Reading with Relevance

Embedding Social and Emotional Skill Development in Common Core-Aligned English Language Arts Instruction
A Study of Program Efficacy

INTRODUCTION.

Reading with Relevance is a socially and emotionally rich literacy curriculum that focuses on students' emotional well-being as a critical strategy for improving their academic achievement. The curriculum is centered around a core belief--that how students feel about themselves and their lives directly impacts their ability to engage with school and succeed academically. *Reading with Relevance* draws together the strengths of academic literacy instruction and social/emotional learning to inspire youth to engage with reading, accelerate their academic achievement, and develop life-changing social and emotional skills.

To date, *Reading with Relevance* has received overwhelmingly positive and heartfelt qualitative feedback from participating school leaders, teachers, and students. Additionally, two years of pre- and post-testing results reveal positive and statistically significant improvements in participating students' English language arts skills (average 50.33% improvement, n=501). This study of program efficacy explores how the curriculum's history of positive outcomes hold up in the context of a more rigorous quasi-experimental design--comparing the outcomes of students at a treated school site with those at a matched control site, after adjusting for the covariate of pre-test outcome.

BACKGROUND.

About the Curriculum.

Reading with Relevance integrates academics and social and emotional learning, helping educators intentionally engage students' hearts to better engage their minds. The program provides engaging, easy-to-implement, standards-aligned teacher's guides for exploring culturally diverse texts, inspiring students' active participation and authentic engagement and bolstering their social and emotional skills by igniting their intrinsic motivation to explore meaningful topics and themes that are relevant to their lives.

Each *Reading with Relevance* teacher's guide provides a comprehensive set of lesson plans for exploring the academic, social/emotional, and cultural themes present in a single, high-interest work of literature. These 2nd-12th grade lesson plans integrate developmentally appropriate social and emotional learning into Common Core Standards aligned instruction through daily themes, engaging reading, thought-provoking academic discussion, connected writing prompts, and inspiring creative activities, serving as a concrete tool for sparking both social/emotional development and academic growth.

Built to Teach SEL Competencies.
Reading with Relevance was explicitly created to embed CASEL's five SEL competencies into classroom discussion, reflective writing, and creative activities centered around daily reading of culturally relevant and diverse texts. Each of the program's intentional lesson plans is designed to support teachers to meaningfully explore a social and emotional theme of the day, and provide students with concrete opportunities to develop, grow, and expand their skills around self-awareness, self management, social awareness, relationships, and responsible decision-making.

The Authoring Organization
Moving Forward Institute is a nonprofit collective of educators on a mission: sharing and scaling the program they have built for (and with!) their students over the last decade, inspiring relevant reading experiences, heartfelt conversations, and instructional breakthroughs in classrooms across the nation. Their team has spent nearly fifteen years custom-building social, emotional, and academic support programs for the highest need students in the San Francisco Bay Area, and has provided social and emotional learning programming to over ten thousand students. Their experience has proven that meeting students' social and emotional needs is the key to unlocking their academic potential. Through their *Reading with Relevance* curriculum, they support caring adults across the nation to replicate the successes of their programming.

METHODS.
In order to further evaluate the quality of *Reading with Relevance*'s classroom-based SEL program, a study was designed to analyze the academic and behavioral effects of school-wide program implementation during the 2017-18 school year. This evaluation utilized a pre-post quasi-experimental design, including a comparison school that did not participate in the program. At the treatment school site, the program was implemented at the universal level, during the regular school day, with students in grades 3-5. The control school site, selected based on demographic similarity in terms of students' race/ethnicity, English learner population, Special Education designation, and pre-test outcomes, did not utilize the curriculum. Table 1 outlines the profiles of the two schools.

