

Charter School Enrollment and Retention Targets Technical Report
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New York State Education Department Charter School Office and
the SUNY Charter Schools Institute

This report describes the current proposed methodology behind the calculation of charter school enrollment and retention targets for free- and reduced-price lunch eligible students, limited English proficient students, and students with disabilities as required by New York Education Law Section 2851(4)(e).¹ According to the stipulations of this law, enrollment and retention targets are calculated for students in all districts at the level of the school district, and in the case of New York City, the Community School District (CSD). The specific rules applied to setting the targets are discussed in detail below. This report also discusses a proposed way to apply the targets to charter schools.

Calculating Enrollment Targets

Enrollment targets are based on student demographic and school enrollment information from New York State Education Department student-level data files. Students who enrolled in a traditional district or charter school in the 2010-11 school year were included in the target setting sample. Students explicitly omitted from the target sample include those enrolled full-time in: a) Boards of Cooperative Educational Services (BOCES) schools, b) private schools, including those for students with disabilities or other special education needs, c) District 75 in New York City, and d) PS 42 and PS 84 in Buffalo Public Schools.

Because the timing of student classification differs across schools and districts, and to ensure that schools are not “penalized” for declassifying students over time, students were identified as free- or reduced-price lunch students, limited English proficient students, or students with disabilities if they were ever classified as such in the NYSED student-level data files in school years 2009-10, 2010-11, or 2011-12. This approach, by definition, gives credit to schools and districts that enrolled classified students at any point during the most recent three school years.

After restricting the target sample to the population of interest, students were assigned to their school and district of attendance on October 1, 2010. Sample targets were also tested using observed enrollments on April 1, 2011 and June 30, 2011, and on these dates in other school years. These analyses validated the use of October 1st enrollments for setting targets since alternative enrollment snapshots yielded comparable targets.

Enrollment targets were created through the following two-step process:

1. The total number of students from each target classification group in each potential grade span was aggregated at the district level.

¹ The target methodology was established by the New York State Education Department Charter School Office, in collaboration with the State University of New York Charter Schools Institute.

2. The number of classified students (obtained in step 1 above) was then divided by the total number of students enrolled in the district and grade span, yielding a unique proportion of classified students for each district and grade span configuration.

Calculating Retention Targets

The process for establishing retention targets involved starting with the same set of student-level data files as for setting enrollment targets. Calculating these targets also employed the same set of initial sample restrictions, i.e. restricting the target sample to include only students who enrolled in traditional district or charter schools, and students were also identified as free- or reduced-price lunch students, limited English proficient students, or students with disabilities if they were ever classified as such in the NYSED student-level data files in school years 2009-10, 2010-11, or 2011-12.

After restricting the target sample to the population of interest, retention targets were created through the following four-step process:

1. The total number of students from each target classification group in each potential grade span that experienced a Type 2 discharge between October 1st of a given school year and September 30th of the subsequent school year was aggregated at the district level.²
2. The number of classified students with Type 2 discharges (obtained in step 1 above) was then divided by the total number of classified students enrolled in the district and grade span between October 1st and June 30th of the given school year, yielding a unique withdrawal rate for classified students for every district and grade span combination.
3. The withdrawal rate was then subtracted from 100%, corresponding to the total proportion of students initially enrolled, to obtain a unique retention rate for classified students for every district and grade span combination. Retention rates were separately calculated for each district from 2009-10 to 2010-11, and from 2010-11 to 2011-12.
4. A 2-year average retention rate for each district was calculated by averaging the rates from 2009-10 to 2010-11, and from 2010-11 to 2011-12. With the exception of Albany City School District, Hempstead Union Free School District, and Middletown City School District, this 2-year average retention rate was used in place of a single year rate because enough variation was observed in school-level rates across years to justify an averaging approach to achieve more precise retention targets. Retention targets for Albany City School District and Hempstead Union Free School District were based solely on retention from 2009-10 to 2010-11 because of data quality concerns in the most recent school year that resulted in systematically lower retention rates in the district from 2010-11 to 2011-12. Conversely, retention targets for Middletown City School District were based exclusively on

² Type 2 discharges constitute all discharges other than a) articulation up to a higher school level, b) graduation, and c) death.

retention from 2010-11 to 2011-12 because of data quality concerns in the earlier period that resulted in systematically lower retention rates in the district from 2009-10 to 2010-11.

Calculating Standard Errors and Lower Limits (“Effective Targets”)

Fluctuations in student populations and sampling frames are likely to yield natural variation in school-level enrollment and retention rates in any given year. A lower limit, or “effective target,” calculated for each target, accounts for this expected variation and thus reflects the lowest possible enrollment or retention rate a school must report to meet its target.

Effective targets are set as a one-sided 95% confidence interval around the target.³ A one-sided interval is used instead of a more traditional two-sided interval because the question of interest is whether schools meet or exceed the target, not whether schools fall within the upper or lower bound intervals of the target. Because enrollment and retention targets are proportions (i.e. targets assume values between 0 and 1), and because the total number of classified students at a school is sometimes quite small (fewer than 30 students, for example), the confidence intervals are calculated using the Wilson Score Interval (WSI) method. The WSI method is preferred to more common methods for calculating confidence intervals for proportions, such as the Wald method, for a number of reasons: a) the WSI does not make the assumption that the target data approximates the normal distribution (which it does not), b) the WSI provides more precision when targets are very close to 0% or 100%, and c) the WSI is valid even when school-level enrollment and retention rates are calculated from a very small number of students.

The formula for calculating the effective target using the WSI confidence interval for a proportion is:

$$ET = \frac{\left(T + \frac{1.645^2}{2n} - 1.645 * \sqrt{\frac{T(1-T)}{n} + \frac{1.645^2}{4n^2}}\right)}{1 + \frac{1.645^2}{n}}$$

where ET is the effective target, T is the unadjusted target, n is the total number of students (for enrollment targets n is the schools size, while for retention targets n represents the number of classified students enrolled), and 1.645 corresponds to the z-score for a standard normal probability distribution in which the likelihood of the target falling below the effective target is less than or equal to 5%.

³ The use of one-sided confidence intervals is widespread among states for establishing accountability targets. See, for example:

California - <http://www.cde.ca.gov/ta/ac/ay/documents/aypinfoguide11.pdf>;

Missouri - <http://dese.mo.gov/divimprove/sia/dar/documents/qs-si-understanding-your-ayp.pdf>; and

New Mexico - <http://ped.state.nm.us/ayp2011/AYP%20FAQ%202011.pdf>.