



The author(s) shown below used Federal funding provided by the U.S. Department of Justice to prepare the following resource:

Document Title: Safe Schools Research Initiative, Summary Overview

Author(s): Pharr San Juan Alamo Independent School District

Document Number: 254129

Date Received: October 2019

Award Number: 2014-CK-BX-0015

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**Safe Schools Research Initiative
Summary Overview
NIJ Project #2014-CK-BX-0015**

Abstract

The Pharr-San Juan-Alamo Independent School District in the Rio Grande Valley implemented the Safe Schools Research Initiative (SSRI) funded through the National Institute of Justice’s Comprehensive School Safety Initiative. Through the SSRI, district secondary schools serving majority Hispanic and economically disadvantaged students adopted *Foundations*, a schoolwide intervention for promoting positive discipline policies. Eight middle and seven high schools participated in a randomized controlled trial in which survey and administrative data were collected and analyzed to assess the impact of the *Foundations* program on staff and student perceptions of school safety, as well as on student behavior and academics, and interview data were collected to learn more about program implementation. The quantitative findings showed that students who attended schools implementing *Foundations* were less likely to report having been bullied in the past 30 days. Staff interviews highlighted that securing administrator participation and buy-in is key to supporting program implementation.

Purpose

In May 2015, the Pharr-San Juan-Alamo Independent School District (PSJA ISD) in the Rio Grande Valley (on the Mexico-Texas border) began implementing the Safe Schools Research Initiative (SSRI) funded through the National Institute of Justice’s Comprehensive School Safety Initiative. This area of the Rio Grande Valley experiences a higher rate of violent crime than most other areas of Texas and the nation. Students enrolled in the district are overwhelmingly Hispanic (99%) and economically disadvantaged (85%), and 41% are classified as limited English proficient (41%). Through the SSRI, PSJA middle and high schools adopted *Foundations*, a multitiered system of support (MTSS) model developed by Safe & Civil Schools. *Foundations* is a comprehensive approach to behavior management that guides

an entire school staff in designing a proactive, positive schoolwide discipline plan. *Foundations* helps educators and support staff expand skills in effective supervision, discipline, positive behavior support, and classroom management, thereby increasing student motivation, attendance, and academic engagement.

The goals of the PSJA SSRI were to improve student engagement and attitudes toward academics, increase student attendance, increase students' academic achievement and performance, reduce students' problem behaviors and discipline referrals, and improve staff perceptions of school safety and positive climate. To achieve these goals, schools that adopted *Foundations* implemented *START on Time!*, a program for middle and high schools to create safe hallway transitions and reduce tardiness schoolwide. Schools also applied Guidelines for Success where school staff, in conjunction with students, described the attitude, traits, and behaviors that would help students be successful in classrooms and throughout their lives. Schools that implemented *Foundations* also had an advisor on campus to assist the administration in overseeing the proper implementation of the program.

A team of researchers from SRI International and Copia Consulting (hereafter referred to as the SRI team) partnered with the PSJA ISD as an external evaluator, per grant requirements, to answer the following research questions: (1) To what extent was the *Foundations* program implemented with fidelity in the participating schools? What factors facilitated or constrained implementation and why? (2) Was implementation of the *Foundations* program effective at improving students' perceptions of school climate, safety, and school engagement; increasing student attendance; increasing students' academic achievement; and reducing students' problem behaviors and discipline referrals? and (3) Was implementation of the *Foundations* program effective at improving staff perceptions of school climate and safety?

Project Design and Methods

The SRI team assessed the district's degree of implementation of *Foundations* and its associated outcomes at the school, student, and staff levels in participating schools. This randomized controlled trial (RCT) had a mixed-methods design in which the team collected and analyzed both quantitative data (e.g., administrative data and surveys) and qualitative data (i.e., interviews, focus groups) from staff and students. Schools were randomly assigned to either the treatment or comparison condition. Treatment schools (four middle schools and four high schools) received training and technical assistance for 2 years to implement the *Foundations* program. Comparison schools (four middle schools and three high schools) demonstrated the variations in behavioral and instructional practices that naturally exist among schools to provide a comparison for the effect of the MTSS framework.

Fidelity of Implementation

The SRI team assessed the degree of implementation of MTSS components of *Foundations* in all study schools using the School-wide Evaluation Tool (SET) (Todd, Lewis-Palmer, Horner, Sugai, Sampson & Phillips, 2012) in the spring of 2015, 2016, and 2017. Researchers reviewed written materials (e.g., the school's discipline handbook and school improvement goals), conducted classroom observations, interviewed one school administrator, and informally interviewed at least 10 staff members and at least 15 students. The SET produces a general index summary score (a percentage) of schoolwide implementation of MTSS as well as scores for seven specific feature areas (e.g., behavioral expectations, management, and monitoring). The SRI team used the baseline SET results (spring 2015) as well as other descriptive factors including school type (middle vs. high school) and number of school suspensions per 100 students to stratify the schools before randomization.

Student Surveys

Each spring, the researchers administered a modified version of the Maryland Safe and Supportive Schools (MDS3) Climate Survey (Bradshaw et al., 2012) to a sample of students with consent in all 15 study schools. The student survey focused on their perceptions of school climate, sense of safety,

engagement in and attitudes toward academics, and behaviors. A total of 4,262 student surveys were collected over the 3 years, in spring 2015 (461 treatment and 292 comparison), spring 2016 (1,053 treatment and 748 comparison), and spring 2017 (913 treatment and 795 comparison).

Administrative Data

PSJA ISD provided the SRI team with school administrative data including information about student attendance, tardies, and the percentage of students achieving proficiency or higher on state standardized reading and math assessments, as well as aggregate school data from the disciplinary data system on the number of office discipline referrals (ODRs) and in-school and out-of-school suspensions.

Staff Surveys

The SRI team administered the School Safety Survey (SSS) (Sprague, Colvin, & Irvin, 1996) in all 15 schools each spring in 2015, 2016, and 2017. All staff members—principals, assistant principals, teachers, librarians, and custodians—were asked to complete it. In the first year, 947 of 1,932 staff (49%) completed the survey; in the second year, 876 of 1,831 staff (48%) completed it; and in the third year, 924 of 1,836 staff (50%) completed it. The SSS asks staff members about their perceptions of school climate, safety, student behavior, student academic orientation, and parent involvement. The SSS provides summary ratings of school risk and protective factors shown to increase or buffer against school violence and discipline problems (Sprague et al., 2001).

Cost Study

The cost study was a descriptive analysis of the *Foundations* program costs using administrative cost data collected from the district. The SRI team also included funding from the National Institute of Justice grant and from the district to support the program. The team used a cost tool to examine the full costs per child to implement the *Foundations* program. The cost tool captured the salaries and benefits of all district and school staff members with any role with the program even if it was limited, as well as all costs for supplies, materials, and services related to the program. The researchers were not able to

conduct a benefit-cost analysis because the impact evaluation yielded a significant impact estimate for reported bullying for which there is little established methodology for monetization (Henrichson & Rinaldi, 2014).

Interviews

Researchers conducted 45- to 60-minute interviews with district and school personnel (such as district leaders, Safe & Civil Schools *Foundations* program staff, principals and assistant principals, teachers, non-teaching staff, and on-campus *Foundations* advisors) and held student focus groups during site visits in fall 2015, spring 2016, and spring 2017. In fall 2015 researchers conducted a total of 142 interviews with district and school personnel, as well as 11 student focus groups across the 15 treatment and comparison schools. In spring 2016 researchers visited the eight treatment schools and conducted one-on-one interviews with 33 school personnel. In spring 2017 researchers visited all 15 treatment and comparison schools and conducted interviews with 76 school personnel and 15 student focus groups.

Researchers used semistructured protocols tailored to each type of interview respondent to collect information about contextual factors that may support or impede successful implementation of an MTSS framework. Additionally, details about stakeholder perceptions of school climate and safety in all the participating schools, as well as feedback on the early implementation of *Foundations* in the treatment schools, were collected.

Data Analysis

Fidelity of implementation Analysis

A basic descriptive analysis was conducted to understand the degree of fidelity *Foundations* implementation, as measured by the SET. Multiple regression models were used to compare the difference in SET scores between the treatment and comparison groups after controlling for baseline SET scores. Tests of interrater reliability (IRR) conducted on 20% of the SET observations resulted in an IRR of 90%.

Impact Analysis

Hierarchical linear models (HLM) (Raudenbush & Bryk, 2002) were used to estimate the impact of the *Foundations* intervention on student and staff outcomes, taking into account that students and staff were nested in schools. Dependent variables were various student- or staff-reported survey scores at the end of the first year of implementation and at the end of the second year of implementation.⁴ HLMs provided the estimated difference between treatment and comparison groups on student and staff survey scores at (1) baseline and (2) post-surveys (spring 2016 and spring 2017) controlling for school-level averages at baseline on the same measure to reduce residual error. The team ran multiple regression analyses to examine the effect of the *Foundations* program on aggregate school-level scores on (1) state reading and math assessments, (2) attendance rate, (3) tardies, and (4) the number of ODRs per 100 students.

