

Literacy and Learning Centers

2017-18 Evaluation Report

Key Findings

- SDP used grant funds to renovate 34 PK-2 classrooms: ten at Pennell, nine at Stearne, eleven at Locke, and four at Haverford. Work in the classrooms included physical renovations, new furniture, and new materials and resources. Teachers and staff received over 200 hours of PD over the course of SY 2017-18.
- Teachers loved the lighting in their rooms but felt they lost storage space.
- Teachers wanted more of a voice in project planning and clearer communication.
- New technology was a challenge for teachers in their classroom and the main area where teachers would have liked more training.
- Treatment teachers showed statistically significant growth from spring 2017 to fall 2017 in two out of three CLASS domains and from spring 2017 to spring 2018 in two out of ten CLASS dimensions.
- Students in treatment schools generally performed better on early literacy assessments (AIMSweb) in the school year after renovations (SY 2017-18).

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Why this evaluation?

The School District of Philadelphia (SDP) received a grant from the William Penn Foundation to redesign 34 pre-kindergarten to second grade classrooms into interactive learning environments. Physical renovations and classroom set-ups were completed by the end of summer 2017. Teachers received professional development sessions on incorporating the new equipment (and related topics) and access to sample units and lesson plans for using centers throughout the 2017-2018 school year. Program staff at SDP identified four schools to receive renovations in all of their PK-2 grade classrooms: Alain Locke School, Haverford Center, Joseph Pennell Elementary, and Allen M. Stearne School (classrooms at Haverford received new furniture but not building renovations).

These renovations and activities build upon the District-wide Early Literacy Strategy already underway in the District, which includes implementation of the Balanced Literacy Framework, a weeklong Summer Literacy Institute, and a full-time Early Literacy Coach in every school. The strategy was rolled out in a cohort model over three years and reached all elementary schools in the 2017-18 school year. The District-wide Early Literacy Strategy focuses on job embedded coaching to support all K-3 teachers in establishing and using best practices in early literacy. Physical workstations such as an independent reading library and a guided reading workstation facilitate teachers' successful implementation of the Balanced Literacy Framework. The Literacy and Learning Centers project was designed to be an extension of the Early Literacy Initiative and to provide teachers with the opportunity to integrate high quality literacy instruction in a renovated, interactive learning environment.

What the evaluation examined

Research Questions

This evaluation examined five primary questions over the two year grant period:

- 1) To what extent have the renovations and professional development been implemented as intended?
 - a. Did renovations occur with fidelity?
 - b. Who benefited from the renovations?
 - c. Did professional development occur with fidelity?
 - d. Who participated in professional development?
- 2) To what extent are classroom teachers satisfied with the renovations and professional development?
- 3) How do teachers perceive changes to their instructional practices and student outcomes associated with the project?
- 4) To what extent has the program improved teacher-student interactions?
- 5) Did students in the treatment classrooms show growth in literacy and attendance rates? If so, to what degree?

Data Collection and Analysis

Four sources of data were collected or reviewed to answer the research questions: teacher surveys and focus groups, observations of classrooms using the Classroom Assessment Scoring System (CLASS), student AIMSweb (reading level) data, and student attendance data. This section describes each data source and how the data were analyzed to address the research questions.

Teacher Surveys and Focus Groups

Teacher survey and focus group data were used to answer Research Questions 2 and 3. Descriptive statistics are presented for survey data, and open-ended items were analyzed for common themes. Focus groups were recorded, transcribed, and coded for common themes in an iterative process.

- Professional development (PD) surveys: Teachers received paper surveys after every PD session attended that asked about the content, delivery, and usefulness of the sessions.
- Teacher survey: ORE administered a longer survey in February 2018 to assess satisfaction with program supports, satisfaction with the renovations/new materials, and teacher perceptions of program effect on instruction and student/teacher interactions. Twenty teachers responded for a 64.5% response rate.
- Teacher focus groups: ORE met with teachers at treatment schools in May 2018 to discuss the renovations, PD, use of centers, and support from the District. We were unable to schedule a focus group at one treatment school; instead we sent those teachers an additional survey with several open-ended questions in order to include their feedback. A total of 10 teachers participated in focus groups.

CLASS Observations

ORE observed treatment and comparison classrooms during spring 2017, fall/winter 2017-18 and spring 2018 using the Classroom Assessment Scoring System (CLASS). Comparison schools were chosen based on Early Literacy Specialist cohort (the first year the school received an Early Literacy Specialist and attended the Literacy Summer Institute), Learning Network, type of PK center (Bright Futures versus Head Start), student demographics, and number of PK-2 classrooms. A summary of comparison school demographics in 2016-17 (the year we chose comparison schools) is in Appendix A.

The CLASS was developed at the University of Virginia to assess the quality of teacher-child interactions in PK-12 classrooms¹. It describes multiple domains of teaching that are linked to student achievement and development and was validated in over 2,000 classrooms. There are three main domains of the CLASS, each of which is further separated into dimensions.

¹ See <https://curry.virginia.edu/classroom-assessment-scoring-system>

- Emotional Support: Teachers’ abilities to support social and emotional functioning in the classroom. Dimensions: Positive Climate, Negative Climate, Teacher Sensitivity, Regard for Student Perspectives.
- Classroom Organization: Classroom processes related to the organization and management of students’ behavior, time, and attention. Dimensions: Behavior Management, Productivity, Instructional Learning Formats.
- Instructional Support: The ways in which teachers implement curriculum to effectively support cognitive and language development (regardless of which curriculum they are using). Dimensions: Concept Development, Quality of Feedback, Language Modeling.

ORE conducted 172 observations of 78 teachers at treatment and comparison schools across three time points (Table 1). Under Research Question 4 (To what extent has the program improved teacher-student interactions?), the first section shows CLASS results for everyone observed at each time period. The second section shows results for a matched group (i.e., teachers who had three observations, one at each time period). Only 36 teachers (19 treatment, 17 comparison) had observations at all three time points and were included in the matched group (Table 2). Significance tests were only run on the matched group sample.

Table 1: ORE Conducted 172 Observations Across the Three Time Points

Time Period	All Classrooms	Treatment	Comparison
Spring 2017	58	32	26
Fall/Winter 2017-18	58	29	29
Spring 2018	56	27	29
Total Number of Observations	172	88	84

Table 2: 36 Teachers Were Included in the Matched Group

Matched Group	Number of Teachers
All Classrooms	36
Treatment	19
Comparison	17

Student AIMSweb Reading Data

SDP uses AIMSweb, a universal early literacy screening, benchmarking, and progress-monitoring tool from Pearson, to assess literacy proficiency for all K-3 students. Teachers score students’ performance on each AIMSweb assessment according to the number of cues students identify correctly or incorrectly in a 60-second period. Each grade level is administered one core assessment (in addition to other standardized measures) at three time points across the year (fall, winter, and spring):

- Kindergarten; **Letter Naming Fluency (LNF)** assessment: Measures letter identification
- 1st Grade; **Nonsense Word Fluency (NWF)** assessment: Measures phonemic awareness

- 2nd Grade; **Reading Curriculum Based Measurement (R-CBM)**: Measures oral reading fluency

For each core assessment, ORE examined the descriptive outcomes of students in the treatment schools on the following data points:

- **Raw Score**: The number of correct responses
- **National Percentile Rank (NPR)**: A norm-referenced measure that compares students' raw scores to a national sample of students
- **Rate of Improvement (ROI)**: The number of points a student or group of students increased per week between assessment periods [i.e., (fall correct-spring correct)/number of weeks]
- **Student Growth Percentile (SGP)**: Percentile norms that indicate the percentage of students in the nationally representative sample with similar baseline scores (*very low, low, average, high, very high*) that had an ROI equal to or smaller than a particular student's or group of students' average ROI.

Results of this analysis are under Research Question 5.

Limitations

Any Kindergarten, first, or second grade students who attended a treatment school (Locke, Pennell, or Stearne) in SY 2016-17 or SY 2017-18 AND who had both a fall and spring AIMSweb score (at the same school) were included in this analysis (Table 3). However, ORE did NOT restrict the analysis only to students who were in a treatment school both school years, so each year of the analysis includes a different population of students. It is important to keep this in mind when comparing results between years.

Table 3: Number of Treatment Students Included in the AIMSweb Analysis

	SY 2016-17	SY 2017-18
Kindergarten	150	143
1 st Grade	117	156
2 nd Grade	155	148
<i>Total</i>	422	447

Student Attendance Data

We also looked at student attendance data to see if the renovated classrooms and any possible changes to teacher-student interactions encouraged students to attend school more often. These results are under Research Question 5. We looked at both the percent of students attending 95% or more days of school and Average Daily Attendance. The attendance analysis only included students who were enrolled at the same school in both years (2016-17 and 2017-18) and for at least ten days. This analysis included student enrollment in that school at any point in the school year and only included student attendance while at that school. The number of students included for each school is shown in Table 4 below.

Table 4: Number of Treatment Students Included in the Attendance Analysis

School	Number of Students
Locke	88
Pennell	129
Stearne	103

What the evaluation found

Research Question 1: To what extent have the renovations and professional development been implemented as intended?

34 classrooms were renovated

SDP used grant funds to renovate 34 PK-2 classrooms: ten at Pennell, nine at Stearne, eleven at Locke, and four at Haverford. Work in the classrooms included physical renovations, new furniture, and new materials and resources. Examples of renovations included painting, updated electrical fixtures, and new flooring. New furniture included new chairs and desks for students, new bookshelves and other storage, and new centers. Centers varied by grade level but included a play kitchen, laundry center, sand and water tables, art center, listening center (where students can listen to an audiobook and follow along in a physical book), writing center, library/cozy corner, dramatic play center (with puppets), guided reading table, science center, and dry erase center (for students to practice writing). Examples of new materials and resources included technology (panel boards and iPads), audiobooks, and classroom manipulatives. However, one recurring theme from the focus groups we conducted was that teachers did not receive enough resources and manipulatives. For example, teachers received a few audiobooks but not enough to cover all reading levels or received some paper and markers but they ran out early in the school year.

