

The Research Alliance for  
New York City Schools

***Persisting Students: Exploring the Pathways  
and Outcomes of Students Who Don't  
Graduate in Four Years, But Remain Enrolled  
in NYC High Schools***

**Technical Appendices**

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## APPENDIX A: ADDITIONAL TABLES, SAMPLE INFORMATION, AND KEY DEFINITIONS

### Additional Tables

**Table A-1: School Mobility of On-Time Graduates, Dropouts, and Persisting Students Between 9th and 12th Grade (Students Who Started High School in Fall 2010)**

	Full Cohort	On-Time Graduates	Permanent Dropouts	Persisting Students
<b>Moved schools (%)</b>	12.2	7.3	12.5	30.5
<b>Attended an alternative school (%)</b>				
Transfer School	6.8	2.2	12.4	22.0
YABC	0.5	0.1	0.4	2.1
<b>Sample size</b>	66,811	48,860	5,183	12,768

**Source:** Research Alliance calculations based on data obtained from the NYC Department of Education.

**Note:** The “attended an alternative school” rows reflect the proportion of students who attended a transfer school or YABC at any point between October of their 9th grade year and June of their 12th grade year.

**Table A-2: School Mobility of Persisting Students in Years 5 and 6 (Students Who Started High School in Fall 2010)**

	All Persisting Students	Drastically Behind Persisting Students	Moderately Behind Persisting Students	Marginally Behind Persisting Students
<b>Moved schools (%)</b>	42.8	43.5	43.8	40.1
<b>Attended an alternative school (%)</b>				
Transfer School	28.8	30.5	37.1	12.7
YABC	22.6	7.6	27.4	31.6
<b>Sample size</b>	12,768	3,803	5,656	3,309

**Source:** Research Alliance calculations based on data obtained from the NYC Department of Education.

**Note:** Here, the “attended an alternative school” rows reflect the proportion of students who attended a transfer school or YABC at any point between October of their fifth year and June of their sixth year of high school.

## Sample and Key Definitions

Our quantitative analytic sample consists of 66,811 students who were first-time 9<sup>th</sup> graders in the fall of 2010. This population of students does not include those who enrolled in NYC public high schools after their 9<sup>th</sup> grade year or students who were repeating 9<sup>th</sup> graders in the fall of 2010. Both excluded groups may be different in terms of their demographic and academic characteristics from students in our sample. That being said, limiting our analytic sample in this way enables us to follow a single, consistent group of students who entered high school at the same time. Furthermore, in keeping with the NYCDOE's approach, we removed students who were marked as having left the district by the end of their fourth year of high school. For this reason, the middle column in Figure 1 only includes students who graduated, dropped out, or persisted whereas the column on the right includes students who have left the district (in their fifth or sixth year of high school).

### Identifying Persisting Students

For our analyses, we partitioned this cohort of 66,811 students into three groups based on their graduation outcomes and enrollment patterns between June of their fourth year of high school and June of their sixth year of high school.<sup>1</sup> We divided them into three groups:

1. Four-year graduates: students who have earned a Regents or local diploma by the start of what would have been their fifth year of high school.
2. Permanent dropouts: students who have left school for *all* semesters during what should be their fifth and sixth years of high school; they do not have a high school credential, nor are they formally discharged to another school district.
3. Persisting students: students who have not graduated by the start of their fifth year of high school, but who remain enrolled for at least one semester in their fifth or sixth years.

### Identifying Different Types of Persisting Students

To identify different types of persisting students, we looked at the combination of credits earned and Regents exams passed at the beginning of students' fifth year of high school. Please consult Table A-3 below for more information about the distribution of credits and Regents earned. Each cell in this table identifies the proportion of persisting students who had earned that combination of credits and Regents as of October of their fifth year.

**Table A-3: Proportional Distribution of Credits Earned and Regents Exams Passed, Among Persisting Students (Students Who Started High School in Fall 2010)**

		Regents Exams						Percent of All Persisting Students
		0	1	2	3	4	5 or more	
<b>Drastically Behind Persisting Students</b>	<b>Credits</b>							
	<b>0-22.9</b>	16.05	6.06	3.43	1.74	1.32	1.18	29.79
	<b>23-32.9</b>	4.01	4.14	3.76	3.31	3.01	3.47	21.69
<b>Moderately Behind Persisting Students</b>	<b>33-41.9</b>	2.41	3.16	2.67	3.25	3.46	7.64	22.60
	<b>42+</b>	2.05	2.71	2.94	3.97	5.87	8.36	25.92
<b>Percent of All Persisting Students</b>		24.5	16.1	12.8	12.3	13.7	20.7	100.0

**Source:** Research Alliance calculations based on data obtained from the NYC Department of Education.

**Note:** These data capture persisting students' credits and Regents distribution at the beginning of their fifth year of high school.

