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Final Report

Evaluation of Atlanta Public Schools' Turnaround Strategy

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EXECUTIVE SUMMARY

The Turnaround Strategy, 2016–2019

Beginning in the 2016–2017 school year, Atlanta Public Schools (APS) implemented a comprehensive set of supports known as the Turnaround Strategy to provide additional support to the district's lowest-performing schools and increase their students' achievement. The Turnaround Strategy included **targeted schools** that received various academic and nonacademic supports and **partnership schools** that were turned over to the operation of two external providers, Kindezi and Purpose Built Schools (PBS).

APS provided targeted schools with increasing degrees of autonomy in each of the three years of the Turnaround Strategy. In the first year, APS asked leaders at targeted schools to implement a fixed menu of supports. In response to feedback from school staff, the district slightly modified implementation of the Turnaround Strategy in the targeted schools in each subsequent year. In the second year, APS determined how each school would spend a portion of its Turnaround Strategy funds and school leaders selected from a menu of targeted supports for the remainder of the funds. In the third year, APS provided school leaders with autonomy over all of their Turnaround Strategy funds while still requiring them to align spending within the three buckets of math and reading specialist, extended learning, and wraparound supports. Meanwhile, Kindezi and PBS maintained full autonomy over the schools they operated in all three years.

Evaluation and reporting

APS engaged Mathematica to conduct a three-year evaluation of the implementation and impact of the Turnaround Strategy. Prior reports examined overall impacts and implementation in the targeted and partnership schools during the first two years of implementation (Hallgren et. al., 2017, 2019). These reports also assessed the specific impacts of services offered in the targeted schools: High Impact Tutoring, reading and math specialists, and Communities in Schools (CIS) case management services, a nonacademic support for at-risk students.

This report is the third and final report of the evaluation. It includes analyses of the overall impacts of the targeted supports and partnerships on student outcomes. It also discusses the specific impacts of the third year of CIS case management services and offers a descriptive analysis of student mobility in the targeted and partnership schools. For each of the analyses, we provide implementation information as context for the findings.

Data for this study included administrative data from APS, including student demographics, attendance, suspensions, and test scores. CIS provided APS with data on which students were on CIS site coordinators' caseloads. For the implementation analysis, we conducted site visits in spring 2019 to each targeted and partnership school, where we interviewed principals, teachers, and other school staff.

Key findings from this report

On average, targeted supports had little impact on student academic achievement, suspensions, chronic absence, and student mobility. After three years, the targeted supports yielded no statistically significant results on key student outcomes. Many targeted schools experienced both high staff turnover and student mobility, which may have contributed to the limited impacts on student outcomes. Despite these challenges, many schools created a cohesive culture and built strong relationships among staff and leaders, particularly in the third year.

The PBS partnership, which began at Thomasville Heights ES in the first year of the Strategy (2016-2017), reduced student mobility but had little impact on average academic achievement, suspensions, or chronic absence. PBS focused more time and resources on social-emotional learning and other behavioral supports. However, it took most of the second year of the partnership to get the school culture and nonacademic supports in place at some PBS schools. As a result, the nonacademic challenges may have hindered the schools' academic improvements.

The Kindezi partnership at Gideons Elementary School, which began in the second year of the Strategy (2017-2018), led to trade-offs in students' academic achievement across subjects. Substantial positive impacts in math were offset by substantial negative impacts in science and social studies. The partnership also had limited impacts on student suspensions, chronic absence, and mobility. Gideons Elementary added access to academic supports and made midyear instructional changes to address students' ongoing challenges with the English language arts and math curricula. Although school staff reported that newly implemented nonacademic and trauma-informed supports improved student behavior, they also stated that additional supports were needed to continue to make improvements.

High student mobility in targeted and partnership schools made it challenging to support the needs of the changing student population while maintaining a consistent learning environment for all students. About 33 percent of students in the targeted and partnership schools entered or withdrew from a school midyear. Most of these students moved in or out of the district, rather than between APS schools. In addition, each summer about 20 percent of students in targeted and partnership schools changed schools (excluding transitional grades 5, 8, and 12). Staff in targeted and partnership schools reported several challenges associated with students enrolling in or withdrawing from their schools midyear and over the summer.

CIS case management decreased the likelihood that students transferred schools midyear, but did not improve other student outcomes relative to other available supports. The Turnaround Strategy allowed schools to hire an array of needed academic and nonacademic staff such as social workers, reading specialists, or CIS site coordinators. A key benefit of hiring CIS site coordinators in targeted schools was that they identified families' needs and provided financial support and legal and job search assistance to families who faced housing and income instability. Despite reducing student mobility, however, they did not improve student attendance,

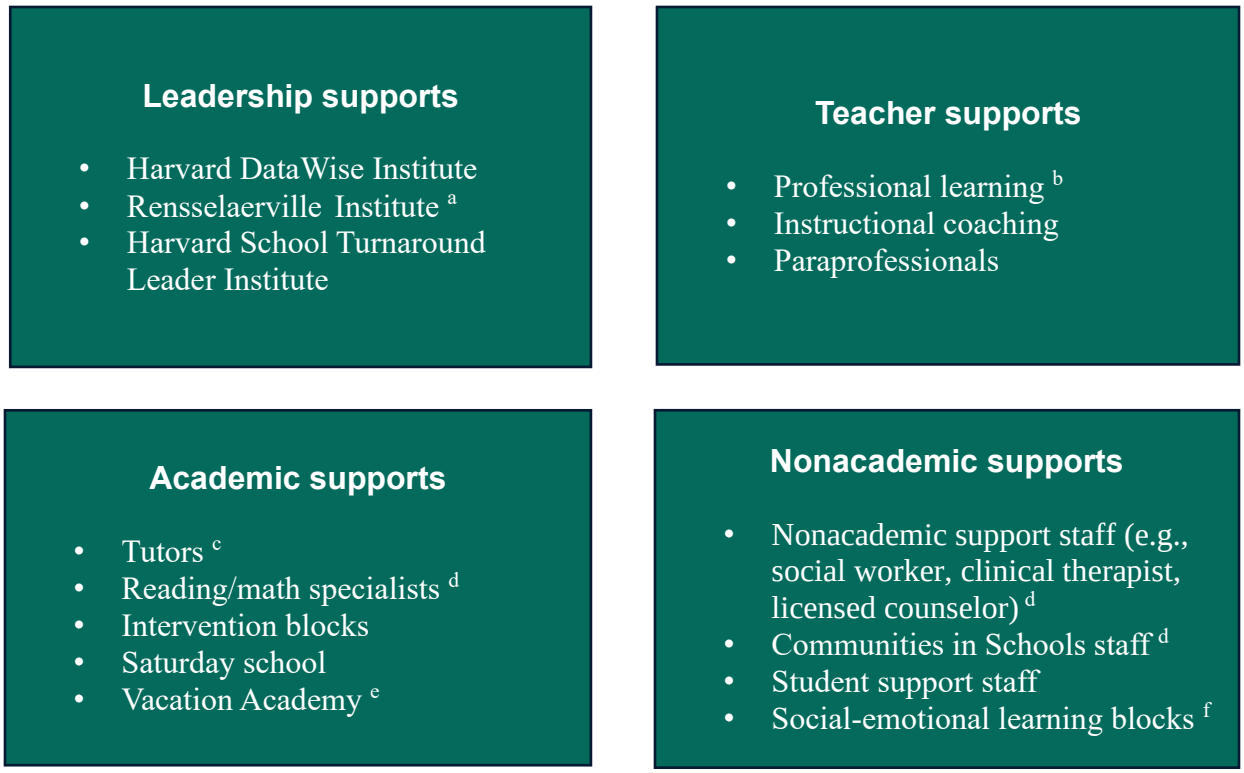
behavior, or academic achievement, even after the position was changed from part-time to full-time in the 2018–2019 school year.

I. INTRODUCTION

The Atlanta Public Schools (APS) Turnaround Strategy sought to transform the district's lowest-performing schools and increase student achievement. To promote the transformation of these schools, the Turnaround Strategy provided three levels of supports: foundational supports for all schools, more intensive supports for schools with greater needs, and additional targeted supports for schools that demonstrated the highest needs. These schools, called **targeted schools**, received resources to implement academic and nonacademic supports. In addition to schools that received foundational, intensive, and targeted supports, the Turnaround Strategy included schools whose daily operations are now overseen and managed by two partner organizations: Purpose Built Schools (PBS) and Kindezi. These schools are called **partnership schools**.

Starting in the 2016–2017 school year, APS provided targeted schools with a variety of leadership, instructional, academic, and nonacademic supports (Figure I.1). APS provided schools with different degrees of autonomy in each of the three years of the Strategy. In the first year, APS asked school leaders to implement a fixed menu of supports in their schools (i.e., reading and math specialists, tutoring support, and wrap-around supports). In response to feedback from school staff, the district slightly modified its implementation of the Turnaround Strategy in each subsequent year. In the second year, APS determined how each school would spend a portion of their Turnaround funds, and school leaders selected from a menu of targeted supports using funds that had previously been allocated for tutoring support. In the third year, APS provided school leaders with autonomy over all of their Turnaround funds while still requiring them to align spending across math and reading specialists, extended learning, and wraparound supports (Figure I.2).

Figure I.1. Supports for targeted schools as part of the Turnaround Strategy, 2016–2019



[a] APS required that new school leaders participate in the Rennselaerville Institute in 2016-2017. Their participation in this support was optional in 2018-2019.

[b] APS provided targeted professional learning in addition to the professional learning offered to all APS schools.

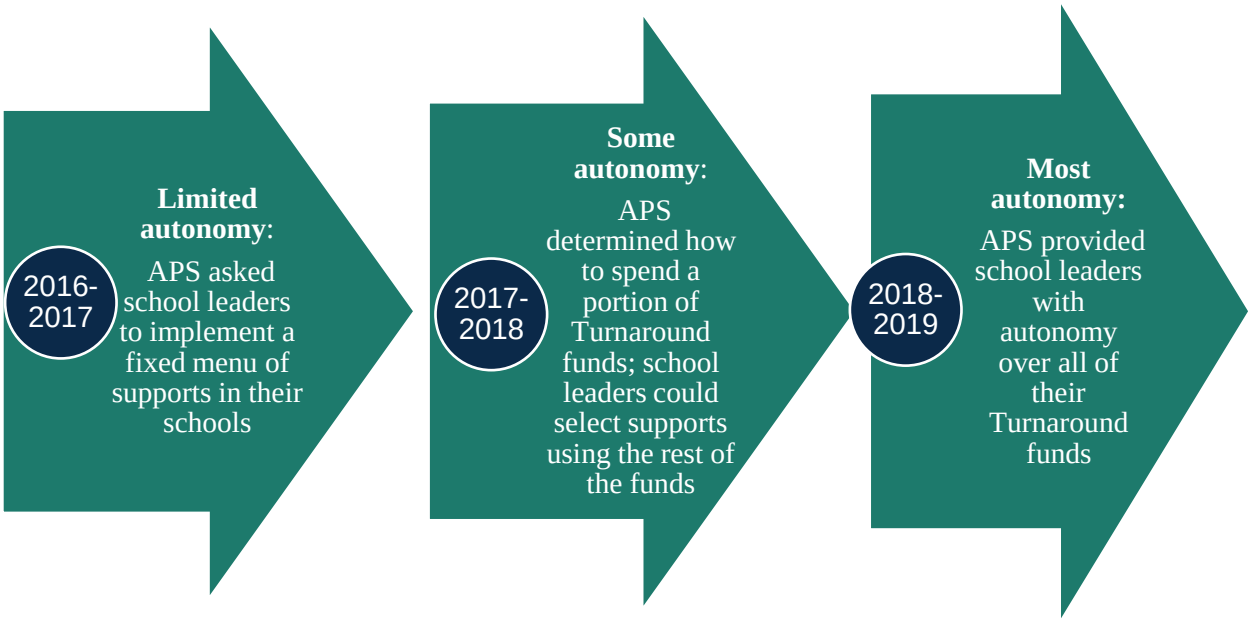
[c] APS required that targeted schools implement these supports for the 2016-2017 year.

[d] APS required that targeted schools implement these supports in all three years of the Strategy (2016-2017, 2017-18, and 2018-2019). School leaders were provided with flexibility on the types of nonacademic support staff they selected every year.

[e] APS offered this support to targeted schools only for the 2016-2017 year.

[f] Social-emotional learning blocks is an APS-wide initiative that all APS schools implemented.

Figure I.2. Principal autonomy with Turnaround Strategy funds in targeted schools, 2016–2019



APS contracted with Mathematica to better understand how schools implemented the Turnaround Strategy and assess its effects on students' academic and nonacademic outcomes. Mathematica's evaluation team submitted the first annual report to APS in October 2017. It included implementation findings for the first year of the Turnaround Strategy (2016–2017) and results from first-year impact analyses of two of the strategy's components: High Impact Tutoring and the PBS partnership with Thomasville Heights Elementary School. The second annual report to APS, submitted in February 2019, included implementation findings for the second year of the Turnaround Strategy (2017–2018). Impact analyses in the second report examined two interventions in targeted schools—reading and math specialists and Communities in Schools (CIS) case management services—as well as the overall impacts of targeted and partnership schools after the first and second years of Turnaround Strategy implementation.

This is the third and final report on the Turnaround Strategy. It includes analyses of the impacts of targeted and partnership schools on student outcomes. Chapter II describes the data sources and methodology used to estimate impacts. Chapter III presents the overall impacts of targeted supports after three years. Chapter IV discusses the specific impact of the second year of CIS case management services, a nonacademic support for at-risk students in targeted schools. Chapter V presents the impacts of the PBS and Kindezi partnerships in partnership schools. Chapter VI presents a descriptive analysis of student mobility in targeted and partnership schools. Chapter VII concludes the report with a discussion of key findings and implications from the evaluation.

II. DATA SOURCES AND METHODOLOGY

This chapter describes the data and methods used to evaluate the Turnaround Strategy in targeted and partnership schools, to assess student mobility in these schools, and to evaluate the impact of CIS case management.

A. Data sources

Administrative data. APS provided several types of administrative data for this evaluation, including data on student demographics, test scores, enrollment, attendance, and suspensions. Test score data came from two assessments: the district universal screener Renaissance Star exam, taken by students in all elementary grades in the fall, and the statewide Georgia Milestones exam, taken by students in grades 3–8 in the spring. We also received a record of every school in which a student enrolled, their enrollment dates, and the total number of days a student was absent. Students are assumed to be in attendance each day unless a staff member records an absence. Suspension data included the number of days a student was suspended (either in school or out of school) for each disorderly conduct event, as entered by school staff. Data spanned from 2011–2012 to 2018–2019.

CIS service data. CIS provided APS with a list of students who received case management services from CIS site coordinators during the Turnaround Strategy (2016–2017 to 2018–2019). The data included each activity that CIS site coordinators logged with a student, and a notation of whether it was a whole-school, small group, or individual activity. For measuring the impacts of CIS (see Chapter IV), we defined CIS case management students as those who had at least five small group or individual activities logged by a CIS site coordinator.

Implementation data. To describe implementation of the Turnaround Strategy, we conducted site visits in spring 2019 to 14 targeted schools, 1 school that received targeted supports for two years, the 4 PBS partnership schools, and the Kindezi partnership school. Site visits included semi-structured interviews and focus groups with principals, teachers, and other school staff, focusing on respondents' experiences with academic, nonacademic, instructional, and leadership supports. We also conducted phone interviews with district staff on related topics.

Additional information on the data sources is in Appendix A.

B. Methodology to evaluate overall targeted and partnership school effects

To evaluate the impacts of targeted school supports and the PBS and Kindezi school partnerships, we calculated the difference between (1) the actual outcomes observed in turnaround (or partnership) schools post-implementation and (2) the *predicted* outcomes for those schools in the same year(s) if the Turnaround Strategy had not been implemented. We examined impacts on seven outcomes: average student achievement on the Georgia Milestones English language arts (ELA), math, science, and social studies exams; and the percentages of

students who were suspended, chronically absent, or left their school in the middle of the school year.[1]

To predict what these outcomes would have been without the Turnaround Strategy, we used a method known as matrix completion. Using data on all APS schools from 2011–2012 to 2018–2019, we formed *predictions* for each outcome and each set of Turnaround schools (targeted, PBS, and Kindezi) by identifying weighted combinations of data across schools and years that best matched *actual* outcomes without the Turnaround Strategy. The data used to form these predictions included data from all non-Turnaround schools in all school years and data from the targeted or partnership schools in the years before the intervention began. The resulting weighted combinations of data represent our best predictions for the outcomes that the targeted or partnership schools would have had in the years after the Turnaround Strategy, had the strategy not been implemented.

Figure II.1 illustrates how we applied this methodology. The solid line shows the actual average ELA scores of all targeted schools over time, in standardized *z*-score units.[2] The dashed line represents these schools' predicted outcomes without targeted supports, with the shaded area indicating the 90 percent confidence interval of those values. For each year of targeted supports that a school received, we calculated the difference between that school's actual average ELA *z*-score and its predicted ELA *z*-score. This yielded the impact of targeted supports in a given school and year. For each year, we then averaged the impacts across all targeted schools to obtain an average yearly impact. Finally, we averaged these yearly impacts across all years to obtain the average impact of targeted supports on the ELA achievement outcome. Averaging the yearly impacts takes into account that some schools could have inconsistent results across years and thus provides an overarching picture of the effect that turnaround efforts had on student outcomes over the implementation period. Additional technical details are in Appendix B, including a discussion of how we determined the level of uncertainty of the results (that is, their statistical significance).

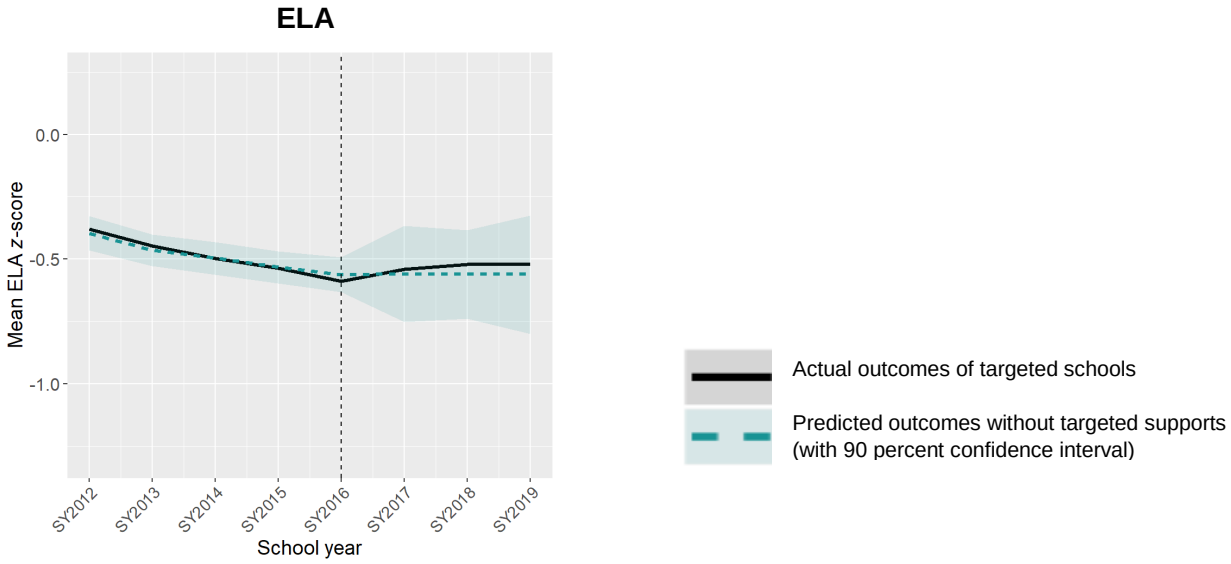
The matrix completion method, and variations of it, have been recently applied to measure the impacts of interventions when multiple years of historical data are available (for example, Athey et al. 2018; Arkhangelsky et al. 2019). Matrix completion has several advantages over related approaches such as difference-in-differences. For example, matrix completion often does a better job of matching the outcomes of the intervention group before the intervention starts (a close match between real and predicted outcomes in the years before the Turnaround Strategy is illustrated in Figure II.1). This advantage is particularly helpful in evaluating interventions like the Turnaround Strategy, where all of the lowest performing schools were selected for

[1] Students in grades 3 through 8 take the Georgia Milestones exams in ELA and math, but only students in grades 5 and 8 take the science and social studies exams. Data on suspensions, absences, and enrollments were available for all grades.

[2] Because scales on state tests changed over time, we converted all scaled scores to standardized *z*-scores that show each student's position in the districtwide distribution. Zero represents the districtwide mean score; positive scores are above the district mean, and negative scores are below it.

intervention and as a result had different historical outcomes than other schools in the district. Thus, relative to comparing Turnaround schools to a fixed set of comparison schools, matrix completion gives us greater confidence in the predictions of what subsequent outcomes would have looked like in the absence of the intervention.

Figure II.1. Illustration of matrix completion methodology applied to targeted schools



Source: APS administrative data.

Note: This figure displays changes in outcome trends for the ELA Georgia Milestones exam in *z*-scores (standard deviations). The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools; ELA = English language arts.

C. Methodology to evaluate impacts of CIS case management

To measure the effect of CIS case management, we identified a comparison group of students in targeted schools who did not receive case management themselves but were similar to those who did. To identify similar comparison students, we used an approach known as propensity-score matching. Following this method, we matched each student who received CIS case management in 2018–2019 with other students in targeted schools in the same grade who had similar prior test scores, attendance, suspensions, school mobility, and demographic characteristics. Having all of the students in the analyses attending targeted schools ensured that matched comparison students had access to the same other services as those who received CIS case management services, and that they shared a similar school environment.

We successfully matched 425 of 602 students who worked with a CIS site coordinator with 1,590 comparison students.[3] We confirmed that the matched comparison group had no significant differences with the group that received CIS case management in any of the baseline measures available (see Table C.3 in Appendix C). Propensity-score matching is a well-established approach that has been found to approximate the results of "gold standard" experimental methods (Tuttle et al. 2013; Gill et al. 2015). However, as with any nonexperimental evaluation, it is possible that differences not captured in the available administrative data could exist.

CIS case management is primarily a nonacademic intervention, so we analyzed its impact on the likelihoods of students being suspended, chronically absent, and leaving their school in the middle of the school year. We also examined the impact of CIS case management on student achievement on the Georgia Milestones exams in math and ELA, as nonacademic supports may also improve student learning. After matching, we measured impacts on these key outcomes using regression analyses that controlled for small remaining differences in baseline student characteristics. Additional details about the analytical methods and results of these analyses appear in Appendix C.

[3] Across all grades, we could not match 150 CIS case management students because they did not have all the baseline data required to conduct the matches (such as Renaissance Star scores from the 2017–2018 school year). In addition, we did not match a small number of the remaining students because no comparison students resembled them sufficiently. See Appendix C for more information.

III. OVERALL FINDINGS FROM TARGETED SCHOOLS

This chapter describes key findings about the impact of the targeted supports as well as the implementation of the supports in the 2018–2019 school year, the third and final year of the Turnaround Strategy. The findings focus on 14 schools that implemented targeted supports for all three years of the Turnaround Strategy, and one that implemented targeted supports for the first two years.

Key Findings: Targeted School Supports

- On average, targeted supports had little impact on student academic achievement or suspensions, chronic absence, and student mobility.
- The majority of schools focused on literacy instruction and supports as the academic priority for the 2018–2019 school year.
- In the second and third years of the Turnaround Strategy, school leaders desired more guidance from the district to make decisions for their schools, and some district and school staff did not perceive the strategy to have a clear three-year plan.
- During the implementation study, many schools reported experiencing high staff turnover and student mobility. Students had difficulties adjusting to changes and staff needed to do extra work to support these changes.
- Despite the challenges, many schools created a cohesive, positive school culture with strong relationships and trust, particularly in the third year.
- The Turnaround Strategy allowed schools to hire academic and nonacademic staff to support students. Since they will continue to serve students facing academic and nonacademic challenges, staff were concerned with how they would progress if they no longer received strategy supports.

A. Impact of targeted school supports

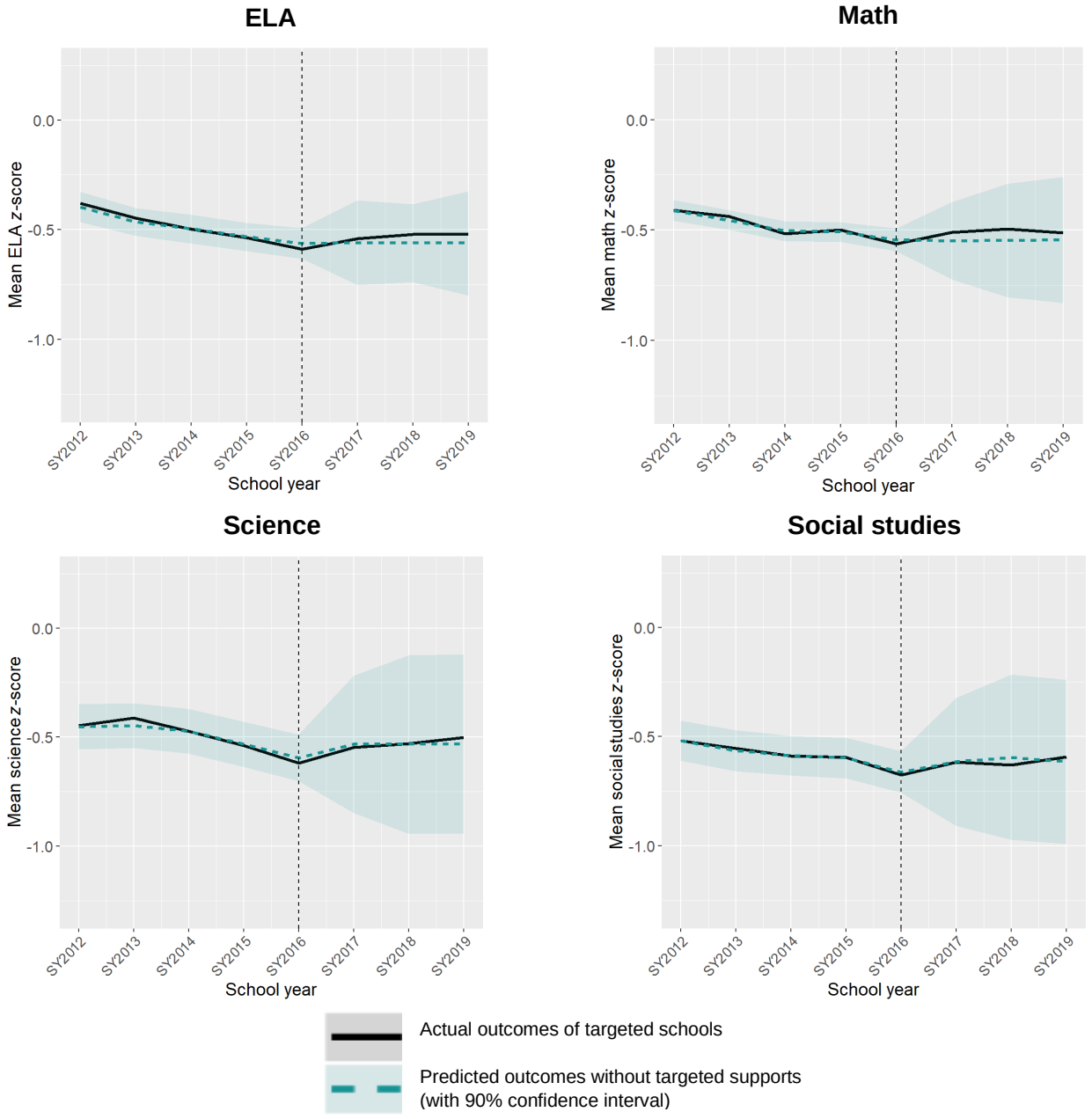
As described in Chapter II, we assessed the impact of targeted school supports by comparing the actual outcomes in targeted schools to their predicted outcomes had the Turnaround Strategy not been implemented. Figure III.1 shows the actual and predicted average test scores of targeted schools (along with a 90 percent confidence interval for the predicted values). In interpreting these results, it is important to keep in mind that the predicted outcomes were generated using data from other schools in APS, excluding schools that received "intensive" supports as part of the Turnaround Strategy. Thus, we are measuring the impact of schools receiving targeted supports relative to those schools receiving limited or no special supports.