Students at four schools serving economically-disadvantaged students benefited from the renovations

Across the four schools, 667 students received instruction in the renovated classrooms. Pennell had the highest K-2 student enrollment (228) and served the highest population of Black/African American students (95%). Stearne served the highest population of Hispanic students (28%) and special education students (14%).

Table 5: SY 2017-18 Demographics by School

	Locke	Pennell	Pennell PK	Stearne	Haverford
Total Enrollment (PK-2)	166	228	40	179	54
% Special Education	11%	6%	-	14%	-
% ELL	8%	-	-	2%	-
% Economically Disadvantaged ¹	83%	82%	-	88%	-
% Female	48%	47%	40%	55%	52%
% Black	82%	95%	98%	57%	78%
% Hispanic	4%	2%	-	28%	-
% Multi-Racial/Other	5%	2%	-	9%	9%
% Asian	5%	-	-	2%	9%
% White	2%	1%	3%	3%	4%

¹Reflects the number of students who are certified as economically disadvantaged by receiving governmental assistance, not the number of students who receive free lunch.

Teachers and staff received over 200 hours of professional development

The Office of Early Childhood Education (ECE) provided professional development (PDs) to treatment teachers during SY 2017-18. Three PDs were held at the SDP central office and covered a wide range of topics about utilizing center based learning in the classroom (Table 6). ECE facilitated additional school or grade specific PDs based on school needs. Teachers and staff received over 200 hours of PD over the course of SY 2017-18 (Table 7). By school, Stearne received the most PD hours (79.5). The PD for this project was in addition to early literacy PD provided throughout the year by the literacy coaches, which also focused on center-based learning.

Table 6: Topics Covered During Professional Developments

Date	Topics Covered
8/31/17	Center Based Theory, Utilizing your Centers, and Interactive Panelboards, Apple
1/2/18	Center Procedures, Differentiation within Centers, Best Practices, Presentation from Locke Teachers
4/14/18	Students with Differing Needs, What Centers Look Like in the Classroom, and Planning Based on Student Needs, Make and Take Session
Grade or School Specific PDs throughout SY 2017-18	Based on school needs. Examples included Differentiating for Students and Using Smart Technology.

Table 7: ECE Provided over 200 hours of PD across all Participating SDP Schools

School	Pre-K	Kindergarten	First Grade	Second Grade	Total
Pennell	15.5	15	20	15	65.5
Locke	-	21.5	21.5	21.5	64.5
Stearne	-	26.5	26.5	26.5	79.5
Haverford	18	-	-	-	18

All teachers attended at least one large professional development

Participating school staff were invited to attend the three PDs that took place at SDP. In addition to teachers, sometimes additional school staff attended, such as Reading Specialists, School-Based Teacher Leaders, or Early Literacy Specialists. The PD held on August 31st had the highest attendance (38) and the PD on April 14th had the lowest (8; see Table 8). The PD held on January 2nd was not attended by Pennell due to a conflict in scheduling (teachers at Pennell received additional hours of PD at their school). Looking at classroom teachers only, all teachers attended at least one session held at the SDP central office (Table 9). Locke had the most teachers attend all three PD sessions (6), though the majority of teachers (15) attended only 1 PD session.

Table 8: August PD Had the Highest Attendance

Date	Haverford	Locke	Pennell	Stearne	Total
8/31/2017	4	9	16	9	38
1/2/2018	-	9	-	9	18
4/14/2018	-	6	1	1	8

Table 9: Classroom Teachers Attended at Least 1 of the 3 Professional Developments Held at SDP

Classroom Teacher PD Attendance	Haverford	Locke	Pennell	Stearne	Total
Number of classroom teachers	4	8	11	8	31
Attended all 3 sessions	-	6	-	1	7
Attended 2 sessions	-	2	1	6	9
Attended 1 session	4	-	10	1	15

Research Question #2: To what extent are classroom teachers satisfied with the renovations and professional development?

Teachers loved the new lighting but had mixed feelings about the furniture, storage space, and room arrangement possibilities

Teachers had positive feedback about the project and the renovations. One teacher said in the survey, “I feel the project is beneficial to students and helps the overall success of each student.” One theme that came up in the focus groups was how much teachers loved the new lighting in their rooms, both how bright it is and the fact that having multiple switches means they can choose to turn off only some of the lights depending on the activity.

However, teachers in the focus groups said they felt they lost storage space, especially for teacher materials and bookshelves. Teachers who do breakfast in the classroom also wanted dedicated space for that. Some teachers were using the guided reading table to serve breakfast and then had to make sure it was clean before doing centers. Some teachers also mentioned either receiving too much furniture or that their room was laid out in a way that made it hard for both teachers and

students to navigate the space. Teachers sometimes needed to try multiple configurations of the room to find one that worked, though the placement of the Smartboard also limited how much teachers could change the set up in their room. Teachers also mentioned not having enough time to set up their rooms before the start of school (many of the provided materials were still in boxes when they entered their classrooms).

Teachers had mixed feelings about the furniture they received. One teacher praised the style of desks, “So there’s a tray and there’s a seat sack. So, if a kid, if you ever have to switch their desk, you don’t have to switch their desk. You take the tray out, you take the seat back off and then you just switch them. That is teacher genius. That is a real person who has taught in a classroom and understands what’s useful.” The second grade teachers said their desks were too big, too heavy, and not movable. Teachers also mentioned wanting an adult-sized chair for themselves. Additionally, the writing center only had space for four students, but most teachers have center groups of five to six students. This forced teachers to find alternative activities for students to do when the rest of their group is at the writing center, and sometimes resulted in students feeling left out when separated from their group. Teachers were also divided on the wireless headphones; some liked that students were free to move around, but others found it annoying that the headphones have to be charged. If students forget to plug them back in, they lose their charge and students would not be able to use that center.

Teachers also asked for follow through and support in terms of replacing materials that get broken or damaged, whether in the current school year or going forward. They also had similar concerns with using up manipulatives in the first year or materials that only last for one year (such as the seat sacks).

Teachers wanted more of a voice in planning and clearer communication

A common theme that arose in both the surveys and teacher focus groups was including teacher voice in the project planning, especially around designing classrooms. Teacher suggestions on the survey included: “Allow teachers to have some say and take their advice” and “There should be an early childhood or elementary ed teacher involved in the planning. Not just to be visible, but to have a voice that is heard, listened to, and valued.”

In focus groups, teacher opinions were mixed. Teachers at one school told us they felt like their feedback was taken into account while teachers at a second school disagreed. One explanation for this difference may be explained by a misunderstanding on the part of the teachers. Project staff told us that they reached out to teachers for suggestions of what to include in the rooms before renovations began. While the intent was for teachers to list suggestions of what they might like to receive, some teachers indicated they thought they were picking out exactly what would be in their classroom. When they saw their classrooms and realized that was not the case, teachers reported that they were disappointed and therefore felt they had not been listened to. They also said they felt like they had wasted time going through catalogs and picking out exactly what they wanted when everyone ultimately received the same items.

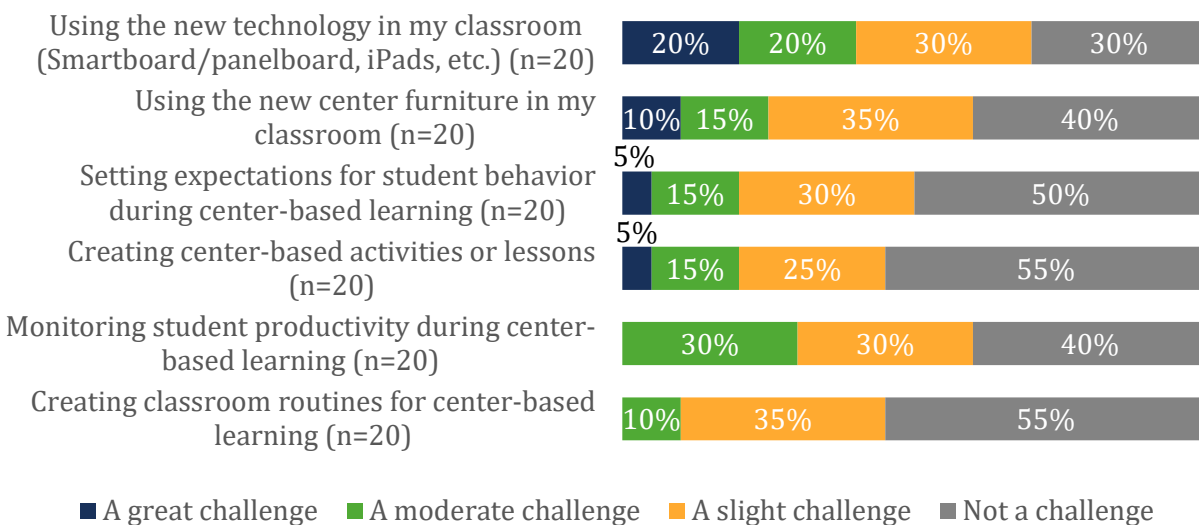
Some teachers told us that the rooms lacked personalization because they all received the same items and they felt like they were not allowed to bring any of their own materials. One teacher said, “This is your classroom, it’s not our classroom. It was nothing personal for us. We spend all these hours in this classroom from the morning to the afternoon with all these children and we can’t even personalize it.”

Teachers told us they would have liked more communication up front about what materials would be included in the renovated classroom. This could have informed what materials to keep, toss, or buy over the summer. For example, teachers told us if they knew they would not receive materials for the art center, but they already had markers, they could have kept them. Teachers said they were told to throw out everything in their classrooms, and all teachers we spoke with in the focus groups were uncomfortable with what they called “the purge.” If teachers knew which materials they would receive, they might feel better about throwing out old versions of those items. During the PD in April 2018, teachers in the first cohort became a resource for teachers in the second cohort by answering questions about what the classroom would look like and what materials they would receive. In the future, the District could provide this type of information to teachers earlier in the process to improve communication about what to expect with the renovations.