We divided persisting students into three categories—drastically behind, moderately behind, and marginally behind—based on their credit accumulation (since credits earned were positively correlated with Regents exams passed).<sup>2</sup> Drastically behind students were those who had earned fewer than 23 credits, moderately behind students had earned 23 to 41.9 credits, and marginally behind students had earned 42 or more credits at the beginning of their fifth year of high school.

## **Other Key Variables**

### *Measuring student poverty*

The Research Alliance's data archive contains individual- and neighborhood-level measures of poverty. For this research brief, we measured all poverty indicators in the 9<sup>th</sup> grade. Our individual-level poverty measure captures whether or not each student is eligible for free or reduced-price meals at school. Students are eligible for free- or reduced-price meals depending on the size of their household and monthly gross income.

To measure neighborhood poverty, we relied on Census-tract-level composites based on students' home addresses in October of their 9<sup>th</sup> grade year. Although we use a variable that captures the proportion of residents in the student's tract whose incomes are below 150 percent of the poverty line, our results are fairly consistent with other measures of neighborhood poverty (i.e., the proportion of residents in the student's tract whose incomes are below the poverty line, and the proportion of residents in the student's tract who receive public assistance or food stamps).

### *Capturing school environment*

In order to capture characteristics of students' schools (in the 9<sup>th</sup> grade year), we drew on data from student responses to the 2011 NYCDOE's School Survey, aggregated to school level.

We began by conducting a factor analysis on a limited set of variables from the 2011 School Survey that we expected—based on the themes emerging in our qualitative analyses—would help us understand whether or not there were differences in the schools attended by four-year graduates, permanent dropouts, and persisting students. Our results assume that there are no correlations between the factors.

Based on the results from our factor analysis, we took student-level means of three groups of variables that loaded onto the same factor (the loading for each variable in the factors we used was greater than or equal to 0.6). We then aggregated the student means for each factor to the school-level and merged this information with our primary analytic file. As such, each student in our analytic file has indicator variables that capture three constructs at their 9<sup>th</sup> grade school: whether or not students thought that their school had an orderly environment, whether or not their school was a safe place, and whether or not educators were accessible.

## APPENDIX B: SAMPLING AND ANALYSIS FOR QUALITATIVE STUDY

We selected two transfer schools and two YABCs in which to do our qualitative fieldwork. Thus, our qualitative sampling yields results that are not generalizable across all New York City high schools and students. The promising practices we identify may be unique to alternative settings, and the students that we interviewed—who had all transferred from their original 9<sup>th</sup>-grade school—might have more negative impressions of their original high schools than students who did not transfer. Despite these limitations, we believe there are valuable lessons to be learned about persisting students from the experiences of students and educators working in alternative settings. These schools were designed to support students who struggle to graduate, and one of the primary interventions in place for struggling students is to counsel them into these settings.

### Site Sampling and Recruitment

We began our site sampling process by identifying schools in our analytic sample that were successful in graduating students who had fallen behind academically during high school. We originally used the NYCDOE’s definition of “over-aged and under-credited” to define the sample of students who had fallen behind academically. We subsequently found that there is much overlap between OA/UC students and persisting students. We defined “successfully graduating” as earning a Regents diploma by the sixth year of high school.

Using our administrative data, we generated a list of high schools ranked in order by the percentage of struggling students who graduated with a Regents diploma.<sup>3</sup> We considered schools that were the most “successful” in graduating these students as those that had both the largest number of struggling students and the highest Regents graduation rates for these students.<sup>4</sup> To pick schools for our recruitment list we:

- Sorted the data first by the OA/UC student count at the beginning of each year and then by the graduation rate for OC/UC students that the year, and
- Selected schools with the top 30 highest numbers of OA/UC students, that also had an overall graduation rate that was above the mean for that year. From that list we eliminated five schools that were outliers in terms

of student demographic characteristics. We ended up with a list of 25 schools for recruitment.