Qualitative Analysis

The researchers documented interview and focus group findings in debrief guides, in which findings were summarized across multiple interviews in a given setting (e.g., school or district) in a consistent and structured format to capture important contextual information and to trigger some initial interpretations of the data. Multiple cross-analysis team meetings were held to refine the overall conclusions based on the findings from other schools and researchers. At each cross-analysis meeting, the researchers reviewed a draft summary outline, discussed the accuracy of general conclusions, identified any potentially important findings that the initial summary did not capture, and weighed the available evidence from each school to support findings. The purpose of the analysis meetings was to provide the SRI team with the opportunity to compare, contrast, and synthesize findings from the district and schools regarding the study's evaluation questions.

Quantitative Findings

⁴ Students and staff were not linked from baseline to post-surveys by a unique identifier

Fidelity of Implementation

Schools with a general index summary score of at least 80% on the SET are considered to be at full implementation of an MTSS model at the tier 1 or universal level. None of the schools in the study met this criterion for full implementation. At the beginning of the SSRI, the average SET summary score for all treatment and comparison schools was 32%. At spring 2016 and spring 2017, the average treatment schools' SET scores had increased to approximately 45% while comparison schools' average SET scores remained consistent in spring 2016 (33%) and declined in spring 2017 (26%). These group differences in spring 2016 and spring 2017 were not statistically significant after controlling for baseline SET scores in spring 2015.

Student Outcomes

After 1 year of implementation of the *Foundations* program (in spring 2016), students in the treatment group reported being 31% less likely to have been bullied during the past 30 days than the comparison group, after controlling for baseline reports of bullying in spring 2015 (odds ratio = 0.69, $p = .0156$, effect size = -0.23). After 2 years of *Foundations* program implementation (in spring 2017), students in the treatment group reported being 36% less likely to have been bullied during the past 30 days than the comparison group after controlling for baseline scores in spring 2015 (odds ratio = 0.64, $p = .0398$, effect size = -0.27). The SRI team found no evidence of the treatment improving students' ratings of school climate, safety, or engagement in and attitudes toward academics as measured by the MDS3 survey after 1 or 2 years of *Foundations* program implementation. There were no significant differences between treatment and comparison schools 1 or 2 years after implementation of the *Foundations* program on any aggregated school-level student outcomes.

Staff Outcomes

The SRI team found no significant differences between the treatment and comparison schools on staff members' perceptions of school safety and positive climate 1 year (spring 2016) or 2 years after

implementation of the *Foundations* program (spring 2017), after controlling for school average at baseline on the same measure.

Cost Study

For the 2015–16 school year, the district spent slightly more than \$190 per student to implement the *Foundations* program and about \$177 in the 2016–17 school year. A little less than half this spending was from the grant funds, and the rest came from the district. PSJA’s total spending per student was \$11,429 in 2015–16, with the program accounting for about 2% of spending.⁵ The per-pupil spending for the 2016–17 school year was not available at the time of writing this summary. Excluding professional development, the *Foundations* program required about 1% of non-program-specific staff’s time.

Qualitative Findings

Analyses of the qualitative data produced several themes related to implementation, program supports, challenges and barriers, sustainability, and lessons learned.

Implementation

Successful implementation relied on widespread staff buy-in and participation beyond the Foundations team. In the first few months of year 1 of the initiative, only school staff who were consistently engaged in program implementation were members of the *Foundations* teams. However, engagement expanded to most school staff and administrators from year 1 into year 2. Teachers attributed this shift to other staff members seeing improvements in student behavior during class transition periods and fewer students loitering in the hallways. As misbehaviors decreased, staff buy-in and participation in program implementation increased.

Participation of school administrators was particularly important for effective implementation.

Schools in the district operate in a very top-down environment, which makes school administrators an

⁵https://rptsvr1.tea.texas.gov/cgi/sas/broker?_service=marykay&_program=sfadhoc.actual_report_2016.sas&_service=appserv&_debug=0&who_box=&who_list=108909

important lever for change in staff behavior. Initially, there was some resistance from school leaders because the SSRI initiative required *Foundations* teachers to miss class time. However, once the benefits of the SSRI initiative became more apparent, most school administrators supported program implementation and other staff followed along.

The size of the school plays a significant role in the level of implementation of Foundations. Middle schools and the smaller alternative high schools were more likely to successfully implement more components of the *Foundations* program with fidelity than the larger comprehensive high schools. This may be because of the challenges advisors faced in larger campuses in keeping staff informed, promoting engagement, and monitoring implementation.

Program Supports: Foundations training and resources were viewed as useful for implementation, but school staff wanted more targeted and differentiated training that was specific to their own campuses

The majority of school administrators and *Foundations* team members mentioned the trainings as the most useful supports they received over the course of the grant. However, some *Foundations* team members wanted more specific training for personnel and families on such topics as child abuse or bullying. Additionally, respondents reported that the *Foundations* materials and the actual *Foundations* teams were also useful resources in the implementation of the program. Team members were viewed as knowledgeable allies who answered questions and shared strategies on implementation with school staff. They served as an important link between the overall initiative and their campus.

Challenges/Barriers: There was little difference in the perceptions of safety and climate between Foundations and comparison schools

In both *Foundations* and comparison schools, most respondents had positive or improving perceptions of school safety and climate after 2 years of implementation. This may be due to the additional efforts to improve safety and climate in *all* middle and high schools over the last few years. For example, the *Capturing Kids' Hearts* initiative was commonly mentioned at both *Foundations* schools and some

comparison schools. This initiative included training teachers to build positive relationships with students. Another possible reason for the lack of difference between *Foundations* and comparison schools was that nearly all comparison schools implemented safety and climate improvement efforts that resembled aspects of the *Foundations* program such as teachers monitoring hallways during transition periods and teaching students to walk on the right side of the hallway.

Sustainability: Even without additional grant funding, nearly all Foundations schools plan to sustain the program next year

Each *Foundations* team and their advisors participated in a training to develop sustainability plans. These plans provide guidance on the roles and responsibilities of key staff members, individualized to meet the needs of the specific schools to sustain the framework into the following school year.

Lessons Learned

Consistency and perseverance in implementation were key in the success of the program in Foundations schools. Despite some of the initial challenges, participants believed consistency in implementation was vital to success and staff investment. They also cited the importance of perseverance in implementing the program. However, they warned against wanting to see drastic changes overnight.

Supportive school administrators are vital for garnering staff buy-in across the school. The school administration was broadly supportive of the *Foundations* program, which led to more engagement from the school staff. *Foundations* team members at the schools with less administrator investment cited that as a barrier to implementing the *Foundations* strategies.

Implications for U.S. Criminal Justice Policy and Practice

For students to succeed in school, educational environments should be safe, civil, and free of violence. To promote positive school climate in middle and high schools, PSJA ISD implemented the *Foundations* program, a schoolwide intervention for promoting positive discipline policies. In

collaboration with the SRI team as an external evaluator, PSJA ISD participated in a rigorous RCT to test the effectiveness of the intervention. Findings showed that students who attended schools implementing the *Foundations* program were less likely to report having been bullied in the past 30 days, providing evidence that this program can help reduce bullying in schools with majority Hispanic and economically disadvantaged students. Preventing and reducing bullying in schools are important because students who are victimized at school are at greater risk for violent behaviors (Nansel, Overpeck, Haynie, Ruan, & Scheidt, 2003), truancy (Ringwalt et al., 2003), dropping out of school, and poor academic performance (Macmillan & Hagan, 2004). However, there were no significant differences between treatment and comparison schools with respect to staffs' or students' ratings of school climate, student attendance, ODRs, or academic achievement. Evidence of some comparison schools implementing practices akin to the *Foundations* program, as well as lack of full implementation of an MTSS framework by treatment schools according to SET scores, may help explain why the intervention did not have an impact in these areas. Nonetheless, learnings from the qualitative interviews can provide PSJA ISD and other districts with strategies (e.g., the importance of administrator buy-in) for supporting implementation of the *Foundations* program.

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Appendix B Methods Appendix

Design – Cluster Randomized controlled trial (RCT) design

This study used a cluster RCT design. SRI randomly assigned eight middle schools and seven high schools to either treatment (i.e., intervention) or control (i.e., comparison) conditions. Eight treatment schools adopted *Foundations*, a schoolwide intervention for promoting positive discipline policies and received training and technical assistance for two years starting from June 2015. Seven control schools demonstrated the variations in behavioral and instructional practices that naturally exist among schools (i.e., business as usual) for two years, providing a strong natural counterfactual for the effect of the intervention.