On average, targeted supports had little impact on student academic achievement, suspensions, chronic absence, and student mobility.

If the targeted supports were effective, we would expect actual test scores to be higher than predicted after 2016, when the Turnaround Strategy began. However, differences between actual and predicted values are limited, indicating that it is unlikely the targeted supports substantially affected academic achievement. For example, the average impacts on ELA and math scores of

.04 standard deviations would be roughly equivalent to students experiencing just two to three weeks of additional learning.[4] These estimates were too small to be either statistically significant or practically meaningful in a turnaround context (see Table B.1).

Figure III.1. Targeted supports had little impact on average academic achievement



[4] This conversion is based on an analysis of annual learning growth on nationally normed exams (Bloom et al. 2008). To convert impacts into months of learning, we divided the impact estimate by the average of the typical annual growth for students in grades 3–5 and assumed a nine-month school year. The accuracy of this conversion depends on the extent to which the learning growth on the Milestones exam is similar to the exams analyzed in Bloom et al. (2008).

Figure III.1 *(continued)*

Source: APS administrative data.

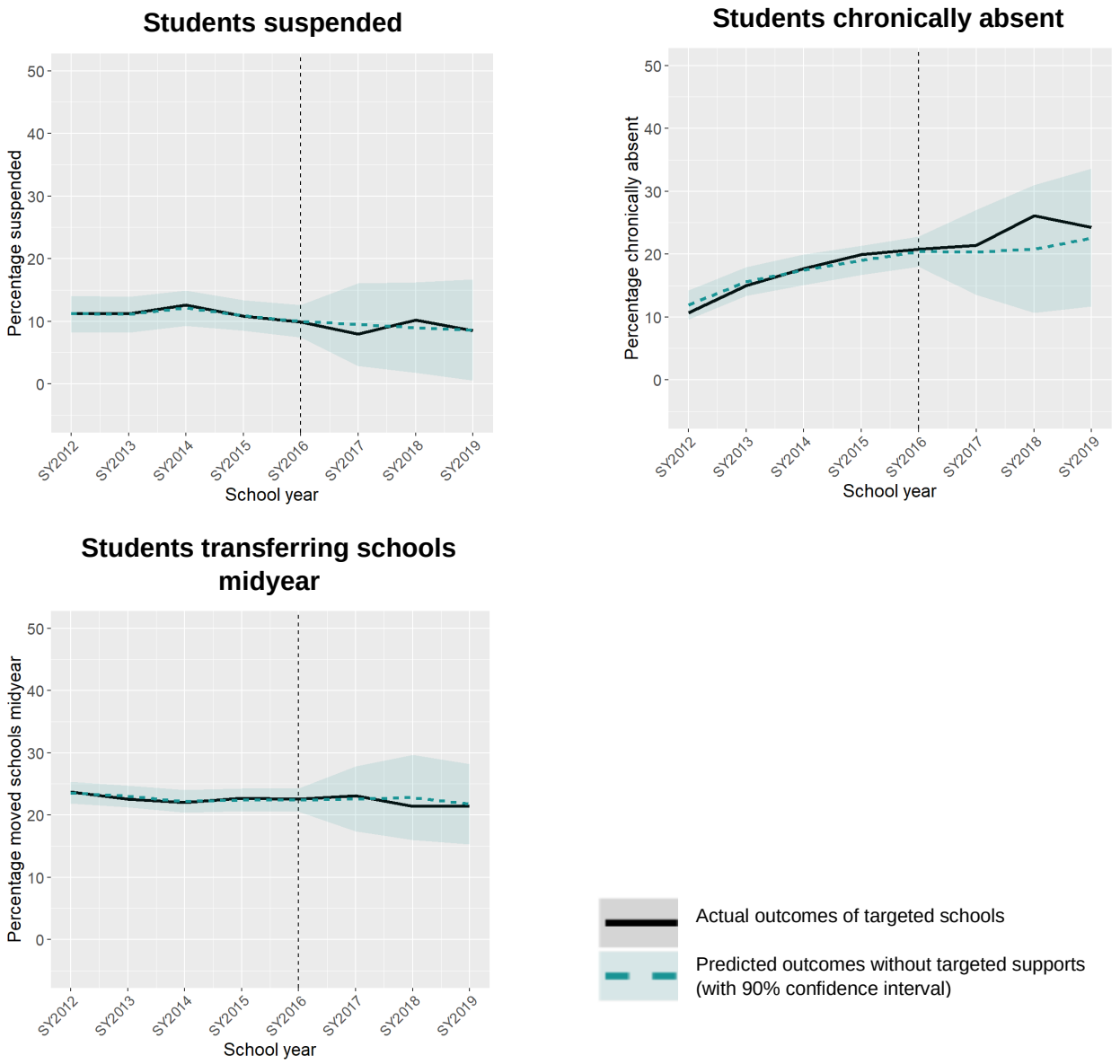
Note: These figures display the actual outcome trends for the Georgia Milestones exams in *z*-scores (standard deviations) compared to the predicted counterfactual trends obtained using matrix completion. The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools; ELA = English language arts.

In addition to implementing strategies and interventions to improve students' academic achievement (particularly in math and ELA), targeted schools also implemented nonacademic supports for students, including hiring CIS and other student support staff and instituting social-emotional learning blocks. Figure III.2 shows how actual nonacademic outcomes compared to predicted outcomes without the Turnaround Strategy. We found no evidence of meaningful differences in the percentage of students suspended, chronically absent, or transferring schools midyear relative to what we predict would have occurred without the Turnaround Strategy. For example, although the chronic absence rate had been increasing over time (due at least in part to improved attendance recordkeeping), targeted supports did not have any impact on this outcome.

These results reflect averages across the 15 schools that received targeted supports (taking into account that some schools did not receive supports in all three years of the Turnaround Strategy). However, just as conditions and implementation may vary across schools, so can the impacts of turnaround efforts. In examining results at the school level, we found evidence of statistically significant variation in the impacts across schools (see Appendix B). In addition, we identified four targeted schools—Barack & Michelle Obama Academy, Hollis Innovation Academy, Towns Elementary, and Usher-Collier Elementary—that had consistently promising results in both ELA and math (results on the other outcomes were less consistent across schools). In the next section, we discuss the conditions we observed in these four promising schools that may contribute to greater success.

Figure III.2. Targeted supports had no impact on average nonacademic outcomes



Source: APS administrative data.

Note: These figures display the actual outcome trends for non-academic outcomes in percentages compared to the predicted counterfactual trends obtained using matrix completion. "Students suspended" refers to the percentage of students ever suspended during each school year. "Students chronically absent" refers to the percentage of students missing 10 percent or more of days enrolled. "Students transferring schools midyear" refers to the percentage of students who were enrolled in a school in the fall but left before the end of the school year. The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools.

B. Implementation of targeted school supports

How the targeted schools implemented the available supports over the course of the 2018–2019 school year has relevance for understanding the impact of the Turnaround Strategy overall. This section presents detailed descriptions from school leaders and staff about how their schools put the supports into action, and describes the successes and challenges associated with their efforts.

The majority of schools focused on literacy instruction and supports as the academic priority for the 2018–2019 school year.

When asked about their goals for their schools, the majority of school leaders stated that they set literacy instruction and supports as a priority for their school because of its relevance across all content areas. Of the 10 school leaders who indicated they prioritized literacy, only 3 included another academic content area (social studies for one school, and math for two schools). Every school had one or more supplemental literacy supports in place, including extra ELA instructional time, afterschool or in-school tutoring, reading specialists, and a reading buddies program.

Teachers noted that they spent time learning to implement the district-provided Units of Study and how to supplement it to support below-grade-level students. The majority of teachers expressed satisfaction with the Units of Study and the customization they could accomplish by drawing from supplemental materials. Teachers also reported benefiting from the professional development they received from the district on implementing the Units of Study, as well as from the in-house professional development they received from instructional coaches.

The attention to instruction and supports for content areas outside of ELA varied. With respect to math, the majority of schools maintained their instructional time for math and provided similar types of extra supports for math as they did for ELA. However, this was not the case for science and social studies. In order to have additional literacy time and supports, eight schools reduced their science and social studies instructional time. One school embedded science and social studies instruction into ELA and had students read texts that focused on science or social studies content. With respect to professional development, while teachers felt adequately supported around ELA instruction, some teachers and school leaders noted the need for more professional development—both from the district and in-school—that focused on other content areas.

In the second and third years of the Turnaround Strategy, school leaders desired more guidance from the district to make decisions for their school, and some district and school staff did not perceive the strategy to have a clear three-year plan.

> *"As a Turnaround school, we […] needed more [guidance]. When we first got a lot of autonomy [year 2], I thought it was great but I wished I had more information to make the best choice. . . . Autonomy isn't about isolating principals and having us make decisions on our own."*
>
> —Principal

As noted earlier, over the three years of the Turnaround Strategy, the district gave school leaders greater autonomy. All of the school leaders stated that they appreciated that autonomy, though some school leaders wished for more guidance in the second and third years of the Turnaround Strategy; specifically, they wanted more information from and consultation with the district when making decisions for the school. Five school leaders described how they needed more information to make decisions about which curricula and supports to select, and to learn the financial implications of their decisions. For example, when selecting a curriculum, they wanted to know whether there was evidence of success after implementing that curriculum in other district schools and whether the district would continue funding that curriculum in future years.

In addition, district and school staff reported a perception that the Turnaround Strategy did not have a consistent three-year plan. Some district staff perceived this was the case because communication was limited about initial and ongoing planning from the various individuals who oversaw different parts of the Turnaround Strategy. They also noted that there was turnover of district staff who oversaw the strategy (or parts of it), and with turnover came shifts in the specific priorities of the strategy. School leaders also perceived a lack of a clear three-year strategy, noting that while the Turnaround Strategy and its priorities were very clear and structured in the first year, specific priorities were less clear in the second and third years. Some school leaders also described how they felt they were unable to build on the progress they made from year to year because each year of the Turnaround Strategy brought different priorities and goals.

During the implementation study, many schools reported experiencing high staff turnover and student mobility. Students had difficulties adjusting to changes and staff needed to do extra work to support these changes.

Similar to what schools experienced across the first two years of the Turnaround Strategy, in 2018–2019 school leaders and staff experienced a great deal of staff turnover and student mobility, and students and staff had difficulties responding and adjusting to the disruptions these issues caused.

Over half of the 15 schools experienced large staffing challenges prior to and throughout the school year: five schools had new principals; and six schools—three of which had a new principal—reported major changes to their staff, including assistant principals, instructional coaches, and teachers. One school implemented a full reconstitution of their staff. Six principals

stated that the most common reason for staffing changes was because effective staff left in response to the challenging work environment. School staff also noted that the difficult working environment was likely to cause staff turnover in future years as well.

In addition to experiencing new staff and teachers, at least five schools experienced midyear student mobility that required extra work for school staff to try to track down students' prior school history and integrate new students into their classes, academic, and nonacademic supports.

Students demonstrated difficulty adjusting to changes in the staff and students at their schools. When students encountered new staff or new students in their classrooms or in their small group configurations, they struggled to adjust to this change. Staff reported students causing disruptions both in and outside class; they attributed students' difficulty in adjusting to these changes to students' preexisting stress from experiencing trauma and inconsistency in their home lives, as, for example, when parents or family members move away. School staff reported how the changes in staffing and students at the school required additional work on their part to allow them to address increased behavioral issues, reconfigure small groups, support or train new staff, and make adjustments to implement new curricula or instructional programs.

School leaders described what they did to address staff turnover and to work around student mobility. To reduce staff turnover, first, school leaders were strategic in their hiring practices and only hired teachers who they felt could succeed in these environments. Twelve school leaders stated that they sought teachers who believe in all students' ability to learn; those who have strong classroom management, social-emotional learning (SEL), and relationship-building skills; and those who could work with students who have experienced—and, unfortunately, may continue to experience—trauma and generational poverty. Second, school leaders implemented processes to retain teachers by establishing a strong school culture and an environment that allows teachers to do their jobs. A district staff member expressed this approach thus: "A big part of teacher retention is low class sizes, wraparound supports, etc., so the extra staffing in [turnaround] schools is helping with retention and engagement."

Although school staff struggled to reduce student mobility, they recognized the need to find ways to support students when new students enrolled or left their schools, given that student mobility would only intensify with the ongoing gentrification of students' communities, poverty in their families, and incarceration of their family members. School staff said it was critical to protect daily SEL time, as this time could be used to do schoolwide meditations and direct SEL instruction for students, including practicing coping strategies.

Despite the challenges, many schools created a cohesive, positive school culture with strong relationships and trust, particularly in the third year.

School leaders and staff at 12 schools described how their schools established their school culture during their years of participation in the Turnaround Strategy. School leaders described how building the school culture meant having the right staff on board; recognizing staff orally

and in writing; rewarding staff members' strong efforts with food, gift cards, and keepsakes; and creating a positive culture and familial environment by making personal connections with staff, encouraging staff, and fostering strong relationships between school leaders and teachers. School leaders also described the importance of continually reinforcing the school culture by communicating it with staff in daily interactions, staff meetings, and school events. School leaders noted that developing the school culture occurred mostly in the third year, once the large number of new hires in the first and second years of the Turnaround Strategy was complete.

School leaders and staff stated the benefits of having a positive school culture. As an instructional coach described, the school culture helped their staff work collaboratively: "There was a whole culture change in the past two years. We were resistant to change at the beginning but because of the culture change and level of collaboration we have now, . . . there's little to no pushback from teachers anymore. Whatever we need for our students, we're all behind changes that need to be made."

> *"The kids are changing. They feel safe at the school, happy, connected to something or someone."*
>
> —Principal

In addition, school leaders and staff stated that students did not have many positive adult relationships outside of schools and benefited from the feeling of safety and comfort their schools offered. They described how the positive environment the schools offered was a benefit to student learning: because students came to school with the "right mindset to learn," they looked forward to being there.

The Turnaround Strategy allowed schools to hire academic and nonacademic staff to support students. Since they will continue to serve students facing academic and nonacademic challenges, staff were concerned with how they would progress if they no longer received strategy supports.

All school leaders and staff reported that the key benefit of the Turnaround Strategy was additional academic and nonacademic staff. Many of the academic staff worked directly in classrooms to implement differentiated instruction in small groups. The nonacademic staff, including behavioral specialists, clinical therapist, social worker, and CIS coordinators, provided wraparound supports to students, SEL reinforcement, and helped school leaders and instructional staff learn how to better support students. Teachers described the necessity of having nonacademic staff because student behaviors sometimes impeded instruction and even undermined safety. As discussed in previous reports, teachers continued to feel they needed to address behavioral issues before they could focus on

> *"As long as schools have kids with trauma and issues, we need two adults in the classroom. In every classroom."*
>
> —Principal

instruction. However, despite implementing strategies to address students' nonacademic needs during the school day, teachers often had to address the same needs the following day (or week) because the positive behaviors teachers encouraged in students were not reinforced outside of school.

In the 2018–2019 school year, many schools needed additional staff beyond those already hired through the Turnaround Strategy. Even though each school integrated additional staff through the Turnaround Strategy, nine schools stated that even with these additional staff members, they needed even more staff to address their students' needs. As in previous years, school leaders and staff continued to describe their schools' waiting lists of students who qualified for specialist support in reading and math, as well as other academic supports. School leaders and staff at six schools stated that even with licensed counselors, psychologists, and/or other mental health professionals on staff during the Turnaround Strategy, they had needed additional mental health staff to provide trauma support, especially because nonacademic staff members' caseloads were full.

Instructional coaches at six schools and teachers at eight schools indicated that they did not have enough time for their respective responsibilities. These instructional coaches stated that they spent the majority of their time on administrative duties or focused on school and/or student emergencies (such as behavioral issues that posed safety risks or students being placed on suicide watch), leaving insufficient time to provide instructional support to teachers or complete coaching cycles with them. Teachers stated that they did not have enough planning time for lessons, activities, or securing supplemental materials for class because they had to attend meetings, work with their instructional coach, or meet with students during this time.

Leaders at 13 schools expressed serious concerns about how the school would progress without the staff who had been onboarded if schools were to lose Turnaround Strategy funds, particularly after the time spent training and cultivating the staff members to be part of the fabric of the schools and to embody its culture. One principal emphasized the need for sustainability with supports that have worked for their schools: "Sustainability: That is the key. . .If you're going to give me support, and I can show you that we can achieve with those supports, don't diminish them. We can easily, over time, end back up where we were before [the Turnaround Strategy]. [We] need sustainability of the supports rather than a flash in the pan of getting better. [We] need to address the root cause of what got us there and what is needed to keep us from going back there." Another principal had a similar comment: "The remaining challenge is once the reading and math specialists are no longer in the building—what will that do to struggling students? . . . It's almost like a punishment . . . somehow you end up back where you started because you don't have the extra supports in place. I think our challenge is to continue the growth, and to continue the growth, we have to be careful about the cuts [to our budget] or class sizes will end up being larger."

C. Promising practices at four targeted schools

This section describes promising practices at four targeted schools: Barack & Michelle Obama Academy, Hollis Innovation Academy, Towns Elementary, and Usher-Collier Elementary. Our school-level analysis determined that these schools showed evidence of positive impacts in math and ELA achievement. These findings describe five key characteristics: (1) consistent goals and plans, (2) a positive culture, (3) involved leadership, (4) strong staff, (5) comprehensive coaching for teachers, and (6) strategic data use. Other targeted schools may also have exhibited some of these practices (for example, many of the targeted schools had positive cultures). However, the four schools included in this analysis exhibited all five of these practices.

Promising Practices at Four Targeted Schools

- The four schools had the same goals over time and applied a consistent plan throughout the Turnaround Strategy.
- The four schools had a clear and positive goal-oriented school culture that emphasized staff collaboration.
- School staff described principals who were involved in all activities at their school and knew what was happening with every support available.
- By the third year of the Turnaround Strategy, the four schools had mostly goal-oriented staff who embraced the school culture—very few staff were resistant.
- School leaders ensured that instructional coaches had adequate time to support teachers and conduct full coaching cycles.
- The four schools had regular strategic data reviews in which school leaders and staff reviewed academic and nonacademic data daily, weekly, and monthly and used multiple data sources.

The four schools held the same goals over time and applied a consistent plan throughout the Turnaround Strategy.

While some schools switched their academic and nonacademic goals at least once during the Turnaround Strategy, these four schools maintained the same goals throughout the implementation of the strategy and applied a consistent plan over the years.[5] School leaders described how these goals provided the structure for how the school was run; every school decision made—big or small—tied back to their goals.

"There are high [levels of] communication about goals through the principal to all staff. Goals are broken down into interim goals and communicated to the staff daily."

—Teachers

[5] Three of these schools had the same principal for the full three-year Turnaround Strategy. The principal at the fourth school, who served as the assistant principal in year one of the strategy and as principal for the last two years of the Turnaround Strategy, maintained the same goals during that time.

These school leaders also regularly communicated these goals to their staff, students, and families so everyone knew the priorities.

The four schools had a clear and positive goal-oriented school culture that emphasized staff collaboration.

> *"Our leadership set expectations at the beginning of the year. Initially, [the staff] wondered how they would do everything, but they have grown, leaned in, and love it. They always want to do more."*
> —Instructional coaches at School A

> *"There is an overarching mindset and vision across the staff at the school and that mindset is whatever it takes for students to succeed…it's all about the kids. From the point of hiring to starting at the school, that vision is clear.*
> —Instructional coaches at School B

These schools had a clear and positive school culture that involved staff collaboration. Staff members described working collaboratively to meet their school goals with an "all hands on deck" mentality, stepping in for their colleagues if the need arose. Staff at these schools worked on reinforcing the school culture continually. Two of these schools even used a shorthand to refer to their school culture or staff and students, referring to themselves as their school mascot or using their school name as a verb to describe the process new staff or students go through to become integrated into the school—for example, at Hollis Innovation Academy, staff would say they need to "Hollisize" new staff (that is, make sure new staff adopt practices that match the school culture).

School staff described principals who were involved in all activities at the school and knew what was happening with every support available.

School staff from these four schools reported that their principals were involved in all activities of the school and knew what was happening with every support and every teacher. At the same time, the principals still trusted staff to independently do their jobs. Principals undertook some practices intended to make themselves available to staff and students. For example, one principal was outside every day greeting students and parents during morning drop-off and afternoon pickup. In addition, these principals regularly visited classrooms and provided real-time feedback to teachers, as opposed to conducting evaluative observations once or twice a year.

By the third year of the Turnaround Strategy, the four schools had mostly goal-oriented staff who embraced the school culture—very few staff were resistant.

> *"[In year 3] we have stable staff here. We didn't have the right people on the bus in the first two years. In the first year, it didn't even seem like people liked children."*
>
> —Principal

By the start of year 3, these schools had replaced the majority of their resistant and ineffective staff. Though some schools still had a small number of resistant staff, by having a large proportion of staff who embodied the school culture and were oriented to meeting the school goals, school leaders were able to observe many school accomplishments and many positive changes, such as well-run classrooms and collaborative and peaceful staff meetings.

School leaders ensured that instructional coaches had adequate time to support teachers and conduct full coaching cycles.

In the four promising schools, instructional coaches stated that their school leaders prioritized coaching time and ensured that coaching cycles were conducted with all teachers; instructional coaches and teachers met at least once a week. Teachers at these schools reported feeling well-supported by school leaders and coaches to provide strong instruction.

The four schools had regular strategic data reviews in which school leaders and staff reviewed academic and nonacademic data daily, weekly, and monthly and used multiple data sources.

> *"The Assistant Principal and I have measurable goals attached to our strategic plan with data points that we review and discuss weekly. We talk about how to close the gaps during meetings with our leadership team, parents, and staff."*
>
> —Principal

Staff from these four schools described strategic and consistent data review processes. All of the schools had a routine they followed for examining data from multiple sources (for example, data from Renaissance Star, iReady, Georgia Milestones, and classroom interim assessments). Staff from three schools described how teachers take ownership over reviewing their classroom data, and they encourage student ownership over their own progress by sharing student-level data with them. At one school, for example, the school leaders and staff examined the classroom exit tickets to check that students demonstrated content mastery daily; they looked at class-level data each week to determine how teachers could provide differentiated instruction to small groups; and they reviewed state or other assessment data each month and structured teachers' professional development and instructional coaching on the basis of those results. During one monthly data review session at this same school, school leaders and staff discovered that a math teacher had been struggling for two months, after which they assigned the instructional coach to support instruction in the class.

IV. COMMUNITIES IN SCHOOLS (CIS) CASE MANAGEMENT IN TARGETED SCHOOLS

In the first two years of the Turnaround Strategy, APS assigned a half-time CIS site coordinator to each targeted school. In response to feedback from school leaders and CIS, however, in 2018–2019, APS provided targeted schools with a full-time CIS site coordinator to support a caseload of high-needs students and implement whole-school supports. This chapter describes the support CIS site coordinators provided to students on their caseloads; the impact CIS case management had on caseload students' outcomes after the change to full-time staffing; and key implementation findings, which offer additional context for the impact results.

Key Findings: Communities in Schools

- CIS case management decreased the likelihood that students transferred schools midyear, but did not improve other student outcomes relative to other available supports.
- Turnover of CIS site coordinators and, at some schools, turnover of students on CIS caseloads may have limited CIS site coordinators' abilities to fully support students and the school.
- Shifting CIS site coordinators' schedules from part-time at two schools to full time at one school allowed coordinators fully integrate into the school; provide support to students daily; and build relationships with staff, students, and families.
- A key benefit of the CIS site coordinators support was that they identified families' needs and provided financial support and legal and job search assistance to families with housing instability.
- While schools valued CIS, most are not continuing with CIS because of the high costs associated with having a CIS site coordinator.

A. Description of CIS case management and whole-school supports

CIS aims to provide wraparound supports to students, their families, and schools with the ultimate goal of helping more students graduate high school. Ideally, the same CIS site coordinator works with the same caseload of students for three years to develop trusting relationships and a full understanding of the needs of the students and their families. When students change schools (e.g., from elementary school to middle school), CIS site coordinators across the schools ideally share information about the students to provide a smooth transition.

During the 2018–2019 school year, site coordinators typically spent four days each week in their assigned school and one day at the CIS central office for planning and professional development. While at the school, site coordinators were to spend approximately two-thirds of their time supporting students on their caseloads, and the rest of their time providing whole-school services. The supports to students on their caseloads included one-on-one or small-group support to foster social emotional learning (self-esteem enhancement, communication strategies, conflict resolution), talking with students during recess and lunch, checking daily on students'

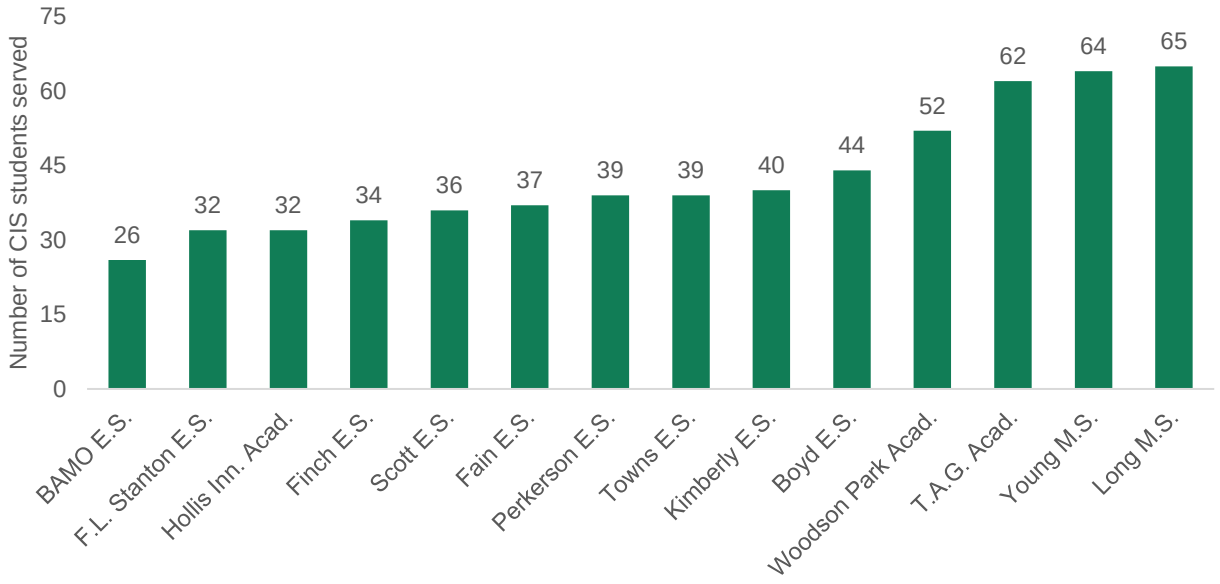
attendance, and offering support if these students demonstrated behavioral issues in class. Depending on the school policy and teachers' needs, some CIS site coordinators also spent time in classrooms to give behavioral or academic support. CIS site coordinators also communicated with their caseload students' families about their needs and conducted regular home visits in order to help with services such as emergency financial support to pay utility bills, rent, medical costs, and other expenses, as well as to provide connections to health services, legal aid, or other community resources.

In addition to supporting students on their caseloads, CIS site coordinators—often in conjunction with other nonacademic staff—also led events and provided supports to the whole school, such as a monthly food pantry for students' families, a schoolwide party for perfect attendance, vouchers for vision services, and student organizations and clubs. Many of these whole-school supports, generated by CIS site coordinators and approved by school leaders and staff, were tailored to meet the schools' needs.