Table 1. *Profiles of the comparison school sites*

	Treatment School	**Control School**
School Name	Piedmont Avenue Elementary	PLACE @ Prescott
Demographic Profile of Sample	57.8% African-American 24% Latinx 6.5% Multiple Ethnicity 4.5% White 3.9% Not Reported 3.2% Asian	57.1% African-American 33.8% Latinx 2.6% Asian 2.6% Multiple Ethnicity 1.3% Native American 1.3% White 1.3% Not Reported
English Learner Population of Sample	17.61%	18.92%
Special Education Population of Sample	11.27%	17.57%
Study Sample Size	351	181
Final N (Matched Scores)	142	74

This study analyzes behavioral student outcomes over time, specifically tracking students' improved academic performance, as measured by the Scholastic Reading Inventory (SRI) assessment of reading ability. The SRI is a valid and reliable assessment instrument utilized in school districts across the nation. Data analyzed include student SRI scores from Fall 2017, prior to the program's implementation (the "pre-test"), and Spring 2018, after utilizing the curriculum (the "post-test"). In order to minimize statistical bias in evaluating the program's effect on the treatment group, data analysis included adjusting for the covariate of pretest outcome.

Additionally, student suspension data is presented as a marker of improved positive social behavior and reduced problem behavior. Since these suspension measures do not include pre- and post-assessments, the data are offered as indicators of promising trends for future study.

RESULTS.

A One-Way Analysis of Covariance (ANCOVA) was performed to test for a statistically significant difference between treatment and control groups on student post-test scores, controlling for pretest scores. In order to accurately estimate intervention effects and highlight findings that are generalizable, no data were excluded from analysis based on implementation factors.

Table 2 presents the findings from ANCOVA. After adjusting for pre-test score as a covariate, post-test score was found to be statistically significant with $F_{(1, 213)} = 7.48$, $p < 0.05$, indicating significant treatment effects. The aggregate correlation within samples are presented in Table 3.

Table 2. *Analysis of covariance of evaluating treatment effect on post-test score*

Source	SS	df	MS	F	P
adjusted means	523383.06	1	523383.06	7.48	0.006764
adjusted error	14912381.47	213	70011.18		
adjusted total	15435764.53	214			

Table 3. *Aggregate correlation within samples: concomitant variable v. dependent variable*
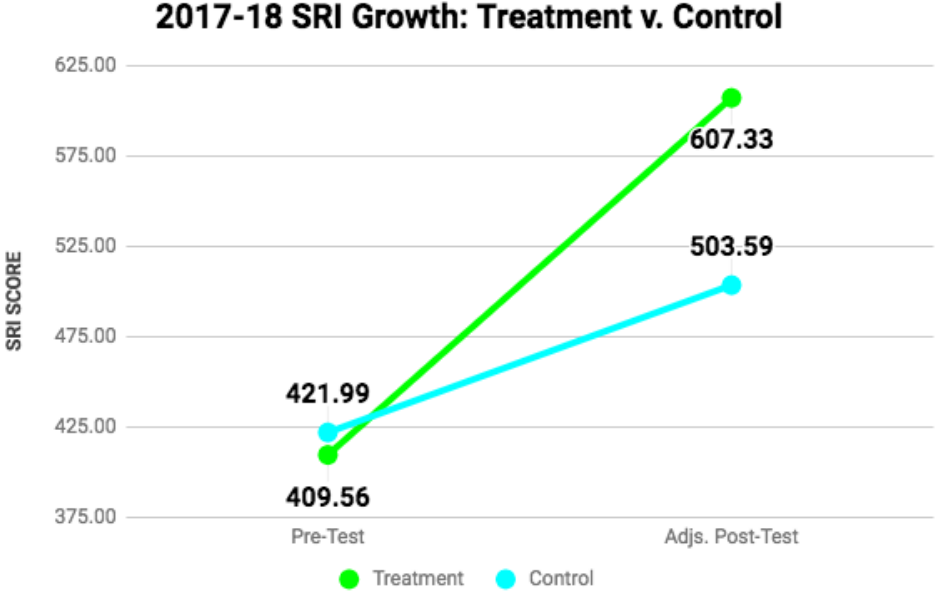
Correlation Coefficient	Coefficient of Determination
r = 0.57	r^2 = 0.32

The adjusted and unadjusted means for the control and treatment groups are presented in Table 4. The treatment group had significantly higher post-test scores for adjusted mean relative to the control group, demonstrating that the program significantly enhanced students' SRI scores after adjusting for pre-test outcomes.