Random Assignment Procedure

Randomization occurred at the school level. Before randomization, schools were placed in strata based on four key school-level variables [e.g., middle vs. high school, baseline School-wide Evaluation Tool (SET) scores, enrollment, and feeder school pattern]. Schools were assigned at random to treatment or control conditions from within each stratum. After randomization, we performed t-tests to examine how similar the two groups were at baseline on the four key school-level variables. The t-test results showed that treatment and control schools were very similar on SET scores and enrollment. The mean and standard deviation of the SET scores for the treatment group were 31.25 and 9.08, while it was 31.71 and 7.99 for the control group. The mean and standard deviation of enrollment for the treatment group were 988 and 578.71, while it was 1031 and 672.99 for the control group. Chi-square results show that treatment and control schools were also balanced on middle vs. high school status and feeder school pattern.

Participants

The RCT involved eight middle schools and seven high schools in the Pharr-San Juan-Alamo Independent School District (PSJA ISD). PSJA ISD serves student populations that are largely Hispanic (99%), limited-English proficient (41%), and economically disadvantaged (85%).

Outcome Measures

This study collected annual measures of school-wide climate, behavior, and academic achievement in all 15 participating schools. These measures enable us to estimate the ecological impact of the intervention and to document key covariates that may moderate and mediate both short- and long-term effects (Wehby, Dodge, & Greenberg, 1993). Our study includes outcomes of students, staff members, and schools.

Student-Level Outcome Measures - We surveyed students on school climate, their sense of safety, engagement in and attitudes toward academics, and behaviors at baseline (spring 2015), spring 2016, and spring 2017, using an abbreviated version of the Maryland Safe and Supportive Schools (MDS3) Climate Survey (Bradshaw et al., 2012). MDS3 established high internal consistency reliabilities ranging from 0.59 to 0.85. A sample of English language arts classrooms at each of the 15 intervention and comparison schools were selected to fill out the

survey annually. We used the strategy of sampling whole classes to ease administration since the whole class can take the survey simultaneously in one period rather than pulling out students from multiple classrooms.

Staff-Level Outcome Measures – All staff in the 15 treatment and comparison schools completed the School Safety Survey (SSS; Sprague et al., 1996) at baseline (spring 2015), spring 2016, and spring 2017. The SSS provides summary ratings of school risk and protective factors shown to increase or buffer against school violence and discipline problems (Sprague et al., 2001) from staff perspectives. A Risk Factor score (on a scale of 1 = *not at all* to 4 = *extensive*) is constructed from responses to 17 questions related to space design and crowding, perceived caring and sensitivity to cultural differences, student bonding with the school, quality of student-adult interactions, perceived fairness of school rules, and level of adult supervision. A Protective Factor score (on the same 4-point scale) is constructed from responses to 16 questions about school climate, clarity of behavioral expectations, student participation and inclusion, opportunities for student skill acquisition, and formal and predictable systems for conflict resolution. The survey has high internal consistency ($\alpha = .90$) and has been used to measure general school safety (Kellam, Mayer, Rebok, & Hawkins, 1998; Laxton & Sprague, 2005; Sprague et al., 1996; Sprague & Walker, 2005).

Aggregate school data from the disciplinary data system on the number of office discipline referrals (ODRs) and days of in-school and out-of-school suspension per 100 students indicated the overall level of problem behavior in each school. Although we readily acknowledge variations in how schools define, administer, and record ODRs, these data can be a useful metric for assessing school-wide discipline approaches and monitoring the effects of a multi-tiered system of support (May et al., 2000).

We collected percent at or above proficiency level on mathematics and reading subtests of the STAAR for each middle school and percent at or above proficiency level on End of Course English I, English II, and Algebra for each high school in spring 2015, spring 2016, and spring 2017. School-level achievement measures in spring 2015 were used as baseline scores for assessing academic outcomes in subsequent years. We also collected school-level attendance rate from 2015 to 2017.

Data Analysis

Factor Analysis. Survey analysis began with basic descriptive statistics for each item for the whole sample and by school type. The second stage of survey analysis involved creating the scores for survey scales that measure the key dimensions of school climate, safety, and student attitudes. Because the student survey was based on an abbreviated version of the MDS3 survey, we conducted principal axis with varimax rotation factor analysis to explore the internal structure of the survey items. Eigenvalues and scree plot cut-off points were used to guide the dimensionality of the factor space and to let the interpretability of the factors indicate the exact number of factors to retain. The large, dominant first eigenvalue and explained variance indicate single factors for each set of items. Exhibit B-1 presents each item, factor loading, and alpha reliability coefficients for each factor. Using the student survey data collected for this study, the reliability alpha (a measure of a single, unidimensional latent construct) ranged from 0.59 to 0.85, indicating a high level of inter-correlation among items under each factor.

Exhibit B-1. Student Survey Subscales, Item Factor Loadings

Subscales	Factor Loading
<i>Connection to and support from teachers (7 items; $\alpha = 0.84$)</i>	
My teachers tell me when I do a good job.	0.66
My teachers care about me.	0.79
My teachers listen to me when I have something to say.	0.73
Students are rewarded for positive behavior.	0.52
My teachers encourage me to work hard in my classes.	0.72
Teachers at this school help students with their problems.	0.71
There is someone at school who I can talk to about personal problems.	0.59
<i>Students perceptions of connectedness and safety (8 items, $\alpha = 0.85$)</i>	
I like coming to school.	0.52
I like this school.	0.58
I believe I can do well at this school.	0.47
I feel like I belong.	0.58
Students help one another.	0.47
Students get along well with each other.	0.50
I feel safe at this school	0.71
I feel safe going to and from this school	0.71
<i>Bullying, aggression, and general drug use (4 items, $\alpha = .79$)</i>	
Physical fighting between students	0.61
Bullying of students	0.69
Students' use of tobacco (such as cigarettes, chew, cigars)	0.87
Students' alcohol use (such as beer, wine, liquor)	0.85
<i>Culture of Equity (3 items, $\alpha = .85$)</i>	
Students of all races are treated the same.	0.82
All students are treated equally, regardless of whether their parents are rich or poor.	0.79
Boys and girls are treated the same.	0.77
<i>School Environment: disorder and physical discomfort (3 items, $\alpha = 0.58$)</i>	
Students disobey the rules.	0.45
There are often broken windows, doors, or desks in this school.	0.78
The school is usually clean.	-0.66
<i>Parent Engagement (3 items, $\alpha = 0.59$)</i>	
If I do something bad at school, my parents hear about it.	0.60
When I do something good at school, my parents usually hear about it.	0.54
Parents often come to school to help out.	0.77

Note. Factor loadings should be at or above + or – 0.40.

Results showed that the student survey items could be grouped into six factors or subscales. Exhibit A-1 shows the six subscales used in the current study. To create summary measures, we computed average scores across all the items under each factor to ease the interpretability of each scale. The average scores indicate the ranking on a latent continuum for that factor.

Impact Analysis.

Student and Staff level Outcomes Analysis.

Intent-to-treat (ITT) is the average effect of the treatment based on the initial treatment assignment regardless how many participants actually received the treatment. The ITT impact estimate is the expected effect of treatment when it was implemented in the real world, with less than perfect implementation and student dosage. Two-level HLM models (Raudenbush & Bryk, 2002) were performed to estimate ITT impact taking into account students and staff are nested in schools. Dependent variables are various student- or staff-reported survey scores at the end of the first year of implementation (spring 2016) and at the end of the second year of implementation (spring 2017). In HLMs estimating treatment impact on student outcomes, the first and second levels are student and school, respectively. In HLMs estimating treatment impact on staff outcomes, the first and second levels are staff and school, respectively. Effect sizes of the ITT effect are presented following What Works Clearinghouse standards 3.0 (What Works Clearinghouse, 2014). Because a sample of students were selected at baseline (spring 2015) to complete the survey and an independent sample of students were selected to complete the post-surveys (at spring 2016 and spring 2017), students were not linked from baseline to post-survey by their ID. HLM impact models controlled for school-level baseline score instead of student-level baseline score. We ran two sets of HLMs to compare intervention and comparison groups on student survey scores at baseline and post-survey respectively.

The first set of HLM compare baseline survey scores between the two groups to understand whether the two groups were different at baseline.

Student level: $Y_{ik} = \pi_{0k} + e_{ik}$

School level: $\pi_{0k} = \gamma_{00} + \gamma_{01} I_k + \mu_{0k}$, where,

- Y_{ik} is the student survey score at baseline for the i -th student in the k -th school.
- I_k is an indicator of the k -th school being in the treatment group, and γ_{01} is the treatment effect.
- e_{ik} and μ_{0k} are the student- and school-level residual variance terms.

The second set of HLM compare post-survey scores between the two groups controlling for school-level averages at baseline on the same measure to reduce residual error.

Student level: $Y_{ik} = \pi_{0k} + e_{ik}$

School level: $\pi_{0k} = \gamma_{00} + \gamma_{01} I_k + \gamma_{02} W_k + \mu_{0k}$, where,

- Y_{ik} is the student survey score at posttest for the i -th student in the k -th school.
- W_k is school-level average scores at baseline on the same survey measure.
- I_k is an indicator of the k -th school being in the treatment group, and γ_{01} is the treatment effect.