In 2018–2019, CIS site coordinators managed the cases of 602 students in grades 3–8.[6] The CIS model specified that the caseload should include 10 percent of the student population; coordinators' caseloads ranged from 26 to 65 students (Figure IV.1). These counts reflect the total number of students CIS site coordinators worked with throughout the school year (that is, at any given time the caseloads could have been smaller). The majority of the 14 CIS site coordinators, including those who had some of the largest caseloads, either felt they had an adequate number of students on their caseloads (7 CIS site coordinators) or they wanted additional students on their caseloads (4 coordinators). Three CIS site coordinators wanted fewer students on their caseloads. The duration of services varied across schools. As shown in Figure IV.2, CIS site coordinators recorded service activities over a range of dates. F.L. Stanton Elementary, which had a site coordinator only during the second half of the school year, offered services for approximately 4 months. On the other end of the spectrum, the CIS site coordinator at Tuskegee Airmen Global Academy provided services from August through June, or about 11 months.

[6] Only students with at least five individual or small-group activities during the school year were counted as caseload students.

Figure IV.1. CIS caseload sizes varied across schools

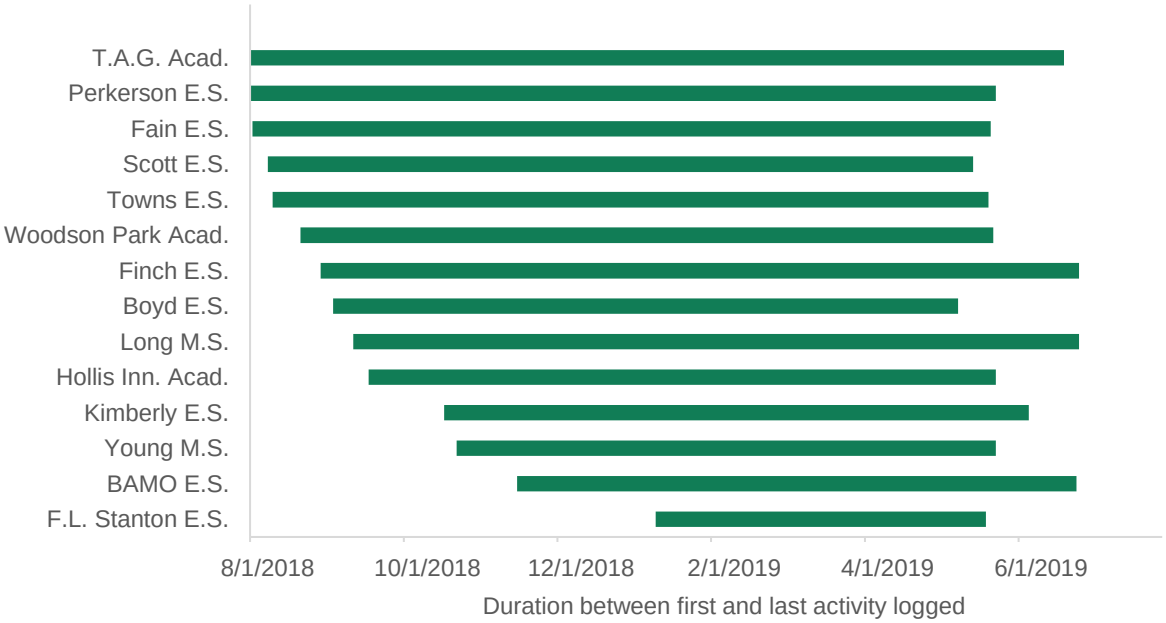


Source: APS and CIS administrative data.

Notes: This figure is restricted to students who had at least five individual or small group activities logged during the 2018–2019 school year.

APS = Atlanta Public Schools; CIS = Communities in Schools.

Figure IV.2. CIS service duration varied across schools



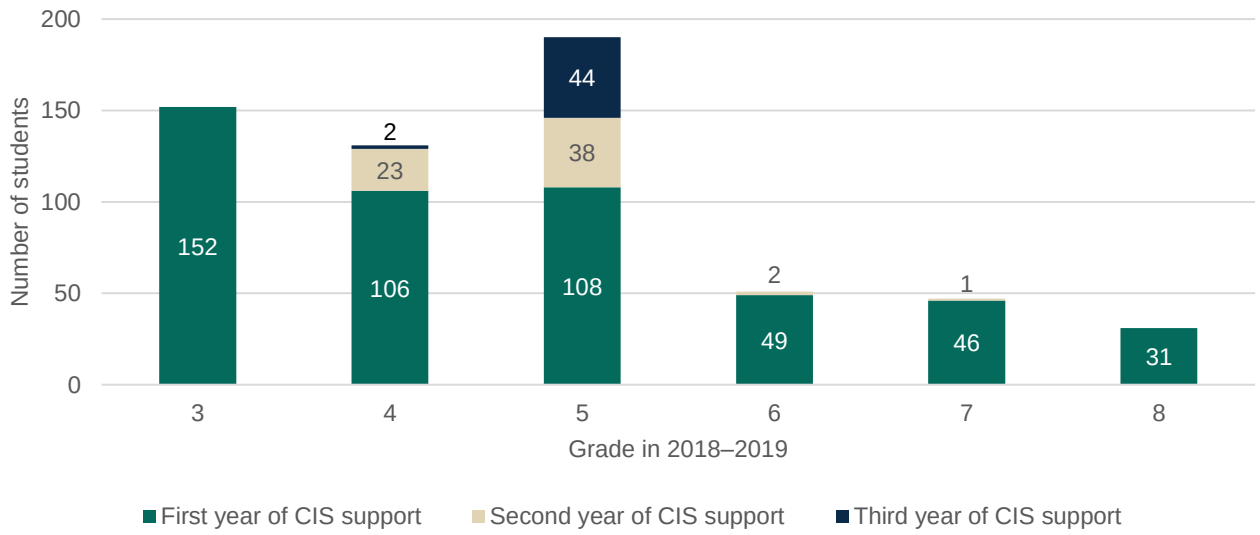
Source: APS and CIS administrative data.

Notes: This figure is restricted to students who had at least five individual or small group activities logged during the 2018–2019 school year.

APS = Atlanta Public Schools; CIS = Communities in Schools.

Some of the caseload students in 2018–2019 had also worked with a CIS site coordinator in previous years (Figure IV.3). For 11 percent of the caseload students in 2018–2019 (mostly students in grades 4 and 5), this was their second year receiving support from CIS. Among these students, many also received CIS support in 2017–2018, while others had received it in 2016–2017 and then gone a year without case management support from CIS. Another 8 percent of the caseload students in 2018–2019 worked with a CIS site coordinator in all three years of the Turnaround Strategy. Almost all of these students were in grade 5.[7]

Figure IV.3. Some caseload students in grades 4 and 5 in 2018–2019 had worked with a CIS site coordinator in previous years



Source: APS and CIS administrative data.

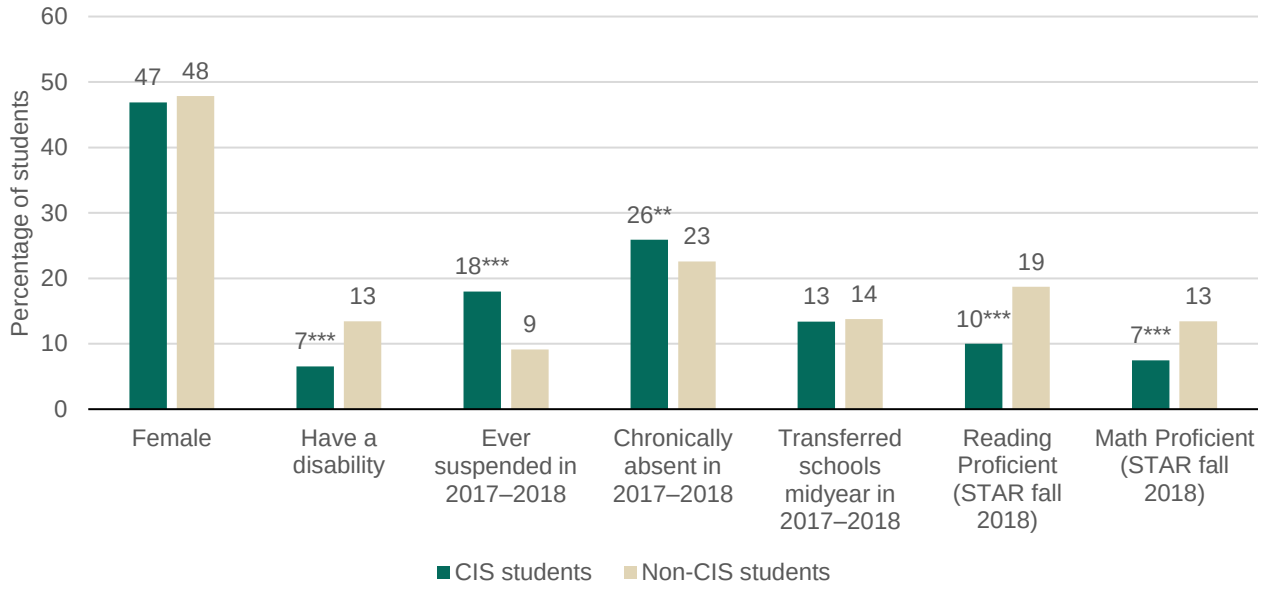
Notes: This figure is restricted to students who had at least five individual or small-group activities logged during the 2018–2019 school year. Students could have received a second year of CIS support in either of the previous two school years (2016–2017 or 2017–2018).

APS = Atlanta Public Schools; CIS = Communities in Schools.

School staff members, including teachers and principals, identified students with high nonacademic needs and referred them for case management from a CIS site coordinator. Schools typically prioritized students who were not already receiving other types of academic or nonacademic support. As shown in Figure IV.4, CIS caseload students differed in several ways from other students in targeted schools. They were twice as likely to have been suspended in the previous school year (18 versus 9 percent) and somewhat more likely to have been chronically absent in the previous school year (26 versus 23 percent). A smaller share of CIS caseload students had a disability (7 versus 13 percent), but they had lower baseline math and ELA achievement in fall 2018, as measured by the Renaissance Star assessment.

[7] 2018–2019 was the first school year in which middle schools (specifically, Crawford Long and Jean Childs Young middle schools) received targeted supports.

Figure IV.4. Students on the CIS caseload had greater academic and nonacademic needs at baseline than other students in targeted schools



Source: APS and CIS administrative data.

Notes: "Ever suspended" shows the percentage of students who were suspended at least one time in the 2017–2018 school year. "Chronically absent" shows the percentage of students who missed 10 percent or more of days enrolled in the 2017–2018 school year. "Transferred schools midyear" shows the percentage of students who were enrolled in a school in fall 2017 but left before the end of the 2017–2018 school year. "Reading Proficient" and "Math Proficient" show the percentage of students scoring at least proficient on the Renaissance Star fall 2018 assessment for the respective subject.

APS = Atlanta Public Schools; CIS = Communities in Schools.

***Difference is statistically significant at the 1 percent level.
**Difference is statistically significant at the 5 percent level.
*Difference is statistically significant at the 10 percent level.

B. Impact of CIS case management services

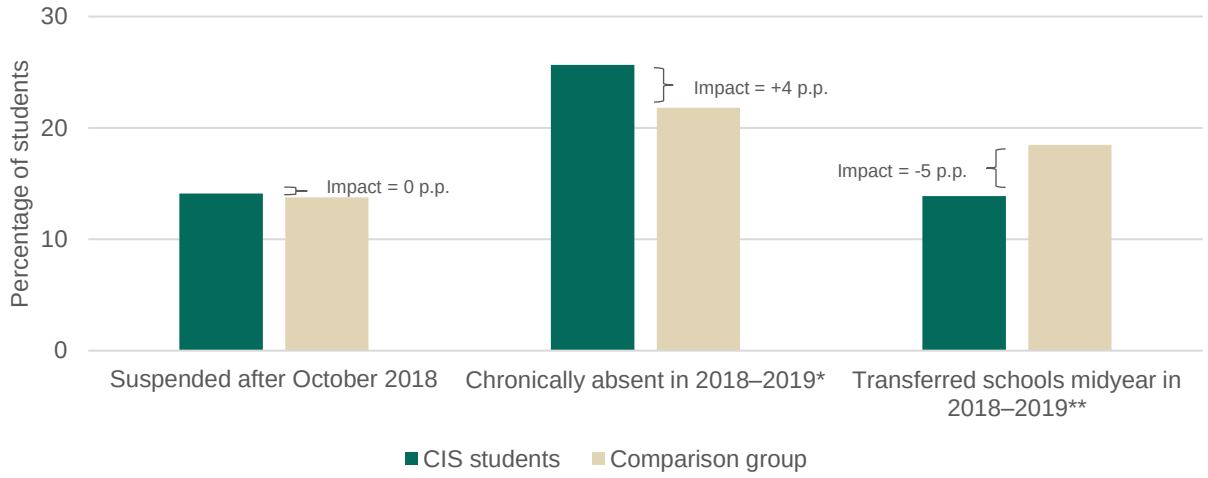
CIS case management decreased the likelihood that students transferred schools midyear, but did not improve other student outcomes relative to other available supports.

In spring 2019, after CIS case management support had been provided for the school year, students who received support were 5 percentage points less likely to have transferred schools midyear than students who did not receive services. There were no statistically significant improvements in caseload students' likelihood of being suspended or chronically absent; nor were there significant improvements in their academic performance relative to a matched comparison group (Table C.4 in Appendix C). These results were consistent with our findings

from the previous academic year, during which CIS site coordinators split their time between two schools rather than working full-time at one school (Hallgren et al. 2019).[8]

Figure IV.5 shows the percentage of CIS students who were suspended or chronically absent or transferred schools midyear in the 2018–2019 school year and the corresponding percentages for the matched comparison group that take into account the impact of CIS case management. Midyear transfers were lower among CIS students relative to the comparison group. In our analysis of students who received CIS case management in the 2017–2018 school year, we found a similar reduction in student mobility of 5 percentage points. These results suggest that CIS case management helps students remain enrolled in the same school throughout the school year. In contrast, there is also indication that CIS case management increased the rate of chronic absenteeism among participating students (by 4 percentage points). Figure IV.5 shows this result as well as the absence of a positive or negative effect on suspension.

Figure IV.5. CIS case management decreased the likelihood that students transferred schools midyear and increased chronic absenteeism relative to other available supports



Source: APS and CIS administrative data.

Notes: This figure shows the percentage of students suspended, those missing at least 10 percent of days enrolled, and those who were enrolled in a school in the fall but left before the end of the 2018–2019 school year. The average CIS outcome rates are unadjusted. We calculated the comparison group outcome rates by subtracting the relevant impact estimates from the CIS students' outcome mean.

APS = Atlanta Public Schools; CIS = Communities in Schools; p.p. = percentage points.

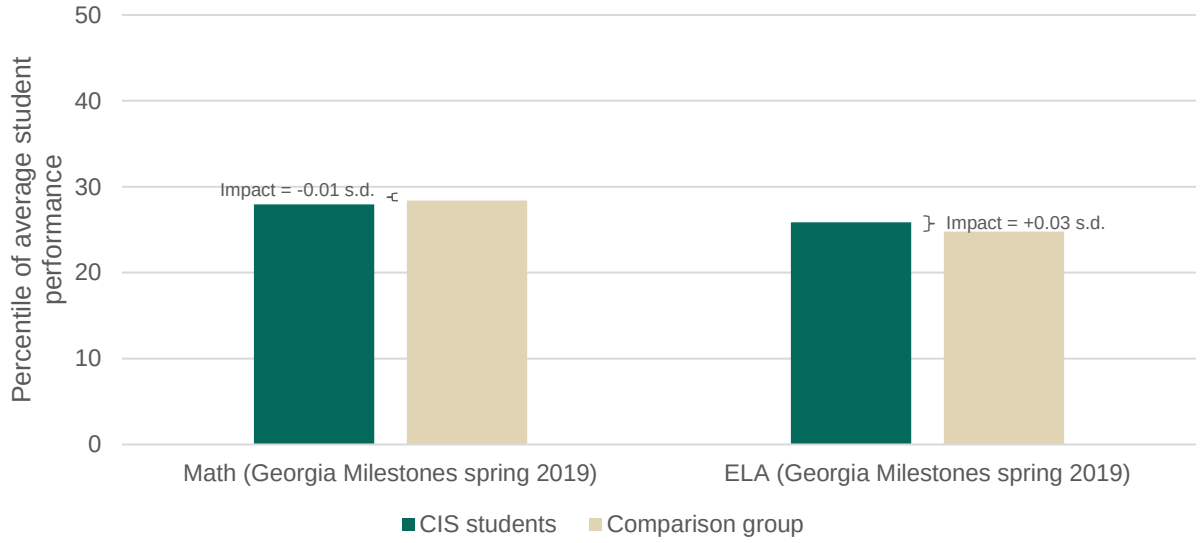
***Difference is statistically significant at the 1 percent level.
**Difference is statistically significant at the 5 percent level.
*Difference is statistically significant at the 10 percent level.

We also found that CIS case management had little impact on students' academic achievement. Figure IV.6 shows average performance on the Georgia Milestones math and ELA exams for

[8] In that report, we did not examine student mobility as an outcome. After discussion with APS and assessing the target outcomes CIS tracks as an organization, we added student mobility to both last year's and this year's analyses. In both years, we found a statistically significant decrease in student mobility.

students on the CIS caseload and the matched comparison group, in terms of percentile scores which range from 1 to 100. There were no statistically significant differences between the two groups.

Figure IV.6. CIS had no measurable impacts on students' academic achievement relative to other available supports



Source: APS and CIS administrative data.

Notes: None of the differences between CIS students and the comparison group are statistically significant at the 10 percent level.

The average CIS percentile ranks are unadjusted. We calculated the comparison group percentile ranks by subtracting the relevant impact estimates from the CIS students' outcome mean.

APS = Atlanta Public Schools; CIS = Communities in Schools; ELA = English language arts; s.d. = standard deviations.

To better understand the effectiveness of CIS case management, we analyzed whether the impact of services differed in schools in which site coordinators had fewer students on their caseloads (and thus could devote more time to each student). We found no evidence that impacts were more favorable in schools with smaller caseloads (Table C.5 in Appendix C).[9] We also examined whether CIS case management impacted outcomes for students who were either suspended or chronically absent in the preceding school year, and thus at greater risk, differently than it did for other CIS students. We did not find any evidence that the services' effectiveness differed between these two groups of students (Table C.6 in Appendix C). Finally, we tested whether impacts differed between students who received CIS case management only in 2018–2019 versus those who received it in one or more previous years; we found no statistically significant differences (Table C.7 in Appendix C).

[9] We found a statistically significant difference in the impacts on Georgia Milestones ELA scores between larger and smaller caseload schools (with impacts being more positive in schools with larger caseloads), but no other differences on any of the other outcomes were statistically significant.

C. Implementation of CIS case management services

Turnover of CIS site coordinators and, at some schools, turnover of students on CIS caseloads may have limited CIS site coordinators' abilities to fully support students and the school.

Similar to findings for Year 2, turnover among CIS site coordinators continued to be a challenge at schools. Five schools had a new CIS site coordinator in 2018-2019. Four of these schools reported turnover of at least one CIS site coordinator during the middle of the school year, and one school had six different CIS site coordinators over the three years of the Turnaround Strategy. Staff reported challenges related to gaps in service and onboarding new CIS site coordinators, whereas CIS site coordinators in their second year at schools reported building stronger relationships with staff and students because it takes time to build trusting relationships. Leaders at two schools noted that they have limited control over staffing or hiring, and therefore they were not involved in decisions to change or assign a new CIS site coordinator.

Moreover, CIS site coordinators at 12 schools reported that the students on their caseload changed schools within or across school years. According to APS enrollment data, 21 percent of CIS students were mobile at some point during the school year (either leaving or joining their school midyear) and 9 percent had changed schools over the previous summer (excluding students transitioning to middle school). This was reportedly problematic because students and their families cannot receive their full case management services if they leave or enter midyear; more importantly, as noted before, it takes time to build relationships with new students and their families.

Shifting CIS site coordinators' schedules from part-time at two schools to full time at one school allowed coordinators to fully integrate into the school; provide support to students daily; and build relationships with staff, students, and families.

CIS site coordinators who shifted to be at one school full time reported that they worked with more caseload students per school (between 26 and 65 students, Figure IV.1). Caseloads increased in 10 of the 12 schools that had a CIS site coordinator in both years, in some cases doubling. Therefore, additional time at the school did not always translate to more time with each student on the caseload. However, having the CIS site coordinator full time at the school allowed full implementation of their supports and services. Staff said that being full time helped CIS site coordinators integrate into the school culture and be part of school scheduling and planning. One principal stated that "being full time allows CIS site coordinator[s] to visit classrooms and fully participate in school events. [They] no longer feel like an outside person but a part of the staff."

In addition, being full time supported the CIS coordinators' ability to work with students on their caseload and check in with them daily. Some CIS site coordinators reported working with additional students who were not officially on their caseload, such as students who transferred to the school midyear or students who could not receive other nonacademic supports.

> *"Full time is much more effective than half time. Students on their caseload need daily attention and consistency to develop relationship and see improvements from the coordinator. . . They provide a lot of partnerships and funding for important events and initiatives at the school such as incentives and emergency funds."*
>
> —Principal

With respect to CIS site coordinators' whole-school duties, being at a school full time enhanced positive relationships between the CIS site coordinators and academic and nonacademic staff and students, allowing coordinators to collaborate with other nonacademic staff to offer regular and one-time schoolwide events. Specific whole-school activities implemented in collaboration with other nonacademic staff included, for example, teaching a dance class, running a SEL group about social media or relationships, working with a parent liaison, or setting up a food bank. School staff and CIS coordinators described some nonacademic benefits they saw that were due to CIS site coordinators' work, though many said these were incremental—for example, a student missing seven fewer days of school, or a teacher's appreciation that students could be sent to the CIS site coordinator when they displayed behavioral issues.

A key benefit of the CIS site coordinators' support was that they identified families' needs and provided financial support and legal and job search assistance to families with housing instability.

All CIS site coordinators provided supports and services to students and families to help address or plan for financial or housing instability—these supports were one of very few for students experiencing housing issues. CIS site coordinators found out what families' needs were through regular home visits and discussions with families. They provided parents with emergency funds to pay utility bills and rent and support to help them avoid evictions (by connecting them to pro bono legal support and accompanying them to court hearings); moreover, they offered job search and application assistance. These supports may help explain why CIS case management services reduced the likelihood of students leaving their schools midyear.

While schools valued CIS, most are not continuing with CIS because of the high costs associated with having a CIS site coordinator.

Many school leaders reported that they did not have enough funding in their school budgets to afford all of the academic and nonacademic supports provided by the Turnaround Strategy, including CIS site coordinators. One school that transitioned from targeted to intensive status in 2018–2019 discontinued having a CIS site coordinator when APS no longer funded the position. Other school leaders reported plans to drop the CIS site coordinator position when it would no longer be district-funded in 2019–2020 because of its high cost. For example, one school leader

noted that CIS site coordinators cost double the amount that could be allocated for a similar nonacademic support staff position. For similar reasons, another school leader noted plans to hire the CIS site coordinator, whose work is highly valued, as a social worker the following year because the social worker position is lower cost and gives the school leader more control over the staff member's responsibilities.

V. OVERALL FINDINGS FROM PARTNERSHIP SCHOOLS

As part of the Turnaround Strategy, partnership organizations managed five APS schools in the 2018–2019 school year. The school year marked the third year of PBS implementation at Thomasville Heights Elementary School and the second year of PBS implementation at Slater Elementary School and Price Middle School. That year, Carver STEAM Academy also transitioned to the PBS model. Kindezi continued operating Gideons Elementary School for a second year.[10] This chapter briefly describes the model implemented by each partnership organization, analyzes the impact of each one on key student outcomes, and provides implementation findings that give additional context for interpreting the results of the impact analyses.

A. Partnership with PBS

PBS schools follow the Drew Instructional Model, which focuses on high quality and increased instructional time, as well as comprehensive systems of student and family support. PBS provides academic and nonacademic supports for students, increased instruction through extended school days and after-school programs, a high adult-to-student ratio at the school, and numerous family support programs. Earlier reports (Hallgren et al. 2017, 2019) described implementation and impact findings from the first and second years of the PBS partnership. This chapter describes the impacts of the partnership on student outcomes at Thomasville Heights Elementary, Slater Elementary, and Price Middle, as well as implementation findings from the 2018–2019 school year in these schools. In addition, we include information on the implementation of the PBS model at Carver STEAM (Science, Technology, Engineering, Arts, and Math) Academy.

[10] Kindezi began operating Gideons Elementary in August 2017. In the third year of the Turnaround Strategy, Kindezi continued operating Gideons Elementary, although the school was temporarily relocated to the Parks Middle campus while the Gideons Elementary campus underwent renovations.

Key Findings: PBS Partnership

- The PBS partnership, which began in the first year of the strategy (2016-2017), reduced student mobility but had little impact on average academic achievement, suspensions, or chronic absence.
- Teachers indicated that the ELA and math curricula were too challenging for students. Teachers' use of small-group instruction may have supported students' learning of the rigorous curricula.
- After experiencing challenges with student behavior and high suspension rates in 2017–2018, PBS focused more time and resources on SEL and other behavioral supports. However, it took most of the 2018-2019 school year to get the school culture and nonacademic supports in place at some PBS schools. As a result, the nonacademic challenges may have hindered the schools' academic improvements.
- In the third year of the partnership, newly implemented efforts to improve instruction and support for teachers, including PBS coordinators and early release on Fridays for students, reduced instructional time for students. In addition, implementation challenges limited their usefulness for teachers and instructional support staff.
- The first PBS high school, Carver STEAM, implemented key components of the PBS model as well as more counseling and remedial support for credit recovery. Challenges with the first year of PBS implementation in a high school setting included preparing students—many of whom were three grade levels behind—to graduate and issues with older students arriving to school late or leaving early.

B. Impact of PBS partnership in elementary and middle schools

Figures V.1-V.4 compare the actual and predicted academic and nonacademic outcomes of Thomasville Elementary (the first cohort to start the PBS partnership) and Slater Elementary and Price Middle (the second cohort to start the PBS partnership). We estimate overall impacts that reflect averages across the three schools but show the figures separately by cohort to make it easier to see the trends in outcomes over time relative to the school year the partnership began (Table B.1 in Appendix B). These impacts take into account that the partnership had been implemented for three years at Thomasville Heights Elementary and only two years at Slater Elementary and Price Middle. As with the analysis of targeted schools, the predicted outcomes were generated by using data from other APS schools, excluding schools that received targeted, intensive, or other partnership supports as part of the Turnaround Strategy. Thus, this analysis measures the impact of schools partnering with PBS relative to receiving limited or no special supports.

The PBS partnership, which began in the first year of the strategy (2016-2017), reduced student mobility but had little impact on average academic achievement, suspensions, or chronic absence.