Table 4. *Observed and adjusted means of post-test scores for treatment and control groups*

Group	Observed Mean		Adjusted Mean
	Pre-Test	*Post-Test*	*Post-Test*
Treatment (n = 142)	409.56	605.0211	607.3325
Control (n = 74)	421.99	508.027	503.5917

As can be seen in Figures 1, 2, and 3, the treatment group outperformed the control group in adjusted post-test mean (Figure 1), score growth between pre- and post-test (Figure 2), and percentage improvement between pre- and post-test (Figure 3). While the treated group initially tested 12.43 points behind their peers in the control group, treated students outperformed control students, improving their scores by an adjusted average of 197.77 points compared to the control group's 81.6 point growth.

Figure 1.

Pre-test means and adjusted post-test means for treatment and control groups

2017-18 SRI Growth: Treatment v. Control

625.00

607.33

575.00

525.00

503.59

SRI SCORE

475.00

425.00

421.99

375.00

409.56

Pre-Test   Adjs. Post-Test

● Treatment   ● Control

Figure 2.

*Points of growth between pre-test means and adjusted post-test means for treatment and control groups*

SRI Score Improvements: Treatment v. Control

200.00

197.77

150.00

Score Improvement

100.00

81.60

50.00

0.00
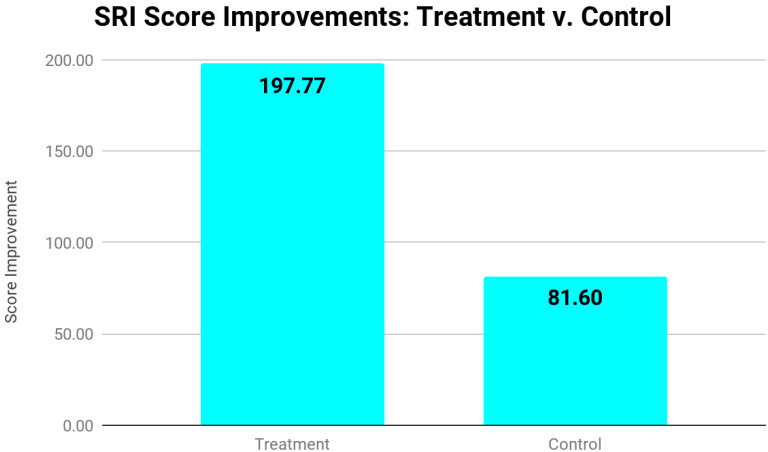
Treatment   Control

Figure 3.

Percentage improvement between pre-test means and adjusted post-test means for treatment and control groups

SRI Score, Percentage Improvements: Treatment v. Control
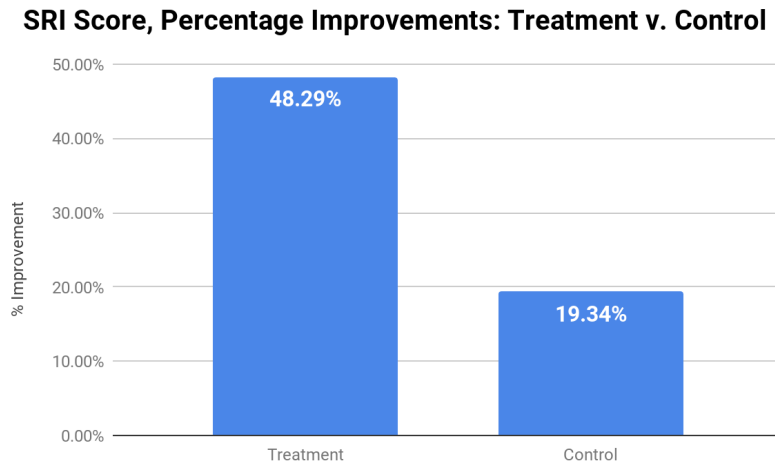
Assumption evaluations indicated that the normality, homogeneity of variance, linearity and homogeneity of regression slopes assumptions were all satisfactory. The assumption of homogeneity of regression slopes was evaluated using Figure 4, which shows two regression lines for Control and Treatment groups, with the the dependent variable (post-test score) regressed on the covariate (pre-test score). It can be seen that the two regression lines are approximately parallel; the assumption of homogeneity of regression slopes is satisfactory.
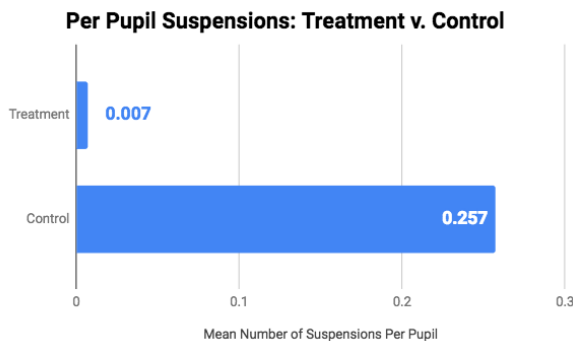
Figure 4.

