Research Brief

Improving the Teacher Pipeline in the Bronx: Examining the Impact of New York City’s Teacher and School Leaders Program

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Introduction

For many years, schools in the Bronx have faced challenges related to teacher recruitment and retention, as well as student achievement. In 2017, to address these issues, the New York City Department of Education (NYC DOE) launched the Teacher and School Leaders Bronx Human Capital Initiative (TSL). TSL was designed to help build a “highly prepared, committed and diverse” teaching pipeline, retain effective teachers, and support strong recruitment and retention practices in 363 schools across the borough. These schools employed about 17,000 teachers and served over 230,000 students. Nearly all the schools (96 percent) were classified as high economic need, reflecting heavy concentrations of poverty in surrounding communities. The schools served large numbers of English Language Learners and students with special needs.

Upon the conclusion of TSL’s programming in the 2019-20 school year, the Research Alliance for New York City Schools undertook an evaluation to examine TSL’s impact on teacher and student outcomes. This brief summarizes our findings. For more information about the study, including additional details about our methods, please contact research.alliance@nyu.edu.

About the Teacher School Leaders Initiative

TSL included a variety of program components aimed at improving different aspects of the teacher pipeline in Bronx-based schools. As the initiative matured, it came to focus on the three core components described below.1

- **Teaching Academies** were designed to help prepare pre-service teachers for the demands of teaching in New York City public schools. The Academies were implemented in high-need and high-performing schools2, where cohorts of five or six pre-service teachers earning alternative certification completed a semester-long clinical experience with daily coaching, mentoring, and guidance provided by trained host teachers. Over the course of TSL’s first three years, Teaching Academy residency sites increased from 23 in the 2017-2018 school year to 50 in 2019-2020. Consequently, the percentage of all new teachers hired in the Bronx who were trained through the Teaching Academies more than doubled—from about 4 percent in 2017-2018 to about 11 percent in 2019-2020. In addition, Teaching Academy graduates were comparatively more diverse (a larger share of male, Black, Latinx, and non-White teachers) and more prepared to serve students with special needs (a larger share with special education certification) in relation to the general population of public school teachers in NYC and in the Bronx.

- **Pre-Budget Hiring** (also known as Bronx Early Hiring) aimed to support Bronx schools in hiring strong teaching candidates prior to the citywide opening of school budgets. Under the program, Bronx school leaders were able to hire from a pool of vetted and exclusively Bronx-specific candidates. These early hire candidates all expressed an interest and desire to teach in the Bronx. The percent of new teachers hired in the
Bronx that were pre-budget hires grew during TSL’s implementation, increasing, for example, from about 2 percent in 2017-2018 to about 4 percent in the following school year. Certain pre-budget hiring activities appeared to be particularly successful: Schools that engaged in at least one school tour, attended two hiring events, and generated hiring projections were almost three times more likely to have a Pre-Budget Hire than schools that did not participate in all of these activities.

- **Teacher Leadership** provided a way to identify and support effectively rated teachers who were tasked with modeling instructional practices and leading school-wide initiatives for instructional improvement. At least two Teacher Leaders were placed in each school. Teacher Leader roles included three formalized, United Federation of Teachers (UFT) contracted teacher career pathways (**Model Teacher, Peer Collaborative Teacher, and Master Teacher**) that provide compensation for teachers rated Effective and Highly Effective based on the NYC DOE’s Advance rating system. Teachers eligible for a Teacher Leader role completed a rigorous online application and interview by a UFT-NYC DOE committee. Principals could then select approved, qualified candidates into a teacher leadership role at their school on an annual basis. Teacher Leaders were asked to serve as change agents for their school communities by partnering with their colleagues to build innovative learning initiatives aligned with school improvement goals. During TSL’s first three years of operation, teacher leadership in the Bronx expanded at an unprecedented rate, from 383 Teacher Leaders in 2017-2018 to 714 in 2019-2020.

**About the Study**

The Research Alliance’s study of TSL was designed to assess how the Teaching Academies, Pre-Budget Hiring, and Teacher Leadership programs influenced teaching quality, teacher retention, school climate, vacancy rates, and student outcomes. We also explored the extent to which TSL’s results differed across school contexts and subgroups of teachers.

To assess the impact of TSL, we compared the outcomes of participating teachers with those of similar teachers who did not participate in the program. In order to maximize the similarity of the two groups, the study used propensity score matching to create a comparison group of nonparticipating teachers and schools that were as similar as possible to the TSL participants based on observable teacher and school characteristics.

**Major Findings**

Our study highlighted both notable benefits and limitations of TSL:

**TSL improved teacher retention.**

As shown in Figure 1 below, we found that teachers who participated in any of the major TSL programs—Teaching Academies, Teacher Leadership, or Pre-Budget Hiring—were more likely to stay at their school than similar teachers who did not participate in TSL. In relation to their respective comparison groups, after one year, Teaching Academy graduates’ retention rate was 27 percentage points higher, and Pre-Budget Hire teachers’ retention rate was 7 percentage points higher. Although not shown in the figure, these effects dissipated somewhat in the second year of the study, as the programs expanded. This raises useful questions, particularly in the case of the Teaching Academies, about
what aspects of the program teachers found most useful, and how these benefits might be sustained into a second year.

Compared to nonparticipants, teachers in the Teacher Leadership program had significantly higher retention rates through two years following their participation in the program. As shown in Figure 1, at the two-year mark, 94 percent of Teacher Leaders were still in the same school compared to 82 percent of nonparticipants.

In addition to stronger retention for individual teachers who participated in TSL, we also found school-wide effects for the Teacher Leadership program. Annual retention rates were 2 percentage points higher at schools with Teacher Leaders than at similar schools without the program. This difference was statistically significant and large enough to have practical implications for schools, especially over time.