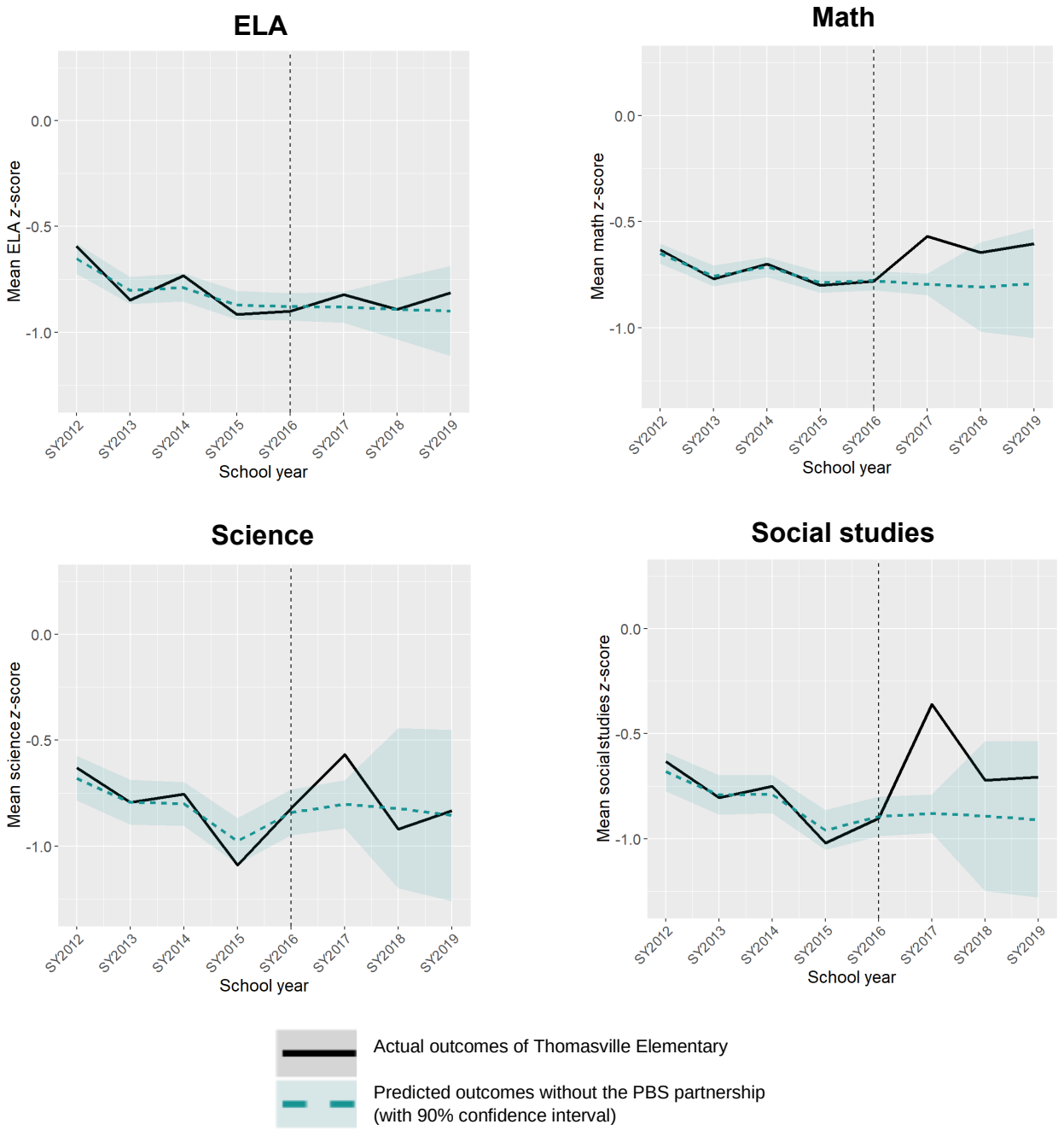
On average, across schools and years, we found that the PBS partnership led to a reduction of about 6 percentage points in the percentage of students enrolled in the fall who transferred out of their school before the end of the year. This result corresponded to a decrease in these schools' student mobility rate from about 23 percent to 17 percent—which could potentially be explained

by the number of supports that PBS offers to families, such as legal services from the Atlanta Volunteer Lawyers Foundation; wraparound services; and training for their staff through CHRIS 180, a nonprofit organization with expertise in trauma-informed care. However, the reduction in mobility was concentrated in Thomasville Heights Elementary.

The PBS partnership had little impact on student academic achievement. We found evidence of improvements in math, science, and social studies achievement in Year 1 of the PBS partnership at Thomasville Heights Elementary (Hallgren et al. 2017), but these improvements were not sustained as the PBS partnership expanded. Across the three schools, there was some indication of a small positive impact in math achievement of 0.08 standard deviations (roughly equivalent to one month of additional learning), but it was not statistically significant. The improvements in math scores were concentrated in Thomasville Heights Elementary. By the end of the evaluation period, we did not find any statistically significant differences in average academic achievement across the three schools relative to what we predicted would have occurred without the PBS partnership.

Similarly, the percentage of students suspended or chronically absent did not deviate substantially from what we predicted would have occurred in these schools without the PBS partnership over the evaluation period. As noted in the Year 2 report (Hallgren et al. 2019), there was an indication of increased suspension rates in the earlier years of the partnership, but this unfavorable impact did not persist. As discussed further in the next section, PBS schools focused even more time and resources on behavioral supports in the 2018–2019 school year to address ongoing challenges with student behavior.

Figure V.1. Despite improvements in the first year, the PBS partnership had a limited impact on academic achievement at Thomasville Heights Elementary after 3 years

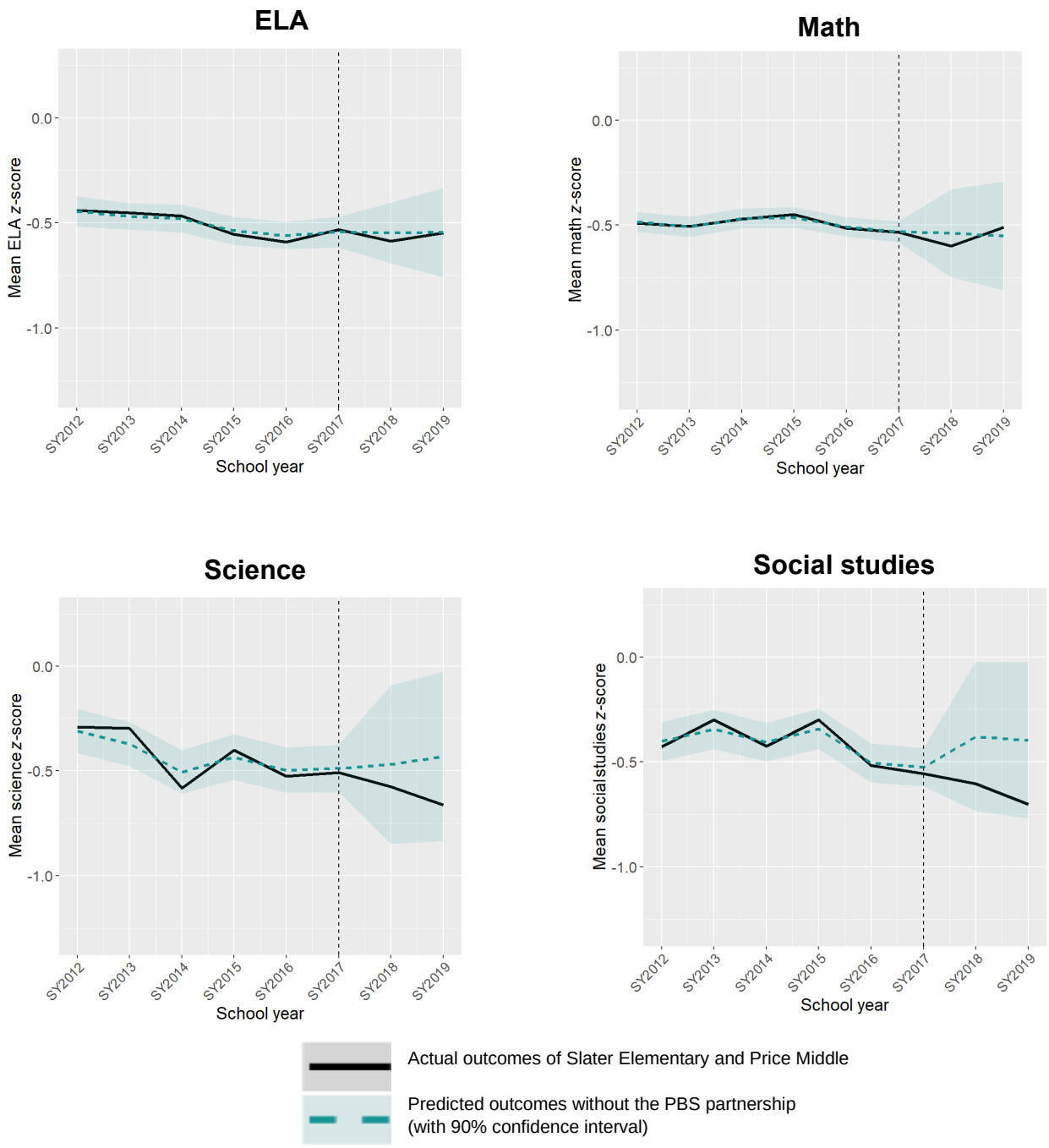


Source: APS administrative data.

Note: These figures display the actual outcome trends for the Georgia Milestones exams in *z*-scores (standard deviations) compared to the predicted counterfactual trends obtained by using matrix completion. The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools; ELA = English language arts.

Figure V.2. The PBS partnership had little impact on academic achievement at Slater Elementary and Price Middle after 2 years

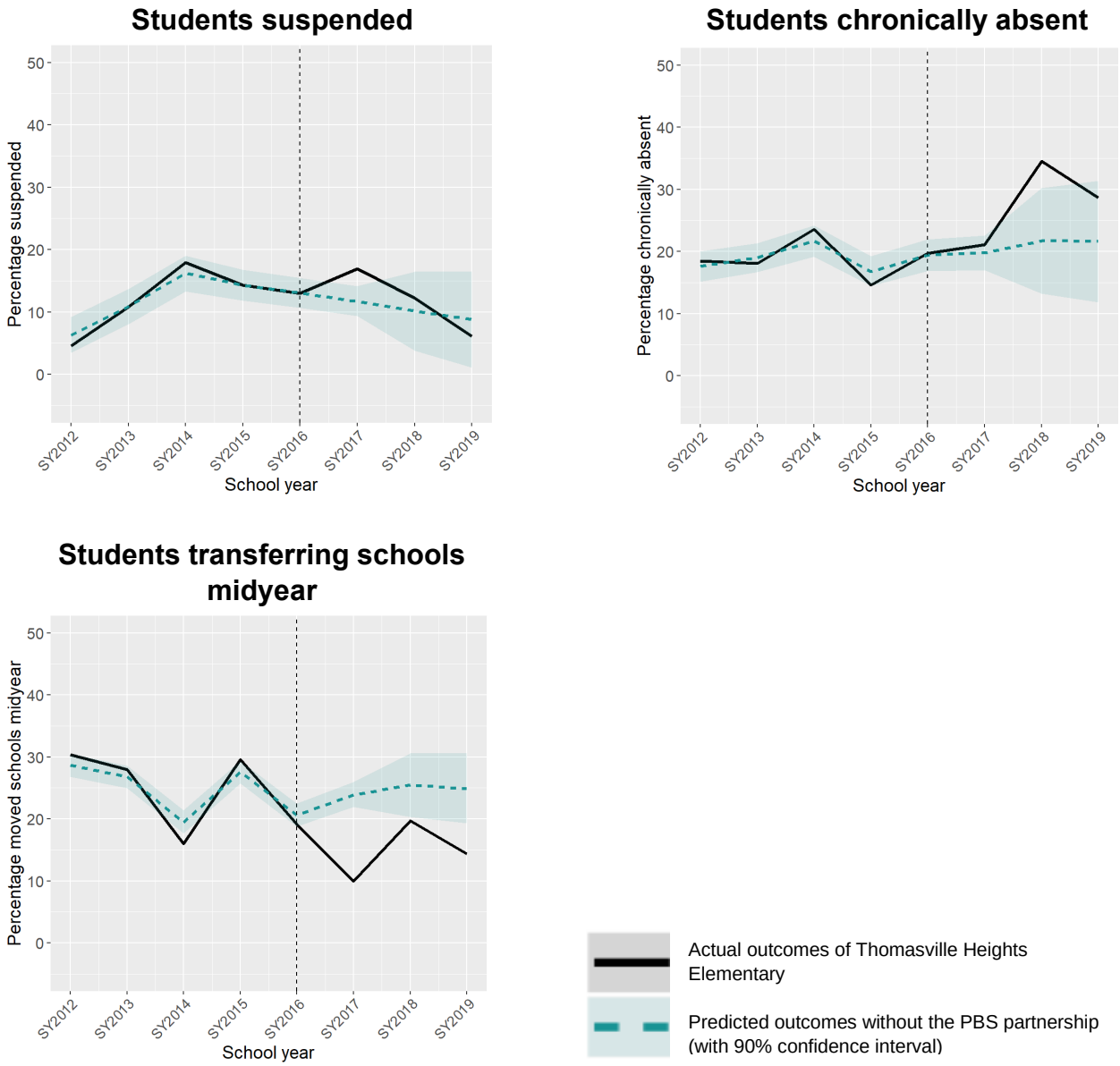


Source: APS administrative data.

Note: These figures display the actual outcome trends for the Georgia Milestones exams in *z*-scores (standard deviations) compared to the predicted counterfactual trends obtained by using matrix completion. The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools; ELA = English language arts.

Figure V.3. The PBS partnership reduced student mobility at Thomasville Heights Elementary but not suspensions or chronic absence

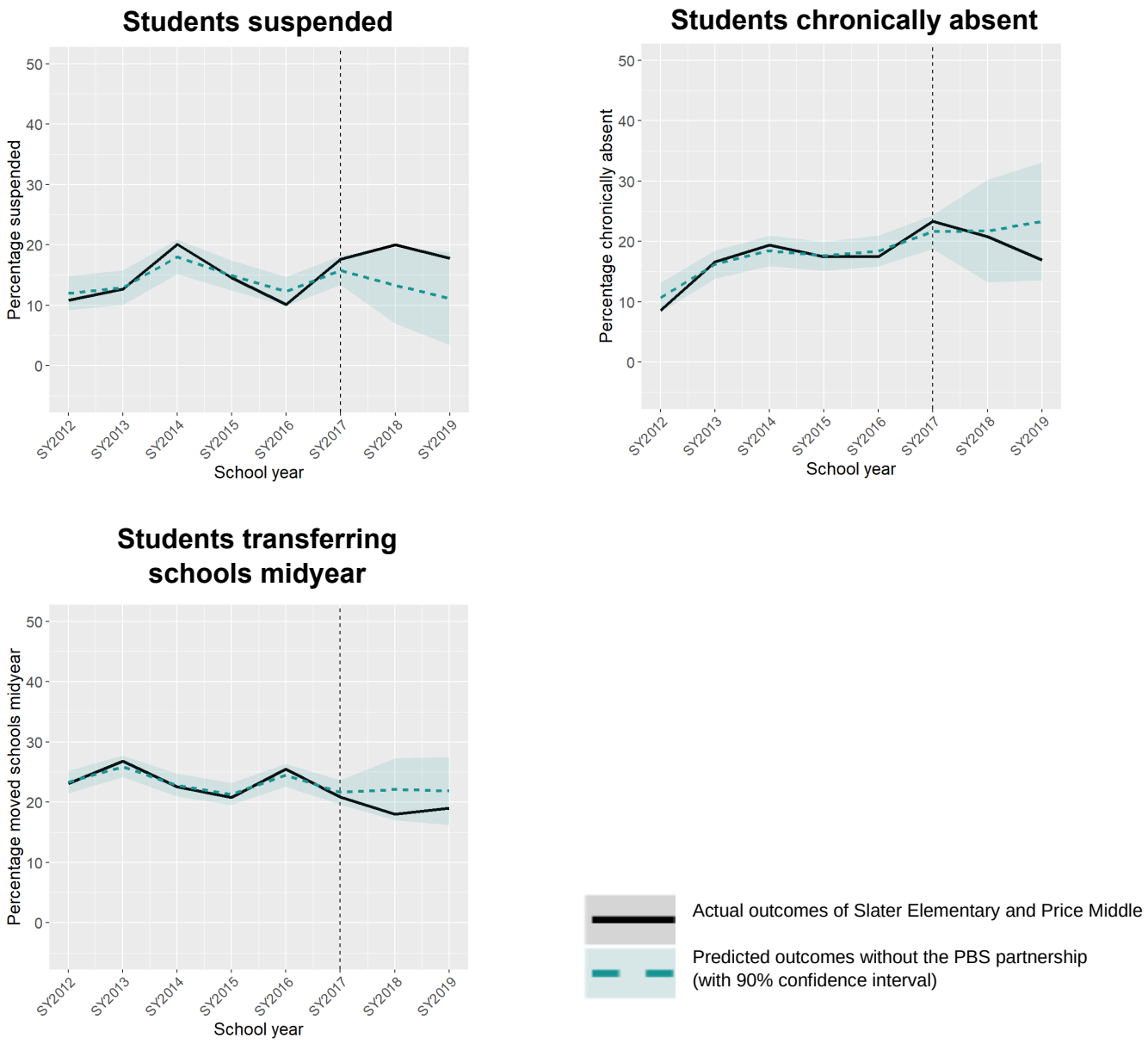


Source: APS administrative data.

Note: These figures display the actual outcome trends for nonacademic outcomes in percentages compared to the predicted counterfactual trends obtained by using matrix completion. "Students suspended" refers to the percentage of students ever suspended during each school year. "Students chronically absent" refers to the percentage of students missing 10 percent or more of days enrolled. "Students transferring schools midyear" refers to the percentage of students who were enrolled in a school in the fall but left before the end of the school year. The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools.

Figure V.4. The PBS partnership had little impact on nonacademic outcomes at Slater Elementary and Price Middle



Source: APS administrative data.

Note: These figures display the actual outcome trends for nonacademic outcomes in percentages compared to the predicted counterfactual trends obtained by using matrix completion. "Students suspended" refers to the percentage of students ever suspended during each school year. "Students chronically absent" refers to the percentage of students missing 10 percent or more of days enrolled. "Students transferring schools midyear" refers to the percentage of students who were enrolled in a school in the fall but left before the end of the school year. The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools.

C. Implementation of PBS in elementary and middle schools

Teachers indicated that the ELA and math curricula were too challenging for students. Teachers' use of small-group instruction may have supported students' learning of the rigorous curricula.

PBS teachers suggested that the chosen ELA and math curricula presented obstacles beyond those associated with initial implementation. According to multiple teachers across PBS schools, the ELA and math curricula (Wit & Wisdom and Eureka Math) were overly challenging. Teachers stated that there were assumptions in the curricula that students had certain background knowledge that they did not have (such as knowing certain professions or having traveled to places they had never been to), which made it more difficult for teachers to convey the material to students. Teachers described Eureka Math as too rigorous for students with foundational gaps, particularly students who struggled with literacy. They expressed concern that their students lacked the foundational skills necessary to implement strategies by using such advanced material.

Despite the challenges, teachers said that in the 2018–2019 school year students were more familiar with the rigor of the Eureka Math curriculum, though they did not indicate the same about the ELA curriculum. Teachers of both subjects at the elementary and middle school level reported using supplemental materials aligned with grade-level standards or using lessons associated with lower grade levels to meet the instructional needs of lower-performing students.

> "*Everything flows back to small-group instruction. When we increase small groups, we see better results.*"
>
> – PBS respondent

Both Slater Elementary and Price Middle emphasized small-group instruction by relying on teachers, paraprofessionals, and teaching assistants to come into the classroom to co-teach in small groups during ELA and math instruction. School staff used data to organize students in small groups and determine what topics to cover, which allowed for more individualization. At Slater Elementary, the small groups in kindergarten through grade 2 focused on building foundational skills, including phonological awareness, while the older grades focused on Georgia Milestones standards.

After experiencing challenges with student behavior and high suspension rates in 2017–2018, PBS focused more time and resources on SEL and other behavioral supports. However, it took most of the 2018-2019 school year to get the school culture and nonacademic supports in place at some PBS schools. As a result, the nonacademic challenges may have hindered schools' academic improvements.

School-level respondents recognized a need to create a conducive environment for learning to avoid lost instructional time resulting from behavioral challenges (for example, suspensions). Price Middle staff set school goals around the number of suspensions and referrals and reviewed

data on their progress throughout the school year. PBS schools also followed the revised APS handbook and incorporated a restorative justice framework into their approach to discipline that was reinforced through professional development for teachers. During the 2018–2019 school year, respondents across PBS schools described an increased emphasis on SEL, trauma, mindfulness, and restorative practices during trainings (see Table IV.1). For example, students at Slater Elementary use vocabulary from SEL lessons and calming strategies such as belly breathing.

Table. IV.1. Snapshots of unique approaches to behavior management used at select PBS schools

Slater Elementary 	In addition to monitoring discipline and suspension data monthly, Slater Elementary created a Google Form for teachers to submit behavior referrals. This allowed staff to track common times of day, locations, and types of discipline infractions so they could be proactive about addressing issues (for example, by reteaching certain SEL lessons).
 **Price Middle**	Price Middle increased the SEL block to 30 minutes for teachers to implement Second Step. Teachers also received training from CHRIS 180 in SEL and therapeutic trauma supports to better support students with traumatic backgrounds and to avoid exclusionary discipline practices (for example, suspensions).

Despite the supports, student behavior remained a struggle across PBS schools throughout most of the 2018–2019 school year. Teachers said that students' limited ability to engage in the rigorous curricula caused behavior challenges in the classroom. They said engaging with students in the morning, being aware of their emotional state, and adapting instruction accordingly posed challenges. It took the majority of the 2018–2019 school year before leaders in select PBS schools could shift their focus from school culture to other priorities, such as academic performance and instruction.

In the third year of the partnership, newly implemented efforts to improve instruction and support for teachers, including PBS coordinators and early release on Fridays for students, reduced instructional time for students. In addition, implementation challenges limited their usefulness for teachers and instructional support staff.

At the beginning of the 2018–2019 school year, PBS changed the schedule across all four schools to dismiss students at 1:00 p.m. on Fridays, which allowed for three hours of teacher planning and professional development. This schedule change reduced instructional time for science and social studies at the elementary schools and cut connections classes, or specials, at Price Middle. Each Friday teachers had planning time and received training on a PBS topic of focus for the school year, such as SEL, content delivery, data, or teacher-led professional development (known as "power PD"). Over the course of the school year, however, staff noted that Friday afternoons often got filled with meetings, professional learning communities, data reviews, and other needs that strayed away from the original goal of giving teachers time to plan

and participate in targeted unit and lesson planning and in specific, topical professional development that would directly benefit teachers' instruction.

To further support instruction, PBS added shared PBS coordinators who focused on addressing the academic needs of all PBS schools in the cluster, including curriculum training for teachers, guidance on how to leverage instructional time, and support for instructional coaches at each campus. However, the PBS coordinator role presented implementation challenges at the campus level. First, respondents from multiple PBS schools stated that the PBS coordinators worked with too many schools to provide adequate support to all of the schools. Second, in the beginning of the year, PBS coordinators served in a similar capacity as instructional coaches and regularly met with teachers, which created confusion among teachers who had to work with both PBS coordinators and instructional coaches. However, as the year progressed, the PBS coordinators only met with instructional coaches and the coaches shared the information from the PBS coordinators to the teachers.

The findings on the PBS model's implementation in the three elementary and middle schools included in the impact study help provide context to interpret the estimated effects of the partnership. PBS also began operating a high school in the 2018–2019 school year, Carver STEAM Academy. High schools differ in many ways from elementary and middle schools, including what outcomes they focus on improving. Therefore, we did not include Carver STEAM Academy in the impact analysis or implementation findings described in this chapter. We did, however, examine the implementation of the PBS model at Carver STEAM Academy and include our findings separately in the following box.

PBS Implementation at Carver STEAM Academy

The first PBS high school, Carver STEAM, implemented key components of the PBS model as well as more counseling and remedial support for credit recovery. Challenges with the first year of PBS implementation in a high school setting included preparing students—many of whom were three grade levels behind—to graduate and older students arriving to school late or leaving early.

Implementation of key PBS components at Carver STEAM Academy

- **High adult-to-student ratio and smaller class sizes.** PBS added noninstructional and instructional staff to have a higher adult-to-student ratio and smaller class sizes.
- **More counseling.** PBS added counselors to every grade level as well as a college and career counselor.
- **Math and literacy labs.** PBS added math and literacy labs as an early intervention tool for lab teachers to provide one-on-one or small-group instruction to students who were in the bottom third in math or literacy. In the 2018–2019 school year, lab teachers mostly worked with 9th graders.
- **Project-based learning (PBL).** PBL is an instructional approach wherein students work together and think critically about a real-world problem relevant to their lives. Carver began PBL training for 9th graders and implemented PBL in the 9th grade. The school will add a new grade of implementation each year until PBL is implemented in all grades.
- **Enrichment opportunities.** Carver's STEAM curriculum includes robotics and an emphasis on fine arts. There are also other enrichment opportunities, including visual arts and opportunities to earn college credits.
- **After-school program.** The after-school program provides students with credit recovery opportunities to aid students in graduating on time. A Response to Intervention specialist leads the after-school program.
- **Homework help.** Students have an hour of "den time" every day during which they receive homework help and other supports.

Carver STEAM Academy student population

Carver serves a similar population to other PBS schools in the Carver cluster, but in grades 9 to 12. Students come from neighborhoods with low socioeconomic status and face trauma, food insecurity, and homelessness. Many students at Carver are three or more years behind grade level. A larger proportion of students have special education designations.

Benefits associated with PBS transition at Carver STEAM Academy

- **Shared vision and excitement.** Even though 2018–2019 was a transition year, teachers said that everyone who stayed at the school or joined the school agreed to the PBS model and have the same vision for the school, so there is more excitement than last year.
- **Carver parents were mostly familiar with PBS.** As the last school to transition to the PBS model, Carver benefited because most parents already knew about the PBS transition. Some even had younger children who attended one of the PBS schools in the cluster.
- **Greater parental involvement.** School staff described seeing an increase in parental involvement and engagement as a result of the transition to PBS.

Challenges associated with PBS transition at Carver

- **Teachers needed more support with project-based learning implementation.** Carver provided teachers with limited support and planning around PBL, particularly with incorporating grade-level standards and the key components of PBL. Teachers needed more training on PBL implementation.
- **Students leave the building during their homework help block and may not return to finish the school day.** Because the homework help block was scheduled near the lunch period, students saw homework help block as a free period. Some students left the building for lunch, skipped their homework help block, and would not return to school.
- **School begins 30 minutes earlier than other APS schools and students arrive late.** PBS extended the daily school schedule, so students begin school 30 minutes earlier and stay 30 minutes later. There are two schools on one campus, Carver STEAM, which starts early, and a traditional APS school that starts 30 minutes later. Instead of taking the PBS bus, many students took the APS bus, arrived 30 minutes after school started, and missed first period.
- **Parents were confused that Carver has a different annual schedule compared to other APS schools.** Carver, along with other PBS schools, started school two weeks earlier than APS schools and only a quarter of students attended school during these two weeks. Parents, who may have children enrolled in Carver and non-PBS schools, did not realize that Carver followed a different schedule.
- **Student transiency.** High rates of student mobility made it challenging to implement a new model. Transiency is more of a problem at the high school level compared to other PBS schools. This may be because older students have more autonomy to leave school than students at elementary and middle schools.

D. The Kindezi partnership at Gideons Elementary

Kindezi operates its schools in accordance with four goals: (1) all students learning, (2) academic ownership, (3) culture and social-emotional learning, and (4) community connectedness. In accordance with these goals, the Kindezi schools feature small classes, after-school programs, staff support from school leaders, and a number of academic and nonacademic supports. An earlier report (Hallgren et al. 2019) describes implementation and impact findings from the first year of the Kindezi partnership at Gideons Elementary. In this section, we present results after the second year of the partnership's implementation (2018–2019).

Key Findings: Kindezi Partnership at Gideons Elementary

- The Kindezi partnership at Gideons Elementary, which began in the second year of the strategy (2017-2018), led to trade-offs in students' academic achievement across subjects. Substantial positive impacts in math were offset by substantial negative impacts in science and social studies.
- The Kindezi partnership had limited impacts on suspensions, chronic absence, and student mobility.
- Gideons Elementary added access to academic supports and made midyear instructional changes to address ongoing challenges with the ELA and math curricula.
- Although Gideons Elementary staff reported that newly implemented nonacademic and trauma-informed supports improved student behavior, they also stated that additional supports were needed to continue to make improvements.