- e_{ik} and μ_{0k} are the student- and school-level residual variance terms.

Please note that the post-survey was measured twice: once at spring 2016 and once at spring 2017. Therefore, the above second set of HLMs were conducted twice: once using spring 2016 survey score as the outcome measure, and the other set used spring 2017 score as the outcome measure.

We also ran the same above-mentioned HLM for staff survey outcomes (staff perceptions of school safety as measured by the SSS) replacing student level with staff level in the above HLM. Because the same set of staff completed both baseline and post-survey, we also performed four sets of HLMs that compare baseline to post-survey in spring 2016 and from baseline to post-survey in spring 2017 within intervention group and within comparison group to test whether there were any changes within group. Additionally, for a subsample of staff we were also able to link baseline to post-surveys through staff email addresses, and re-run the HLM impact models to control for staff-level baseline difference to increase precision of the analysis. However, analyses using linked staff survey responses did not produce different impact findings than when using non-linked staff survey responses. Therefore, we only present non-linked staff survey responses in this progress report.

School-level Outcomes Analysis.

We ran multiple regression analysis to examine the effect of intervention on aggregate scores of 1) state reading and math tests, 2) the number of ODRs⁶ per 100 students, and 3) attendance rate. Please note that because this analysis uses school level data, the sample size is 15. ITT effect sizes are presented.

For school-wide average test scores, the primary analysis for the treatment effect in each implementation year is a linear regression. The model for state test achievement by subject is as follows: $Y_k = \beta_0 + \beta_1 T_k + \beta_2 W_k + e_k$, where:

- Y_k is the average state test score for the k-th school in a single intervention year.
- T_k is an indicator of the k-th school being in the treatment group.
- W_k is school wide baseline scores (test scores, ODRs, or attendance rate) to reduce residual variability.
- e_k is the school-level random effect.

Fidelity of Implementation Analysis. Basic descriptive analysis was conducted to understand the degree of implementation fidelity of *multi*-tiered systems of support (MTSS) components in *Foundations*, as measured by the SET. SRI tracked the SET scores in both treatment and comparison schools over time to measure treatment-comparison contrast in the activities constituting the MTSS components of *Foundations* being implemented in the treatment schools. Multiple regression models comparing the difference in SET scores between the two groups after controlling for baseline SET scores were conducted.

⁶ We ran linear regression to ODRs because ODRs are normally distributed.

Moderation Analyses. To examine the extent to which the MTSS components of *Foundations* may be more or less efficacious by baseline achievement, baseline attendance, baseline ODRs, and school type (middle vs. high), SRI augmented the impact analyses above with interaction terms of intervention and these moderating variables. The model is as follows:

$$Y_k = \beta_0 + \beta_1 W_k + \beta_2 T_k + \beta_3 T_k V_k + e_k$$

where, Y_k is the outcome measure for the school, W_k are covariates (including the moderator), T_k is the treatment indicator, and V_k is the moderator, $T_k V_k$ is the interaction term between treatment and moderator.

For student or staff outcomes, we conducted 2-level HLM with student outcomes at level 1, moderators at level-2, and treatment by moderator interaction terms at level-2. Results from moderation analysis using school level data and moderation analysis using student and teacher level data are presented. We only proceeded with interaction analysis when main impacts were significant.

Mediation analysis. Mediation implies a causal hypothesis whereby an independent variable effects change in a mediator variable that in turn effects change in a dependent variable (MacKinnon, 2008). For example, we hypothesized that improved SET scores mediated the effects of the intervention on student survey outcomes. Specific conditions must be met to affirm mediation effects (Baron & Kenny, 1986; Holmbeck, 1997). Generally speaking, to test whether mediation occurred, we have to

Step 1: demonstrate significantly different student survey outcomes by condition,

Step 2: show significantly different levels of SET score by condition,

Step 3: establish that SET scores are significantly related to student survey outcomes in a model when both intervention and SET scores are predictors of student outcomes, and

Step 4: show that the effect of the intervention on student outcomes is significantly less in (step 3) when the model controlled for SET scores than in (step 1) when the model did not control for SET scores.

We modeled the first three steps by HLM, taking into account the clustering of data. To determine the statistical significance of the mediation effect (step 4), a Sobel test was conducted to determine whether the association between intervention and outcome is reduced significantly when controlling for the mediator. Difference in coefficients was calculated (MacKinnon & Dwyer, 1993) to test the mediation hypotheses.

When evaluating a mediation effect three different regression models are examined:

Model A for Step 1: $Y_0 = \gamma_1 + \tau X_1 + \varepsilon_1$

Model B for Step 2: $M = \gamma_2 + a X_1 + \varepsilon_2$

Model C for Step 3: $Y_0 = \gamma_3 + \tau' X_1 + b M + \varepsilon_3$

In these models Y_0 is the dependent variable (student outcome), X_1 is the independent

variable (treatment indicator) and M is the mediator (SET score). γ_1 , γ_2 , and γ_3 represent the intercepts for each model, while ε_1 , ε_2 , and ε_3 represent the error term for each equation. τ denotes the relationship between the treatment indicator variable and student outcome in model 1, while τ' denotes that same relationship in model C after controlling for the effect of the mediator. The terms aX_i and bM represent the relationship between the treatment and the mediator, and the mediator and student outcome after controlling for treatment, respectively. In order to determine the statistical significance of the mediation effect (Step 4), the Sobel test = $(a*b)/SE$ where SE is the pooled standard error term and $SE = \text{SQRT}(b^2*sa^2 + a^2*sb^2)$ and sa^2 is the variance of a and sb^2 is the variance of b (Sobel, 1982).

Effect sizes and odds ratio. Effect size indicates the strength of the intervention effect. We report HLM-adjusted effect sizes (ES) for continuous outcomes and odds ratio estimate for categorical outcomes. HLM-adjusted ES is calculated by dividing the coefficient associated with intervention's effect from two-level HLMs by the unadjusted pooled within-group standard deviation of the outcome at the student level (What Works Clearinghouse, 2014). The odds ratio indicates the likelihood of an event occurring. An odds ratio of 1 means that treatment and comparison groups have the same likelihood of achieving the outcome (was bullied during the past 30 days). An odds ratio above 1 means that the treatment group has a higher likelihood of achieving the outcome by the percent above 1 (e.g., an odds ratio of 1.10 would mean a 10% higher likelihood of being bullied during the past 30 days compared with the comparison group). An odds ratio less than 1 means that the treatment group has a lower likelihood of achieving the outcome by the percent below 1 (e.g., an odds ratio of 0.9 would mean a 10% lower likelihood of being bullied during the past 30 days compared with the comparison group).

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Appendix C Moderation Tables

Table C-1

	Student Survey Outcomes: Connection to and support from teachers subscale (Spring 2016)			Student Survey Outcomes: Connection to and support from teachers subscale (Spring 2017)		
	β	SE	p	β	SE	p
<i>Model A</i>						
Intercept	3.01	0.04	<.0001*	3.01	0.04	<.0001*
Treatment	-0.04	0.05	0.5247	-0.04	0.05	0.5247
Baseline school-level mean for connection to and support from teachers (spring 2015)	0.67	0.17	0.0027*	0.67	0.17	0.0027*
Baseline math score (spring 2015)	-0.58	0.45	0.2326	-0.58	0.45	0.2326
Treatment x Baseline math score (spring 2015)	0.43	0.51	0.4187	0.43	0.51	0.4187
<i>Model B</i>						
Intercept	3.03	0.04	<.0001*	3.03	0.04	<.0001*
Treatment	-0.05	0.05	0.3386	-0.05	0.05	0.3386
Baseline school-level mean for connection to and support from teachers (spring 2015)	0.83	0.16	0.0004*	0.83	0.16	0.0004*
Baseline reading score (spring 2015)	0.00	0.00	0.4615	0.00	0.00	0.4615
Treatment x Baseline reading score (spring 2015)	0.00	0.00	0.9578	0.00	0.00	0.9578
<i>Model C</i>						
Intercept	3.03	0.03	<.0001*	3.03	0.03	<.0001*
Treatment	-0.03	0.05	0.4809	-0.03	0.05	0.4809
Baseline school-level mean for connection to and support from teachers (spring 2015)	0.83	0.14	0.0002*	0.83	0.14	0.0002*
Baseline attendance (fall 2014)	-0.96	0.64	0.1701	-0.96	0.64	0.1701
Treatment x Baseline attendance (fall 2014)	-1.14	1.31	0.4069	-1.14	1.31	0.4069
<i>Model D</i>						
Intercept	3.04	0.04	<.0001*	3.04	0.04	<.0001*
Treatment	-0.06	0.05	0.2121	-0.06	0.05	0.2121
Baseline school-level mean for connection to and support from teachers (spring 2015)	0.83	0.15	0.0003*	0.83	0.15	0.0003*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.2904	0.00	0.00	0.2904
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.6079	0.00	0.00	0.6079
<i>Model E</i>						
Intercept	3.02	0.05	<.0001*	3.02	0.05	<.0001*
Treatment	-0.06	0.07	0.3737	-0.06	0.07	0.3737
Baseline school-level mean for connection to and support from teachers (spring 2015)	0.85	0.19	0.0011*	0.85	0.19	0.0011*
High school	0.04	0.09	0.6772	0.04	0.09	0.6772
Treatment x High school	0.00	0.11	0.9780	0.00	0.11	0.9780

