summer, and during their official first year in high school.

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Consortium on Chicago School Research

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