New technology was a challenge for teachers in their classroom

Teachers identified using the new technology in their classroom as a challenge (70% of teachers identified technology as at least a slight challenge; Figure 1). In addition, 60% of teachers said that monitoring student productivity during centers was at least a slight challenge. More than half of teachers (55%) said that creating center-based activities and classroom routines were not challenges.

Figure 1: 70% of Teachers Said Using the New Technology Was at Least a Slight Challenge



Challenges with technology also came up frequently during the focus groups. One of the challenges teachers identified was not having enough technology. For example, the iPads that were provided were often used for interventions (e.g., Lexia), so they were not available for other center activities. One teacher also mentioned that when her computer is hooked up to the Smartboard, then she cannot use it for other things (for example, giving a student an assessment); previously she had two computers for this reason. Alternatively, it would be great if the iPads connected to the Smartboard instead. Some other technology challenges teachers mentioned:

- Sound on the Smartboard was too low, even with the volume turned all the way up.
- The iPads synced across the whole school, so pictures would come up that were taken by other students. This made teachers hesitant to use some of the features on the iPads.
- Some of the school-wide intervention software were not compatible with iPads.
- Teachers were unable to download apps and updates to the iPads and Smartboards.
- Headphones that came with the iPads were not as high quality as the ones for the listening center and broke more easily.
- Teachers and students were getting random phone calls/Facetime calls on the iPads.

Teachers also mentioned needing more support around technology, both in terms of professional development but also how to get things fixed if they are not working. First, teachers need to know whom the right person is to contact, but some teachers mentioned asking for help and not having anyone come out to the school. One teacher wound up taking her iPads to the Apple store in order to get them set up after repeatedly asking for help.

Overall, teachers were satisfied with the professional development sessions they received

For sessions where surveys were given, average satisfaction ratings ranged from 3.06 to 3.87 (on a scale from 1-4; see Table 10). The August session on Tech Centers (which focused on iPads) received the lowest rating, and the April session (Early Literacy Professional Development) received the highest rating. This session included teachers and principals presenting on how they use centers, which teachers said in the focus groups was helpful.

Table 10: Average Session Ratings¹

Session	Date	Audience	N Size	Average Satisfaction Rating ²
Center-Based Classrooms Theory	August 31, 2017	All teachers	23	3.47
Interactive Whiteboards	August 31, 2017	All teachers	26	3.45
Tech Centers	August 31, 2017	All teachers	31	3.06
Utilizing Your Writing, Math, Science, and Listening Centers	August 31, 2017	All teachers	19	3.38
Literacy and Learning Centers	January 2, 2018	All teachers	18	3.36
Early Literacy Professional Development	April 14, 2018	All teachers	8	3.87
All Small Group PDs ³	Various	By school or by grade	12	3.59

¹Ratings only reflect scores from teachers at one of the four grant schools (Locke, Pennell, Stearne, and Haverford), though other schools receiving renovations attended some of the sessions.

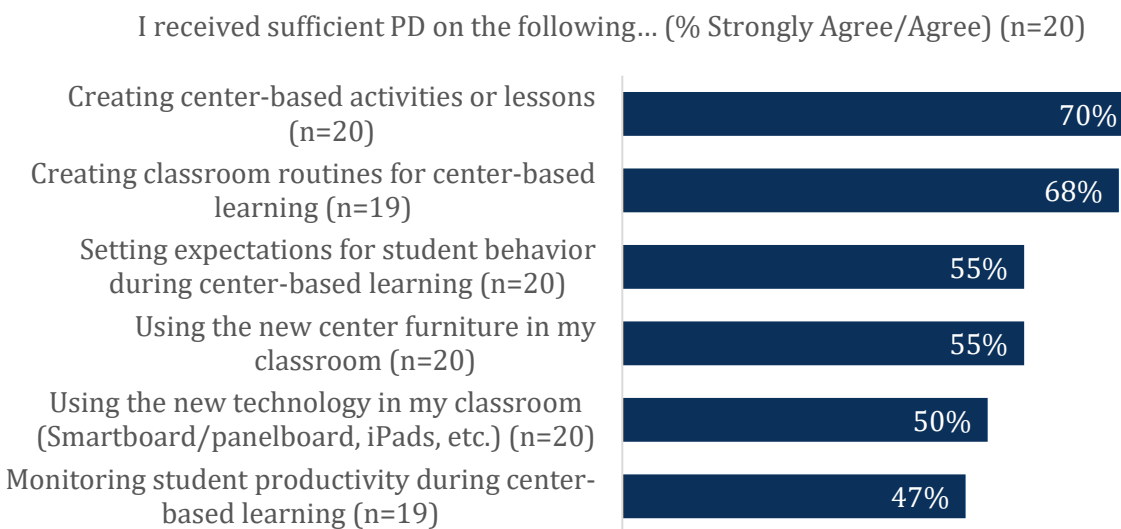
²Each session average was calculated by finding the individual mean scores of each of the 13 session-specific questions listed in Appendix B (where 1 was Strongly Disagree and 4 was Strongly Agree) and averaging these mean scores to calculate an overall mean for each session.

³These session sizes were too small to display results individually.

Teachers would have liked more training on using new technology in their classrooms

Teachers said that they received the most sufficient professional development (PD) in creating center-based activities or lessons (Figure 2). However, teachers rated monitoring student productivity during center-based learning as the area where they did not receive enough PD. When asked for additional feedback about professional development, teachers mentioned wanting additional PD on technology (specifically iPads and SMARTboards).

Figure 2: Teachers Rated Using the New Technology as the Area Where They Did Not Receive Sufficient PD



In the focus groups, teachers echoed the desire for more training on technology, specifically the iPads. Teachers also mentioned wanting the sessions to be less focused on the theory of doing centers and more on how to use the provided furniture and materials. Teachers liked best the sessions where their colleagues presented and shared out strategies to use within their classrooms.

Research Question #3: How do teachers perceive changes to their instructional practices and student outcomes associated with the project?

Teachers reported using centers daily during the literacy block, but some centers had less use

All respondents to the survey said they use centers daily during the literacy block. Additionally, 75% of respondents said they use centers during another part of the day. All of the respondents who use centers outside of the literacy block use them during math, and two teachers mentioned using them during science.

In both the survey and the focus group, teachers mentioned not using the art, science, and dramatic play centers because they were not sure how to integrate them into the literacy block. Teachers also mentioned the puppets that came with the dramatic play center were not diverse. When teachers mentioned manipulatives that they did not use, it was usually for the same reason as the centers, that they were not sure how to integrate them into the literacy block in a way that supports student learning (and was not just “fun”). One teacher also mentioned the whisper phone could be cumbersome as it took up a lot of room. She would have liked if there was a way to store it when not in use.

Teachers identified centers as beneficial to several components of literacy block implementation

Half of teachers (10 out of 20) rated improving the literacy environment as a great benefit from the Literacy and Learning Centers project (Figure 3). Half (50%) of teachers said that there was no benefit or only a slight benefit to their ability to work with students one-on-one. Teachers also rated the literacy environment as the component of the literacy block where the project provided the greatest benefit (Figure 4).

Figure 3: Teachers Rated Improving the Literacy Environment as a Great Benefit

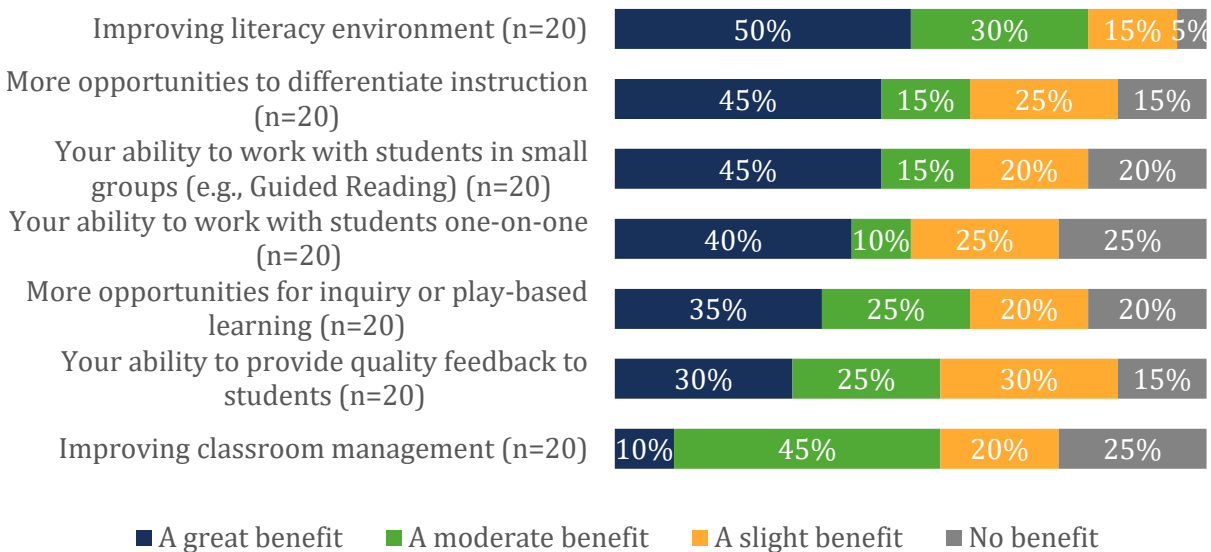
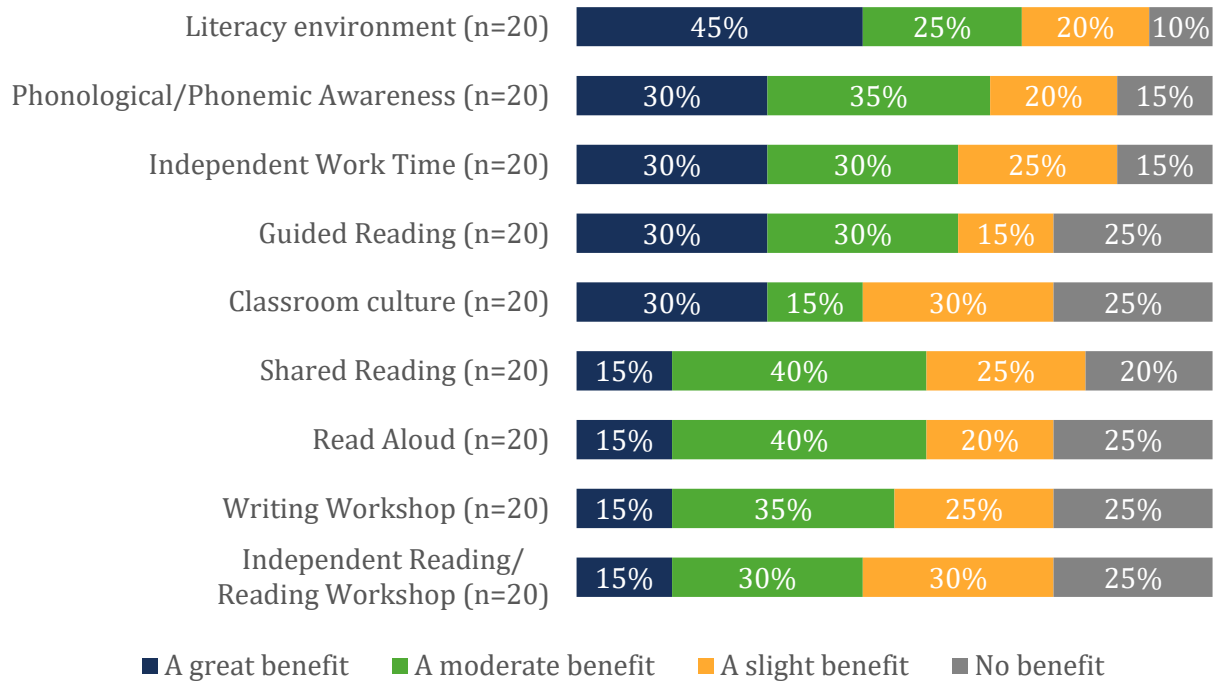