Treatment effect showing reading ability for Control and Treatment groups with pre-test as a covariate


Treatment Effect on SRI (Reading) Scores
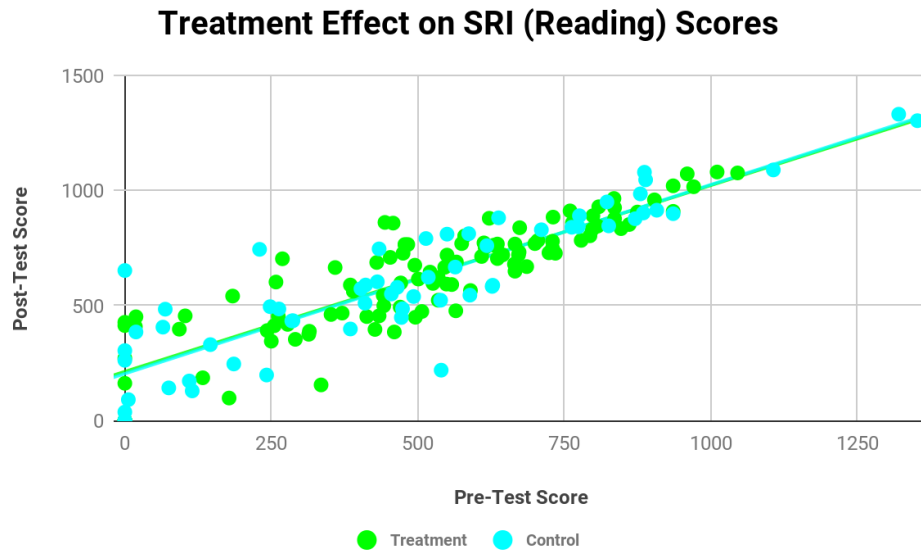
While analysis of the intervention's academic outcomes was the primary purpose of this study, collected data also included indicators of positive social behavior and reduced problem behaviors, as measured by student suspension rates. A review of the data analyzed is

presented in Figures 5-6. Observable means show that students in the treatment group were significantly less likely to experience school suspension for problem behaviors. While the treatment site issued just a single, two-day suspension during the entire school year, the control site issued nineteen suspensions totaling forty-two days during this same period.

Figure 5. *Mean number of suspensions per pupil at the treatment and control schools*

Figure 6. *Mean number of days suspended for the treatment and control groups*
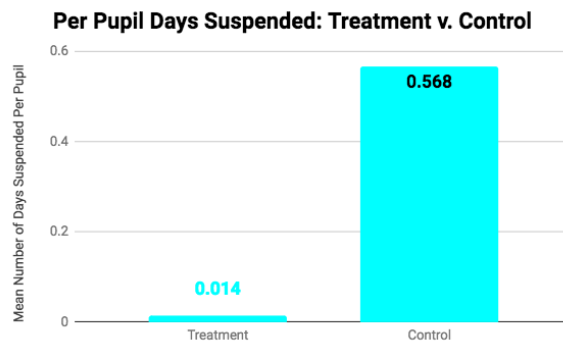
Since these measures are quantitative for the school year as a whole, and were not structured around a quasi-experimental pre/post model, further study is required to determine the significance of these observed means; this data is presented only to highlight observable trends for ongoing inquiry.

DISCUSSION.

The data presented highlight significant positive effects on student academic performance favoring the treatment group. After adjusting for pre-test outcome as a covariate, the treated group's growth in reading ability outpaced the control group's growth by nearly two and a half times. These results align with the growing body of evidence demonstrating that social and emotional learning is integral to students' academic performance, and that SEL skills are key drivers of success--in school and in life. They also confirm the program's many years of pre- and post-testing outcomes of efficacy.