p < .05

Table C-2

	Student Survey Outcomes: Student perceptions of connectedness and safety subscale (Spring 2016)			Student Survey Outcomes: Student perceptions of connectedness and safety subscale (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	3.00	0.03	<.0001*	3.00	0.03	<.0001*
Treatment	-0.04	0.04	0.2593	-0.04	0.04	0.2593
Baseline school-level mean for student perceptions of connectedness and safety (spring 2015)	0.31	0.12	0.0284*	0.31	0.12	0.0284*
Baseline math score (spring 2015)	-0.63	0.33	0.0858	-0.63	0.33	0.0858
Treatment x Baseline math score (spring 2015)	0.98	0.40	0.0347*	0.98	0.40	0.0347*
Model B						
Intercept	3.02	0.03	<.0001*	3.02	0.03	<.0001*
Treatment	-0.06	0.04	0.1665	-0.06	0.04	0.1665
Baseline school-level mean for student perceptions of connectedness and safety (spring 2015)	0.50	0.14	0.0059*	0.50	0.14	0.0059*
Baseline reading score (spring 2015)	0.00	0.00	0.1644	0.00	0.00	0.1644
Treatment x Baseline reading score (spring 2015)	0.00	0.00	0.2159	0.00	0.00	0.2159
Model C						
Intercept	3.02	0.03	<.0001*	3.02	0.03	<.0001*
Treatment	-0.05	0.04	0.2225	-0.05	0.04	0.2225
Baseline school-level mean for student perceptions of connectedness and safety (spring 2015)	0.49	0.12	0.0034*	0.49	0.12	0.0034*
Baseline attendance (fall 2014)	-1.13	0.56	0.0735	-1.13	0.56	0.0735
Treatment x Baseline attendance (fall 2014)	0.80	1.13	0.4976	0.80	1.13	0.4976
Model D						
Intercept	3.03	0.03	<.0001*	3.03	0.03	<.0001*
Treatment	-0.07	0.04	0.0885	-0.07	0.04	0.0885
Baseline school-level mean for student perceptions of connectedness and safety (spring 2015)	0.59	0.14	0.0017*	0.59	0.14	0.0017*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.0928	0.00	0.00	0.0928
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.2580	0.00	0.00	0.2580
Model E						
Intercept	3.00	0.04	<.0001*	3.00	0.04	<.0001*
Treatment	-0.07	0.05	0.2373	-0.07	0.05	0.2373
Baseline school-level mean for student perceptions of connectedness and safety (spring 2015)	0.58	0.14	0.0022*	0.58	0.14	0.0022*
High school	0.08	0.07	0.2508	0.08	0.07	0.2508
Treatment x High school	-0.02	0.08	0.8474	-0.02	0.08	0.8474

p < .05

Table C-3

	Student Survey Outcomes: Bullying, aggression, and general drug use subscale (Spring 2016)			Student Survey Outcomes: Bullying, aggression, and general drug use subscale (Spring 2017)		
	β	SE	p	β	SE	p
<i>Model A</i>						
Intercept	2.04	0.08	<.0001*	2.04	0.08	<.0001*
Treatment	0.04	0.10	0.6867	0.04	0.10	0.6867
Baseline school-level mean for bullying, aggression, and general drug use (spring 2015)	0.50	0.19	0.0278*	0.50	0.19	0.0278*
Baseline math score (spring 2015)	0.65	0.75	0.4098	0.65	0.75	0.4098
Treatment x Baseline math score (spring 2015)	-1.62	1.00	0.1355	-1.62	1.00	0.1355
<i>Model B</i>						
Intercept	1.99	0.08	<.0001*	1.99	0.08	<.0001*
Treatment	0.09	0.11	0.4343	0.09	0.11	0.4343
Baseline school-level mean for bullying, aggression, and general drug use (spring 2015)	0.72	0.21	0.0060*	0.72	0.21	0.006*
Baseline reading score (spring 2015)	0.00	0.01	0.9440	0.00	0.01	0.9440
Treatment x Baseline reading score (spring 2015)	0.00	0.01	0.9650	0.00	0.01	0.9650
<i>Model C</i>						
Intercept	2.00	0.08	<.0001*	2.00	0.08	<.0001*
Treatment	0.09	0.12	0.4803	0.09	0.12	0.4803
Baseline school-level mean for bullying, aggression, and general drug use (spring 2015)	0.71	0.21	0.0086*	0.71	0.21	0.0086*
Baseline attendance (fall 2014)	0.29	1.47	0.8481	0.29	1.47	0.8481
Treatment x Baseline attendance (fall 2014)	-0.31	2.63	0.9090	-0.31	2.63	0.9090
<i>Model D</i>						
Intercept	1.99	0.07	<.0001*	1.99	0.07	<.0001*
Treatment	0.08	0.10	0.4443	0.08	0.10	0.4443
Baseline school-level mean for bullying, aggression, and general drug use (spring 2015)	0.70	0.19	0.0043*	0.70	0.19	0.0043*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.8529	0.00	0.00	0.8529
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.01	0.6865	0.00	0.01	0.6865
<i>Model E</i>						
Intercept	1.97	0.09	<.0001*	1.97	0.09	<.0001*
Treatment	0.21	0.12	0.1109	0.21	0.12	0.1109
Baseline school-level mean for bullying, aggression, and general drug use (spring 2015)	0.75	0.16	0.0008*	0.75	0.16	0.0008*
High school	0.07	0.13	0.6189	0.07	0.13	0.6189
Treatment x High school	-0.28	0.18	0.1578	-0.28	0.18	0.1578

p < .05

Table C-4

	Student Survey Outcomes : Culture of equity subscale (Spring 2016)			Student Survey Outcomes: Culture of equity subscale (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	3.03	0.05	<.0001*	3.03	0.05	<.0001*
Treatment	0.03	0.06	0.6860	0.03	0.06	0.6860
Baseline school-level mean for culture of equity (spring 2015)	0.44	0.20	0.0518	0.44	0.20	0.0518
Baseline math score (spring 2015)	-1.27	0.52	0.0333*	-1.27	0.52	0.0333*
Treatment x Baseline math score (spring 2015)	1.28	0.65	0.0785	1.28	0.65	0.0785
Model B						
Intercept	3.10	0.05	<.0001*	3.10	0.05	<.0001*
Treatment	-0.05	0.06	0.4916	-0.05	0.06	0.4916
Baseline school-level mean for culture of equity (spring 2015)	0.78	0.22	0.0051*	0.78	0.22	0.0051*
Baseline reading score (spring 2015)	0.00	0.00	0.4025	0.00	0.00	0.4025
Treatment x Baseline reading score (spring 2015)	0.00	0.00	0.7421	0.00	0.00	0.7421
Model C						
Intercept	3.09	0.04	<.0001*	3.09	0.04	<.0001*
Treatment	-0.02	0.06	0.7515	-0.02	0.06	0.7515
Baseline school-level mean for culture of equity (spring 2015)	0.66	0.19	0.0080*	0.66	0.19	0.0080*
Baseline attendance (fall 2014)	-1.31	0.87	0.1667	-1.31	0.87	0.1667
Treatment x Baseline attendance (fall 2014)	-0.78	1.81	0.6786	-0.78	1.81	0.6786
Model D						
Intercept	3.11	0.04	<.0001*	3.11	0.04	<.0001*
Treatment	-0.06	0.06	0.3122	-0.06	0.06	0.3122
Baseline school-level mean for culture of equity (spring 2015)	0.81	0.19	0.0017*	0.81	0.19	0.0017*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.9422	0.00	0.00	0.9422
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.1580	0.00	0.00	0.1580
Model E						
Intercept	3.10	0.06	<.0001*	3.10	0.06	<.0001*
Treatment	-0.10	0.09	0.3157	-0.10	0.09	0.3157
Baseline school-level mean for culture of equity (spring 2015)	0.67	0.20	0.0082*	0.67	0.20	0.0082*
High school	0.01	0.10	0.9076	0.01	0.10	0.9076
Treatment x High school	0.09	0.14	0.5306	0.09	0.14	0.5306