E. Impact of the Kindezi partnership

This study measured the impact of the Kindezi partnership on academic (Figure V.5) and nonacademic (Figure V.6) outcomes by comparing the actual outcomes of students at Gideons Elementary with predicted outcomes that they would be expected to have in the absence of the partnership. The predicted outcomes were generated by using data from other schools in APS, excluding schools that received targeted, intensive, or other partnership supports as part of the Turnaround Strategy. Thus, this analysis measures the impact of the Kindezi partnership at Gideons Elementary relative to receiving limited or no special supports. In interpreting the results of these analyses, it is important to note that they represent the impacts of the partnership at just one school, which makes it impossible to disentangle the effects of Kindezi from any effects specific to Gideons Elementary.

The Kindezi partnership at Gideons Elementary, which began in the second year of the strategy (2017-2018), led to trade-offs in students' academic achievement across subjects. Substantial positive impacts in math were offset by substantial negative impacts in science and social studies.

Gideons Elementary had large, sustained gains in math achievement in the two years after the partnership began that significantly exceeded its predicted outcomes in this subject (Figure V.5).

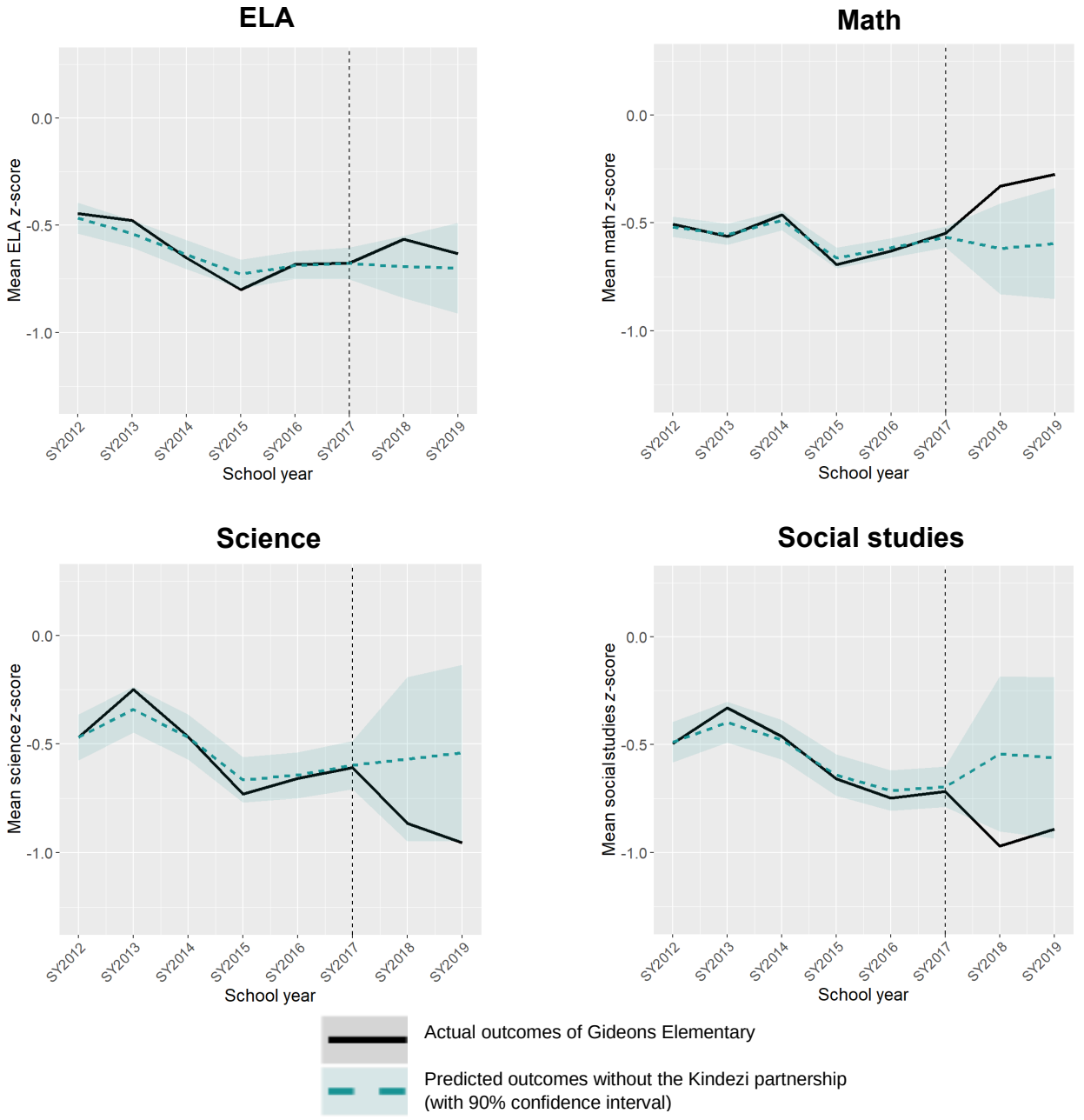
The average impact of 0.31 standard deviations (Table B.1 in Appendix B) is statistically significant and roughly represents four additional months of student learning in math.[11] Although ELA scores improved after the first year of the partnership, this gain was not sustained in the second year and we did not find a statistically significant impact on ELA achievement. On the science and social studies assessments—which only students in grade 5 take—achievement declined relative to the predicted outcomes for these subjects. Negative, statistically significant impacts of -0.35 and -0.38 standard deviations in science and social studies, respectively, represent a loss of approximately eight months of learning in each of these subjects. Trade-offs in academic achievement across subjects were consistent with the school devoting additional time for remediating foundational skills, which left less time for science and social studies instruction.

The Kindezi partnership had limited impacts on suspensions, chronic absence, and student mobility.

Gideons Elementary did not significantly deviate from its predicted suspension, chronic absence, and student mobility outcomes after two years of the Kindezi partnership (Figure V.6). As noted in the last evaluation report (Hallgren et al. 2019), there was an indication of increased suspensions in the first year of implementation at Gideons Elementary, but this unfavorable impact did not persist. School staff reported that the suspension rate could have increased in the first year due to a change in reporting practices, but also noted that student behavior improved in the 2018–2019 school year because of the nonacademic and trauma-informed supports offered. Overall, we found limited evidence of impacts on nonacademic outcomes at Gideons Elementary.

[11] These conversions are based on an analysis of annual learning growth on nationally normed exams (Bloom et al. 2008). To convert impacts into months of learning, we divided the impact estimate by the average of the typical annual growth for students in grades 3–5 in that subject and assumed a nine-month school year. The accuracy of this conversion depends upon the extent to which the learning growth on the Georgia Milestones exam is similar to the exams analyzed in Bloom et al. (2008).

Figure V.5. The Kindezi partnership had mixed effects on academic achievement

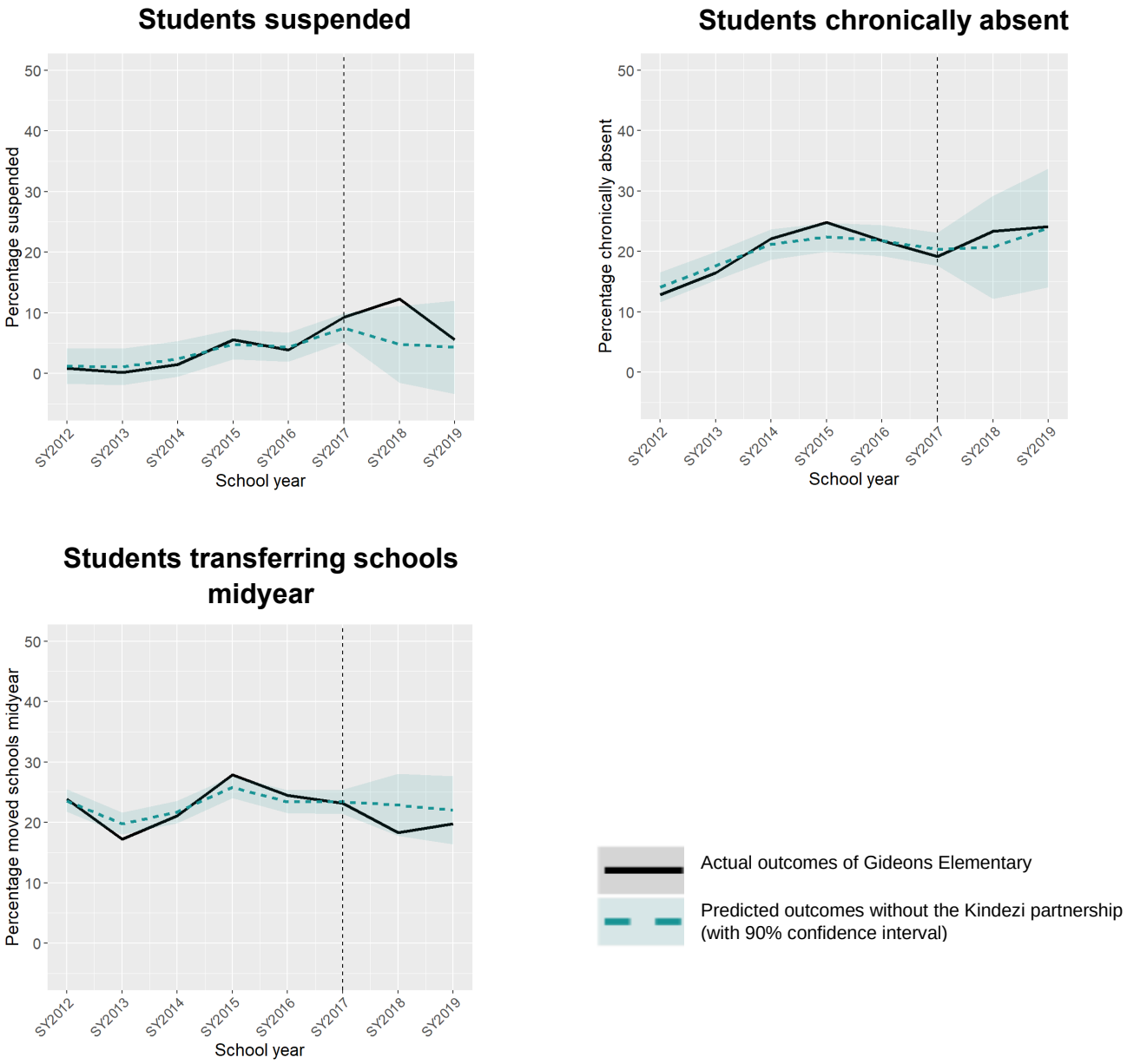


Source: APS administrative data.

Note: These figures display the actual outcome trends for the Georgia Milestones exams in *z*-scores (standard deviations) compared to the predicted counterfactual trends obtained by using matrix completion. The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools; ELA = English language arts.

Figure V.6. The Kindezi partnership had limited impacts on nonacademic outcomes



Source: APS administrative data.

Note: These figures display the actual outcome trends for nonacademic outcomes in percentages compared to the predicted counterfactual trends obtained by using matrix completion. "Students suspended" refers to the percentage of students ever suspended during each school year. "Students chronically absent" refers to the percentage of students missing 10 percent or more of days enrolled. "Students transferring schools midyear" refers to the percentage of students who were enrolled in a school in the fall but left before the end of the school year. The dashed vertical line indicates the last school year before the intervention began, such that the years to the right of the line all correspond to the post-intervention period. SY2019 refers to the 2018–2019 school year.

APS = Atlanta Public Schools.

F. Implementation of the Kindezi partnership

Gideons Elementary added access to academic supports and made midyear instructional changes to address ongoing challenges with the ELA and math curricula.

To increase the number of students performing at proficiency, Gideons Elementary expanded access to academic supports during the 2018–2019 school year by increasing the number of students served in after-school tutorials and by providing supplemental instruction on Saturdays. As part of the expansion of the after-school tutorials, Gideons Elementary required bus riders to enroll in them, unless they specified a preference for the Stewart Center's after-school program.[12] As a result, the number of students served by the 90-minute tutorials increased by 60 students—from 50 students to 110 students. Leading up to the Georgia Milestones assessments in spring 2019, Gideons Elementary also offered a Milestones Boot Camp on Saturdays for students who fell below certain standards according to Measures of Academic Progress (MAP) assessments in math and English and school-based weekly assessment data.

In addition to these additional supports, in the fall, Gideons Elementary implemented 45 minutes of independent reading time during the two-hour ELA block for every grade level, in order to improve students' enjoyment of and proficiency in reading. During independent reading time, teachers could also work individually with students to provide support. Staff who oversaw the initiative reported that they needed to work with teachers on guided reading strategies because some teachers used this time for additional whole-class instruction.

Despite these supplemental academic supports, staff acknowledged that the primary math and ELA curricula presented challenges during the 2018–2019 school year. Specifically, staff indicated that both the ELA and math curricula were too challenging for a lot of their students. Teachers struggled to move through the curricula and address all the required standards, especially when students did not understand prior lessons. Ultimately, Gideons Elementary switched the ELA curriculum midyear and began using Reading A-Z. The math curriculum, Eureka Math, was similarly challenging for students; however, teachers had flexibility to incorporate their own supplemental materials to help students understand the lessons. Math teachers at Gideons Elementary focused on remediation and used manipulatives to address the challenging curriculum.

While Gideons Elementary integrated additional ELA and math supports, they did not purchase computers and science supplies or expand its central office staff as planned, which meant limited staff availability to support the use of data to inform decision making in real time.

Although Gideons Elementary staff reported that newly implemented nonacademic and trauma-informed supports improved student behavior, they also stated that additional supports were needed to continue to make improvements.

[12] The Stewart Center after-school program focuses on homework help and involvement in extracurricular activities, including journalism, coding, and theater.

School leaders and staff reported improvements in behavior and school climate over the course of the 2018–2019 school year, after initial challenges. Enrollment of new students unfamiliar with the Kindezi model and routines limited Gideons Elementary's staff in building on the prior year's progress with student behavior. At the beginning of the school year, students had to learn or relearn classroom procedures, behavior expectations, and routines. Gideons Elementary also incorporated additional time for students to learn the structures and routines in real time. In addition, they practiced transitions, classroom procedures, and Kindezi routines when students returned from winter and spring breaks.

To support student behavior, Gideons Elementary implemented the Second Step program twice a week in every classroom to make social and emotional learning available to every student. In addition, the school had a dean of culture and three behavior aides to identify students who needed special attention and proactively implement supports for them. For example, staff used Kickboard[13] data to examine the frequency of extreme behavior and identify students who could benefit from the support of a behavior aide. Behavior aides set goals with students on their caseload and check in with them two to three times each day. If students meet their goals, the aides reduce the number of check-ins and may remove the students from their caseload. School staff recognized the supportive role of the dean of culture and the behavior aides.

Although many interviewees felt that the school environment had improved, Gideons Elementary did not experience the "night-and-day difference" that the school's leaders were hoping for with student behavior. Both school staff members and leaders recognized the need to sustain their focus on long-term student behavior, such as teaching positive behavioral strategies so that students were able and ready to learn without interruption in the classroom instruction. Kindezi leaders identified the need to provide professional development to enhance teachers' resilience with students from high-trauma areas and to train teachers to avoid triggering students' challenging behaviors to limit the need for the behavior aides.

[13] Kickboard is a classroom management software platform that helps schools implement the Positive Behavior Interventions and Supports (PBIS), SEL, and Response to Intervention (RTI) programs.

VI. STUDENT MOBILITY IN TARGETED AND PARTNERSHIP SCHOOLS

Student mobility can negatively affect students' academic outcomes, both for the students who move schools and for the students already enrolled in the schools that receive mobile students (Gruman et al. 2008; Gasper, DeLuca, and Estacion 2012; Schwartz, Stiefel, and Chalico 2007, Hanushek, Kain, and Rivkin 2004). Staff in targeted and partnership schools reported that their student populations were highly mobile, noting that this was challenging for the school as a whole. For example, students who join their school midyear may miss critical instruction if the school that they transferred from was on a different instructional calendar. To better understand the extent of student mobility in Turnaround Strategy schools, we examined students' movements midyear as well as their movements from one school year to another. Appendix D contains details about these analyses and additional results.

Key Findings: Student Mobility

- High student mobility in targeted and partnership schools made it challenging to support the needs of the changing student population while maintaining a consistent learning environment for all students.
- About 33 percent of students in targeted and partnership schools entered or withdrew from a school midyear, compared with 20 percent in other APS schools.
- Students who entered or withdrew from schools midyear faced greater challenges than other students in targeted and partnership schools. For example, they were twice as likely to be homeless or chronically absent.
- Most students who enrolled in or withdrew from schools midyear moved in or out of the district rather than between APS schools. Of those who moved between APS schools, most moved to a school in a different cluster.
- Each summer, about 20 percent of students in targeted and partnership schools change schools (excluding transitional grades 5, 8, and 12).

High student mobility in targeted and partnership schools made it challenging to support the needs of the changing student population while maintaining a consistent learning environment for all students.

Principals, teachers, and other staff in targeted and partnership schools reported several challenges associated with students enrolling in or withdrawing from their schools midyear. First, schools lacked information on new students' educational history, particularly for students transferring from schools outside of the district. Second, many students transferred into the schools multiple grade levels behind, and there was not enough time to get them to proficiency before the end-of-year assessments. Third, more time and resources were needed to schedule new students' classes and adjust small-group instruction. Finally, schools use different curricula and teach at different paces, so students who transfer between schools can miss instruction on

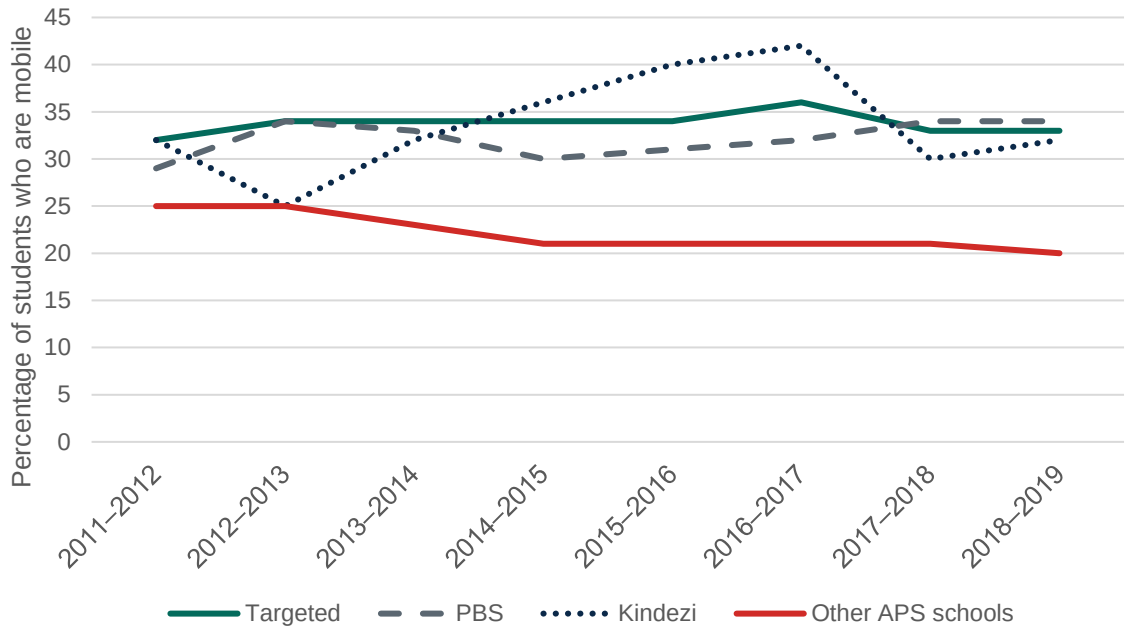
critical topics. Due to these various challenges, school staff noted it was difficult to plan for and sustain consistent supports for students.

Principals and school leaders also reported that when a substantial portion of students move over the summer, it can be challenging to know the critical needs that the student body will face from one year to the next. This has implications for how school leaders make resource and staffing plans for the school in the following year. For example, one school leader noted that they had decided to remove a leadership position at their school because of the decline in students reenrolling in the school from one year to the next. Another principal noted that because their school experienced a high rate of mobility across school years, it was difficult to maintain a stable school environment.

About 33 percent of students in targeted and partnership schools entered or withdrew from a school midyear, compared with 20 percent in other APS schools.

We identified mobile students as those who were not enrolled in the same school for the entire school year. Among all students enrolled in an APS school over the course of the 2018–2019 school year, approximately 22 percent were mobile, meaning that they moved in or out of their school at some point during the school year (Figure D.1 in Appendix D). However, targeted and partnership schools have had consistently higher rates of mobile students than other APS schools (Figure VI.1). In the 2018–2019 school year, approximately 33 percent of students enrolled in a targeted school were not enrolled in the same school for the entire school year. Rates of student mobility are similar for the partnership schools (34 percent for PBS and 32 percent for Kindezi). In contrast, in non-Turnaround Strategy APS schools, only 20 percent of students entered or withdrew from schools midyear. While the percentage of mobile students in other APS schools has declined over time, mobility rates have remained high in the schools designated as targeted and partnership schools in the 2018–2019 school year.

Figure VI.1. For several years, Turnaround Strategy schools have served a greater proportion of students who transfer midyear than have other schools in the district



Source: APS administrative data.

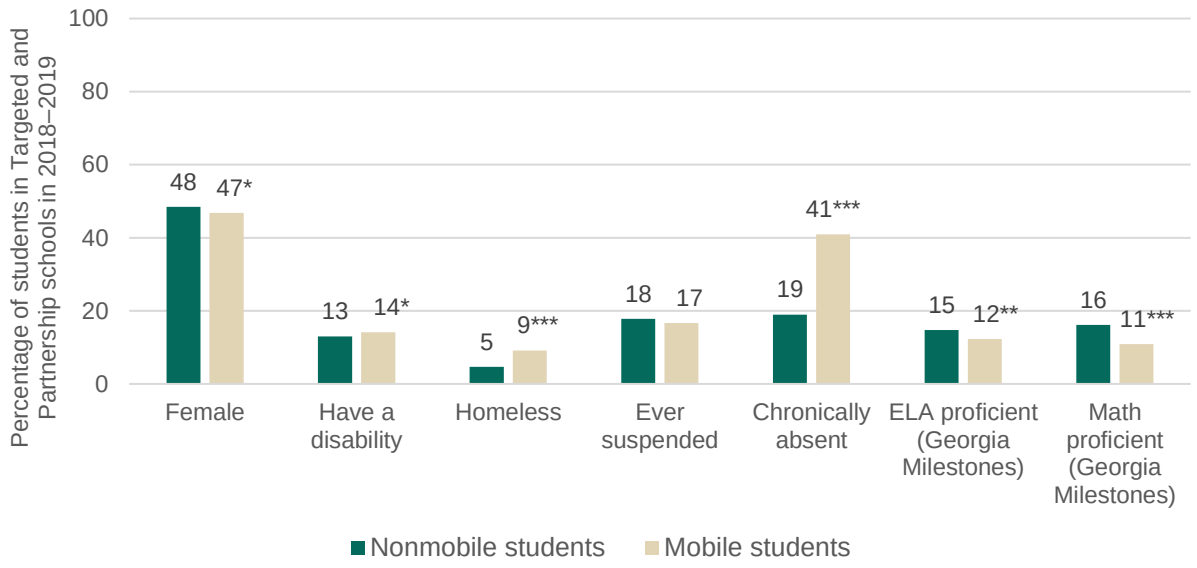
Notes: This figure shows the percentage of students enrolled in each type of school who transferred in or out of their school midyear. School types are based on the 2018–2019 school designations. For example, in schools designated as targeted schools for the 2018–2019 school year (the solid green line), 32 percent of students were mobile during the 2011–2012 school year.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

Students who entered or withdrew from schools midyear faced greater challenges than other students in targeted and partnership schools.

For example, mobile students in targeted and partnership schools are twice as likely to be chronically absent and homeless than nonmobile students in these schools, and they are less likely to score proficient on the math and ELA Georgia Milestones exams (Figure VI.2). In interviews, staff noted these differences, reporting that although many students in their schools have high needs, mobile students require more academic and nonacademic supports than other students, such as additional instructional time, wraparound services, and behavioral interventions.

Figure VI.2. Students in Turnaround schools who move schools midyear face more disadvantages than students who remain in the same school year-round



Source: APS administrative data.

Notes: These percentages are based on all students enrolled in a targeted or partnership school during the 2018–2019 school year. "Ever disciplined" shows the percentage of students who were disciplined at least one time in the 2018–2019 school year. "Chronically absent" shows the percentage of students who missed 10 percent or more of days enrolled in the 2018–2019 school year. "ELA proficient" and "Math proficient" show the percentage of students scoring at least proficient on the 2019 Georgia Milestones assessment for the respective subject.

APS = Atlanta Public Schools; ELA = English language arts.

***Difference is statistically significant at the 1 percent level.

**Difference is statistically significant at the 5 percent level.

*Difference is statistically significant at the 10 percent level.

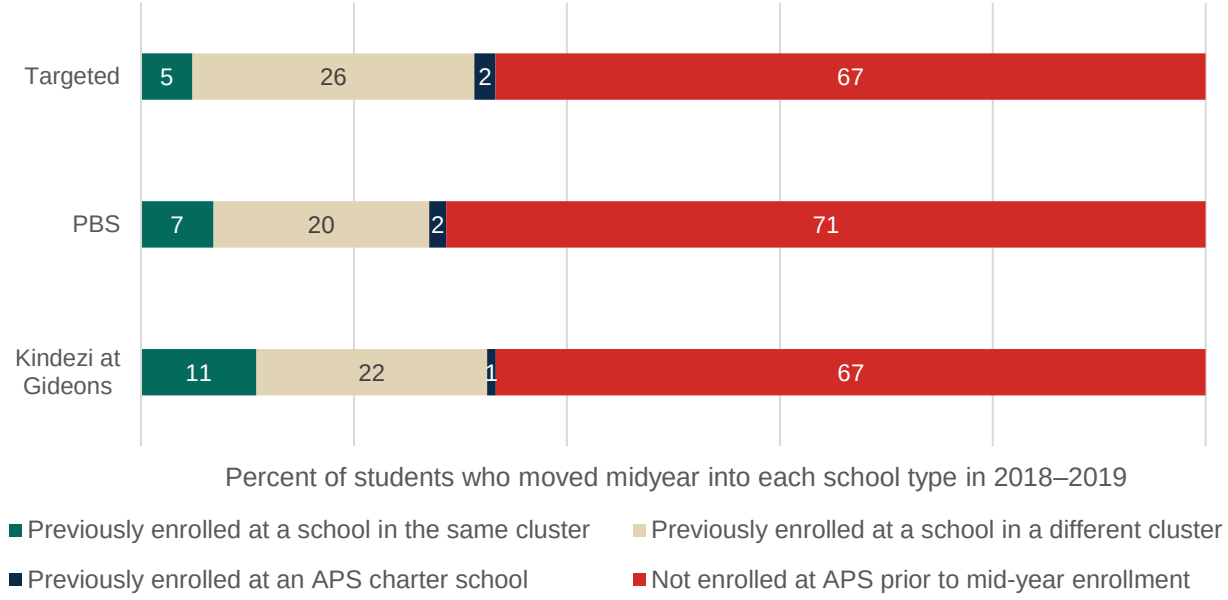
Most students who enrolled in or withdrew from schools midyear moved in or out of the district rather than between APS schools. Of those who moved between APS schools, most moved to a school in a different cluster.

Over the course of the 2018–2019 school year, almost 2,500 students enrolled in a targeted or partnership school after the start of the school year (1,841 students in targeted schools, 527 students in PBS schools, and 115 students in the Kindezi School at Gideons). These students represent about a quarter of the student enrollment present at the end of the 2018–2019 school year. Many midyear enrollments occurred in August, September, and October, with an additional spike in enrollment occurring in January (Figure D.3 in Appendix D). However, students continued enrolling in targeted and partnership schools at moderate rates through April.