In CASEL's 2013 Guide to Effective Social and Emotional Programs, the authors highlight the field's increasing need for academically-integrated SEL programs, stating, "Given the current emphasis on accountability for academic performance and the priorities of federal funding agencies, researchers are more likely to include assessments of academic outcomes in the future when evaluating SEL programs. CASEL looks forward to including more SEL programs that document these outcomes in future versions of the Guide." This study evaluates the efficacy of a resource designed for exactly this purpose: the evidence-based *Reading with Relevance* program has demonstrated that its classroom resources effectively accelerate students' academic performance.

READING WITH RELEVANCE:
Embedding Social and Emotional Skill Development in
Common Core-Aligned English Language Arts Instruction
A Study of Program Efficacy on SEL Outcomes - Updated November 2020

METHODS.

In order to further evaluate the quality of *Reading with Relevance*'s classroom-based SEL program beyond its evidence of efficacy in improving students' academic outcomes, a study was designed to analyze the behavioral effects of school-wide program implementation during the 2017-18 school year. This evaluation utilized a pre-post quasi-experimental design, including a comparison school that did not participate in the program. At the treatment school site, the program was implemented at the universal level, during the regular school day, with students in grades 3-5. The control school site, selected based on demographic similarity in terms of students' race/ethnicity and overall enrollment, did not utilize the curriculum. Table 1 outlines the profiles of the two schools.

Table 1. *Profiles of the comparison school sites*

	Treatment School	**Control School**
School Name	Carl Munck Elementary	PLACE @ Prescott
Demographic Profile of Sample	61.9% African-American 19.5% Latinx 5.1% White 3.8% Asian 3.8% Multiple Ethnicity	63.5% African-American 24.3% Latinx 3.9% White 3.3% Asian 3.3% Multiple Ethnicity
Study Sample Size	353	181
Final N (Matched Scores)	126	103

This study analyzes behavioral student outcomes over time, specifically tracking improvements in student-reported school climate and cognitive engagement measures, as evaluated by the California Healthy Kids Survey (CHKS) assessment. The CHKS is a valid and reliable assessment instrument utilized by school districts throughout the state. Data analyzed include student CHKS responses from Spring 2016-17, prior to the program's implementation (the "pre-test"), and from Spring 2017-18, after utilizing the curriculum (the "post-test"). In order to minimize statistical bias in evaluating the program's effect on the treatment group, data analysis included adjusting for the covariate of pretest outcome.

RESULTS.

Reading with Relevance demonstrated statistically significant outcomes on student behavioral outcomes in both cognitive engagement and school climate domains; the specific items analyzed were selected because they align closely with the goals of *Reading with Relevance*'s academically-integrated approach to developing social and emotional skills. Several One-Way Analysis of Covariance (ANCOVA) were performed to test for statistically significant differences between treatment and control groups on student post-test scores, controlling for pretest scores. In order to accurately estimate intervention effects and highlight findings that are generalizable, no data were excluded from analysis based on implementation factors. Following are the results across the four measures analyzed.
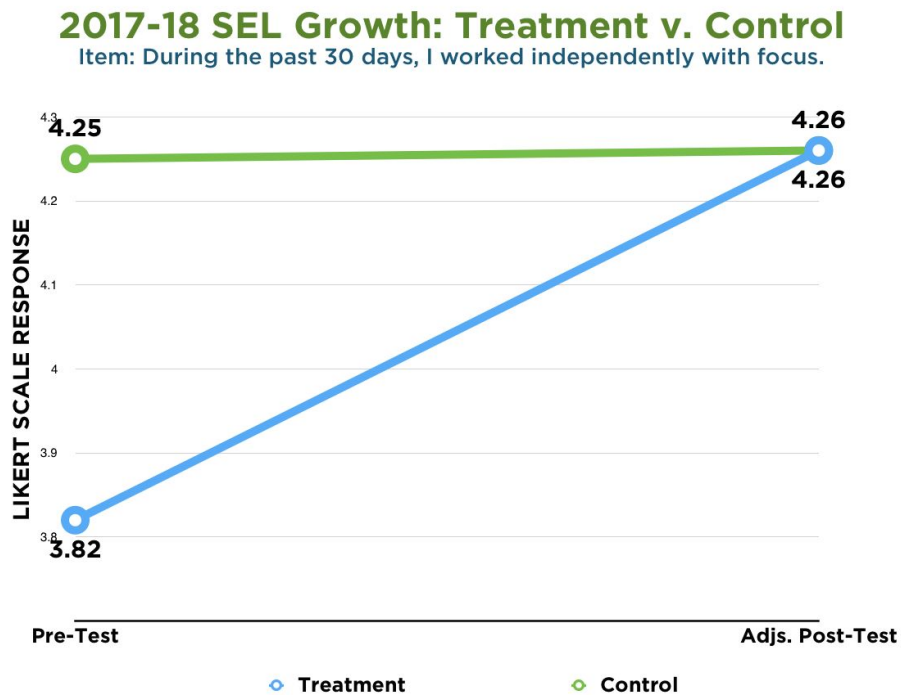
COGNITIVE ENGAGEMENT OUTCOMES.
Independent Focus.