p < .05

Table C-5

	Student Survey Outcomes: School Environment - Disorder and Physical Discomfort subscale (Spring 2016)			Student Survey Outcomes: School Environment - Disorder and Physical Discomfort subscale (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	2.27	0.07	<.0001*	2.27	0.07	<.0001*
Treatment	0.02	0.09	0.8196	0.02	0.09	0.8196
Baseline school-level mean for school environment: disorder and physical discomfort (spring 2015)	0.67	0.16	0.0022*	0.67	0.16	0.0022*
Baseline math score (spring 2015)	0.17	0.65	0.8013	0.17	0.65	0.8013
Treatment x Baseline math score (spring 2015)	-0.49	0.89	0.5929	-0.49	0.89	0.5929
Model B						
Intercept	2.25	0.06	<.0001*	2.25	0.06	<.0001*
Treatment	0.04	0.08	0.6633	0.04	0.08	0.6633
Baseline school-level mean for school environment: disorder and physical discomfort (spring 2015)	0.79	0.16	0.0006*	0.79	0.16	0.0006*
Baseline reading score (spring 2015)	0.00	0.00	0.9306	0.00	0.00	0.9306
Treatment x Baseline reading score (spring 2015)	0.00	0.01	0.7311	0.00	0.01	0.7311
Model C						
Intercept	2.25	0.06	<.0001*	2.25	0.06	<.0001*
Treatment	0.04	0.09	0.6836	0.04	0.09	0.6836
Baseline school-level mean for school environment: disorder and physical discomfort (spring 2015)	0.78	0.14	0.0004*	0.78	0.14	0.0004*
Baseline attendance (fall 2014)	0.08	1.02	0.9399	0.08	1.02	0.9399
Treatment x Baseline attendance (fall 2014)	1.70	2.09	0.4355	1.70	2.09	0.4355
Model D						
Intercept	2.26	0.06	<.0001*	2.26	0.06	<.0001*
Treatment	0.04	0.08	0.6594	0.04	0.08	0.6594
Baseline school-level mean for school environment: disorder and physical discomfort (spring 2015)	0.76	0.14	0.0003*	0.76	0.14	0.0003*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.4205	0.00	0.00	0.4205
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.4017	0.00	0.00	0.4017
Model E						
Intercept	2.27	0.07	<.0001*	2.27	0.07	<.0001*
Treatment	0.10	0.10	0.3336	0.10	0.10	0.3336
Baseline school-level mean for school environment: disorder and physical discomfort (spring 2015)	0.78	0.12	<.0001*	0.78	0.12	<.0001*
High school	-0.05	0.11	0.6562	-0.05	0.11	0.6562
Treatment x High school	-0.12	0.15	0.4270	-0.12	0.15	0.4270

p < .05

Table C-6

	Student Survey Outcomes: Parent Engagement subscale (Spring 2016)			Student Survey Outcomes: Parent Engagement subscale (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	2.67	0.05	<.0001*	2.67	0.05	<.0001*
Treatment	-0.02	0.07	0.7603	-0.02	0.07	0.7603
Baseline school-level mean for parent engagement (spring 2015)	0.57	0.18	0.0085*	0.57	0.18	0.0085*
Baseline math score (spring 2015)	-0.42	0.49	0.4187	-0.42	0.49	0.4187
Treatment x Baseline math score (spring 2015)	0.10	0.59	0.8675	0.10	0.59	0.8675
Model B						
Intercept	2.68	0.05	<.0001*	2.68	0.05	<.0001*
Treatment	-0.04	0.07	0.5793	-0.04	0.07	0.5793
Baseline school-level mean for parent engagement (spring 2015)	0.69	0.21	0.0081*	0.69	0.21	0.0081*
Baseline reading score (spring 2015)	0.00	0.00	0.6049	0.00	0.00	0.6049
Treatment x Baseline reading score (spring 2015)	0.00	0.00	0.9624	0.00	0.00	0.9624
Model C						
Intercept	2.68	0.05	<.0001*	2.68	0.05	<.0001*
Treatment	-0.03	0.07	0.6771	-0.03	0.07	0.6771
Baseline school-level mean for parent engagement (spring 2015)	0.69	0.19	0.0052*	0.69	0.19	0.0052*
Baseline attendance (fall 2014)	-0.89	0.86	0.3262	-0.89	0.86	0.3262
Treatment x Baseline attendance (fall 2014)	-0.77	1.68	0.6573	-0.77	1.68	0.6573
Model D						
Intercept	2.69	0.05	<.0001*	2.69	0.05	<.0001*
Treatment	-0.05	0.07	0.4831	-0.05	0.07	0.4831
Baseline school-level mean for parent engagement (spring 2015)	0.64	0.20	0.0095*	0.64	0.20	0.0095*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.7538	0.00	0.00	0.7538
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.9595	0.00	0.00	0.9595
Model E						
Intercept	2.71	0.07	<.0001*	2.71	0.07	<.0001*
Treatment	-0.02	0.08	0.7828	-0.02	0.08	0.7828
Baseline school-level mean for parent engagement (spring 2015)	0.48	0.26	0.0952	0.48	0.26	0.0952
High school	-0.04	0.13	0.7641	-0.04	0.13	0.7641
Treatment x High school	-0.06	0.13	0.6667	-0.06	0.13	0.6667

p < .05

Table C-7

	Student Survey Outcomes: Student was bullied during the past 30 days (Spring 2016)			Student Survey Outcomes: Student was bullied during the past 30 days (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	-0.94	0.20	0.0008*	-0.94	0.20	0.0008*
Treatment	-0.54	0.26	0.0358*	-0.54	0.26	0.0358*
Baseline school-level mean for student was bullied during the past 30 days (spring 2015)	4.65	1.35	0.0006*	4.65	1.35	0.0006*
Baseline math score (spring 2015)	1.35	2.25	0.5486	1.35	2.25	0.5486
Treatment x Baseline math score (spring 2015)	0.15	2.79	0.9568	0.15	2.79	0.9568
Model B						
Intercept	-0.96	0.13	<.0001*	-0.96	0.13	<.0001*
Treatment	-0.49	0.18	0.0073*	-0.49	0.18	0.0073*
Baseline school-level mean for student was bullied during the past 30 days (spring 2015)	3.06	0.96	0.0015*	3.06	0.96	0.0015*
Baseline reading score (spring 2015)	0.03	0.01	0.0204	0.03	0.01	0.0204*
Treatment x Baseline reading score (spring 2015)	-0.01	0.01	0.4552	-0.01	0.01	0.4552
Model C						
Intercept	-0.99	0.12	<.0001*	-0.99	0.12	<.0001*
Treatment	-0.54	0.18	0.0028*	-0.54	0.18	0.0028*
Baseline school-level mean for student was bullied during the past 30 days (spring 2015)	2.56	0.91	0.0049*	2.56	0.91	0.0049*
Baseline attendance (fall 2014)	11.11	4.31	0.0100*	11.11	4.31	0.0100*
Treatment x Baseline attendance (fall 2014)	5.24	7.81	0.5026	5.24	7.81	0.5026
Model D						
Intercept	-1.02	0.15	<.0001*	-1.02	0.15	<.0001*
Treatment	-0.41	0.21	0.0496	-0.41	0.21	0.0496
Baseline school-level mean for student was bullied during the past 30 days (spring 2015)	4.08	1.07	0.0001*	4.08	1.07	0.0001*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	-0.01	0.01	0.0721	-0.01	0.01	0.0721
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.01	0.01	0.3433	0.01	0.01	0.3433
Model E						
Intercept	-0.66	0.10	<.0001*	-0.66	0.10	<.0001*
Treatment	-0.34	0.16	0.0320*	-0.34	0.16	0.0320
Baseline school-level mean for student was bullied during the past 30 days (spring 2015)	0.72	0.88	0.4157	0.72	0.88	0.4157
High school	-0.91	0.20	<.0001*	-0.91	0.20	<.0001*
Treatment x High school	0.06	0.27	0.8210	0.06	0.27	0.8210