Most students who entered or withdrew from schools midyear move in or out of the district rather than between APS schools. Of those who moved between APS schools, most moved to a school in a different cluster.

Most of the students who enrolled in a targeted or partnership school after the start of the school year had not previously been enrolled in the district that year (Figure VI.3). These students could have transferred from schools in other districts, charter schools not authorized by APS (as shown in the figure, few students transferred into these schools from charter schools authorized by APS), or private schools. Among those students who did come from other APS schools, more transferred from a school in a different cluster than from the same cluster. In addition, many of these students transferred from schools not affiliated with the Turnaround Strategy (Figure D.2 in Appendix D).

Figure VI.3. Most students who joined a targeted or partnership school midyear came from outside the district



Source: APS administrative data.

Notes: Data are from the 2018–2019 school year. Each portion of a bar represents the percentage of students who transferred into each type of school midyear, based on where they were enrolled prior to transferring into the school. "Previously enrolled at a school in the same cluster" includes students who were previously enrolled in the same school that they entered midyear, as long as the gap in enrollment was greater than one week. "Previously enrolled at a school in a different cluster" includes any student who transferred from an APS school that was in a different cluster than the cluster of the school they joined. "Previously enrolled at an APS charter school" includes any student who transferred from a charter school for which APS is the authorizer.

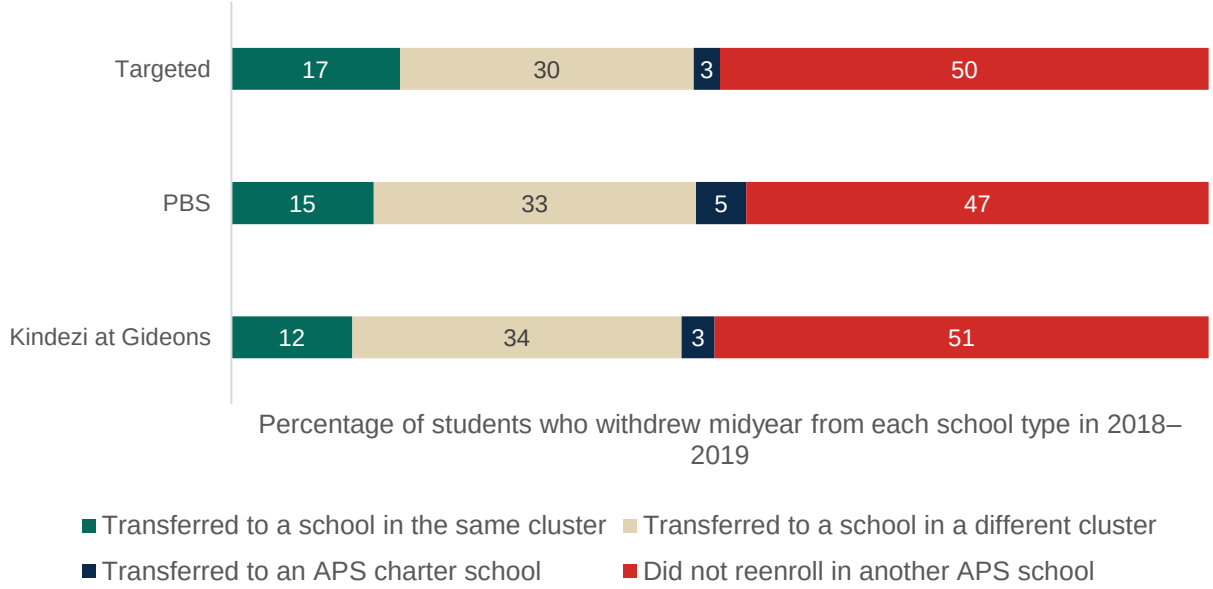
APS = Atlanta Public Schools; PBS = Purpose Built Schools.

Many of the students enrolled in targeted and partnership schools left their school before the end of the school year. Over the course of the 2018–2019 school year, more than 2,200 students withdrew from a targeted or partnership school midyear (1,734 students in targeted schools, 421 students in PBS schools, and 84 students in the Kindezi School at Gideons). Students withdrew from targeted and PBS schools at a relatively consistent rate throughout most of the school year,

excluding April and May, when fewer students left their schools (Figure D.5 in Appendix D). At the Kindezi School at Gideons, withdrawals were concentrated in the first semester.

About half of these students had not reenrolled in another APS school by the end of the school year (Figure VI.4). Among the other half that transferred to another APS school, more students transferred to schools in a different cluster than to a school in the same cluster. Across targeted and partnership schools, few students transferred to a district-authorized charter school. In addition, most of the students who transferred to another APS school transferred to non-Turnaround Strategy schools (Figure D.7 in Appendix D).

Figure VI.4. About half of the students who withdrew midyear from targeted and partnership schools did not reenroll in an APS school before the end of the school year



Source: APS administrative data.

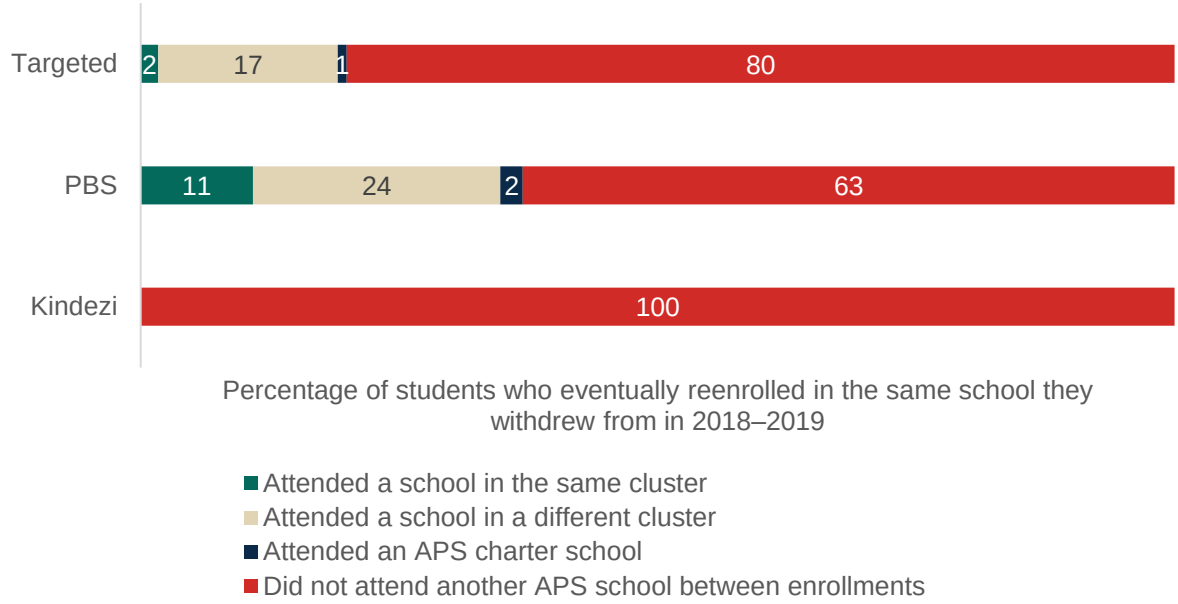
Notes: Data are from the 2018–2019 school year. Each portion of a bar represents the percentage of students who withdrew from each type of school midyear, based on where they enrolled after transferring out of the school. "Transferred to a school in the same cluster" includes students who reenrolled in the same school that they withdrew from midyear, as long as the gap in enrollment was greater than one week. "Transferred to a school in a different cluster" includes any student who transferred to an APS school that was in a different cluster than the cluster of the school from which they withdrew. "Transferred to an APS charter school" includes any student who transferred to a charter school for which APS is the authorizer.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

However, some students return to their schools before the end of the school year. In 2018–2019, almost 13 percent of students who withdrew from a targeted school midyear eventually returned to that school before the end of the school year. These rates were slightly lower in partnership schools (approximately 10 percent in PBS schools and 4 percent in Kindezi at Gideons). Most of these students did not enroll at another APS school between withdrawing from the school and eventually returning to it (Figure VI.5). In targeted schools, about seven weeks passed, on

average, before these students reenrolled in the school. For partnership schools, the average was around 10.5 weeks.

Figure VI.5. Most of the students who withdrew from and then reenrolled in the same school in 2018–2019 did not attend another APS school between enrollments



Source: APS administrative data.

Notes: Data are from the 2018–2019 school year. Each portion of a bar represents the percentage of students who withdrew from each type of school midyear and then reenrolled in the same school, based on the first school they attended between withdrawing and reenrolling. Most of these students attended only one school between withdrawing and reenrolling (90 percent, 85 percent, and 100 percent of targeted, PBS, and Kindezi students, respectively). "Attended a school in a different cluster" includes any student who attended an APS school that was in a different cluster than the cluster of the school from which they withdrew and then returned to. "Attended an APS charter school" includes any student who attended a charter school for which APS is the authorizer.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

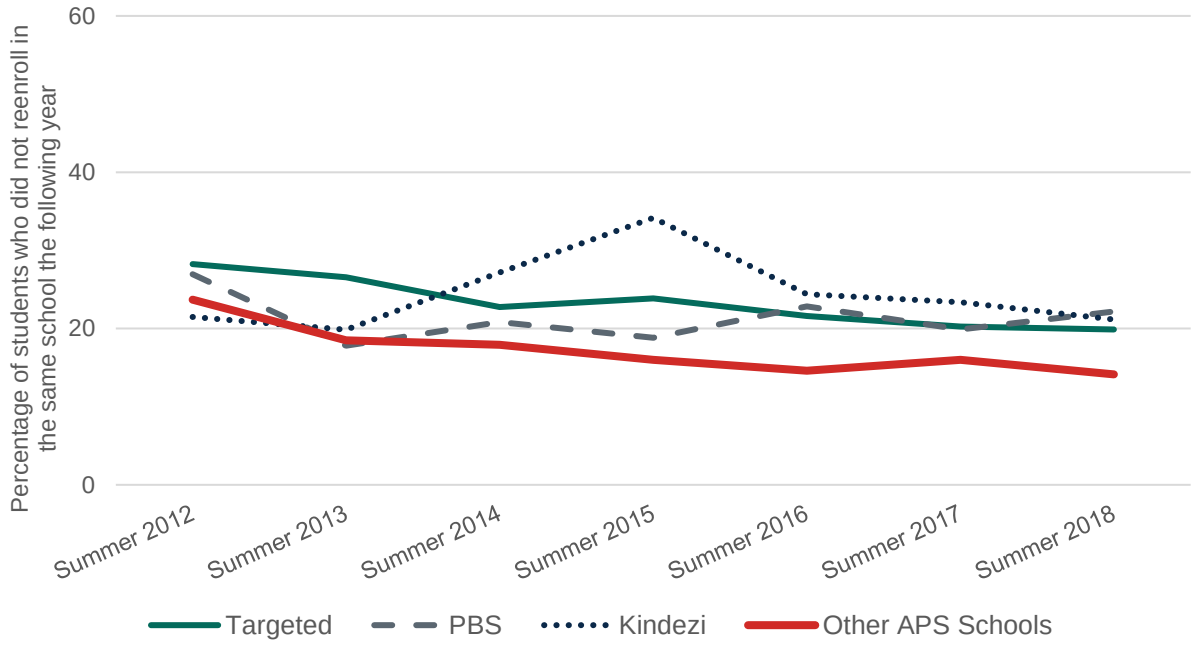
Each summer, about 20 percent of students in targeted and partnership schools change schools (excluding transitional grades 5, 8, and 12).

In targeted and partnership schools, about 20 percent of students in nontransitional grades (that is, K–4, 6–7, and 9–11) do not return to their same school at the start of the following school year (Figure VI.6).[14] This rate has remained fairly stable over time, including the periods before and after the Turnaround Strategy. Most of the students in nontransitional grades who were enrolled in a targeted or partnership school at the end of the 2017–2018 school year and did not

[14] Students in grades 5, 8, and 12 (*transitional grades*) do not typically enroll in the same school the following school year. Therefore, this rate does not include students in these grades.

return to their school at the start of the 2018–2019 school year left the district (Figure D.6 in Appendix D). However, many of these students eventually returned to APS at some point later in the 2018–2019 school year: 31 percent of those who had left targeted schools, 42 percent of those who had left PBS schools, and 21 percent of those who had left Gideons at Kindezi (Figure D.7 in Appendix D). They often reenrolled in the same school they had attended at the end of the 2017–2018 school year.

Figure VI.6. Each summer, about 20 percent of students in targeted and partnership schools change schools



Source: APS administrative data.

Notes: This figure shows the percentage of students in grades K–4, 6-7, and 9–11 who were enrolled in each type of school at the end of a school year and did not reenroll in the same school at the start of the following school year. School types are based on the 2018–2019 designations. For example, in schools designated as targeted schools for the 2018–2019 school year (the solid green line), 28% of students enrolled in nontransitional grades at the end of the 2011–2012 school year did not reenroll in the same school at the start of the 2012–2013 school year.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

VII. LEARNING AND IMPLICATIONS

From the 2016–2017 through 2018–2019 school years, APS implemented the Turnaround Strategy to support its lowest-performing schools. The findings from our study of the implementation and impacts of the Turnaround Strategy may have implications not only for APS, but also for other districts with low-performing schools as well as the larger field of policymakers and educators.

Although it is fair to expect that substantial investments in low-performing schools would improve students' academic outcomes, positive impacts in these schools may have required more support than the Turnaround Strategy offered. Though the Turnaround Strategy provided schools with additional academic and nonacademic staff, every year school staff described long waiting lists of students who qualified for nonacademic and academic supports but were unable to receive them due to a lack of staff. School staff stated that without the nonacademic supports, students demonstrated behavioral issues that impeded instruction and without the academic supports, students struggled to keep up with grade-level instruction.

Our findings do not suggest a clear advantage for either district operation or partner contracting as a turnaround strategy. Evidence from this evaluation suggests that both the targeted and partnership models had advantages and disadvantages. The targeted schools did not show academic achievement improvements over three years; however, a handful of schools showed promising results on student achievement by the third year. The Kindezi model showed large, positive impacts in math but negative impacts in science and social studies. The PBS model reduced student mobility but ultimately did not show impacts on academic achievement over three years.

Districts can offer school leaders autonomy to adjust academic and nonacademic programs to align with their schools' needs. An important part of APS's work with the targeted schools was offering school leaders increasing autonomy over the three years of the Turnaround Strategy. In the first year, APS provided limited autonomy to school leaders by asking them to implement a fixed menu of supports in their schools. In response to feedback from school staff, APS modified its implementation of the Turnaround Strategy in the targeted schools. In the second year, APS provided school leaders with more autonomy: APS determined how each school would spend a portion of its Turnaround Strategy funds and school leaders selected from a menu of targeted supports for the remaining funds. In the third year, APS provided school leaders with full autonomy over all of their Turnaround Strategy funds while still requiring them to align spending within the three buckets of math and reading specialists, extended learning, and wraparound support. When districts provide full autonomy to school leaders, they should still provide guidance to aid school leaders' short-term and long-term planning and their selection of the most relevant programs to meet their school's unique needs.

A positive school culture is important but takes time and focused nurturing. Over the course of the Turnaround Strategy, many targeted and partnership schools created a positive school

culture by having the right staff on board, recognizing staff accomplishments, and fostering strong relationships between school leaders and teachers. School leaders noted that improvements to school culture occurred mostly in the third year, after they had integrated a large number of new staff in the first and second years of the strategy. Several schools exhibited a clear focus on improvement, having honed in on their goals and on how their community could accomplish them. All of the schools that showed promising results in math and ELA also had favorable school cultures, which distinguished them from many of the schools with weaker results.

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APPENDIX A

ADMINISTRATIVE AND IMPLEMENTATION DATA

This appendix provides additional details about the administrative and implementation data described in Chapter II of the main report.

A. Administrative data

APS provided all administrative data used in the analyses. For Year 3, the school district provided student assessment, demographic, enrollment, attendance, and suspension data for the 2018–2019 school year. The statewide assessment in the 2018–2019 school year was the Georgia Milestones exam, which students in grades 3–8 took each spring in ELA, math, science, and social studies. The Georgia Milestones replaced the Criterion-Referenced Competency Tests (CRCT), starting in 2014–2015.[15] The district universal screener assessment in 2018–2019 was the Renaissance Star exam, which students took multiple times per year, typically in the fall, winter, and spring, in math and reading or early literacy. The Renaissance Star assessment replaced the Computer Adaptive Assessment System (CAAS) exam as the district universal screener assessment for elementary grades, starting in the 2016–2017 school year. Participation rates in these assessments varied across grades, years, and subjects.[16] Student demographic information included birth month and year, race and ethnicity, gender, English-language proficiency, disability status, homelessness status, and eligibility for the free and reduced-price lunch program.[17] For each school where a student enrolled, APS also provided the dates of enrollment and attendance and suspension records for the 2018–2019 school year.

In addition, APS provided data specifically related to the Turnaround Strategy for the 2018–2019 school year. We obtained roster and service data that CIS shared with APS for students who worked with CIS site coordinators in the 2018–2019 school year. Finally, APS provided data on school participation in the various components of the Turnaround Strategy in the 2018–2019 school year, as well as schools' designated cluster and Community Eligibility Provision status.

We appended each 2018–2019 data set to the historical data, spanning from school years 2011–2012 to 2017–2018, which APS provided during the first and second evaluation years. We then merged the various data sets provided by using an anonymized student ID provided by APS. We reduced the analytical data set to the student level for the CIS analysis and to the school-year level for the analyses of the targeted and partnership schools. For students who attended multiple schools within a school year, we counted a student as attending the school where he or she had the greatest number of enrollment days for that school year. However, we summed the total

[15] Beginning in the 2016–2017 school year, only students in grades 5–8 took the Georgia Milestones science and social studies exams.

[16] For example, in the 2015–2016 school year, the majority of K–11 students took the math and reading CAAS exams. In 2016–2017, the majority of pre-K–1 students took the Renaissance Star early literacy exam, while the majority of students in grades 2–5 took the Renaissance Star ELA exam. Most students in grades 1–5 took the Renaissance Star math exam.

[17] All students who attended a Community Eligibility Provision school qualified for the free and reduced-price lunch program, regardless of their personal eligibility.

number of days suspended, enrolled, and absent across all schools the student attended during the year.

We created several new variables to facilitate the analyses. For example, we transformed student assessment scaled scores into standardized *z*-scores based on districtwide year-, grade-, and subject-specific means and standard deviations. We used suspension records to create indicators of whether students received either in-school or out-of-school suspensions during the year or after the first quarter of the school year. We determined whether students had been enrolled in the district for only part of each school year or transferred schools midyear. We used attendance and enrollment data to calculate students' yearly absence rates and created an indicator of whether students were chronically absent. We also used students' birth month and year to create an indicator of whether they were behind grade level for their age.

B. Implementation data

Three researchers who conducted the data collection analyzed the notes from interviews and focus groups for topics that focused on successes and challenges with the implementation of academic and nonacademic supports, school climate, school leadership practices, staffing and hiring practices, teacher professional development, and future sustainability of the Turnaround Strategy. The notes were coded for these prespecified topics as well as for additional topics that emerged, such as the importance of relationship building to enhance school culture.

1. Targeted school data

Six phone interviews with district staff and site visits to 15 schools informed the implementation analysis of targeted supports. Data collection activities occurred in spring 2019, before schools administered the state assessments. During site visits, a team of four researchers from Mathematica conducted 64 individual or group interviews with 108 individuals: 15 principals, 23 instructional coaches, 44 teachers, 14 CIS site coordinators, and 12 reading or math specialists. The interview protocols for district staff included questions about planning efforts for the Turnaround Strategy; high-level implementation of the strategy; needs of the schools; and successes of, challenges of, and lessons learned from implementation. The school interview protocols focused on the school's top goals and priorities; planning; district-provided and in-school professional development; staff collaboration and communication practices; staff hiring and retention; data use; implementation of academic and nonacademic supports; student behavior, discipline, and social and emotional learning; and successes of, challenges of, and lessons learned from the overall Turnaround Strategy implementation.

2. PBS data

Two researchers conducted 13 interviews and focus groups during site visits to three schools for the implementation analysis of PBS. Interviews were conducted with 55 individuals, including a PBS central leader, school leaders, CIS coordinators, instructional coaches, and teachers.[18] Data

[18] We do not provide the exact numbers of specific roles to protect the confidentiality of respondents.

collection occurred in spring 2019. The PBS interview protocols focused on similar questions as the targeted school protocols but also included questions specific to the PBS model and supports, such as the use of project-based learning, the focus on STEAM, and the literacy and math labs. The interview protocols for Carver High School included questions about the first-year transition to the PBS model and about the successes and challenges of implementing PBS in a high school setting.

3. Kindezi data

Three researchers conducted a phone interview and site visits in spring 2019 to inform the implementation analysis of Kindezi at one school. Interviews were conducted with seven individuals, including Kindezi central leadership, school leaders, instructional coaches, specialists, and teachers.[19] The Kindezi interview protocols focused on similar questions as the targeted school protocols but also included questions specific to the Kindezi model and supports, such as small class sizes and after-school programs.

[19] We do not provide the exact numbers of specific roles to protect the confidentiality of respondents.

APPENDIX B

TECHNICAL APPENDIX FOR ANALYSIS OF TARGETED SUPPORTS AND SCHOOL PARTNERSHIPS

This appendix presents supplemental information for the analyses of targeted supports and school partnerships. We first provide supplemental information about the methodology used to estimate the impacts of these interventions and then present detailed results for the impact analyses discussed in the main text.

METHODOLOGY

To evaluate the average effects of the targeted school supports and the PBS and Kindezi school partnerships, we calculated the difference between (1) the actual outcomes observed in the Turnaround Strategy schools post-implementation and (2) the predicted outcomes for those schools in the same years had the Turnaround Strategy not been implemented. We examined impacts on seven outcomes: average student achievement on the Georgia Milestones ELA, math, science, and social studies exams as well as the percentage of students who were suspended or chronically absent or who left their school in the middle of the school year.

We defined the average effect of either the targeted supports or the PBS or Kindezi school partnerships on a given Turnaround Strategy school in year *t* as follows:

$$(1) \quad \tau_{Turnaround,t} = Y^1_{Turnaround,t} - Y^0_{Turnaround,t} \ ,$$

where Y^1 and Y^0 represented outcome Y under treated and untreated states, respectively. Because one cannot observe outcome values for Turnaround Strategy schools in post-treatment years without the influence of the Turnaround Strategy, we focused on estimating $Y^0_{Turnaround,t}$ for all periods *t* after implementation began. This post-treatment period varied across schools depending upon when they began receiving targeted supports or began partnering with either PBS or Kindezi. The estimated counterfactual outcomes were then used to calculate treatment effects as follows:

$$(2) \quad \hat{\tau}_{Turnaround,t} = Y^1_{Turnaround,t} - \hat{Y}^0_{Turnaround,t} \ ,$$

where $\hat{Y}^0_{Turnaround,t}$ was an estimate for the counterfactual outcome in Turnaround Strategy schools during period *t*.

After obtaining an average effect for each Turnaround Strategy school in year *t*, we averaged all the targeted (or PBS or Kindezi) schools' average effects in each year *t* to obtain the average effect of the targeted supports, the PBS partnership, and the Kindezi partnership in each year. Finally, an overall average treatment effect for each of these interventions was calculated as the average across all *t* after implementation.

A. Estimation of counterfactual outcomes

We estimated counterfactual outcomes for Turnaround Strategy schools by using a method for estimating causal effects referred to as matrix completion (MC). This method, and variations of it, have received recent attention in a body of literature that generalizes the estimation of causal effects using panel data, which nests methods such as difference-in-differences estimation and

synthetic controls as special cases (Bai 2009; Doudchennko and Imbens 2016; Gobillon and Magnac 2016; Xu 2017; Athey et al. 2018; Arkhangelsky et al. 2019). MC considers unobserved counterfactual outcomes to be missing elements in a matrix containing outcomes in the absence of treatment for all *N* units and *T* periods. Specifically, MC estimates the missing counterfactual outcomes by using all observed data in that matrix (that is, all observations except those for the treatment group in the treatment periods) to solve the minimization problem:

$$(3) \quad \min_{M,\mu,\gamma} \sum (Y_{it} - \mu_i - \gamma_t - M_{it})^2 + \lambda \|M\|_*,$$

for all (*i*,*t*) that are not the treated unit in the treatment periods. Here, Y_{it} is the outcome of interest for unit *i* at time *t*; μ_i is a fixed effect for unit *i*; γ_t is a common effect across units for time *t*; M_{it} represents both observed and unobserved time-varying factors (for example, unobserved time-varying confounders); and $\lambda \|M\|_*$ is the penalty term that imposes a cost on model complexity to the minimization. M represents a factor model that captures unit-specific, time-varying components of the underlying data-generating process, after accounting for unit fixed effects μ_i and common period effects γ_t, by using variation in the data to identify how many factors appear to be present (the rank) and their unit-specific coefficients (loadings). This factor model takes the following form:

$$(4) \quad M_{it} = \sum_{r=1}^{R} L_{ir} F_{tr},$$

where L_{ir} are unit *i*'s separate loadings for each of the *R* factors specific to year *t* represented by F_{tr}. MC uses a nuclear norm penalization for $\|M\|_*$ to solve the unknown number of *R* factors in Equation (4) and cross-validation to find the optimal penalty weight, λ (following the approach of Athey et al. 2018). Counterfactual outcomes for the treatment group are estimated by using predicted values from the following equation:

$$(5) \quad \hat{Y}_{i,t}^{0} = \hat{\mu}_i + \hat{\gamma}_t + \widehat{M}_{it},$$

for all (*i*,*t*) that are for the treated unit in the treatment periods.

This generalized approach has several attractive qualities. First, like synthetic control methods, it can accommodate designs with one treatment unit but many potential comparison units. Second, compared to traditional synthetic controls, such as those in Abadie, Diamond, and Hainmueller (2010), this method more flexibly incorporates variation in outcomes between units as well as variation within treated units over time to estimate counterfactual outcomes. The resulting counterfactual outcome values often match those of the treatment group in the pre-treatment period better than common difference-in-differences approaches, which often fail to satisfy the underlying parallel trends assumption when there is one or few treated units.[20] Third, whereas difference in differences requires many units relative to time periods and traditional synthetic controls require many time periods relative to units, MC uses regularization and is flexible in the

[20] See Arkhangelsky et al. (2019) for a discussion of difference-in-differences parallel trend assumption versus synthetic control-type weighting approaches.

dimensions of panel data that can be used. Fourth, this method relaxes the rigid functional form imposed by a standard difference-in-differences model by estimating the number of factors in the model via cross-validation.

B. Estimation of uncertainty

To describe the level of uncertainty in our estimates, we followed the literature by using two estimates of uncertainty commonly used for synthetic control methods: (1) post-treatment prediction error that used placebo treatment effects for untreated units and (2) treatment effect *p*-values adjusted for model fit in pre-treatment years. In each case, we are implicitly assuming that the variance in counterfactual outcomes for the treatment group can be approximated by using the variance in outcomes observed among the comparison group.

1. Placebo tests of counterfactual prediction error

We estimated the uncertainty of these methods in determining counterfactual outcomes in the post-treatment period by performing placebo tests with untreated units from the control group—that is, schools that did not participate in the targeted, intensive, or partnership components of the Turnaround Strategy. We removed treated schools from the sample and then, separately for each unit, assumed that unit was treated in the post-treatment period and repeated the process used to estimate counterfactual outcomes for treated schools. Because we do observe the untreated outcomes for each of these schools, the difference between their estimated and observed values provided a measure of how well the method could predict outcomes in the absence of treatment. For each outcome, we used this difference across all units' placebo tests for all post-treatment years to calculate the root mean square prediction error (RMSPE) for that outcome, as follows:

$$(6) \quad \sqrt{\frac{1}{N_{i\neq Turnaround(T-T0)}} \sum_{i\neq Turnaround} \sum_{t=T0+1}^{T} \left(Y_{i,t}^{0} - \widehat{Y_{i,t}^{0}}\right)^2},$$

where *T0* is the last pre-treatment year and *T* is the final year of panel data. If the difference between outcomes predicted by the placebo tests and actual outcome values observed among untreated units is zero in expectation, the RMSPE statistic is analogous to the standard error of counterfactual estimates among untreated units. To the extent that our counterfactual estimator performed as well for Turnaround Strategy schools as it did on average for other schools, it provides a reasonable estimation of a standard error for the predicted counterfactual outcome for the treated units (as well as for the treatment effect, after re-centering).