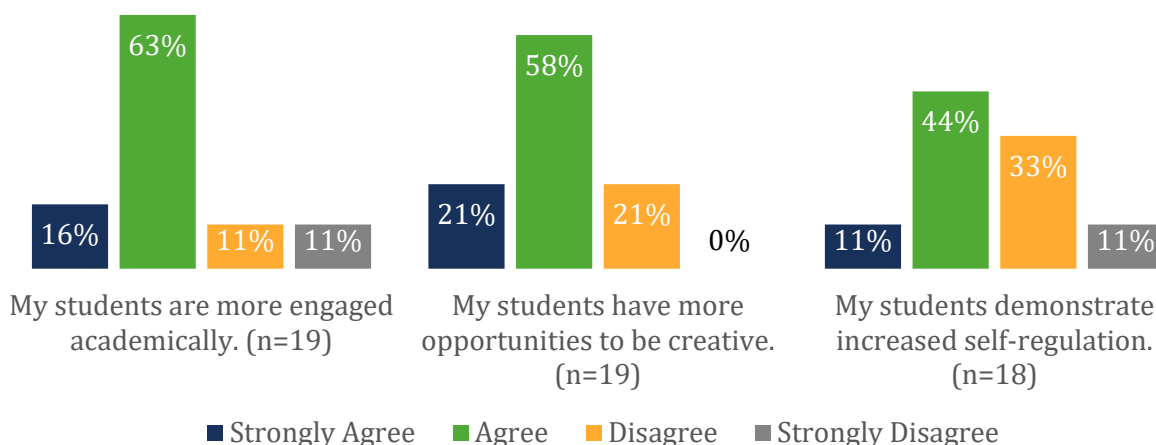
Figure 4: Teachers Said the Project Provided a Great or Moderate Benefit to Their Ability to Implement the Literacy Environment Component of the Literacy Block



Teachers said their students have more opportunities to be creative and are more academically engaged

When asked specifically about benefits the project provided to their students, 79% of teachers said their students have more opportunities to be creative (Figure 5). Most teachers (79%) also said their students are more engaged academically after the project, and just over half (55%) said their students demonstrate increased self-regulation.

Figure 5: 79% of Teachers Said Their Students Have More Opportunities to Be Creative



In two of the focus groups, teachers mentioned seeing benefits to their students. As one teacher said, “It’s beneficial for all students, for the high kids, the struggling kids, the kids that are mostly on level. With the renovation it met each, for me... for all of us, it met each student’s independent need.” Another teacher said, “My kids did make progress, especially I’m thinking of one in particular, he came in knowing maybe 7 words a minute, he’s leaving me knowing 60 words per minute. And I think that part of that helped, being on Lexia, being in the writing center, being in the word work center, having the guided reading area, having the Smartboard.” This teacher went on to state that the benefits to students were potentially limited by not having all the needed materials or items not working correctly. “I do feel that the listening center helped when it worked... all of those things have to be in place for it to be constantly working, to constantly help. I think that if we had more materials for the listening center, those tier three kids could have been listening to fluent stories and gotten more instruction.... I think it would have been even better if all the parts were in place.”

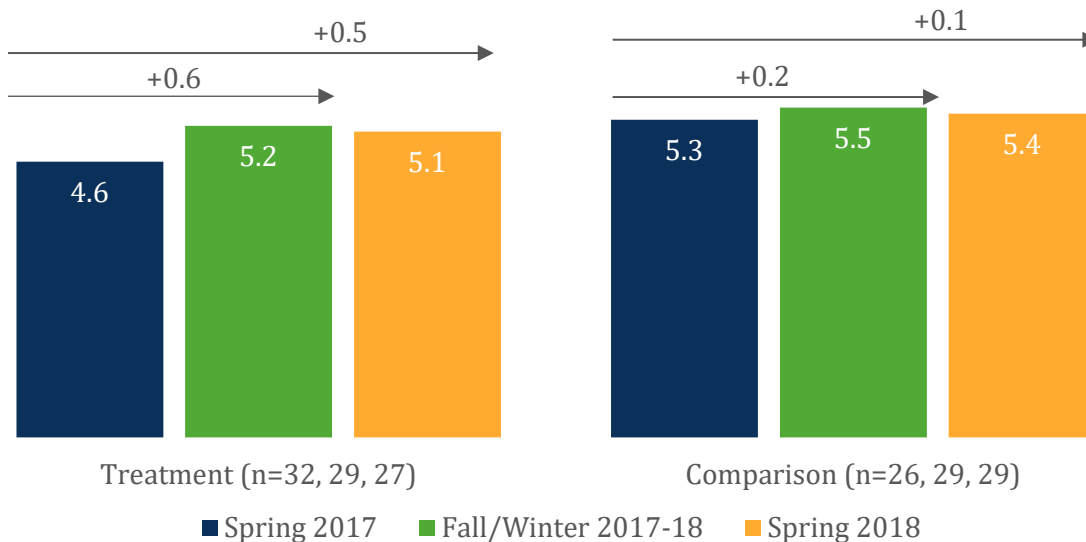
Research Question #4: To what extent has the program improved teacher-student interactions?

ORE conducted 172 observations of 78 teachers at treatment and comparison schools across three time points using the CLASS (full details in the Data Collection and Analysis section). The first section below shows CLASS results for everyone observed at each time period. The second section shows results for a matched group (i.e., teachers who had three observations, one at each time period). Only 36 teachers (19 treatment, 17 comparison) had observations at all three time points and were included in the matched group. Significance tests were only run on the matched group sample.

When we include all teachers who were observed at any point in the project, we found that treatment classrooms had slight increases in the Emotional Support and Classroom Organization

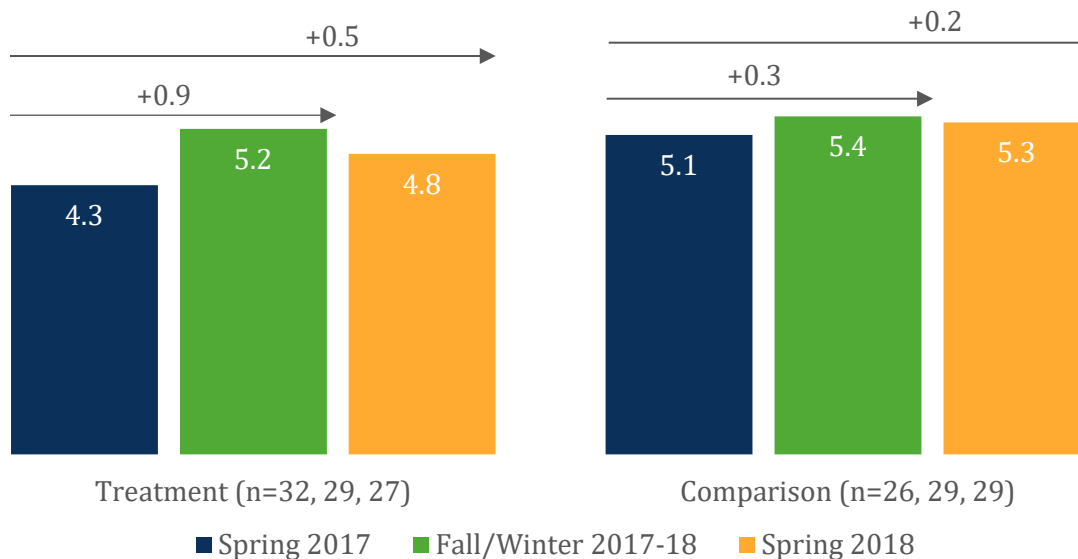
domains (Figures 6 and 7). There was no change in scores for treatment and comparison classrooms in the Instructional Support domain (Figure 8).

