

IV. SUMMARY OF RESEARCH DESIGN AND ANALYSIS

Variables. Our operational variables, outlined in Table 4, are demographic characteristics and performance measures, reaching from the early grades through the CUNY freshman year. We studied the cohort of students who graduated from New York City high schools in June 1997.¹⁰ The entire cohort numbers 29,854 students and includes:

- students who entered 9th grade in fall 1993 and graduated on time;
- students who entered the BOE system after 9th grade and graduated on time; and
- students who entered 9th grade before fall 1993 and took more than four years to graduate.

The cohort excludes students who earned GEDs, students who entered in fall 1993 but took more than four years to graduate and students who dropped out before graduation.¹¹ Since we did not study dropouts or GED students, our cohort includes the BOE's stronger students. Of the 29,854 graduates, 8,559 students matriculated at CUNY in September 1997 and 21,295 did not.

Our data were gathered from several sources. Student demographic data and performance data generated from kindergarten through high school graduation came from the CUNY University Application Processing Center (UAPC), which archived selected data on behalf of the BOE through an out-sourcing relationship. The BOE gave UAPC permission to satisfy our requests for data.¹² CUNY FSAT scores and college placement and performance data were provided by CUNY's Office of Institutional Research and Analysis. SAT scores came from the BOE and CUNY. Given our various sources and the limitations on our cohort, there are discrepancies between our data and data presented in other reports published by the Task Force, the BOE, CUNY and others.

Table 4. Variables and Definitions Considered in Research Model

¹⁰ The June 1997 parameter was set by CUNY's University Application Processing Center (UAPC), which supplied most of our data to us. We believe more students, even some who went on to CUNY, collected diplomas after June and before the end of the year. We regret that we could not include all 1997 graduates in our test cohort.

¹¹ In *Class of 1997 Four-Year Longitudinal Report and 1996-97 Dropout Rates*, the BOE's Division of Assessment and Accountability defined the Class of 1997 as the sum of students who entered 9th grade in fall 1993 and entered the class in 10th, 11th or 12th grades and less the students who transferred to other school systems – a net number of 66,703. The BOE reported that the four-year dropout rate for the Class of 1997 cohort was 15.9%; that the four-year graduation rate through August 1997 was 48.4% ; and that 35.7 % were still enrolled as of September 1997.

¹² In a letter dated September 2, 1998, Judith A. Rizzo, Deputy Chancellor for Curriculum and Instruction, directed CUNY's UAPC to release the information contained in the Student Automated Record-Keeping (SARK) System to the Task Force and its representatives. Rizzo added that the BOE was "committed to assisting [the Task Force] in any way."

TEST & CREDIT VARIABLES	SCALE RANGE	REMEDIATION BENCHMARKS
8th GRADE DRP score (reading) CAT-Math score	1 to 99 1 to 99	50 (grade level) 50 (grade level)
SECONDARY SCHOOL Regents English Regents math English CPI units Highest level math course Academic GPA	1 to100 1 to100 0 to 4 1 to 4 1 to100	65 (Regents cut score) 65 (Regents cut score) 4 (Regents requirement) 2 (RAND construct)
COLLEGE ENTRY RAT score (reading) MAT score (math) WAT score (writing) SAT verbal score SAT math score SAT combined score	0 to 45 0 to 40 2 to 12 200 to 800 200 to 800 400 to 1600	30 (CUNY cut score) 25 (CUNY cut score) 8 (CUNY cut score) 500 (College Board mean) 500 (College Board mean) Level of college preparedness (NCES): 1,250 = very high 1,110 = high 960 = moderate 820 = minimal
COLLEGE Equated credits • Attempted • Failed • Accumulated • Accum./attempt. College credits • Attempted • Failed • Accumulated	1 to n 1 to n 1 to n 0 to 1 1 to n 1 to n 1 to n	- - - - - - -

Source: Appendix C, which cites sources of benchmarks

We attempted to examine other characteristics of the total June 1997 cohort. However, we were inhibited by the unavailability of data. From the BOE, we asked for but did not receive: qualification for free or assisted lunch; scores on standardized reading and math tests generated before the 8th grade; scores on the Language Assessment Battery (LAB) or other measure of limited English proficiency generated K-12; number of schools attended during each school year K-12; age entering each grade K-12; number of credits, courses and CPI units attempted each grade 9-12; number of CPI units accumulated in math; and number of times the RCTs were attempted.