Item 1: *"During the past 30 days, I worked independently with focus."*
Response choices: - Almost never (1) - Once in a while (2) - Sometimes (3) - Often (4) - Almost all the time (5)

Findings from ANCOVA. After adjusting for pre-test score as a covariate, post-test score was found to be statistically significant with $F(1, 227) = 7.04$, $p < 0.01$, indicating significant treatment effects. The observed pre-test means and adjusted post-test means for the control and treatment groups are presented in Figure 1 and Table 2.

While the treated group initially reported lower independent focus than their peers in the control group, treated students' report of independent focus improved after the treatment period, while the reports of students in the control group remained flat.

Figure 1.
Pre-test means and adjusted post-test means for treatment and control groups

2017-18 SEL Growth: Treatment v. Control
Item: During the past 30 days, I worked independently with focus.

Table 2. *Observed and adjusted means of cognitive engagement scores for treatment and control groups*

Group	Pre-Test (Observed Mean)	Post-Test (Adjusted Mean)
Treatment	3.82	4.26
Control	4.25	4.26

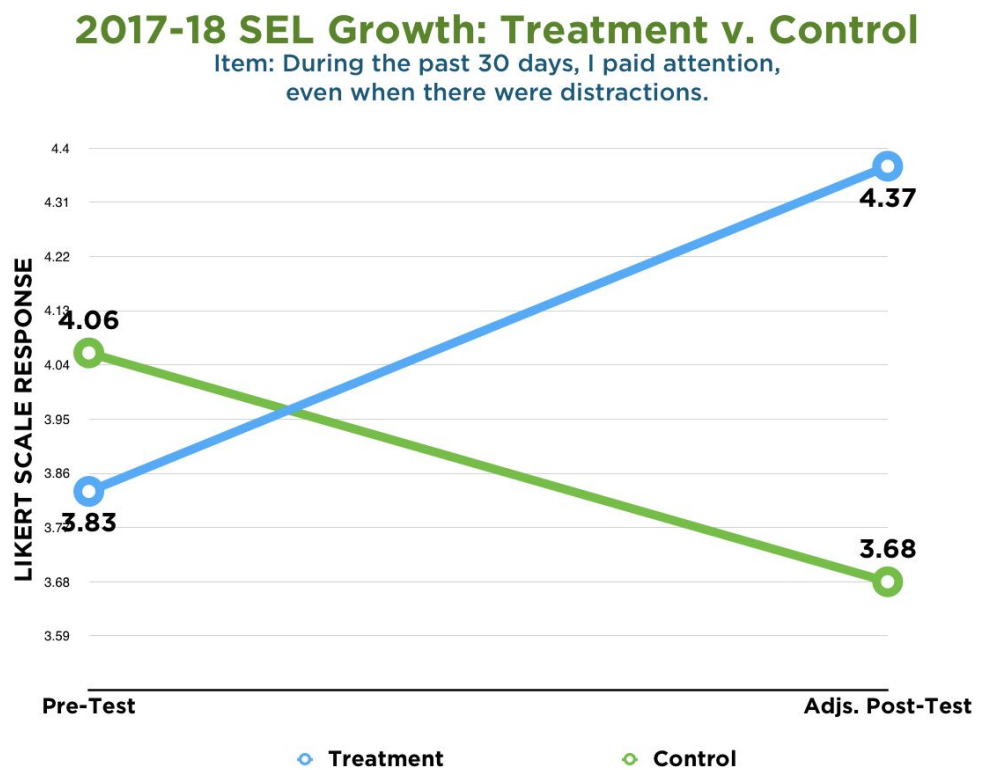**COGNITIVE ENGAGEMENT OUTCOMES (CONTINUED).**
Paying Attention.

