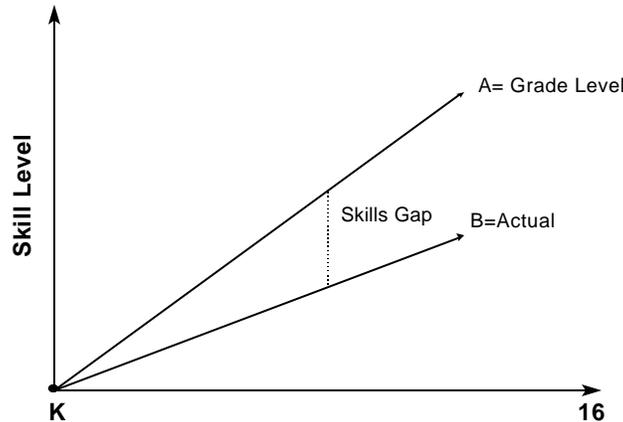


## V. LIMITATIONS OF THE RESEARCH

Despite what we believe is a careful research design, our study falls somewhat short of the full institution-spanning analysis we hoped it would be. We envisioned plotting a graph, like the figure below, with the x-axis representing each grade level, K-16, and the y-axis representing student skill level. We envisioned two vectors: Vector A would represent performance at grade level (*i.e.*, “expected” or “non-remedial” performance), and Vector B would represent actual (*i.e.*, remedial) performance.



We had hoped that such an analysis would enable us to pinpoint when skills gaps arise and how they change over time. Our plans were foiled by the poor quality and quantity of data.

**Poor data quality.** The BOE and CUNY do not coordinate student assessment, so the data they collect is neither entirely compatible nor comparable. Even though they serve largely the same population, the two institutions analyze skills deficiencies among students in very different ways. First, they define remediation differently. The BOE defines weaknesses in students’ basic skills in terms of performance below grade level.<sup>1</sup> CUNY does not use this construct and, in fact, does not apply clear standards for remediation at all.<sup>2</sup>

Second, the BOE and CUNY do not use a common set of measurement tools or criteria. Clearly, no one test is developmentally appropriate for, say, a 4<sup>th</sup> grader and a college freshman. However, given that the BOE and CUNY are so tightly linked, they could reasonably be expected to

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<sup>1</sup> Robert Tobias, Executive Director, Division of Assessment and Accountability, BOE, said that the BOE “uses the 50<sup>th</sup> percentile operationally as grade level” on standardized tests (February 9 and 19, 1999).

<sup>2</sup> Renfro and Armour-Garb, in *Open Admissions and Remedial Education at the City University of New York*, conclude that CUNY takes a haphazard approach on many issues, including setting academic standards. They say that CUNY allows “each college...to create its own remedial placement guidelines, sequences, curricula and exit criteria, as well as its own academic standards and prerequisites for participation of remedial students in college-level courses.”

share a gateway exam, as high schools and colleges in Florida and Texas do.<sup>3</sup> The SAT, a national standardized measure of college-preparedness, and CUNY's own FSATs, assuming they are reliable and valid, would be the obvious choices.<sup>4</sup> However, neither institution requires the SAT, and CUNY administers the FSATs only to matriculants and to students through the College Now program.<sup>5</sup>

Third, the BOE and CUNY lack congruent curricula. During the period covered by our study, neither institution had clear curriculum standards. Since then, the BOE adopted system-wide criteria, but CUNY still does not have system-wide curriculum standards. (As a result, we do not know if the new BOE high school curriculum is adequate preparation for college-level work at CUNY.)

As a consequence of these inconsistent definitions, assessment instruments and curricula, we are forced to break the K-16 continuum down into its logical parts and then to interpolate rather than plot the continuum of performance. In other words, instead of calculating Vectors A and B and the skills gap depicted on the preceding page, we piece together an analysis. As Table 6 indicates, we discuss remedial performance in terms of several unrelated benchmarks and over four separate time periods. Scores on the DRP and CAT-Math exams are our only data on student performance K-8 (Column 1). Even though the DRP and CAT-Math are not compatible with the BOE's measures of high school performance, we use them to explain students' scores on the Regents English and math exams, highest level of math achievement, number of CPI units in English and academic GPA (Column 2). Next, we use the measures of high school performance to predict students' scores on college entrance exams, the SAT (verbal and math sections) and the CUNY FSATs (Column 3). Finally, we use scores on the college entrance exams to explain student performance during freshman year at CUNY (Column 4). Taken together, our analyses approximate the K-16 continuum.

**Poor data quantity.** Because we were missing data for many students, we could not apply statistical significance tests to our means analysis. We have complete college performance data for all BOE students who went to CUNY; it was the BOE data that was missing records. The BOE's lack of

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<sup>3</sup> For more information on CUNY's testing program, see Section V.B of *Open Admissions and Remedial Education at the City University of New York*.

<sup>4</sup> In *CUNY's Testing Program: Characteristics, Results, and Implications for Policy and Research*, RAND expressed concerns about CUNY's FSAT program. RAND said:

It may not be appropriate for CUNY to continue to use the FSATs to make high stakes decisions, such as whether a student is required to take a remedial course or be admitted to a particular college. The major reasons for this concern are (1) the security of the RAT and MAT have been breached and (2) the score reliability of the WAT is far below what is appropriate for making important decisions about individual students. It is just not adequate for the task it is being asked to perform, especially since it is the major determiner of whether a student is required to take a remedial course. (RAND)

<sup>5</sup> College Now is a collaborative program between CUNY and the BOE intended to prepare students for success in higher education (Marshall, April 24, 1998). Through the program, BOE high school juniors may have the opportunity to take CUNY's FSATs and begin college remediation prior to graduation from high school.

data is a striking manifestation of its failure to generate useful, accurate information on student performance.

Of the 22,389 students who attended a City public school in 8<sup>th</sup> grade, we have complete data for only 12,396 (55%). Of the 29,854 students who graduated from a BOE high school, we have complete high school data for only 22,553 (79%). Furthermore, the intersection between these two sets is narrow. If we were to limit the study to students for whom we have data across the entire K-16 continuum, we would have a cohort of only 2,455. Our data set clearly suffers from bias – bias that we cannot estimate. As conscientious researchers, we cannot put limited data through rigorous analysis.

Given the poor quality and quantity of the data, the analysis herein is the best we could do. We cannot state conclusions with absolute certainty and can only report trends underlying the data. Nevertheless, despite the compromised state of the data, the trends are so strong that they draw a compelling picture.

We note that if we cannot perform institution-spanning analysis that meets the highest statistical standards, neither can the BOE or CUNY. These institutions lack the insight essential to rational policy making and resource allocation across the K-16 continuum –the kind of insight that the SED is beginning to demand.

We believe that this report serves as example of the type of analysis of student performance that should be produced at every level of New York City's public education system. The report lays out specifications for analyzing and reporting information that would allow strategic remediation and rational policy making along the K-16 continuum. Now, the burden is on the BOE and CUNY to take the next steps.