We also bootstrapped the RMSPE statistics each time they were calculated to reduce potential bias contained in any single estimate for an untreated unit. Year-specific RMSPE statistics were used to construct 90 percent confidence intervals for post-treatment counterfactual estimates in all of our figures.

2. Fit adjusted *p*-values

We used the empirical distribution of treatment effect estimates among the targeted, PBS, or Kindezi schools and untreated schools (via placebo tests)—adjusted for the pre-treatment fit—to approximate the likelihood of observing a particular school's estimate by random chance. Specifically, we used the distribution of a statistic commonly used for synthetic control approaches that (1) captures the magnitude of differences between a unit's observed outcomes and estimated counterfactuals in the post-treatment period and (2) down-weights that magnitude in inverse proportion to similar differences in the pre-treatment period—thus penalizing post-treatment estimates when the model poorly fits the observed, untreated outcomes in earlier periods.[21] For targeted, PBS, and Kindezi schools, we calculated the following:

$$(7) \quad \phi_{Turnaround} = \frac{\sqrt{\frac{1}{T-T0}\sum_{t=T0+1}^{T}\left(Y_{Turnaround(1),t} - \widehat{Y_{Turnaround(0),t}}\right)^2}}{\sqrt{\frac{1}{T0}\sum_{t=1}^{T0}\left(Y_{Turnaround(1)} - \widehat{Y_{Turnaround(0),t}}\right)^2 + 1}},$$

whereas for an untreated unit i, ϕ_i is calculated similarly but uses the observed, untreated values $Y_{i,t}^0$ in place of $Y_{Turnaround(1),t}$. Under the null hypothesis of no treatment effect, we used the empirical cumulative distribution of ϕ_i, $F(\phi_i)$, to estimate $\hat{p}_j$—the *p*-value for a two-tailed test of the null for a particular unit *j*:

$$(8) \quad \hat{p}_j = 1 - F(\phi_j);\ F(\phi_j) = \frac{1}{N}\Sigma_i 1\{\phi_i < \phi_j\}.$$

RESULTS

Table B.1 presents the average impacts of targeted supports and the PBS and Kindezi school partnerships. As noted above, each impact estimate is an average across each treatment year (which in turn is an average across all treated schools in that year), and thus reflects an overall impact across all participating schools and post-treatment years. In addition to estimating these overall impacts, we also estimated average impacts at the school level that indicate the effect of the targeted supports and the school partnerships in each school across the post-treatment years (Table B.2). Although there was statistically significant variation in the school-level impacts, most of the school-level impacts were not statistically significant themselves. We discuss both the overall and school-level results in Chapters III and V in the main text.

[21] See, for example, Abadie et al. (2015). Our method is similar to what has been done in the literature, except that we added 1 to the denominator to avoid exceptionally large statistics driven almost entirely by small deviations from near-perfect fits in the pre-treatment period. With this adjustment, ϕ_i in Equation (7) converges to the RMSPE for the post-treatment period as the error in the pre-treatment fit approaches zero.

Table B.1. Average impacts of the targeted supports and school partnerships

Outcome	Targeted schools		PBS schools		Kindezi at Gideons Elementary	
	Average impact	Fit adjusted *p*-value	Average impact	Fit adjusted *p*-value	Average impact	Fit adjusted *p*-value
ELA (*z*-scores)	0.038	0.452	0.009	0.714	0.099	0.357
Math (*z*-scores)	0.043	0.548	0.076	0.476	0.305*	0.071
Science (*z*-scores)	0.010	0.634	-0.074	0.463	-0.354*	0.098
Social studies (*z*-scores)	-0.005	0.439	-0.025	0.220	-0.378*	0.073
Suspension (percentage points)	0.000	0.354	0.045	0.167	0.044	0.208
Chronic absence (percentage points)	0.029	0.250	0.009	0.208	0.014	0.917
Midyear transfers (percentage points)	-0.005	0.438	-0.063*	0.062	-0.034	0.250

Source: APS administrative data.

Note: This table displays estimates of average treatment effects that reflect the difference between actual and predicted counterfactual outcomes, obtained by using matrix completion. The fit adjusted *p*-values are based on the sample-wide distribution of the statistic described in our methodology section.

APS = Atlanta Public Schools; ELA = English language arts; PBS = Purpose Built Schools.

*** Impact is statistically significant at the 1 percent level.

** Impact is statistically significant at the 5 percent level.

* Impact is statistically significant at the 10 percent level.

Table B.2. Average impacts of the targeted supports and school partnerships, by school

		ELA (*z*-scores)	Math (*z*-scores)	Science (*z*-scores)	Social studies (*z*-scores)	Suspension (percentage points)	Chronic absence (percentage points)	Midyear transfers (percentage points)
Targeted schools								
Finch Elementary School	Average impact	0.000	-0.091	-0.222	-0.197	0.044	0.058	0.040
	p-value	1.000	0.661	0.327	0.418	0.145	0.274	0.258
Long Middle School	Average impact	-0.024	-0.026	-0.084	0.106	-0.054	0.018	0.002
	p-value	0.964	0.982	0.945	0.873	0.226	0.887	1.000
Young Middle School	Average impact	-0.137	-0.136	-0.052	-0.026	-0.030	-0.029	0.027
	p-value	0.214	0.339	1.000	1.000	0.500	0.726	0.484
Perkerson Elementary School	Average impact	-0.014	0.049	-0.191	-0.136	-0.034	-0.006	-0.035
	p-value	0.714	0.875	0.473	0.582	0.306	0.629	0.129
Usher Elementary School	Average impact	0.152	0.119	-0.021	-0.306*	-0.017	0.023	-0.043
	p-value	0.161	0.446	0.873	0.091	0.694	0.597	0.161
Boyd Elementary School	Average impact	0.021	-0.015	-0.245	-0.152	0.045	0.053	-0.018
	p-value	0.768	0.768	0.200	0.364	0.210	0.210	0.613
Kimberly Elementary School	Average impact	0.024	0.106	0.075	0.060	0.006	-0.062	-0.006
	p-value	0.929	0.518	0.764	0.764	0.661	0.194	0.194
Towns Elementary School	Average impact	0.110	0.205	0.204	-0.069	-0.033	0.049	0.004
	p-value	0.286	0.143	0.364	0.491	0.403	0.306	0.500
Hollis Innovation Academy	Average impact	0.151	0.204	0.220	0.238	0.061	-0.014	-0.020
	p-value	0.125	0.125	0.273	0.164	0.177	0.581	0.226
KIPP Woodson Park Academy	Average impact	0.013	-0.084	-0.055	-0.072	-0.022	0.099*	0.000
	p-value	0.893	0.643	0.673	0.327	0.516	0.065	0.339
Tuskegee Airmen Global Academy	Average impact	0.024	0.085	0.205	0.175	-0.028	0.047	0.018
	p-value	0.821	0.607	0.455	0.455	0.484	0.113	0.694

		ELA (*z*-scores)	Math (*z*-scores)	Science (*z*-scores)	Social studies (*z*-scores)	Suspension (percentage points)	Chronic absence (percentage points)	Midyear transfers (percentage points)
Fain Elementary School	Average impact	-0.069	-0.124	-0.146	-0.087	0.046	0.075	0.014
	p-value	0.536	0.411	0.400	0.436	0.129	0.145	0.726
Scott Elementary School	Average impact	-0.165	-0.014	0.269	0.425**	-0.028	0.019	-0.026
	p-value	0.107	0.839	0.127	0.018	0.419	0.516	0.468
Barack and Michelle Obama Elementary School	Average impact	0.246*	0.140	0.121	0.041	0.006	0.010	-0.030
	p-value	0.054	0.286	0.618	0.709	0.710	0.790	0.387
Stanton Elementary School	Average impact	0.082	0.076	-0.037	-0.017	-0.017	0.045	0.029
	p-value	0.446	0.554	0.836	0.800	0.597	0.161	0.452
PBS schools								
Price Middle School	Average impact	-0.014	0.015	-0.363*	-0.458**	0.071	-0.054	-0.016
	p-value	0.841	0.909	0.070	0.047	0.120	0.140	0.680
Slater Elementary School	Average impact	-0.027	-0.036	0.026	-0.074	0.064	-0.020	-0.053
	p-value	0.886	0.591	0.953	0.837	0.160	0.880	0.100
Thomasville Heights Elementary School	Average impact	0.048	0.191	0.052	0.297	0.015	0.071	-0.101**
	p-value	0.614	0.159	0.674	0.116	0.340	0.120	0.020
Kindezi schools								
Gideons Elementary School	Average impact	0.099	0.305*	-0.354*	-0.378*	0.044	0.014	-0.034
	p-value	0.357	0.071	0.098	0.073	0.208	0.917	0.250

Source: APS administrative data.

Note: This table displays estimates of average treatment effects that reflect the difference between actual and predicted counterfactual outcomes, obtained by using matrix completion. The fit adjusted *p*-values are based on the sample-wide distribution of the statistic described in our methodology section.

APS = Atlanta Public Schools; ELA = English language arts; PBS = Purpose Built Schools.

*** Impact is statistically significant at the 1 percent level.

** Impact is statistically significant at the 5 percent level.

* Impact is statistically significant at the 10 percent level.

APPENDIX C

TECHNICAL APPENDIX FOR ANALYSIS OF COMMUNITIES IN SCHOOLS (CIS) CASE MANAGEMENT

This appendix presents supplemental information for the Communities in Schools (CIS) analyses. We first provide supplemental information on CIS data and then present additional information on the methodology used to evaluate the intervention. Lastly, we present supplemental results for the impact analyses presented in the main text.

A. Supplemental information on CIS data

APS provided a CIS case management roster for the 2018–2019 school year and an activity log containing all activities documented by the CIS site coordinators during the year for each student with whom they worked. The CIS case management roster and activity log was obtained by APS from CIS. The rosters included each caseload student's grade and the school in which the students received CIS services. The activity log also included this information, as well as a record of each activity's category; whether the activity was at the individual, small group, or school level; the activity duration (in minutes); and the activity date. We used the activity log data to create new variables for the analyses, including the number of activities each student received and the duration of CIS support.

The roster contained 620 students, 9 of whom did not have activity data. The activity data contained 645 students, 34 of whom were not included in the roster. Per guidance from APS, we based our analysis only on students who had activity data recorded (even if they did not appear in the CIS roster) because the activity log included those students who actually received CIS services.[22]

B. Supplemental information on the methodology used to evaluate CIS

1. Sample selection

The CIS impact analyses included students who met the following criteria: (1) logged five or more individual or small-group activities during the school year; (2) had the required baseline data (described in the next paragraph); (3) were successfully matched to similar comparison students; (4) had 2018–2019 Georgia Milestones math or ELA outcome scores or attendance, suspension, or fall-to-spring mobility outcome data. The eligible comparison students were composed of students in grades 3–8 who were enrolled in any targeted school and who had baseline data available but did not participate in CIS. Table C.1 summarizes how each of the above restrictions affected the sample sizes for the analyses.

[22] CIS staff noted that some CIS students received very limited support but could have been included in the service data without appearing in the roster. Thus, we excluded from the impact analysis students with fewer than five individual or small-group activities logged.

Table C.2 *(continued)*

Table C.1. Summary of CIS sample size

	Number of students
Total number of CIS students	645
CIS students with at least five individual or small-group activities logged	602
CIS students with baseline data	452
CIS students matched	425
Comparison students matched	1,590
Matched CIS students with 2019 Milestones math scores	400
Matched CIS students with 2019 Milestones ELA scores	399
Matched CIS students with 2019 attendance, suspension, and fall-to-spring mobility data	425

Source: APS administrative data.

Note: Number of CIS students matched refers to CIS students who had baseline data and who were matched with at least one comparison student.

APS = Atlanta Public Schools; CIS = Communities in Schools; ELA = English language arts.

To be included in the CIS analysis, students had to have one Renaissance Star math score and one Renaissance Star reading score from the 2017–2018 school year[23] as well as nonacademic data from the 2016–2017 and 2017–2018 school years (see Table C.2 for a complete list of baseline variables). We used two years of baseline data in this analysis because students could have been selected to work with CIS at various times up to two years prior to joining CIS (Figure IV.3 in Chapter IV).[24] Although we required test scores only from the 2017–2018 school year, we also matched students on Renaissance Star math and Renaissance Star reading or SEL scores from fall 2018 and Renaissance Star or CAAS scores from the 2016–2017 school year.[25] If these scores were missing, we imputed them by using a dummy imputation method: for each exam we

[23] For students who took the Renaissance Star math or ELA exam multiple times during the 2017–2018 school year (in the fall, winter, and spring), we took the most recent available score. Students in early grades could take the Renaissance Star early literacy test instead of the ELA test.

[24] As a sensitivity check, we repeated the matching and impact analyses on only those students who worked with a CIS site coordinator for the first time in the 2018–2019 school year. We found similar findings as in our main analysis.

[25] Similar to the 2017–2018 Renaissance Star exams, if a student took the Renaissance Star or CAAS exam more than once in the 2016–2017 school year, then we used the most recent available exam score (spring or winter). The 2016–2017 baseline scores came from the CAAS exam for 8th graders only, because they were the only group in our analysis that took the CAAS exam, and not the Renaissance Star exam, that year. All other students in the analysis took the Renaissance Star exam in the 2016–2017 school year.

(continued)

Table C.2 *(continued)*

created an indicator of whether the student was missing that exam and then set the score to a constant value of zero.[26]

CIS students who met the sample selection criteria above were eligible to be included in the analysis, even if they attended another school for a greater number of days in the 2018–2019 school year (about 2 percent of CIS students).

2. Propensity score matching methodology

We estimated a propensity score for each eligible CIS and comparison student, by grade, by using a logistic regression model. This propensity score indicated the likelihood of participating in CIS case management, given the students' prior academic performance and characteristics. Table C.2 lists the variables used to estimate the propensity scores. We first standardized all test scores by school year, grade, and subject.

Table C.2. Baseline variables used in the CIS propensity score models

Math and reading or SEL Renaissance Star scores from fall 2018
Math and reading or SEL Renaissance Star scores from the 2017–2018 school year
Math and reading or SEL Renaissance Star scores from fall 2019 squared and cubed
Math and reading or SEL Renaissance Star scores from the 2017–2018 school year squared and cubed
Indicator of whether the student took the reading or SEL test in fall 2018
Indicator of whether the student took the reading or SEL test in the 2017–2018 school year
Math and reading or SEL Renaissance Star scores from the 2016–2017 school year (grades 3–7 only)
Indicator of whether the student took the reading or SEL test in the 2016–2017 school year
Math and reading CAAS scores from the 2016–2017 school year (grade 8 only)
Indicators of whether 2016–2017 STAR or CAAS or fall 2018 Renaissance Star baselines scores were imputed by using dummy imputation
Student demographics from the 2016–2017 and 2017–2018 school years (gender, race/ethnicity, English-language learner status, disability status, homelessness status)
Indicators of whether the student was enrolled in a school for only part of the 2016–2017 and 2017–2018 school years
Indicators of whether the student transferred schools midyear during the 2016–2017 and 2017–2018 school years
Indicators of whether the student was suspended at any point in the 2016–2017 and 2017–2018 school years

[26] Before matching, 24 percent of CIS and potential comparison students were missing a fall 2018 Renaissance Star math score, 23 percent were missing a fall Renaissance Star ELA score, 35 percent of students in grades 3–7 were missing a 2016–2017 Renaissance Star math score and 26 percent were missing an ELA score, and 35 percent of 8th graders were missing CAAS math and reading scores. Among students matched, we imputed about 8 percent of fall 2018 Star scores, 12 percent of 2016–2017 Renaissance Star math scores, 2 percent of 2016–2017 Renaissance Star ELA scores, and 1 percent of CAAS math and reading scores. The imputed test scores and missing value indicators were included in the propensity score estimation and impact analyses.

Table C.2 *(continued)*

Attendance rates for the 2016–2017 and 2017–2018 school years
Indicators of whether the student was chronically absent in the 2016–2017 and 2017–2018 school years
Indicators of whether the student was behind grade level for his/her age in the 2016–2017 and 2017–2018 school years
Indicators of whether the student was suspended for two or more days in the 2016–2017 and 2017–2018 school years
Indicators of whether the student was disciplined at any point in the 2016–2017 and 2017–2018 school years
Indicators of whether the student was disciplined for a serious offense at any point in the 2016–2017 and 2017–2018 school years
Indicator of whether the student was suspended in fall 2018
Indicator of whether the student was disciplined in fall 2018
Interactions of gender with academic variables (2017–2018 and fall 2018 Renaissance Star scores)
Interactions of gender with 2017–2018 demographic variables (disciplined, disciplined for a severe event, suspended two or more times, behind grade level for age, and homelessness status in the 2017–2018 school year)

Note: We ran a logistic regression for each grade, except for grades 7 and 8, which were run together due to sample size limitations. We omitted some variables or interactions listed from grade-specific models if there was no variation in CIS students for that model.

CAAS = Computer Adaptive Assessment System; CIS = Communities in Schools; SEL = Renaissance Star early literacy.

After generating the propensity scores, we matched each eligible CIS student with up to 20 comparison students in the same grade who had the most similar propensity scores within a threshold, or radius, of 0.2 of the CIS student's propensity score. If there were no eligible comparison students within the matching radius for a given CIS student, then we excluded that student from the matched comparison impact analyses. As summarized in Table C.1, we were able to match 425 out of 452 CIS students with baseline data. Each matched CIS student was matched with 20 comparison students, on average.

Table C.3 presents summary statistics showing how well CIS students were matched to comparison students on baseline characteristics. On average, comparison students were not significantly different from the CIS students on any baseline characteristics used in the analyses. Similarly, there were no statistically significant baseline differences between CIS and matched comparison students in the analytical samples used to estimate impacts for any outcome.

Table C.3 *(continued)*

Table C.3. Baseline characteristics of matched CIS and comparison students

	CIS students	Matched comparison
2016–2017 Renaissance Star reading or SEL *z*-score (grades 3–7)	-0.429 (0.702)	-0.422 (0.691)
2016–2017 Renaissance Star math *z*-score (grades 3–7)	-0.592 (0.846)	-0.603 (0.879)
2016–2017 CAAS reading *z*-score (grade 8 only)	-0.678 (0.910)	-0.347 (0.741)
2016–2017 CAAS math *z*-score (grade 8 only)	-0.878 (0.954)	-0.428 (0.850)
2017–2018 Renaissance Star reading or SEL *z*-score	-0.588 (0.639)	-0.600 (0.636)
2017–2018 Renaissance Star math *z*-score	-0.535 (0.819)	-0.562 (0.820)
Fall 2018 Renaissance Star reading *z*-score	-0.611 (0.613)	-0.608 (0.620)
Fall 2018 Renaissance Star math *z*-score	-0.551 (0.827)	-0.548 (0.834)
Black	0.969	0.969
Hispanic	0.033	0.033
Other race	0.035	0.037
Female	0.496	0.512
2017–2018 characteristics		
Homeless	0.061	0.056
Disabled	0.066	0.067
English-language learner	0.031	0.034
Enrolled less than a full year	0.136	0.133
Transferred schools midyear	0.125	0.124
Behind grade level for his/her age	0.108	0.112
Attendance rate	0.930 (0.057)	0.930 (0.061)
Chronic absence	0.238	0.243
Ever suspended	0.172	0.179
Ever suspended in fall 2018	0.059	0.066
Suspended two or more days	0.115	0.122
Ever disciplined	0.304	0.305
Ever disciplined in fall 2018	0.148	0.153
Ever disciplined for a serious offense	0.184	0.187
2016–2017 characteristics		
Homeless	0.024	0.020

Table C.3 *(continued)*

	CIS students	Matched comparison
Disabled	0.047	0.050
English-language learner	0.031	0.034
Enrolled less than a full year	0.127	0.136
Transferred schools midyear	0.111	0.111
Behind grade level for their age	0.104	0.108
Attendance rate	0.944 (0.046)	0.943 (0.053)
Chronic absence	0.151	0.156
Ever suspended	0.111	0.085
Suspended two or more days	0.056	0.044
Ever disciplined	0.191	0.162
Ever disciplined for a serious offense	0.096	0.079
Number of students	**425**	**1,590**

Source: APS administrative data.

Note: Standard deviations are in parentheses for continuous variables. The 2016–2017 CAAS reading and math data were based on scores from 16 grade 8 CIS students and 133 grade 8 matched comparison students with nonmissing exam scores. The 2016–2017 Renaissance Star data were available for students in grades 3–7 only. Reading/SEL Renaissance Star data were based on scores from 399 CIS students and 1,409 matched comparison students. The math Renaissance Star data were based on scores from 346 CIS students and 1,262 matched comparison students. Fall 2018 reading Renaissance Star data were based on scores from 396 CIS students and 1,449 matched comparison students and the math Renaissance Star data were based on scores from 394 CIS students and 1,443 matched comparison students. Renaissance Star early literacy scores were not used for the fall 2018 baseline.

APS = Atlanta Public Schools; CAAS = Computer Adaptive Assessment System; CIS = Communities in Schools; SEL = Renaissance Star early literacy.

3. Impact model

To measure impacts by using the matched sample, we estimated an OLS regression model that accounted for any small remaining differences between CIS and comparison students in their prior academic performance and characteristics:

$$y_i = \alpha + X_i\beta + \delta T_i + grade\ dummies + school\ dummies + \varepsilon_i, \quad \text{(C1)}$$

where y_i is the outcome of interest for student *i*; X_i is a vector of demographic controls, baseline test scores, and baseline test score imputation indicators for student *i*; T_i is a binary variable for treatment status, indicating whether student *i* received case management support from a CIS site coordinator; ε_i is a random error term that reflects the influence of unobserved factors on the outcome; and δ and β are parameters or vectors of parameters to be estimated, with δ

representing the impact of the intervention of interest. Because each comparison student could be matched to multiple CIS students, we used a weighting scheme in which each CIS student had a weight of one and each comparison student had a weight representing the fraction of the number of matching CIS students.

We assessed the impact of CIS case management on students' likelihood of being suspended after October 2018, being chronically absent, or having transferred schools in the 2018–2019 school year as well as their performance on the Georgia Milestones exams from spring 2019. No students were missing suspension or chronic absence outcome data. The analyses of fall-to-spring mobility included 16 fewer students (all comparison students). The Georgia Milestones ELA analysis included 137 fewer students (26 CIS students and 111 comparison students). The math analysis included 136 fewer students (25 CIS students and 111 comparison students) due to missing outcome data (see Table C.1).

4. Exploratory analyses

In addition to the main impact analysis described above, we conducted exploratory analyses to assess whether the impacts differed for specific groups of students. Specifically, we tested whether the impacts of CIS case management varied for students who were served by CIS site coordinators with smaller caseloads.[27,28] In addition, we tested whether the impacts differed for students who were considered higher risk in the prior school year due to having been either suspended or chronically absent in the 2017–2018 school year. Finally, we tested whether CIS students who received case management in the 2018–2019 school year and at least one additional school year experienced different impacts than students who received only one year of case management.

For each variable of interest, we estimated the following regression model, which adds interaction terms to the benchmark model in Equation (C1):

$$(C2) \qquad y_i = \alpha + X_i\beta + \delta T_i + \gamma T_i E_i + E_i + grade\ dummies + school\ dummies + \varepsilon_i.$$

The coefficient γ represents how the impact differs for the exploratory variable of interest (E_i) (for example, whether the student was in a school with a smaller CIS caseload). Because students were not randomly assigned to schools and because their baseline discipline or attendance was not random, these analyses were exploratory. Therefore, the findings might reflect the influence of other related but unobserved factors.

[27] We calculated the ratio of CIS students to CIS site coordinators in each school, based on the number of students on the CIS roster, which included those with fewer than five individual or small-group activities. If that ratio was smaller than the 25th percentile of students per CIS site coordinator (or 37 students), then we classified the school as a smaller caseload school. Smaller caseload schools served about 20 percent of all CIS students.

[28] We also estimated a model that tested whether impacts differed linearly as caseload size increased. Similar to the binary model, we found no differences in outcomes in this analysis.

C. Supplemental results

Table C.4 presents the results of the main impact analysis. The impact estimates for nonacademic outcomes are shown in percentage points and the estimates for academic outcomes are shown in standardized *z*-score units. In the main text, we illustrated these findings by showing how outcomes changed for students on the CIS caseload compared to students in the matched comparison group (Chapter IV, Figures IV.5 and IV.6). For CIS students, we reported unadjusted baseline and outcome means. We then calculated the comparison group outcome rates by subtracting the relevant impact estimates from the CIS students' outcome mean. As explained in Chapter IV, CIS case management was associated with a statistically significant reduction in the likelihood of transferring schools midyear (by about 5 percentage points), but also with an increase in chronic absenteeism (by about 4 percentage points).

Table C.4. Impacts of CIS case management

		Nonacademic outcomes (percentage points)		Academic outcomes (standard deviations)	
	Likelihood of being suspended	Likelihood of being chronically absent	Likelihood of transferring schools midyear	Georgia Milestones ELA	Georgia Milestones math
Impact of CIS case management services	0.00 (0.02)	0.04* (0.02)	-0.05** (0.02)	0.03 (0.03)	-0.01 (0.03)
Number of students	**2,015**	**2,015**	**1,999**	**1,878**	**1,879**

Source: APS administrative data.

Note: This table displays impact estimates in (1) *z*-scores (standard deviations) for the 2019 Georgia Milestones exams taken by students in grades 3–8 and (2) percentage point units for the suspended, chronically absent, and midyear transfer outcomes. "Suspended" refers to the likelihood that a student was ever suspended during the school year after October 2018. "Chronically absent" refers to the likelihood that a student missed 10 percent or more of days enrolled. "Transferring schools midyear" refers to the likelihood that a student ended the school year in a different school than the one first enrolled in during the fall. Standard errors are displayed in parentheses below each impact estimate. The sample size reflects the total number of CIS students and matched comparison students in each analysis.

APS = Atlanta Public Schools; CIS = Communities in Schools; ELA = English language arts.

*** Impact is statistically significant at the 1 percent level.

** Impact is statistically significant at the 5 percent level.

* Impact is statistically significant at the 10 percent level.

1. The impact of CIS on students in schools with a smaller CIS caseload

Four of the targeted schools were classified as smaller caseload schools (Barak and Michelle Obama, Finch, and Stanton Elementary Schools and Hollis Innovation Academy). We tested whether the impacts of CIS case management differed between CIS students who attended these four schools and those who attended schools with larger CIS caseloads, hypothesizing that site coordinators with smaller caseloads were able to give more attention to their students. The

results of this analysis are presented in Table C.5. We found evidence that CIS case management was more effective in improving ELA scores in schools with larger caseloads than in schools with smaller caseloads. There were no other statistically significant differences in the impacts of CIS case management in schools with smaller versus larger caseloads.