Item 2: *"During the past 30 days, I paid attention even when there were distractions."*

Response choices:
- Almost never (1)
- Once in a while (2)
- Sometimes (3)
- Often (4)
- Almost all the time (5)

Findings from ANCOVA. After adjusting for pre-test score as a covariate, post-test score was found to be statistically significant with $F(1, 227) = 10.57$, $p < 0.001$, indicating significant treatment effects. The observed pre-test means and adjusted post-test means for the control and treatment groups are presented in Figure 2 and Table 3.

While the treated group initially reported lower attention than their peers in the control group, treated students' report of attention improved after the treatment period, while the reports of students in the control group declined.

Figure 2.
Pre-test means and adjusted post-test means for treatment and control groups

2017-18 SEL Growth: Treatment v. Control
Item: During the past 30 days, I paid attention, even when there were distractions.

Table 3. *Observed and adjusted means of cognitive engagement scores for treatment and control groups*

Group	Pre-Test (Observed Mean)	Post-Test (Adjusted Mean)
Treatment	3.83	4.37
Control	4.06	3.68

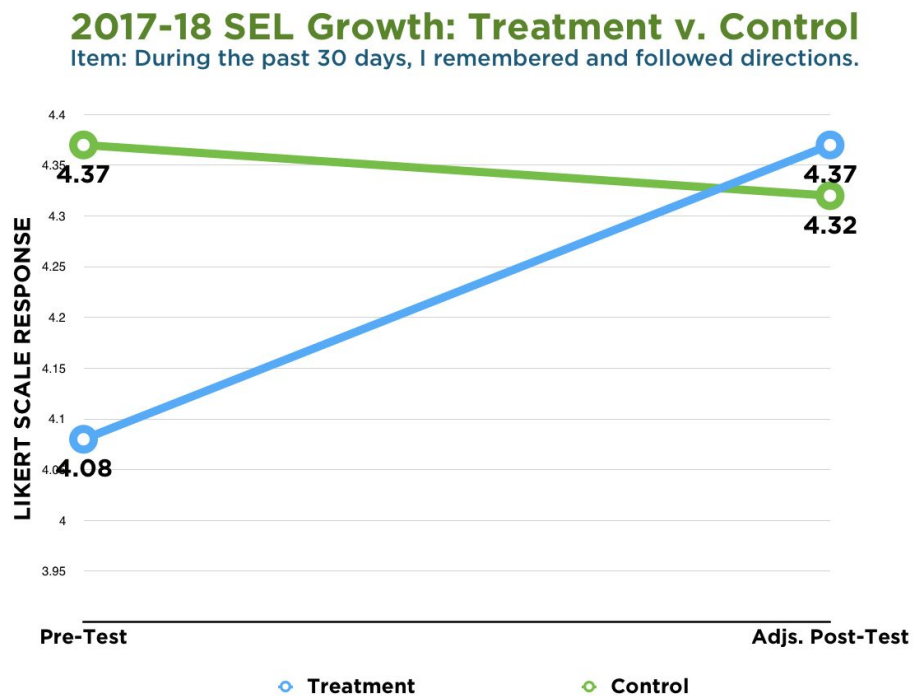**COGNITIVE ENGAGEMENT OUTCOMES (CONTINUED).**
Following Directions.

Item 3: *"During the past 30 days, I remembered and followed directions."*
Response choices: - Almost never (1) - Once in a while (2) - Sometimes (3) - Often (4) - Almost all the time (5)

Findings from ANCOVA. After adjusting for pre-test score as a covariate, post-test score was found to be statistically significant with $F_{(1, 227)} = 19.8$, $p < 0.0003$, indicating significant treatment effects. The observed pre-test means and adjusted post-test means for the control and treatment groups are presented in Figure 3 and Table 4.