We sent emails to each of the 25 schools asking whether they would participate in our study. We also followed up with phone calls to each school. Our recruitment efforts resulted in the four alternative schools where we conducted our fieldwork—two transfer schools and two YABCs.

### **Participant Sampling**

After recruiting our four school sites, we recruited educators in each school who work closely with students that struggle to graduate and who could speak to the supports that their school offered these students. We ended up interviewing eight educators—two YABC principals, one internship coordinator, two CBO program directors, and three guidance counselors.<sup>5</sup>

We recruited students from our four school sites who had fallen behind academically but were now close to graduation and could speak both about challenges that impeded their progress through high school, and how they believe the school(s) they attended helped get them back on track. We interviewed 20 students, and all but three were in their fifth or sixth year of high school.<sup>6</sup>

### **Educator and Student Interviews**

We conducted one-on-one interviews with student and educator participants, which lasted around 40 minutes each, on average. We used a semi-structured approach in our interviews—while we followed a standard interview protocol with questions, we also allowed some flexibility to capture any additional insights from participants that we did not anticipate. We asked educators to discuss the promising ways that they supported students toward graduation and beyond—touching on students' academic, socio-emotional, and workforce development needs. We asked students about their journeys through high school, including where they began to fall off track, how they moved into an alternative school, how their school(s) supported them in getting back on track, and their plans and aspirations for the future.

### **Coding and Generating Thematic Findings**

The analysis consisted of generating hypothesis-forming thematic summaries of the interviews, as well as more penetrating, coded analyses of interview transcripts. All

interviews were audio-recorded, transcribed verbatim, and then coded using Atlas.ti software. Immediately after conducting interviews, field researchers wrote thematic summaries of interviews in reflection memos. We used these memos along with our research questions to construct an initial list of topical category codes.

We had several researchers code the same transcript to test this initial coding schema, and to develop a reliable coding system. After this first round of coding, we examined the existing coding system as a group for variations, gaps, and redundancies and then refined our list and built a hierarchy of codes and sub codes. This helped ensure that our research team remained open to noticing conflicting data and developing new insights. We then generated a new coding list, and met to refine it one additional time. This iterative process of coding, re-coding, and sub-coding increased the validity of the analytical process. The lead qualitative researcher then coded all of the interview transcripts using this refined coding system.

Upon completion of the coding, we used Atlas' categorizing and sorting features, and developed a framework matrix, which summarized relevant interview data for each participant across all codes. This helped us to identify the critical patterns and themes across the transcripts. We fleshed out key themes and determined the prevalence of specific concepts and patterns across all of the participants' interview data. From further analyses of these themes, we developed a cohesive set of findings that connected the research questions to the patterns and evidence present in the data. We then examined how the qualitative findings either complimented or complicated our quantitative findings.

## Endnotes

- <sup>1</sup> Four- and five-year graduates are based on students who graduate with Regents or local diplomas in June and August of those years. In calculating six-year graduation rates, we only have data on June graduates. As such, our six-year estimates are likely an undercount of the actual six-year graduation rate.
- <sup>2</sup> We tried other combinations of credits and Regents to capture the different types persisting students. Regardless of specification, we found similar groups to those we have chosen to present here.
- <sup>3</sup> The denominator of the percentages was all students who were over-aged and under-credited (OA/UC) at the beginning of their fourth year of high school. The number of OA/UC students who earned a Regents diploma by their sixth year of high school was the numerator in our calculations. Overall, about half of the students who were OA/UC at the beginning of their fourth year of high school received a Regents diploma.
- <sup>4</sup> We looked at data in the 2013-2014, 2014-2015, and 2015-2016 school years (which would have been our 2010 cohort's fourth, fifth and sixth years of high school).
- <sup>5</sup> One of the guidance counselors worked at a transfer school, one worked as a day school guidance counselor and a YABC (at the same comprehensive high school) and the last was an at-risk day school guidance counselor who worked in a comprehensive high school that housed our other YABC site.
- <sup>6</sup> The three students that we interviewed who were in their fourth year of high school all had fewer than 33 credits at the end of winter semester, meaning that they were not likely to finish by the end of their fourth year, and would become persisting students.