The Teacher Leadership program enhanced Teacher Leaders’ effectiveness.

We found that teachers who served as Teacher Leaders had higher Advance scores than similar teachers who did not become Teacher Leaders. These Advance scores are based on multiple measures, including Measures of Teacher Practice (MOTP), which are derived from classroom observation ratings using the Danielson Framework, teacher-submitted artifacts, and other evidence, and Measures of Student Learning (MOSL), which are calculated from student performance on state and local assessments. Teacher Leaders ended up with significantly higher average MOTP scores than comparison teachers (3.3 versus 3.1, respectively). The largest difference was in the “growing and developing professionally” component, but there were substantial differences across all of the domains, as shown in Figure 2 on the next page.
Subgroup analyses revealed that participating in Teacher Leadership had a stronger impact on some teachers than others. For example, the impact on teaching effectiveness was statistically significantly larger for male teacher leaders compared to female teacher leaders and for Latinx teachers compared to non-Latinx teachers.

Unlike the Teacher Leadership program, the Teaching Academy program did not appear to have a systematic impact, positive or negative, on teacher effectiveness, as measured by teachers’ MOTP and MOSL scores.

We found no evidence that TSL impacts school-level student outcomes.

We did not find a significant relationship between schools’ participation in TSL and their students’ outcomes. Our outcome measures included students’ responses on the annual NYC School Survey as well as attendance and achievement scores (e.g., ELA and Math scaled scores from grades 3-8 state assessments, Regents exams, GPA). This may be in part because we were not able to link students to individual teachers who participated in the program, and looked instead at school-wide differences. We do not know if individual TSL teachers had a measureable impact on the outcomes of students in their classes.
Summary

The Teacher Leadership program was the most intensive component of the TSL initiative and the most impactful—improving both teacher effectiveness and retention. The program included a salary increase, more leadership development opportunities and responsibilities, and a lighter teaching load for Teacher Leaders. These investments appear to have produce substantial benefits: Teachers who participated in the program scored higher on teacher effectiveness measures and had substantially lower turnover than peers who did not participate. These findings suggest that Teacher Leadership adds real value in helping experienced teachers continue to hone their craft and remain at their school—providing strong motivation for sustaining and expanding the program.

The Teaching Academies initiative did not produce gains in teacher quality, but did improve teacher retention. As the NYC DOE continues to expand the Teaching Academy initiative and other similar teacher preparation programs, it should consider doing so in a targeted manner, with a focus on schools and districts that have historically high turnover rates and thus the most room for improvement in retaining teachers. Additional research on the implementation of the Teaching Academies and participants’ subsequent experiences in classrooms might provide insight that can help strengthen the program’s impact on teachers’ effectiveness.

Pre-Budget Hiring also had a meaningful impact on teacher retention in high-needs Bronx schools. District leaders should consider promoting Pre-Budget Hiring practices, particularly in schools with high rates of teacher turnover, and reframing Pre-Budget Hiring as a strategy capable of not only reducing vacancies but improving retention as well. Our findings also suggest that it may be useful to refine the theory of action for Pre-Budget Hiring activities. Some school-based activities were more likely to yield a Pre-Budget Hire than others: Schools that engaged in a school tour, attended two hiring events, and generated hiring projections were more likely to have a Pre-Budget Hire than schools that did not participate in all of these activities. A theory of action could help connect the dots between specific Pre-Budget Hiring practices and desired short- and long-term outcomes.

Taken together, our findings suggest promising results from TSL’s first three years, especially in terms of reducing teacher turnover. High-needs schools often experience a churn of teachers, which requires them to continually hire, train, and socialize educators who are new to the school. This churning can prevent the development of relationships, routines, and culture necessary for schools to perform at a high level. TSL’s positive effect on teacher retention bodes well for similar future efforts.
Endnotes

1 Initially, the TSL initiative consisted of seven programmatic components: Teaching Academies, Pre-Budget Hiring, the Bronx Talent Initiative, Formal Teacher Leadership, New Teacher Support, the Principal Talent Academy, and Teacher Team Leaders (TTLs). As TSL evolved, the initiative emphasized the three core elements that are the focus on this brief.

2 High-need schools are defined as schools where at least 45% of students come from low-income families, there is a high population of students with disabilities and English language learners, and the school in located in a “hard-to-staff” district. High-performing schools are defined as those meeting or exceeding student achievement targets, with rigorous instruction as evidenced by School Survey data, and demonstrating growth in School Quality Review data. See https://www.teachercareerpathways.com/partnerships/nyc-teaching-academies for more information.

3 Because teachers and schools that participate in TSL were not randomly assigned to the program, they are likely to differ systematically from nonparticipating teachers and schools. To create a matched comparison group, we relied on propensity score matching (PSM) to approximate the likelihood that teachers or schools would have participated in TSL programs. For more information about the PSM design, see Li, M. (2013). “Using the propensity score method to estimate causal effects: A review and practical guide.” Organizational Research Methods, 16(2), 188-226. Also: Stuart, E. A. (2010). “Matching methods for causal inference: A review and a look forward.” Statistical Science, 25(1), 1-21.

4 We recognize that the two groups of teacher may differ on characteristics that were not measured or observable. To the extent that these differences also influenced outcomes like teaching quality or retention, the findings presented in this brief may over- or underestimate the true impact of TSL.

5 We also examined the relationship between Pre-Budget Hiring and vacancy rates at the beginning of the school year. We found that vacancy rates were similar for schools that did and did not participate in Pre-Budget Hiring. Having any vacancies at the start of the school year is harmful to schools, but, fortunately, most schools in our study did not have any vacancies in September.

6 See, for example:


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