Figure 6: Treatment Classrooms Showed Slight Increases in Emotional Support Domain Scores



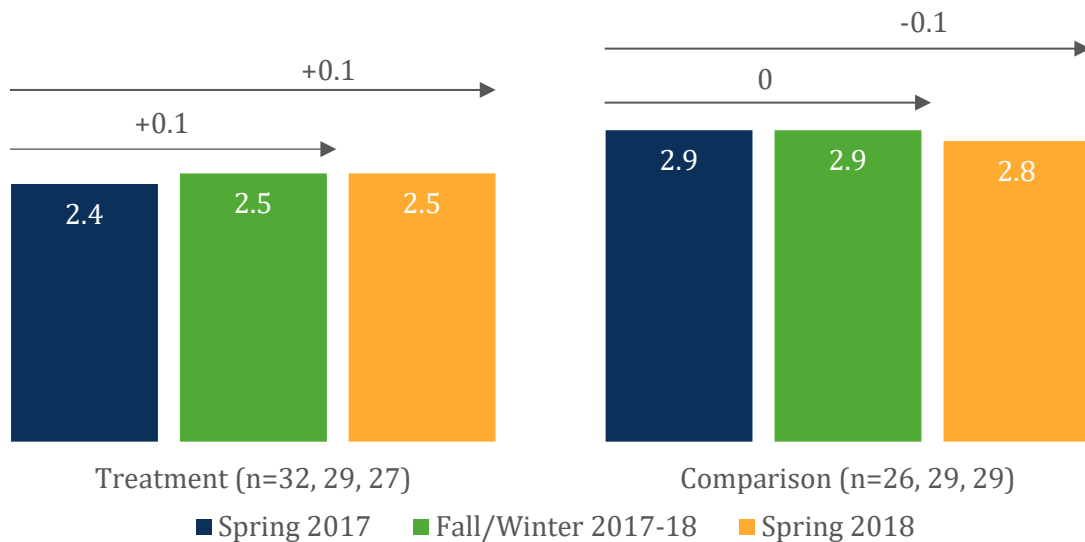
Note: Includes all observations done at each time point; does not reflect the same group of teachers at each time point.

Figure 7: Treatment Classrooms Showed Slight Increases in Classroom Organization Domain Scores



Note: Includes all observations done at each time point; does not reflect the same group of teachers at each time point.

Figure 8: Instructional Support Domain Scores for Treatment and Comparison Classrooms did not Change over Time

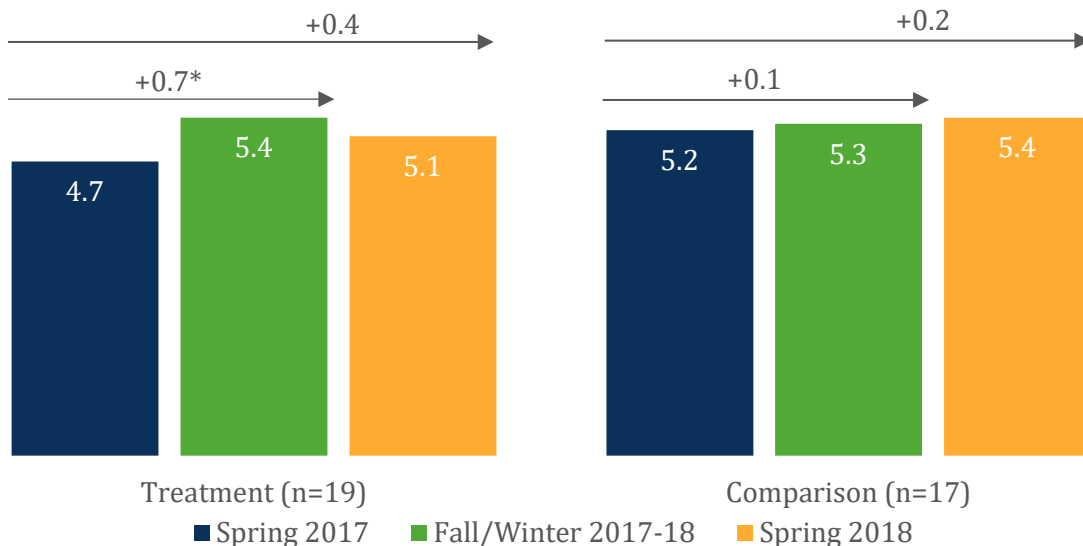


Note: Includes all observations done at each time point; does not reflect the same group of teachers at each time point.

Treatment classrooms showed statistically significant growth in the Emotional Support and the Classroom Organization domains

In the matched group of 36 teachers (19 treatment and 17 comparison), treatment classrooms showed statistically significant growth in both the Emotional Support and Classroom Organization domains from spring 2017 to fall 2017 (Figures 9 and 10). Treatment and comparison classrooms remained flat in their Instructional Support domain scores (Figure 11), and comparison classrooms did not show any statistically significant growth. CLASS results for the matched group by school and by grade are in Appendix C.

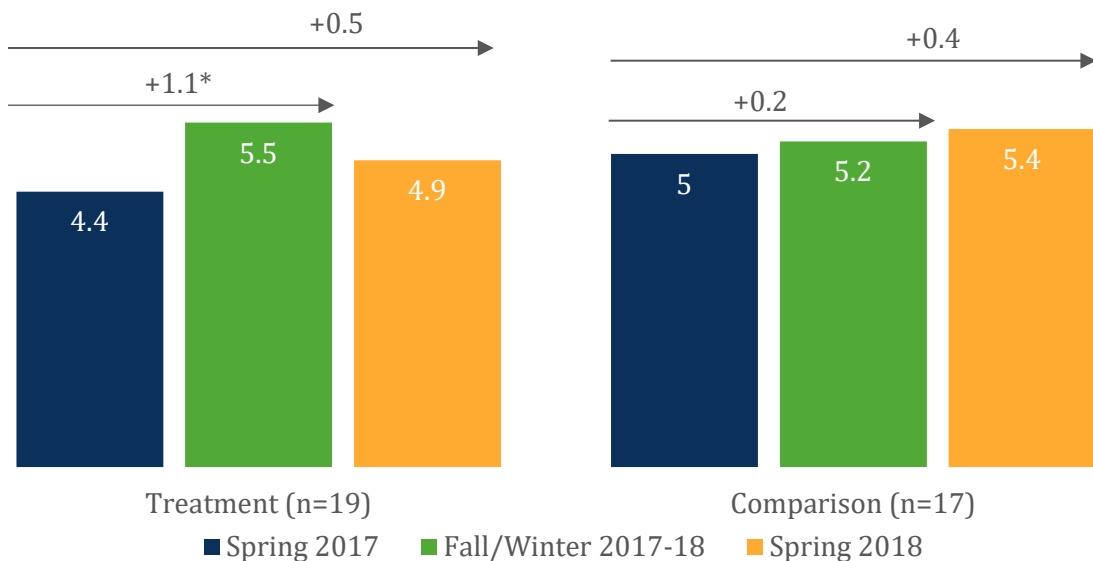
Figure 9: Treatment Classrooms Showed Statistically Significant Growth in the Emotional Support Domain from Spring 2017 to Fall 2017



Note: Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

*Difference is statistically significant using a paired samples t-test ($t=2.5, p=.02$).

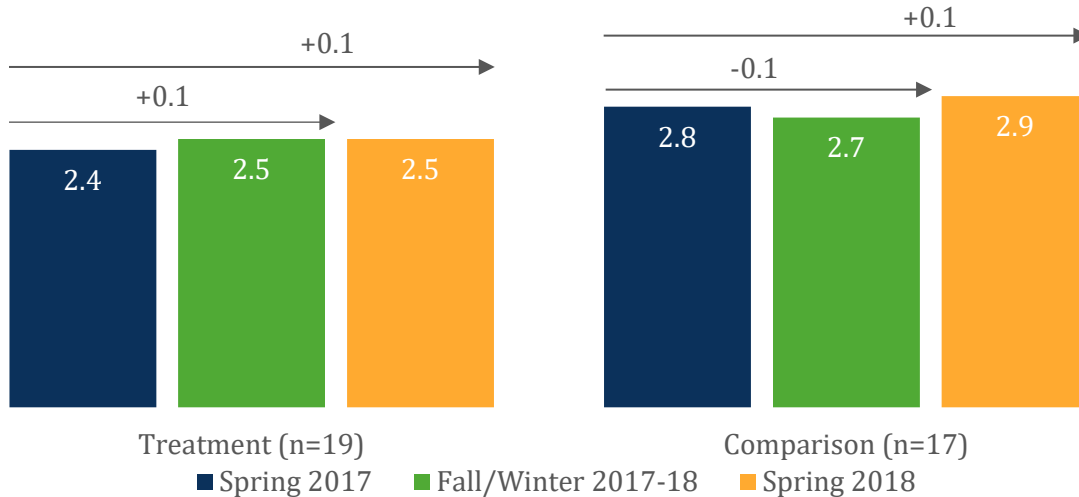
Figure 10: Treatment Classrooms Showed Statistically Significant Growth in the Classroom Organization Domain from Spring 2017 to Fall 2017



Note: Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

*Difference is statistically significant using a paired samples t-test ($t=3.7, p=.00$).

Figure 11: Instructional Support Scores for Treatment and Comparison Classrooms did not Change over Time



Note: Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

Treatment classrooms showed statistically significant growth in the Regard for Student Perspectives and the Instructional Learning Formats dimensions

The three domains are further divided into ten dimensions (Table 11). In the Emotional Support domain, treatment classrooms showed statistically significant growth in both Negative Climate and Regard for Student Perspectives from spring 2017 to fall 2017. Treatment classrooms also showed growth in Regard for Student Perspectives from spring 2017 to spring 2018. Comparison classrooms did not show any statistically significant growth in the Emotional Support Dimensions. From spring 2017 to fall 2017, treatment classrooms showed statistically significant growth in all three Classroom Organization Dimensions, and the growth in Instructional Learning Formats was also significant from spring 2017 to spring 2018. Comparison classrooms also showed statistically significant growth in Instructional Learning Formats from spring 2017 to spring 2018. Treatment and comparison classrooms remained flat in all three Instructional Support dimensions.