p < .05

Table C-8

	Student Survey Outcomes: Student has seen someone else bullied during the past 30 days (Spring 2016)			Student Survey Outcomes: Student has seen someone else bullied during the past 30 days (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	-0.07	0.15	0.6503	-0.07	0.15	0.6503
Treatment	-0.19	0.19	0.3268	-0.19	0.19	0.3268
Baseline school-level mean for student has seen someone else bullied during the past 30 days (spring 2015)	2.96	0.73	<.0001*	2.96	0.73	<.0001*
Baseline math score (spring 2015)	2.35	1.64	0.1526	2.35	1.64	0.1526
Treatment x Baseline math score (spring 2015)	-3.31	1.91	0.0837	-3.31	1.91	0.0837
Model B						
Intercept	-0.18	0.16	0.2738	-0.18	0.16	0.2738
Treatment	-0.11	0.22	0.6240	-0.11	0.22	0.6240
Baseline school-level mean for student has seen someone else bullied during the past 30 days (spring 2015)	3.28	1.00	0.0011*	3.28	1.00	0.0011*
Baseline reading score (spring 2015)	0.00	0.01	0.7111	0.00	0.01	0.7111
Treatment x Baseline reading score (spring 2015)	0.00	0.01	0.9865	0.00	0.01	0.9865
Model C						
Intercept	-0.14	0.14	0.3439	-0.14	0.14	0.3439
Treatment	-0.25	0.20	0.2197	-0.25	0.20	0.2197
Baseline school-level mean for student has seen someone else bullied during the past 30 days (spring 2015)	1.90	1.01	0.0620	1.90	1.01	0.0620
Baseline attendance (fall 2014)	6.06	3.37	0.0723	6.06	3.37	0.0723
Treatment x Baseline attendance (fall 2014)	3.20	6.11	0.6006	3.20	6.11	0.6006
Model D						
Intercept	-0.20	0.15	0.2106	-0.20	0.15	0.2106
Treatment	-0.07	0.21	0.7219	-0.07	0.21	0.7219
Baseline school-level mean for student has seen someone else bullied during the past 30 days (spring 2015)	3.59	0.85	<.0001*	3.59	0.85	<.0001*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	-0.01	0.01	0.5085	-0.01	0.01	0.5085
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.01	0.01	0.4898	0.01	0.01	0.4898
Model E						
Intercept	-0.15	0.17	0.3786	-0.15	0.17	0.3786
Treatment	0.12	0.21	0.5604	0.12	0.21	0.5604
Baseline school-level mean for student has seen someone else bullied during the past 30 days (spring 2015)	2.55	0.89	0.0040*	2.55	0.89	0.0040*
High school	-0.04	0.29	0.8989	-0.04	0.29	0.8989
Treatment x High school	-0.49	0.33	0.1321	-0.49	0.33	0.1321

p < .05

Table C-9

	School-level Outcomes: Reading achievement (Spring 2016)			School-level Outcomes: Reading achievement (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	5.30	2.24	0.0359	19.51	5.55	0.0042*
Treatment	1.56	1.54	0.3314	0.04	3.80	0.9912
Baseline reading score (spring 2015)	0.92	0.04	<.0001*	0.72	0.10	<.0001*
Model B						
Intercept	3.79	3.74	0.3325	33.29	7.71	0.0012*
Treatment	3.81	4.65	0.4307	-20.50	9.60	0.0561
Baseline reading score (spring 2015)	0.95	0.07	<.0001*	0.44	0.15	0.0151*
Treatment x Baseline reading score (spring 2015)	-0.05	0.09	0.6172	0.42	0.18	0.0438*
Model C						
Intercept	2.27	3.50	0.5304	5.45	7.45	0.4811
Treatment	0.78	2.10	0.7166	0.85	4.47	0.8532
Baseline reading score (spring 2015)	0.97	0.05	<.0001*	0.90	0.11	<.0001*
High school	2.14	2.70	0.4472	12.72	5.76	0.0517
Treatment x High school	1.03	3.11	0.7484	-4.31	6.62	0.5297

p < .05

Table C-10

	School-level Outcomes: Math achievement (Spring 2016)			School-level Outcomes: Math achievement (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	0.10	0.05	0.0957	0.40	0.08	0.0003*
Treatment	0.00	0.02	0.8693	-0.01	0.04	0.7217
Baseline math score (spring 2015)	0.94	0.10	<.0001*	0.58	0.14	0.0014*
Model B						
Intercept	0.11	0.07	0.1321	0.51	0.12	0.0018
Treatment	-0.05	0.12	0.6821	-0.20	0.16	0.2549
Baseline math score (spring 2015)	0.91	0.13	<.0001*	0.37	0.23	0.1373
Treatment x Baseline math score (spring 2015)	0.08	0.21	0.6981	0.33	0.29	0.2757
Model C						
Intercept	0.06	0.11	0.6193	0.31	0.04	<.0001*
Treatment	0.00	0.03	1.0000	-0.01	0.02	0.5697
Baseline math score (spring 2015)	1.00	0.19	0.0011*	0.63	0.06	<.0001*
High school	0.03	0.07	0.6800	0.13	0.02	0.0002*
Treatment x High school	-0.03	0.07	0.6784	-0.03	0.03	0.3985

* $p < .05$

Table C-11

	School-level Outcomes: Attendance (Fall 2015)			School-level Outcomes: Attendance (Spring 2016)			School-level Outcomes: Attendance (Fall 2016)			School-level Outcomes: Attendance (Spring 2017)		
	β	SE	p	β	SE	p	β	SE	p	β	SE	p
<i>Model A</i>												
Intercept	0.22	0.04	0.0002*	-0.17	0.08	0.0455*	0.29	0.03	<.0001*	-0.03	0.06	0.6772
Treatment	0.00	0.01	0.6371	-0.01	0.01	0.6059	0.00	0.00	0.6049	0.00	0.01	0.5606
Baseline attendance (fall 2014)	0.82	0.05	<.0001*	1.25	0.09	<.0001*	0.75	0.04	<.0001*	1.09	0.07	<.0001*
<i>Model B</i>												
Intercept	0.18	0.05	0.0023*	-0.15	0.09	0.1527	0.26	0.04	<.0001*	-0.01	0.07	0.9192
Treatment	0.13	0.08	0.1406	-0.09	0.18	0.6009	0.09	0.07	0.2402	-0.07	0.14	0.6441
Baseline attendance (fall 2014)	0.87	0.05	<.0001*	1.22	0.11	<.0001*	0.78	0.04	<.0001*	1.07	0.08	<.0001*
Treatment x Baseline attendance (fall 2014)	-0.15	0.09	0.1469	0.10	0.20	0.6207	-0.10	0.08	0.2510	0.07	0.15	0.6673
<i>Model C</i>												
Intercept	0.15	0.05	0.0103	-0.34	0.07	0.0012*	0.23	0.04	0.0003*	-0.15	0.06	0.0320*
Treatment	0.00	0.01	0.8348	0.00	0.01	0.7654	0.00	0.01	0.7339	0.00	0.01	0.6945
Baseline attendance (fall 2014)	0.90	0.05	<.0001*	1.42	0.08	<.0001*	0.81	0.04	<.0001*	1.21	0.06	<.0001*
High school	0.02	0.01	0.0848	0.04	0.01	0.0072*	0.01	0.01	0.0957	0.03	0.01	0.0098*
Treatment x High school	0.00	0.01	0.7237	-0.03	0.01	0.0792	0.00	0.01	0.6496	-0.03	0.01	0.0663

$p < .05$

Table C-12

	School-level Outcomes: Tardies per 100 students (2015-16 SY)			School-level Outcomes: Tardies per 100 students (2016-17 SY)		
	β	SE	p	β	SE	p
Model A						
Intercept	8252.40	3261.58	0.0264	-228.64	343.50	0.5183
Treatment	-4534.44	2151.02	0.0567	282.29	226.54	0.2365
Baseline in-school suspensions per 100 students (2014-15 SY)	-1.12	1.06	0.3148	0.70	0.11	<.0001*
Model B						
Intercept	18351.00	3952.65	0.0007*	-432.58	577.03	0.4692
Treatment	-18187.00	4505.03	0.0020*	558.01	657.67	0.4143
Baseline in-school suspensions per 100 students (2014-15 SY)	-4.79	1.38	0.0053*	0.78	0.20	0.0027*
Treatment x Baseline in-school suspensions per 100 students (2014-15 SY)	5.48	1.69	0.0078*	-0.11	0.25	0.6623
Model C						
Intercept	8537.78	3873.70	0.0521	-294.25	369.11	0.4439
Treatment	-5161.05	3243.02	0.1426	439.25	309.02	0.1856
Baseline in-school suspensions per 100 students (2014-15 SY)	-1.34	1.22	0.2996	0.76	0.12	<.0001
High school	748.89	3168.54	0.8179	-235.25	301.92	0.4539
Treatment x High school	802.83	4395.05	0.8587	-186.06	418.79	0.6663

$p < .05$

Table C-13

	School-level Outcomes: ODRs (2015-16 SY)			School-level Outcomes: ODR (2016-17 SY)		
	β	SE	p	β	SE	p
Model A						
Intercept	4.44	3.94	0.2825	2.93	3.20	0.3777
Treatment	0.91	3.75	0.8127	0.31	3.05	0.9217
Baseline ODR per 100 students (2014-15 SY)	0.18	0.09	0.0747	0.16	0.08	0.0617
Model B						
Intercept	6.50	5.24	0.2401	1.73	4.29	0.6941
Treatment	-2.81	7.11	0.7005	2.47	5.82	0.6797
Baseline ODR per 100 students (2014-15 SY)	0.12	0.15	0.4484	0.20	0.12	0.1283
Treatment x Baseline ODR per 100 students (2014-15 SY)	0.12	0.20	0.5468	-0.07	0.16	0.6671
Model C						
Intercept	4.54	4.44	0.3307	2.92	3.64	0.4406
Treatment	-0.19	5.41	0.9730	0.94	4.43	0.8358
Baseline ODR per 100 students (2014-15 SY)	0.14	0.11	0.2496	0.19	0.09	0.0681
High school	2.90	6.41	0.6610	-2.30	5.26	0.6705
Treatment x High school	1.89	7.99	0.8181	-1.03	6.55	0.8787