While the treated group initially reported lower engagement with directions than their peers in the control group, treated students' report of engagement with directions improved after the treatment period, while the reports of students in the control group declined slightly.

Figure 3.
Pre-test means and adjusted post-test means for treatment and control groups

2017-18 SEL Growth: Treatment v. Control
Item: During the past 30 days, I remembered and followed directions.

Table 4. *Observed and adjusted means of cognitive engagement scores for treatment and control groups*

Group	Pre-Test (Observed Mean)	Post-Test (Adjusted Mean)
Treatment	4.08	4.37
Control	4.37	4.32

CLIMATE OUTCOMES.
*School Safety.*

Item: *"Do you feel safe at school?"*
Response choices: - Yes, all of the time (4) - Yes, most of the time (3) - Yes, some of the time (2) - No, never (1)

Findings from ANCOVA. After adjusting for pre-test score as a covariate, post-test score was found to be statistically significant with $F(1, 227) = 9.66$, $p < 0.002$, indicating significant treatment effects. The observed pre-test means and adjusted post-test means for the control and treatment groups are presented in Figure 4 and Table 5.

The treatment group outperformed the control group in adjusted post-test mean: while the treated group initially reported nearly the same sense of safety at school as their peers in the control group, treated students' report of school climate improved after the treatment period, while the reports of students in the control group declined.

Figure 4.
Pre-test means and adjusted post-test means for treatment and control groups

2017-18 Climate Growth: Treatment v. Control
Item: Do you feel safe at school?
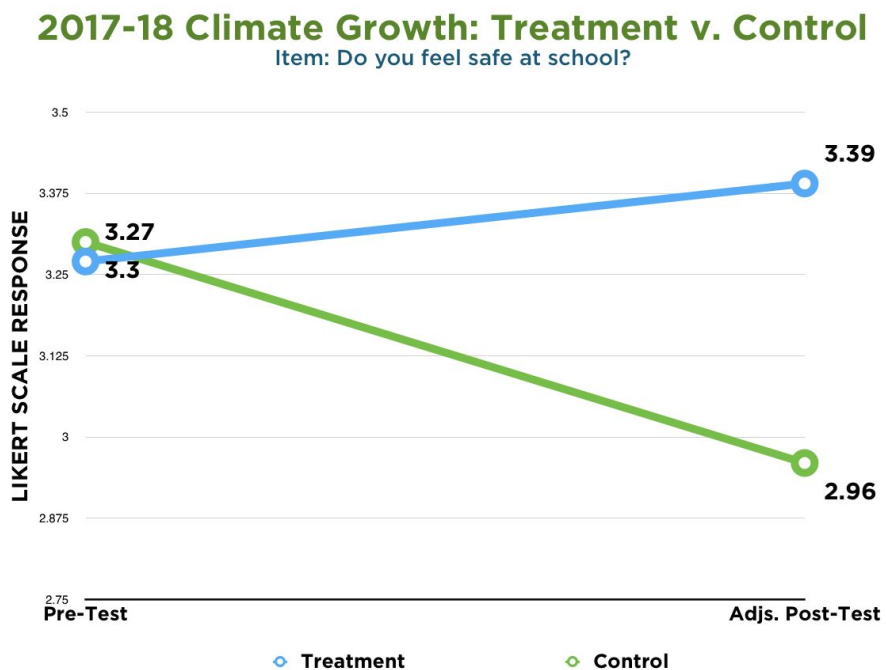
Table 5. *Observed and adjusted means of climate scores for treatment and control groups*

Group	Pre-Test (Observed Mean)	Post-Test (Adjusted Mean)
Treatment	3.27	3.39
Control	3.3	2.96

DISCUSSION.

The data presented highlight significant positive behavioral effects on students' report of cognitive engagement and school climate, favoring the treatment group. After adjusting for pre-test outcome as a covariate, the treated group's growth in both climate and cognitive engagement measures outpaced their peers in the control group, even mitigating against declines seen at the control site. The findings of cognitive engagement in particular speak to the strength and impact of integrating social and emotional learning into core academic curricula, supporting students' acceleration in skills that effectively support their learning. These results align with the growing body of research demonstrating that well-designed, evidence-based social and emotional learning programs support both students' improved academic performance (as evidenced in the original submission to CASEL) and positive behavioral outcomes.