Table 11: CLASS Results by Dimension

Domain	Dimension	Group	Spring 2017	Fall 2017	Spring 2018	Change (from Spring to Fall, Spring to Spring)
Emotional Support	Positive Climate	Treatment	4.5	5.1	4.9	+0.6, +0.4
		Comparison	4.8	4.9	5.1	+0.1, +0.3
	Negative Climate	Treatment	2.1	1.4	1.8	-0.7*, -0.3
		Comparison	1.6	1.3	1.4	-0.3, -0.2
	Teacher Sensitivity	Treatment	4.5	5	4.7	+0.5, +0.2
		Comparison	5.0	5.0	5.2	+0.0, +0.2
	Regard for Student Perspectives	Treatment	3.8	4.7	4.7	+0.9*, +0.9*
		Comparison	4.6	4.5	4.9	-0.1, +0.3
Classroom Organization	Behavior Management	Treatment	4.7	5.8	4.9	+1.1*, +0.2
		Comparison	5.3	5.3	5.4	+0.0, +0.1
	Productivity	Treatment	4.9	5.9	5.5	+1.0*, +0.6
		Comparison	5.5	5.7	6.1	+0.2, +0.6
	Instructional Learning Formats	Treatment	3.6	4.7	4.3	+1.1*, +0.7*
		Comparison	4.3	4.7	4.8	+0.4, +0.5*
Instructional Support	Concept Development	Treatment	2.2	2.3	2.3	+0.1, +0.1
		Comparison	2.6	2.4	2.5	-0.2, -0.1
	Quality of Feedback	Treatment	2.5	2.7	2.5	+0.2, +0.0
		Comparison	3.0	3.1	3.2	+0.1, +0.2
	Language Modeling	Treatment	2.4	2.7	2.7	+0.3, +0.3
		Comparison	2.9	2.8	3.0	-0.1, +0.1

Note: Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018. Negative Climate is reverse coded, so a decrease in scores shows improvement. *Difference is statistically significant using a paired samples t-test (p<.05).

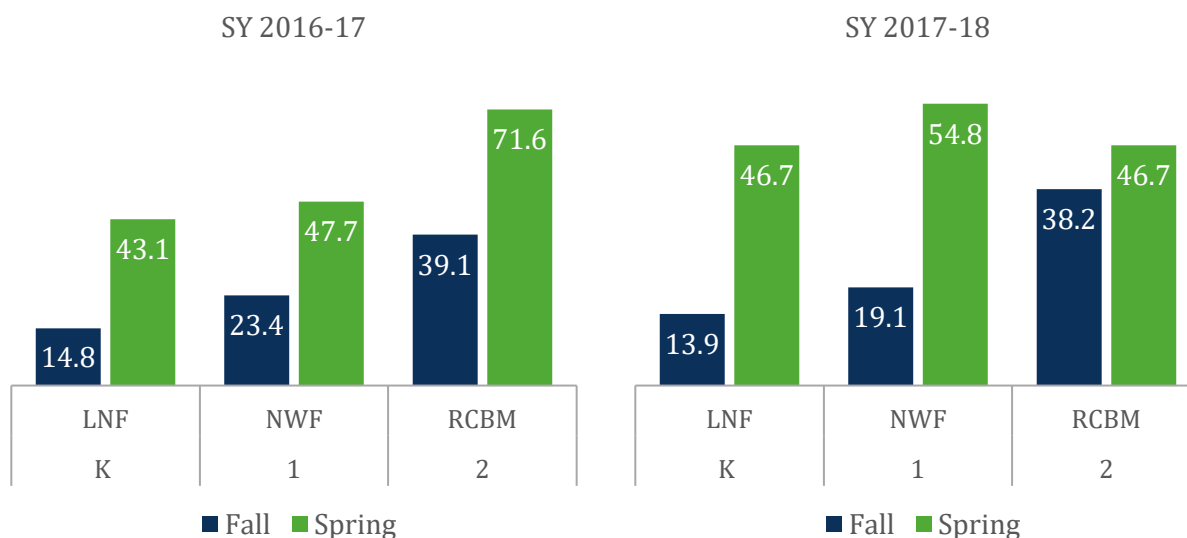
Research Question #5: Did students in the treatment classrooms show growth in literacy and attendance rates? If so, to what degree?

Students in treatment schools grew at a faster rate on their core assessments in the 2017-18 school year, as measured by their rate of improvement (ROI)

Overall, students’ baseline (fall) scores were relatively consistent over time, with the exception of first graders, who had an average raw score of 23.4 in the fall of SY 2016-17 and an average raw score of 19.1 in SY 2017-18 (Figure 12). Kindergarten and first-grade students’ spring scores increased from SY 2016-17 to SY 2017-18, from 43.1 to 46.7 for Kindergarten and 47.7 to 54.8 for first grade. Second-grade students’ spring raw scores in SY 2017-18 were lower than second-grade students’ spring raw scores in SY 2016-17 (46.7 and 71.6, respectively). However, it is not the same group of students, so these comparisons should be interpreted with caution.

Treatment students’ raw scores increased from fall to spring in both SY 2016-17 and SY 2017-18. In SY 2016-17, second-grade students had the biggest increase in their raw scores from fall to spring (+32.5) (Figure 12). In SY 2017-18, first-grade students had the largest increase in their raw scores between fall and spring (+35.7). Again, it is not the same group of students, so these changes could be due to factors unrelated to the initiative.

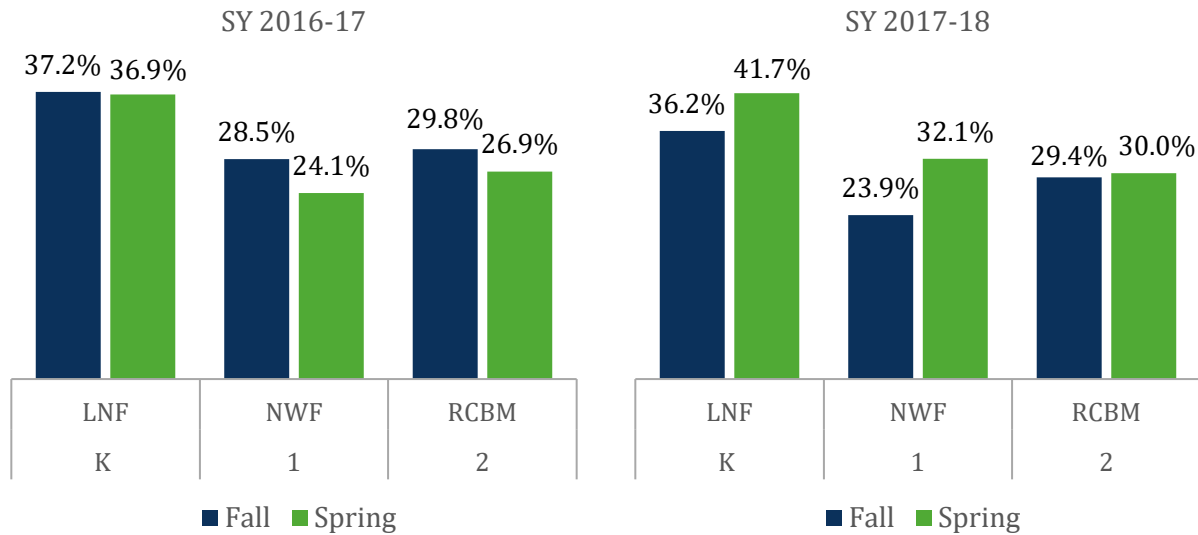
Figure 12: Treatment Students’ Raw Scores Increased from Fall to Spring both SY 2016-17 and SY 2017-18



In SY 2016-17, treatment students’ average national percentile ranks (NPRs) decreased slightly from the fall to the spring. First graders’ NPRs decreased the most (-4.4 percentage points) (Figure 13). This indicates that although treatment students’ raw scores increased between fall and spring, they did not increase at a rate high enough to maintain or increase their national percentile ranking. However, in SY 2017-18, treatment students’ NPRs increased from fall to spring. First graders’

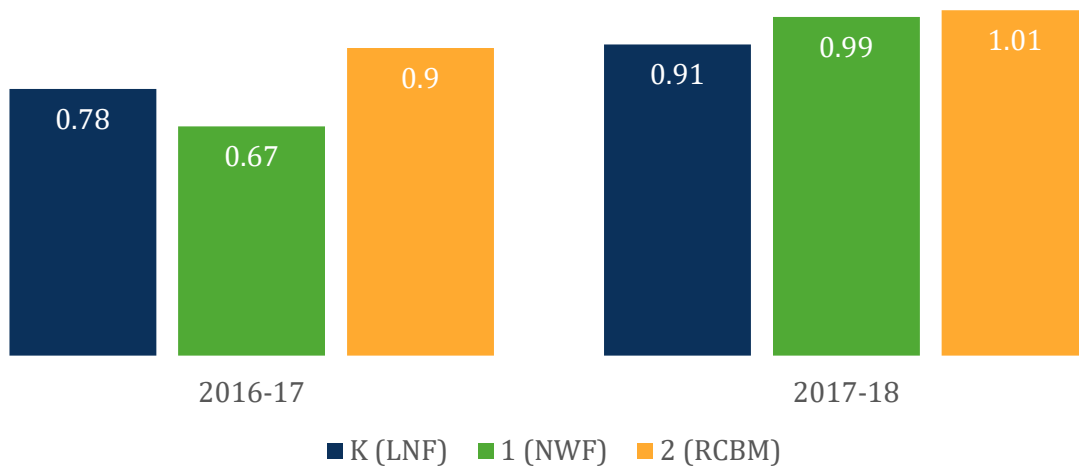
NPRs increased the most (+8.2 percentage points), compared to Kindergarten and third-grade NPRs.