The BOE's inability to provide complete data obviously undermined our ability to analyze student performance before, during and after high school. We had hoped to analyze a broad range of K-8 performance data. However, the BOE said that data generated before students entered 8th grade could not be easily accessed and that it had neither the time nor staff to assemble the data (Mei, September 1998). Therefore, student performance on the last administration of the DRP and CAT-Math in 8th grade are our only proxies for student performance before high school.

We were also inhibited by unreliable data. We tried to but could not analyze time spent in high school. The BOE furnished a date of first admission to and date of departure from high school, which

seemed to allow us to calculate the number of months a student had spent in high school. However, because the process of registering for a BOE high school is not standardized, any calculation we made using the variables was uncertain and, therefore, unusable. In addition, we planned to analyze BOE high school students' performance on the Regents Competency Tests (RCTs). However, we only received students' final passing scores. We did not receive data on students' previous failures on the tests. Because nearly every student passes the tests, there is little variance in pass rates. We were left with almost nothing to analyze. Indeed, the lack of variance tells us that the last RCT score is not useful for gauging graduates' skill sets. We encountered a similar problem trying to analyze student performance on CUNY's Writing Assessment Test (WAT). In its report to the Task Force entitled *CUNY's Testing Program: Characteristics, Results, and Implications*, RAND concluded that the WAT has unacceptably low score reliability.

We had originally intended to analyze placement and participation in CUNY ESL classes. However, because the WAT is CUNY's primary tool for ascertaining students' need for instruction in English as a second language, we eliminated ESL classes from our discussion. As *Open Admissions and Remedial Education at the City University of New York* explains, we do not know, with confidence, that CUNY can distinguish between students who are literate in their native languages and those who are not.

Means analysis. Table 5 illustrates our means analysis. We sorted students and data by *demographic characteristics*, including race, immigrant status and LEP status, and *academic characteristics*, including remedial status in 8th grade, type of elementary school (NYC public, NYC private, outside New York City and other), type of high school (one that produces National Merit honorees, SURR school, vocational and other) and type of high school diploma (Regents or local). This taxonomy generates skills profiles of successful and unsuccessful (read remedial) CUNY and non-CUNY students across the K-16 continuum and enables us to compare their progress and results.

We note that one reason we chose to sort students by demographic characteristics is that CUNY analyzes its students this way as well. In its *CUNY Student Data Book – Fall 1997, Volumes I and II* (July 1998), CUNY sorts its students in terms of the percentage who are racial minorities, recent US immigrants and learners who are most comfortable or functional in languages other than English. Examining our cohort in terms of demographics generated some insight into how the BOE serves the needs of CUNY students before they get to college.

Table 5. Taxonomy of Characteristics for Means Analysis

K-16 CON- TINUUM	DEMOGRAPHIC			ACADEMIC			
	Race	Immigrant Status	LEP Status	Remedial in Elementary Grades	Type of Elementary School	Type of High School	Type of High School Diploma
Elementary School							
Secondary School							
College Entry							
College Performance							

Regression analysis. Table 6 maps out our linear and logistical regression analysis. Working across the grid from left to right, and using the indicators as independent variables and then as outcome variables, we analyzed the relationships between the categories. This process enabled us to map typical patterns and defined the predictive ability of these relationships. We tested our regression equations for statistical significance.

Table 6. Analytical Categories Used in Regression Analysis

8 th GRADE	HIGH SCHOOL	COLLEGE ENTRY	COLLEGE PERFORMANCE
Degrees of Reading Power (DRP) score California Achievement Test in mathematics (CAT-Math) score	Regents English score Regents math score Highest level math course English College Preparatory Initiative (CPI) units Academic GPA	Reading Assessment Test (RAT) score Mathematics Assessment Test (MAT) score Writing Assessment Test (WAT) score SAT verbal score SAT math score SAT combined score	Equated Credits: • Attempted • Failed • Accumulated • Attempted/accumulated College-level credits: • Attempted • Failed • Accumulated
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The research protocol is detailed in Appendix B, “Statistical Model,” and our research variables are detailed in Appendix C, “Definitions, Scale Ranges and Benchmarks of Sub-Groups and Variables.”