$p < .05$

Table C-14

	School-level Outcomes: In-school suspensions per 100 students (2015-16 SY)			School-level Outcomes: In-school suspensions per 100 students (2016-17 SY)		
	β	SE	p	β	SE	p
Model A						
Intercept	-0.10	0.30	0.7430	0.23	0.42	0.5986
Treatment	0.05	0.37	0.8900	-0.14	0.53	0.7922
Baseline in-school suspensions per 100 students (2014-15 SY)	0.62	0.05	<.0001*	0.45	0.07	<.0001*
Model B						
Intercept	0.02	0.36	0.9574	0.19	0.52	0.7156
Treatment	-0.10	0.45	0.8363	-0.10	0.65	0.8795
Baseline in-school suspensions per 100 students (2014-15 SY)	0.56	0.12	0.0008*	0.47	0.17	0.0195*
Treatment x Baseline in-school suspensions per 100 students (2014-15 SY)	0.08	0.13	0.5414	-0.02	0.19	0.9043
Model C						
Intercept	-0.02	0.38	0.9606	0.14	0.53	0.7991
Treatment	0.00	0.54	0.9968	-0.15	0.76	0.8426
Baseline in-school suspensions per 100 students (2014-15 SY)	0.64	0.07	<.0001*	0.43	0.09	0.0013*
High school	-0.33	0.74	0.6716	0.39	1.05	0.7151
Treatment x High school	0.21	0.85	0.8075	-0.10	1.20	0.9354

$p < .05$

Table C-15

	School-level Outcomes: Out-of-school suspensions per 100 students (2015-16 SY)			School-level Outcomes: Out-of-school suspensions per 100 students (2016-17 SY)		
	β	SE	p	β	SE	p
Model A						
Intercept	-0.42	1.57	0.7926	0.83	1.64	0.6207
Treatment	1.85	1.38	0.2046	2.02	1.44	0.1855
Baseline out-of-school suspensions per 100 students (2014-15 SY)	1.17	0.17	<.0001*	0.51	0.18	0.0156*
Model B						
Intercept	0.40	1.70	0.8172	1.13	1.87	0.5577
Treatment	-0.65	2.54	0.8026	1.12	2.80	0.6972
Baseline out-of-school suspensions per 100 students (2014-15 SY)	1.05	0.20	0.0002*	0.47	0.22	0.0543
Treatment x Baseline in-school suspensions per 100 students (2014-15 SY)	0.45	0.39	0.2695	0.16	0.43	0.7092
Model C						
Intercept	-1.10	1.55	0.4950	0.66	1.86	0.7291
Treatment	2.47	1.72	0.1808	2.75	2.06	0.2107
Baseline out-of-school suspensions per 100 students (2014-15 SY)	1.05	0.17	0.0001*	0.53	0.21	0.0284
High school	3.48	1.92	0.1007	0.05	2.30	0.9837
Treatment x High school	-2.26	2.51	0.3892	-1.37	3.00	0.6576

$p < .05$

Table C-16

	Staff Survey Outcomes: Risk factors - School safety and violence (Spring 2016)			Staff Survey Outcomes: Risk factors - School safety and violence (Spring 2017)		
	β	SE	p	β	SE	p
Model A						
Intercept	2.42	0.07	<.0001*	2.17	0.05	<.0001*
Treatment	0.00	0.10	0.9772	0.10	0.07	0.2122
Baseline school-level mean for risk factors: school safety and violence (spring 2015)	0.73	0.17	0.0017*	0.72	0.12	0.0002*
Baseline math score (spring 2015)	0.71	0.70	0.3318	0.66	0.54	0.2487
Treatment x Baseline math score (spring 2015)	-1.70	0.99	0.1171	-1.14	0.75	0.1588
Model B						
Intercept	2.39	0.07	<.0001*	2.14	0.05	<.0001*
Treatment	0.04	0.10	0.6896	0.13	0.07	0.0957
Baseline school-level mean for risk factors: school safety and violence (spring 2015)	0.82	0.18	0.0011*	0.75	0.12	0.0001*
Baseline reading score (spring 2015)	0.00	0.00	0.6236	0.00	0.00	0.6367
Treatment x Baseline reading score (spring 2015)	-0.01	0.01	0.3154	0.00	0.00	0.3504
Model C						
Intercept	2.39	0.06	<.0001*	2.15	0.05	<.0001*
Treatment	-0.01	0.09	0.9251	0.11	0.07	0.1598
Baseline school-level mean for risk factors: school safety and violence (spring 2015)	0.87	0.13	<.0001*	0.78	0.10	<.0001*
Baseline attendance (fall 2014)	0.64	1.06	0.5589	0.72	0.87	0.4278
Treatment x Baseline attendance (fall 2014)	-3.25	1.96	0.1310	-2.31	1.63	0.1918
Model D						
Intercept	2.36	0.08	<.0001*	2.12	0.05	<.0001*
Treatment	0.08	0.10	0.4844	0.15	0.07	0.0618
Baseline school-level mean for risk factors: school safety and violence (spring 2015)	1.01	0.16	<.0001*	0.83	0.11	<.0001*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.4220	0.00	0.00	0.3438
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.01	0.8417	0.00	0.00	0.3483
Model E						
Intercept	2.41	0.10	<.0001*	2.14	0.07	<.0001*
Treatment	0.04	0.14	0.7939	0.14	0.10	0.1829
Baseline school-level mean for risk factors: school safety and violence (spring 2015)	0.96	0.15	<.0001*	0.84	0.10	<.0001*
High school	-0.07	0.15	0.6489	-0.01	0.10	0.8901
Treatment x High school	0.05	0.21	0.8287	0.00	0.14	0.9910

p < .05

Table C-17

	Staff Survey Outcomes: Protective factors - Assessment of response plans for school safety and violence (Spring 2016)			Staff Survey Outcomes: Protective factors - Assessment of response plans for school safety and violence (Spring 2017)		
	β	SE	p	β	SE	p
<i>Model A</i>						
Intercept	3.14	0.06	<.0001*	3.24	0.06	<.0001*
Treatment	0.03	0.08	0.6760	-0.04	0.08	0.6264
Baseline school-level mean for protective factors: assessment of response plans for school safety and violence (spring 2015)	0.93	0.21	0.0013*	0.63	0.19	0.0079*
Baseline math score (spring 2015)	0.40	0.59	0.5133	-0.15	0.55	0.7823
Treatment x Baseline math score (spring 2015)	-0.10	0.75	0.9015	0.80	0.69	0.2724
<i>Model B</i>						
Intercept	3.13	0.06	<.0001*	3.25	0.05	<.0001*
Treatment	0.05	0.08	0.5250	-0.05	0.07	0.5328
Baseline school-level mean for protective factors: assessment of response plans for school safety and violence (spring 2015)	0.93	0.19	0.0007*	0.71	0.18	0.0026*
Baseline reading score (spring 2015)	0.00	0.00	0.8974	0.00	0.00	0.4365
Treatment x Baseline reading score (spring 2015)	0.00	0.00	0.6345	0.01	0.00	0.1766
<i>Model C</i>						
Intercept	3.13	0.05	<.0001*	3.24	0.05	<.0001*
Treatment	0.09	0.07	0.2410	0.00	0.07	0.9900
Baseline school-level mean for protective factors: assessment of response plans for school safety and violence (spring 2015)	0.80	0.18	0.0017*	0.63	0.17	0.0045*
Baseline attendance (fall 2014)	0.59	0.93	0.5441	-0.88	0.85	0.3295
Treatment x Baseline attendance (fall 2014)	0.64	1.59	0.6953	3.22	1.50	0.0602
<i>Model D</i>						
Intercept	3.15	0.06	<.0001*	3.27	0.06	<.0001*
Treatment	0.04	0.07	0.6406	-0.06	0.08	0.4279
Baseline school-level mean for protective factors: assessment of response plans for school safety and violence (spring 2015)	0.99	0.18	0.0003*	0.82	0.18	0.0012*
Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.2284	0.00	0.00	0.1787
Treatment x Baseline ODR per 100 students for fall 2014-spring 2015 SY	0.00	0.00	0.5053	0.00	0.00	0.2491
<i>Model E</i>						
Intercept	3.09	0.08	<.0001*	3.19	0.07	<.0001*
Treatment	0.10	0.11	0.3675	0.02	0.10	0.8842
Baseline school-level mean for protective factors: assessment of response plans for school safety and violence (spring 2015)	0.99	0.20	0.0005*	0.81	0.19	0.0017*
High school	0.09	0.12	0.4738	0.14	0.11	0.2526
Treatment x High school	-0.10	0.16	0.5347	-0.13	0.16	0.4243

p < .05