Figure 13: In SY 2017-18, Treatment Students' NPRs Increased from Fall to Spring



Treatment students in all grades had higher rates of improvement (ROIs) in SY 2017-18 than in SY 2016-17, which indicates that they were learning literacy skills faster in the second year of the program than in the first year (Figure 14). First grade had the highest increase in the average ROI between years, increasing from 0.67 to 0.99 (+0.32).

Figure 14: Students in Treatment Schools Grew at a Faster Rate the Second Year of the Program, as Measured by ROI



Student Growth Percentiles (SGPs) are used to analyze the growth of treatment students compared to other students across the country. These groupings provide a more accurate depiction of a student’s growth based on their baseline performance (as measured by their initial fall NPR). First, students are categorized into five groups (*very low, low, average, high, very high*) based on their baseline NPR. In both SYs 2016-17 and 2017-18, between 89% and 100% of treatment students had fall (baseline) NPRs that fell into the *very low, low, or average* categories (Table 12).

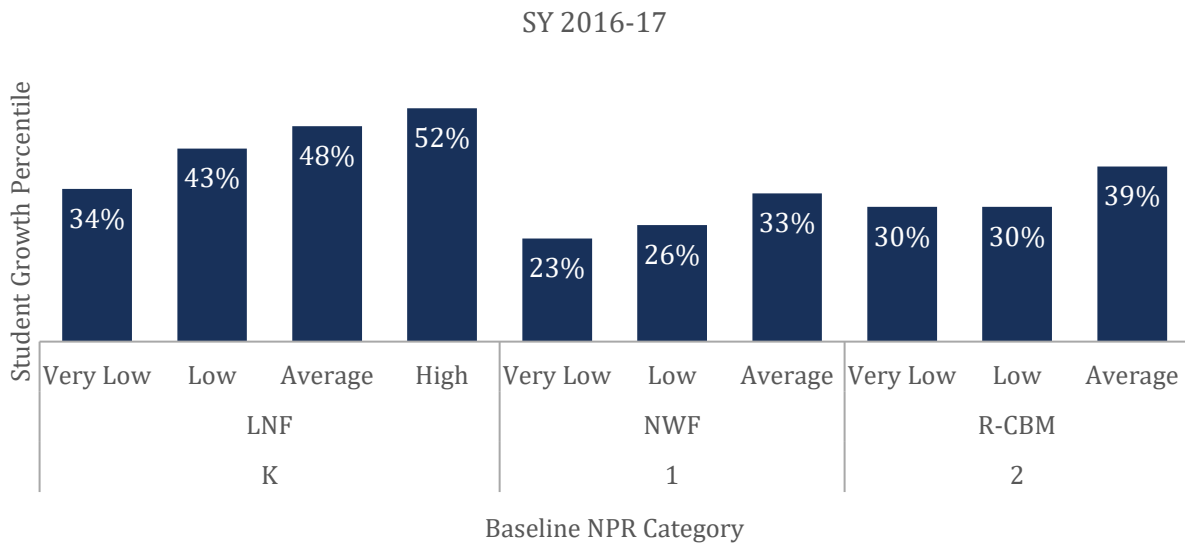
Table 12: Almost All Treatment Students had Baseline NPRs in the *Very Low, Low, or Average* Categories

Grade	Assessment	Number Assessed	Initial NPR				
			Very Low (0-10%)	Low (11-25%)	Average (26-75%)	High (76-90%)	Very High (91-100%)
SY 2016-17							
K	LNF	145	23%	23%	43%	12%	<10
1	NWF	117	42%	22%	36%	<10*	<10
2	R-CBM	155	38%	23%	38%	<10	<10
SY 2017-18							
K	LNF	140	14%	31%	47%	9%	<10
1	NWF	149	44%	20%	36%	<10	<10
2	R-CBM	137	43%	13%	44%	<10	<10

*values with fewer than 10 students were suppressed and are not included in this table or this analysis.

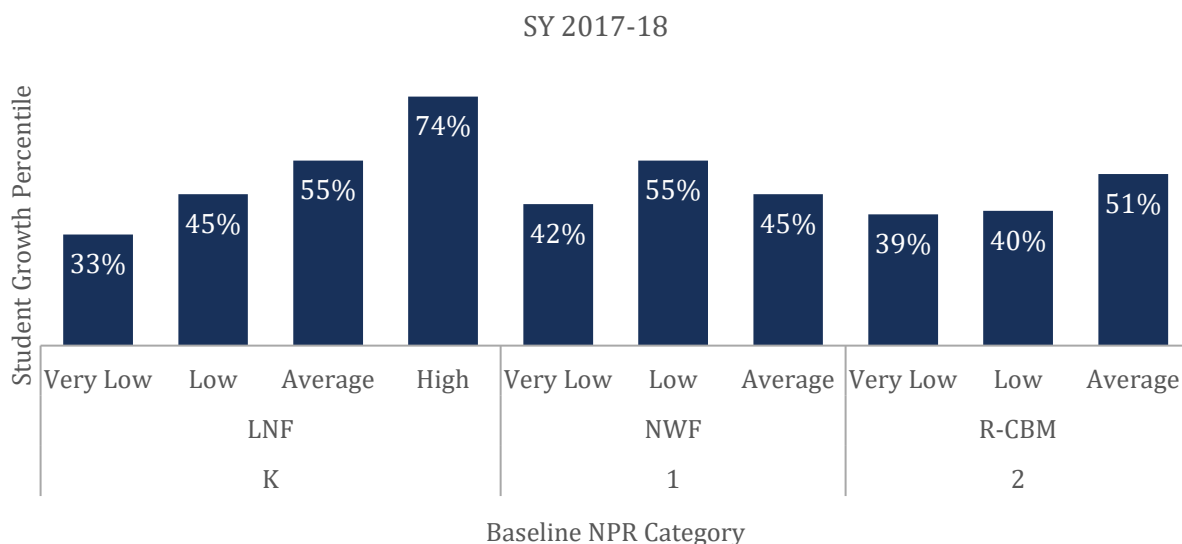
Next, SGPs were calculated by comparing the ROI of students within each baseline NPR category. In SY 2016-17, treatment students with *very low, low, or average* baseline NPRs grew at a slower rate, on average, than most of their peers nationally (Figure 15). For example, first-grade students who had a *low* baseline NPR grew faster than about 26% of their *low* peers nationally; conversely, they improved at a slower rate than 74% of their *low* peers. Kindergarten students with *average* or *high* baseline NPRs grew faster than about half of their peers nationally (48% and 52%, respectively).

Figure 15: Treatment Students with *Average* and *High* Baseline NPRs had the Highest Rates of Growth in 2016-17, Compared to Treatment Students with *Very Low* or *Low* Baseline NPRs



Overall, SY 2017-18 treatment students' SGPs increased, compared to treatment students' SGPs the prior school year, particularly in first and second grade (Figure 16). For example, in SY 2016-17, first-grade students with *very low*, *low*, or *average* baseline NPRs grew at a faster rate than only 23-33% of their peers (conversely, they grew at a slower rate than about 67-77% of their peers). In SY 2017-18, however, first-grade students grew at a faster rate than about half of their peers (42-55%). Second-graders and most Kindergarten students experienced a similar trend. The only exception to this trend was Kindergarten students who scored in the *very low* baseline NPR category in SY 2017-18; those students grew at about the same rate compared to their peers as Kindergarten students did in SY 2016-17. However, this analysis compares two different groups of students each year, so this change should be interpreted with caution.

Figure 16: Treatment Students' SGPs Increased from SY 2016-17 to 2017-18; First and Second Graders Saw the Largest Increases in SGPs



One school showed slightly higher attendance rates in the 2017-18 school year

Two of the three treatment schools had Averaged Daily Attendance (ADA) rates that remained relatively flat from 2016-17 to 2017-18, though Locke students' ADA increased slightly (Table 13). When looking at the percent of students who attended 95% or more of school days, Locke had a slight increase from 2016-17 to 2017-18 while Pennell and Stearne showed slight decreases.

Table 13: Locke Students Showed Slightly Higher Attendance Rates in SY 2017-18

School	Average Daily Attendance in 2016-17	Average Daily Attendance in 2017-18	% of Students Attending 95% or More of School Days in 2016-17	% of Students Attending 95% or More of School Days in 2017-18
Locke (n=88)	87.6%	88.9%	26.1%	29.5%
Pennell (n=129)	91.1%	90.4%	43.4%	38.8%
Stearne (n=103)	90.7%	89.7%	32.0%	28.2%

Note: Only includes students who were at that school in both years and enrolled for at least ten days, and only includes their attendance while at that school.

Recommendations

Based on teacher feedback, we recommend the program team consider the following suggestions:

- Program staff may want to consider a support plan for schools and teachers after the initial renovation period to make changes sustainable (e.g., replacing materials that get broken, damaged, or used up during the school year) rather than a one-time infusion of resources.

- Program staff may want to consider taking a holistic view of the new furniture by providing all materials for that center to ensure that teachers can start using centers from the first day of school.
- Program staff should consider ways for teachers to provide input in what materials/furniture are in their classrooms and if information about the materials can be shared with teachers earlier.
- Program staff may want to consider structuring support for teachers around technology or more formally having a process to connect teachers with resources as necessary.
- Program staff may want to consider implementing changes to future PD sessions including providing more training on technology, more sessions where teachers present, and more sessions on how to integrate the new centers and materials (as opposed to the theory behind centers).