Table C.5. Impacts of CIS case management, by caseload size

	Nonacademic outcomes (percentage points)			Academic outcomes (standard deviations)	
	Likelihood of being suspended	Likelihood of being chronically absent	Likelihood of transferring schools midyear	Georgia Milestones ELA	Georgia Milestones math
Impact of CIS case management services in larger caseload schools	0.007 (0.021)	0.030 (0.025)	-0.046** (0.021)	0.067** (0.030)	0.003 (0.031)
Impact of CIS case management services in smaller caseload schools	-0.007 (0.035)	0.070* (0.042)	-0.047 (0.033)	-0.087* (0.051)	-0.072 (0.053)
Difference in impacts (smaller minus larger caseload schools)	-0.013 (0.041)	0.040 (0.049)	-0.001 (0.039)	-0.154*** (0.059)	-0.075 (0.062)
Number of students	**2,015**	**2,015**	**1,999**	**1,878**	**1,879**

Source: APS administrative data.

Note: This table displays impact estimates in *z*-scores (standard deviations) for the 2019 Georgia Milestones exams taken by students in grades 3–5, and in percentage point units for the suspended and chronically absent outcomes. "Suspended" refers to the likelihood that a student was ever suspended during the school year after October 2017. "Chronically absent" refers to the likelihood that a student had missed 10 percent or more of days enrolled. "Transferring schools midyear" refers to the likelihood that a student ended the school year in a different school than the one first enrolled in during the fall. "Larger caseload schools" refers to schools where the ratio of students to CIS site coordinators was 37 students or more to 1 coordinator. "Smaller caseload schools" are schools where that ratio was smaller than 37:1. Standard errors are displayed in parentheses below each impact estimate. The sample size reflects the total number of CIS students and matched comparison students in each analysis. Differences in impacts may differ due to rounding.

APS = Atlanta Public Schools; CIS = Communities in Schools; ELA = English language arts.

*** Impact is statistically significant at the 1 percent level.

** Impact is statistically significant at the 5 percent level.

* Impact is statistically significant at the 10 percent level.

2. The impact of CIS on high-risk students

Approximately 38 percent of all CIS students were suspended or chronically absent in the 2017–2018 school year. As shown in Table C.6, we tested whether the impacts differed for these higher-risk students compared to other CIS students who were not suspended or chronically absent in the previous school year to assess whether CIS case management services could benefit

students with different levels of need. There was no evidence that CIS case management was more effective for one type of student.

Table C.6. Impacts of CIS case management on academic and nonacademic student outcomes, by high-risk status

	Nonacademic outcomes (percentage points)			Academic outcomes (standard deviations)	
	Likelihood of being suspended	Likelihood of being chronically absent	Likelihood of transferring schools midyear	Georgia Milestones ELA	Georgia Milestones math
Impact of CIS case management on low-risk students	0.014 (0.020)	0.030 (0.023)	-0.042** (0.020)	0.056* (0.031)	-0.010 (0.034)
Impact of CIS case management services on high-risk students	-0.016 (0.037)	0.054 (0.044)	-0.052 (0.035)	-0.008 (0.046)	-0.021 (0.042)
Difference in impacts (high-risk students minus low-risk students)	-0.030 (0.042)	0.025 (0.050)	-0.010 (0.040)	-0.065 (0.056)	-0.011 (0.053)
Number of students	**2,015**	**2,015**	**1,999**	**1,878**	**1,879**

Source: APS administrative data.

Note: This table displays impact estimates in (1) *z*-scores (standard deviations) for the 2019 Georgia Milestones exams taken by students in grades 3–8 and (2) percentage point units for the suspended and chronically absent outcomes. "Suspended" refers to the likelihood that a student was ever suspended during the school year after October 2017. "Chronically absent" refers to the likelihood that a student had missed 10 percent or more of days enrolled. "Transferring schools midyear" refers to the likelihood that a student ended the school year in a different school than the one first enrolled in during the fall. "Low-risk students" refers to students who had not been suspended nor chronically absent in the previous school year. "High-risk students" are those who were suspended, chronically absent, or both in the previous school year. Standard errors are displayed in parentheses below each impact estimate. The sample size reflects the total number of CIS students and matched comparison students in each analysis. Differences in impacts may differ due to rounding.

APS = Atlanta Public Schools; CIS = Communities in Schools; ELA = English language arts.

** Impact is statistically significant at the 1 percent level.

* Impact is statistically significant at the 5 percent level.

* Impact is statistically significant at the 10 percent level.

3. The impact of CIS on students who received support in multiple years

Approximately 18 percent of all CIS students in the 2018–2019 school year also received case management support from CIS in a previous school year (either 2016–2017, 2017–2018, or both). As shown in Table C.7, we tested whether the impacts differed for these students compared to CIS students who only received case management support in the 2018–2019 school year. Ideally, students would work with a CIS site coordinator for multiple years. However,

caseloads could shift if a student left the school; school staff decided that a student needed a different support (for example, from a school psychologist); or school staff determined that a student was improving and there were other students who needed case management. We did not find any statistically significant differences in the impacts of students with one year of support compared to those with multiple years of support. For instance, the main analysis showed that CIS case management reduced the likelihood of transferring schools midyear, and here we see that this impact was similar regardless of how many years of support a student had received.

Table C.7. Impacts of CIS case management on academic and nonacademic student outcomes, by number of years receiving CIS support

	Nonacademic outcomes (percentage points)			Academic outcomes (standard deviations)	
	Likelihood of being suspended	Likelihood of being chronically absent	Likelihood of transferring schools midyear	Georgia Milestones ELA	Georgia Milestones math
Impact of CIS case management on students with one year of support	-0.002 (0.020)	0.027 (0.023)	-0.044** (0.020)	0.043 (0.028)	-0.003 (0.030)
Impact of CIS case management services on students with two or more years of support	0.023 (0.035)	0.081* (0.042)	-0.053** (0.024)	-0.003 (0.051)	-0.056 (0.047)
Difference in impacts (two or more years of support minus one year of support)	0.024 (0.039)	0.054 (0.046)	-0.009 (0.026)	-0.046 (0.056)	-0.053 (0.052)
Number of students	**2,015**	**2,015**	**1,999**	**1,878**	**1,879**

Source: APS administrative data.

Note: This table displays impact estimates in (1) *z*-scores (standard deviations) for the 2019 Georgia Milestones exams taken by students in grades 3–8 and (2) percentage point units for the suspended and chronically absent outcomes. "Suspended" refers to the likelihood that a student was ever suspended during the school year after October 2017. "Chronically absent" refers to the likelihood that a student had missed 10 percent or more of days enrolled. "Transferring schools midyear" refers to the likelihood that a student ended the school year in a different school than the one first enrolled in during the fall. "Low-risk students" refers to students who were not suspended or chronically absent in the previous school year. "High-risk students" are those who were suspended, chronically absent, or both in the previous school year. Standard errors are displayed in parentheses below each impact estimate. The sample size reflects the total number of CIS students and matched comparison students in each analysis. Differences in impacts may differ due to rounding.

APS = Atlanta Public Schools; CIS = Communities in Schools; ELA = English language arts.

** Impact is statistically significant at the 1 percent level.

* Impact is statistically significant at the 5 percent level.

* Impact is statistically significant at the 10 percent level.

APPENDIX D

TECHNICAL APPENDIX FOR THE STUDENT MOBILITY ANALYSES

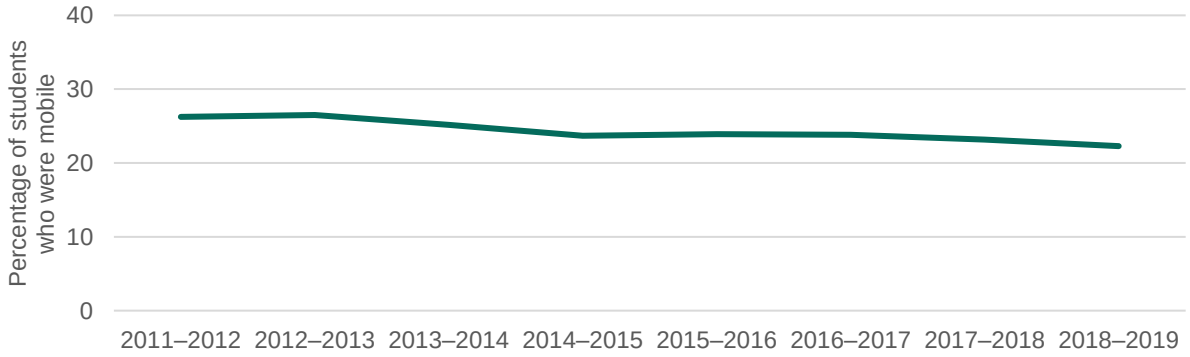
This appendix presents supplemental information and results for the student mobility analyses described in Chapter VI.

A. Supplemental information and results on midyear mobility

Students were identified as mobile if they were not enrolled in the same school for the entire school year. Specifically, we defined mobile students as having an enrollment start date at least seven days after the start of the school year or an enrollment end date at least seven days before the end of the school year. The start and end of the school year were determined for each individual school based on the most common enrollment start and end dates for students at the school in that school year. We did not consider students to be mobile if they withdrew from a school and reenrolled in that same school within seven days, unless they enrolled in another APS school between enrollments. Nonmobile students were students with an enrollment start date in a school less than seven days after the start of the school year and an enrollment end date at the same school less than seven days before the end of the school year.

The mobility rate for each school year was the number of mobile students divided by the total number of students who were enrolled in an APS school at any point in the year (Figure D.1). Although students can be mobile at multiple schools (for example, a student who withdraws from School A and enrolls in School B midyear would be considered a mobile student at both School A and School B), we only counted students once for this calculation if they were mobile in at least one school in the district over the course of the school year. A similar methodology was applied to determine the percentage of mobile students in each type of school (Figure VI.1 in Chapter VI). For example, the percentage of students who were mobile in targeted schools in a given year was the number of students who enrolled in or withdrew from at least one targeted school midyear divided by the total number of students enrolled in a targeted school at any point in the year.

Figure D.1. Percentage of students who were mobile across the district



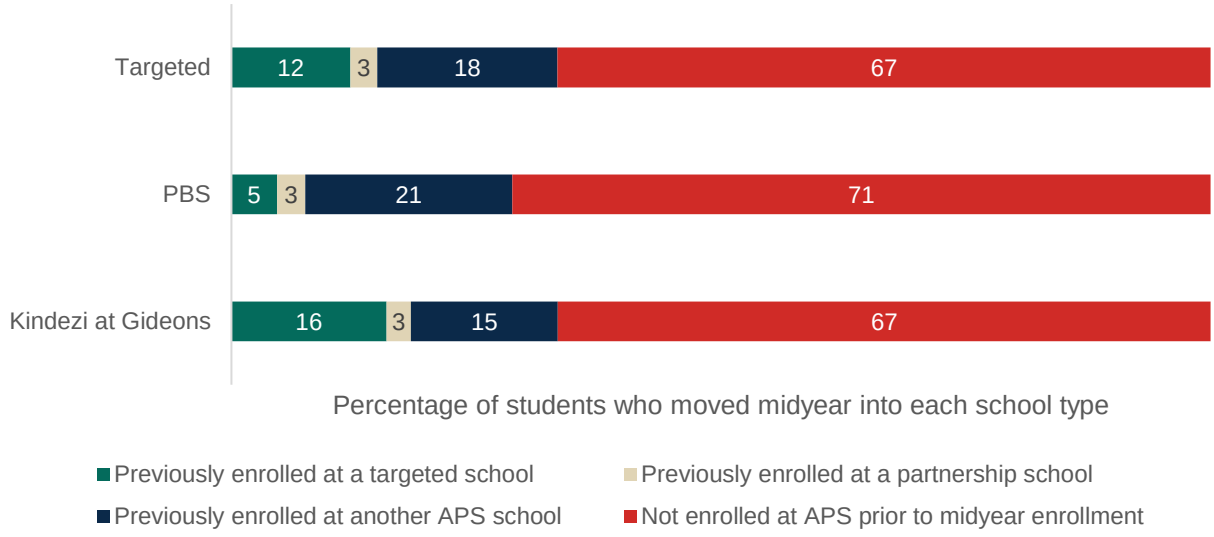
Source: APS administrative data.

Note: The line shows the percentage of students who transferred in or out of an APS school midyear, among all of the students who were enrolled in an APS school at some point during the school year.

APS = Atlanta Public Schools.

As noted in Chapter VI, almost 2,500 students enrolled in a targeted or partnership school after the start of the 2018–2019 school year. To better understand the mobility patterns of these students, we conducted some supplementary analyses in addition to those shown in the main text.[29] We examined the percentage of these students who transferred from other Turnaround Strategy schools, non-Turnaround Strategy schools, or outside the district (Figure D.2). We also determined the percentage of total midyear enrollments that occurred in each month of the school year for each type of school (Figure D.3).

Figure D.2. Percentage of students who enrolled midyear in Turnaround Strategy schools, by the type of Turnaround Strategy school where they were previously enrolled



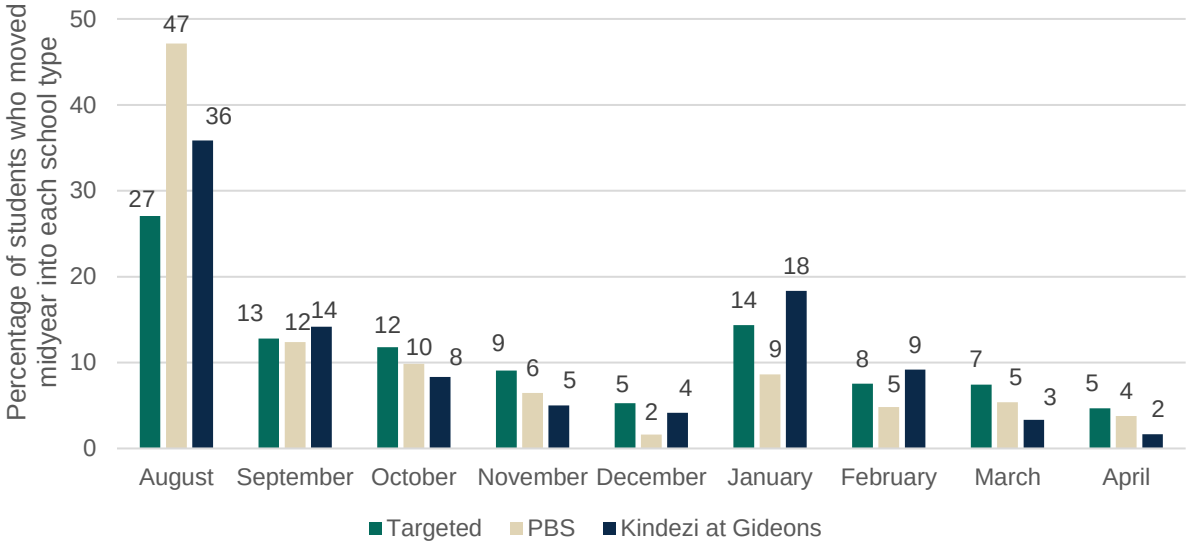
Source: APS administrative data.

Note: Data are from the 2018–2019 school year. Each portion of a bar represents the percentage of students who transferred into each type of school midyear, based on where they were enrolled prior to transferring into the school.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

[29] Fewer than 1 percent of these students enrolled in more than one targeted or partnership school over the course of the school year. If a student enrolled midyear in two targeted schools, then that student was included twice in the analyses of students who enrolled midyear in targeted schools. These analyses included students who transferred back into the same school after an enrollment gap greater than seven days. For example, in Figure D.2 the category for students previously enrolled at a targeted school included some students who were previously enrolled at the same targeted school that they reenrolled in midyear.

Figure D.3. Midyear enrollments in Turnaround Strategy schools, by month



Source: APS administrative data.

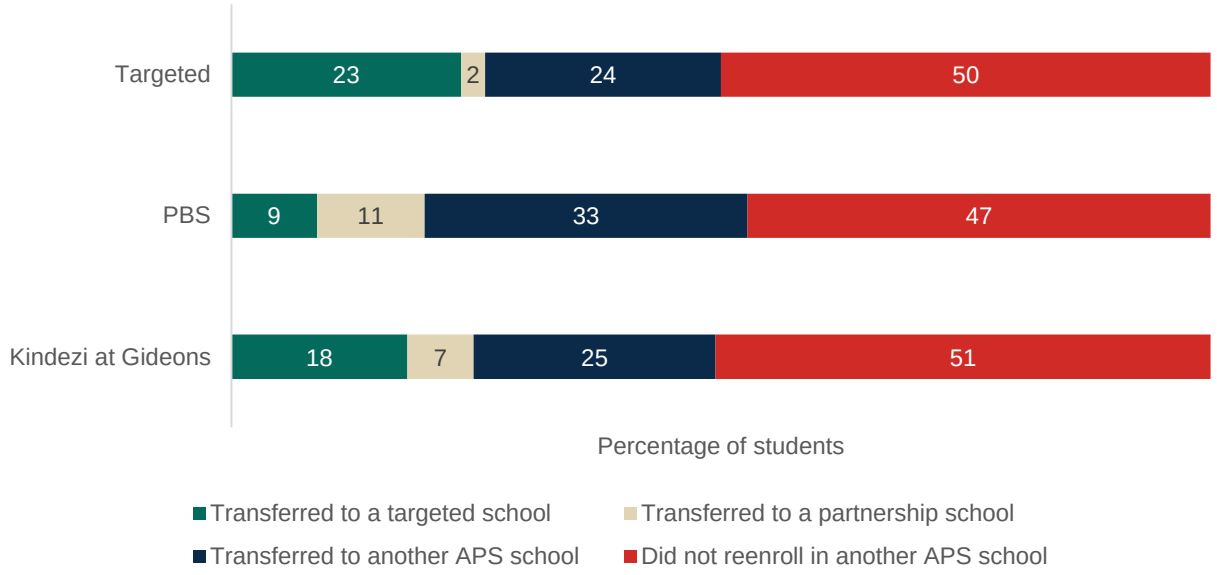
Note: Data are from the 2018–2019 school year. Each bar represents the percentage of students who transferred into each type of school midyear in the respective month. Students who transferred into schools in August joined at least one week after the start of the school year.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

During the 2018–2019 school year, more than 2,200 students withdrew from a targeted or partnership school midyear. To better understand the mobility patterns of these students, we conducted a set of similar supplementary analyses as described above. [30] We examined the percentage of these students who transferred to other Turnaround Strategy schools, non-Turnaround Strategy schools, or schools outside the district (Figure D.4). We also determined the percentage of total midyear withdrawals that occurred in each month of the school year for each type of school (Figure D.5).

[30] Fewer than 1 percent of students who withdrew from a targeted or partnership school midyear withdrew from more than one targeted or partnership school over the course of the school year. If a student withdrew midyear from two targeted schools, then that student was included twice in the analyses of students who withdrew midyear in targeted schools. As above, these analyses included students who transferred back into the same school after an enrollment gap greater than seven days.

Figure D.4. Percentage of students who withdrew midyear from Turnaround Strategy schools, by the type of school in which they next enrolled

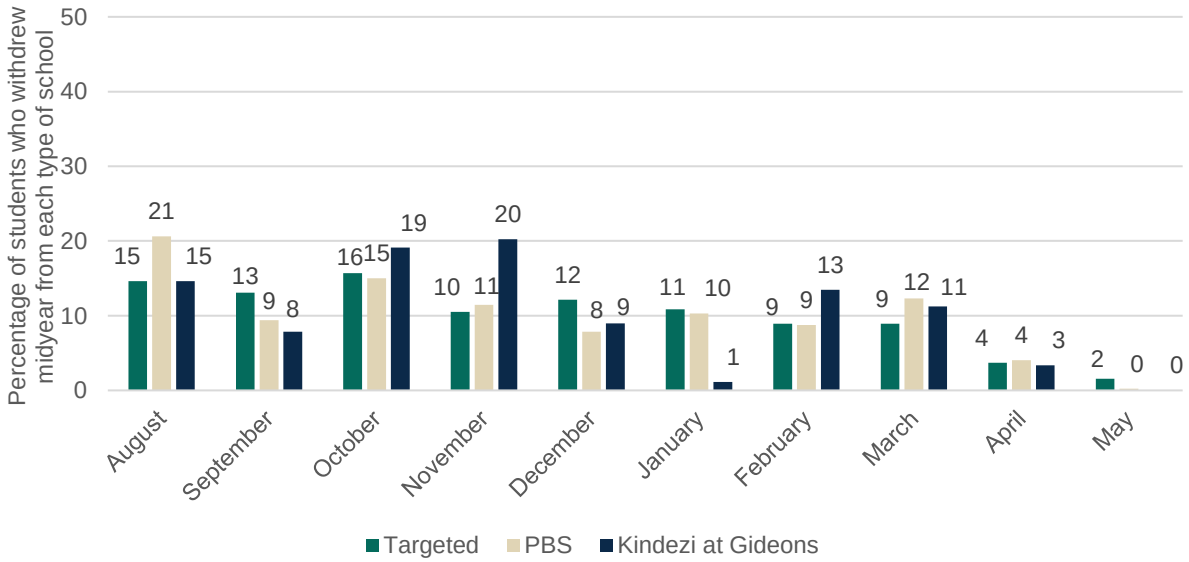


Source: APS administrative data.

Note: Data are from the 2018–2019 school year. Each portion of a bar represents the percentage of students who withdrew from each type of school midyear, based on where they enrolled after transferring out of the school.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

Figure D.5. Midyear withdrawals from Turnaround Strategy schools, by month



Source: APS administrative data.

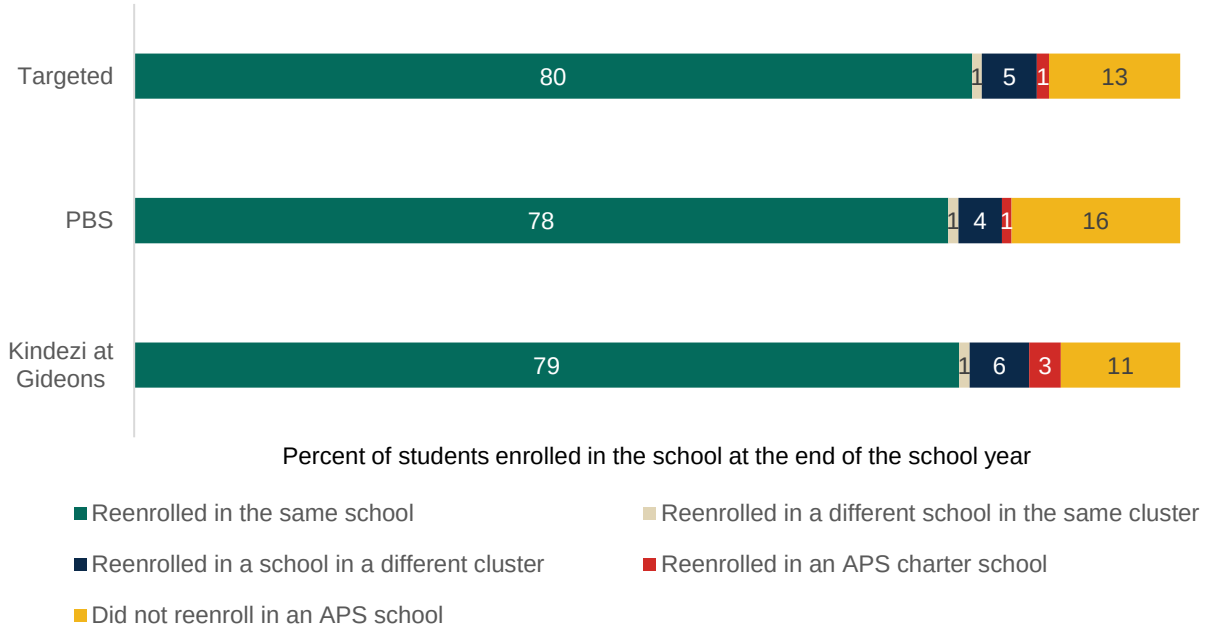
Note: Data are from the 2018–2019 school year. Each bar represents the percentage of students who withdrew from each type of school midyear in the respective month. Students who withdrew from schools in May left more than one week before the end of the school year.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

B. Supplemental information and analyses on mobility across school years

To better understand student mobility across school years, we conducted two supplementary analyses of students who were enrolled in a targeted or partnership school at the end of the 2017–2018 school year. As noted in the main text, most returned to the same school at the start of the 2018–2019 school year, but some did not reenroll in an APS school (Figure D.6). Among students who did not return to an APS school within seven days of the start of the 2018–2019 school year, most never enrolled in APS over the course of the 2018–2019 school year (Figure D.7). However, more students eventually returned to the same school they were enrolled in at the end of the 2017–2018 school year than to another APS school.

Figure D.6. Percentage of students at the end of the 2017–2018 school year, by their enrollment in fall 2018

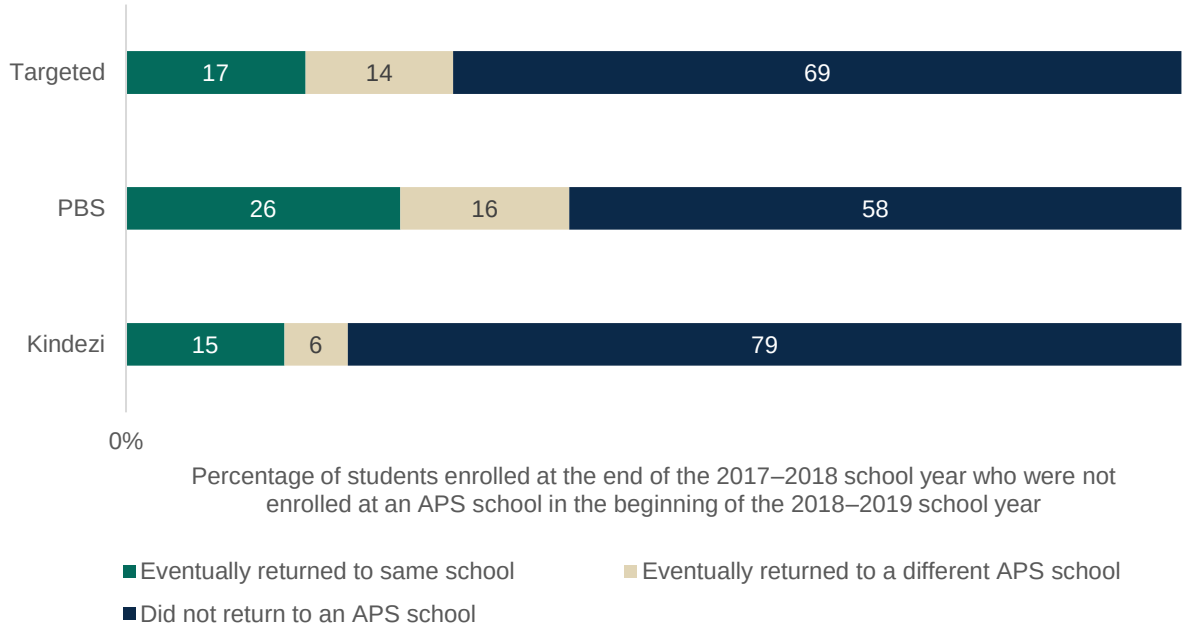


Source: APS administrative data.

Note: Each portion of a bar represents the percentage of students enrolled in a school of that type at the end of the 2017–2018 school year, based on where they were enrolled at the start of the 2018–2019 school year. Students in transitional grades (that is, grades 5, 8, and 12) were excluded from the analyses. The category for students who reenrolled in a school in a different cluster included any student who enrolled in an APS school that was in a different cluster than the cluster of the school they attended in the spring of the 2017–2018 school year. The category for students who reenrolled in an APS charter school included any student who enrolled in a charter school for which APS is the authorizer. The category for students who did not reenroll in an APS school included any student who was not enrolled in an APS school within one week of the start of the 2018–2019 school year.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

Figure D.7. Status of students who were enrolled at the end of the 2017–2018 school year but did not return to APS at the beginning of 2018–2019 school year



Source: APS administrative data.

Note: Data are from the 2017–2018 and 2018–2019 school years. Each portion of a bar represents the percentage of students who were enrolled at a school of the respective school type at the end of the 2017–2018 school year but were not enrolled in any APS school at the beginning of the 2018–2019 school year.

APS = Atlanta Public Schools; PBS = Purpose Built Schools.

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