Appendix A: Comparison School Demographics in 2016-17

Table A1: 2016-17 Demographics by Grade for Comparison Schools

	Total	PK	K	1	2
Enrollment	1067	110	291	327	339
Race/Ethnicity					
<i>American Indian/Alaskan Native</i>	0.4%	0.9%	0.7%	0.3%	0.0%
<i>Asian</i>	1.1%	1.8%	2.1%	0.6%	0.6%
<i>Black/African American</i>	59.9%	86.4%	57.0%	56.9%	56.6%
<i>Hispanic/Latino</i>	26.2%	0.0%	27.5%	28.4%	31.6%
<i>Multi-Racial/Other</i>	8.4%	7.3%	7.9%	9.8%	8.0%
<i>White</i>	3.9%	3.6%	4.8%	4.0%	3.2%
% English Language Learners	3.3%	N/A	1.7%	3.1%	5.0%
% Students in Special Education	10.2%	N/A	5.5%	9.2%	15.3%
% Economically Disadvantaged	89.7%	N/A	87.6%	91.1%	90.0%

Appendix B: Session-Specific PD Questions

Each session average was calculated by finding the individual mean scores of each of the 13 session-specific questions in Table B1 and averaging these mean scores to calculate an overall mean for each session. Each question was on the same scale, where 1 was Strongly Disagree, 2 was Disagree, 3 was Agree, and 4 was Strongly Agree.

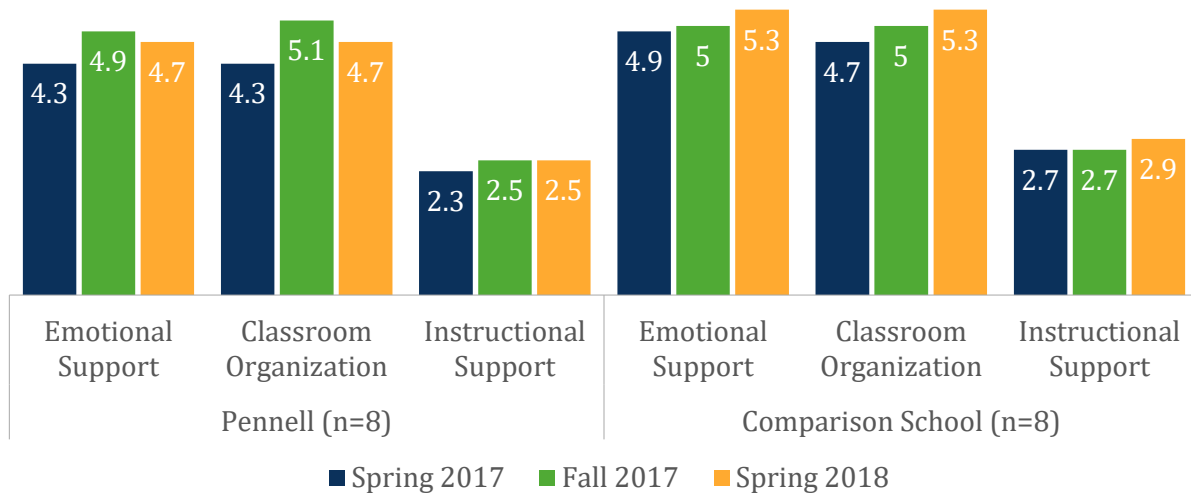
Table B1: List of Session-Specific Questions in Overall Session Averages

The content of this professional development was relevant to my use of classroom centers.
The facilitators helped me understand how to implement what I learned.
This professional development was tailored to the context of my classroom/school.
The professional development provided me with useful tools and materials.
The professional development goals and objectives were clearly specified.
The materials used were accessible and enhanced my learning.
Time was used efficiently and effectively.
New practices were thoroughly explained and modeled.
Sufficient time was provided for guided practice and tasks.
The professional development activities were carefully planned and well organized.
Activities were hands-on and interactive.
The facilitator was engaging.
The facilitator was knowledgeable and helpful.

Appendix C: CLASS Results by School and Grade

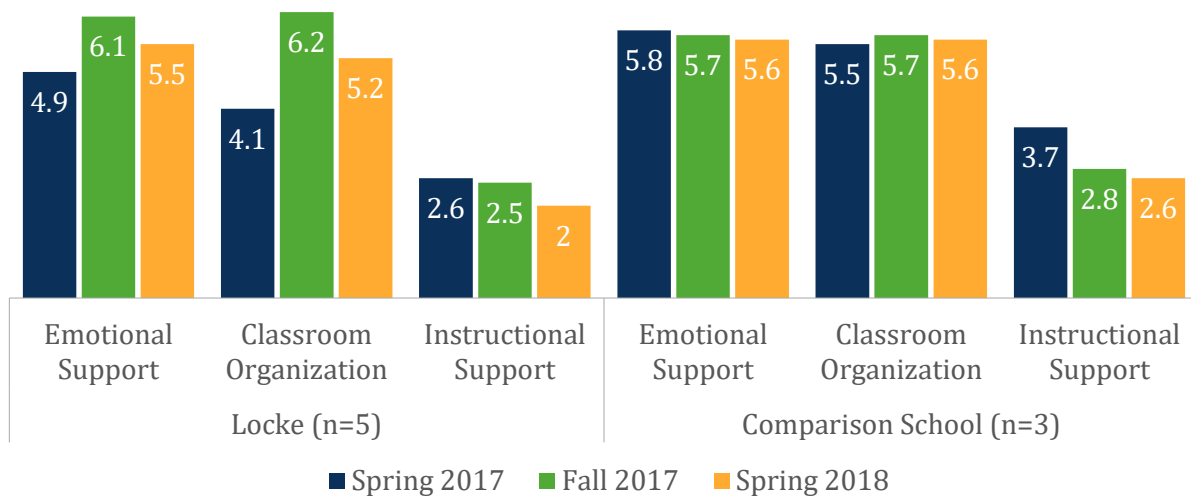
CLASS Results for each of the treatment schools and their matched comparison school are in Figures C1-C4 and for each grade (treatment only) are in Figures C5-C8. Due to the small sample size, we did not run significance testing and results should be interpreted with caution.

Figure C1: Pennell Teachers Showed Slight Increases in Emotional Support and Classroom Organization Domains



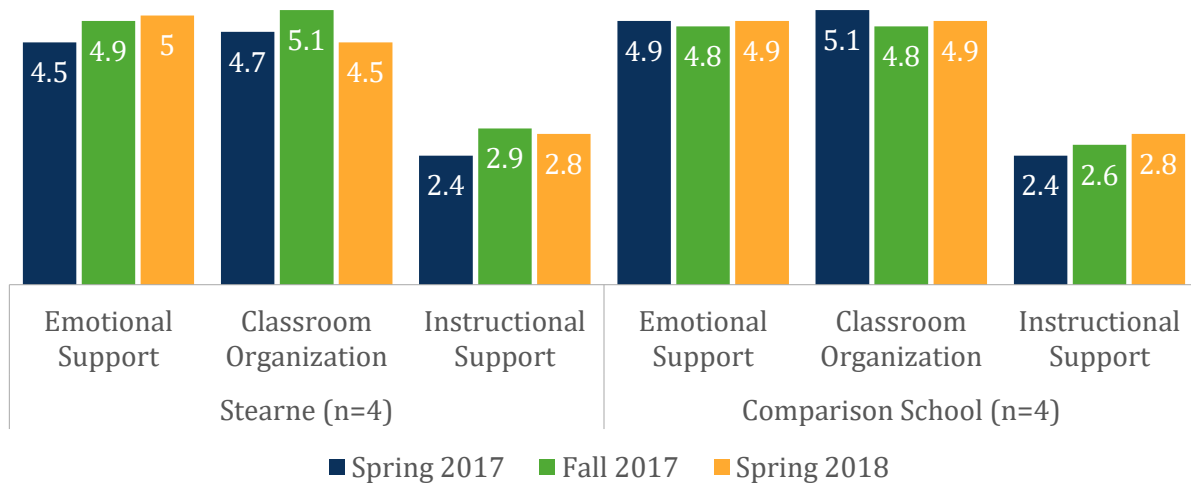
Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

Figure C2: Locke Teachers Showed Slight Increases in Emotional Support and Classroom Organization Domains



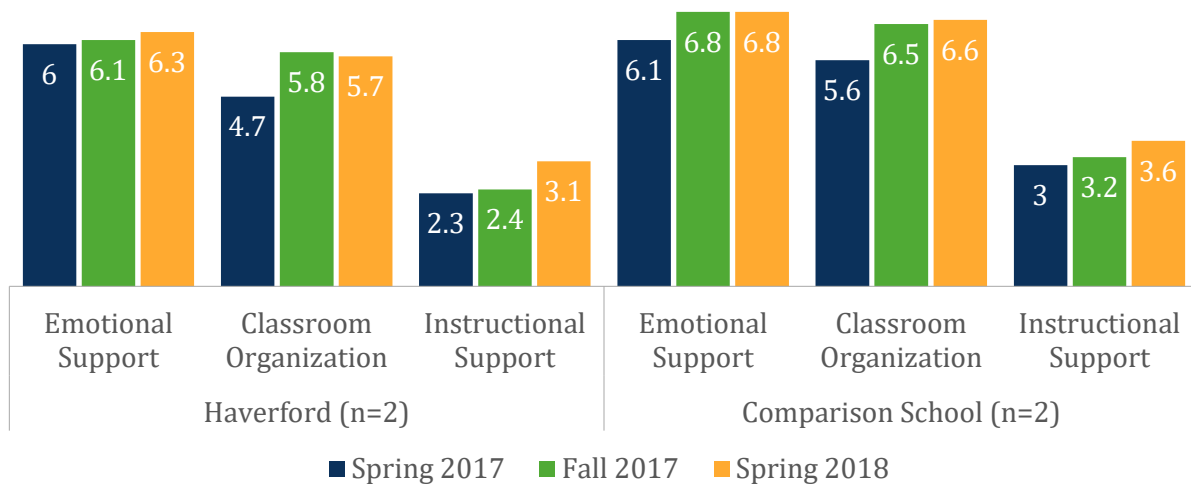
Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

Figure C3: Stearne Teachers Showed Slight Increases in All Three Domains



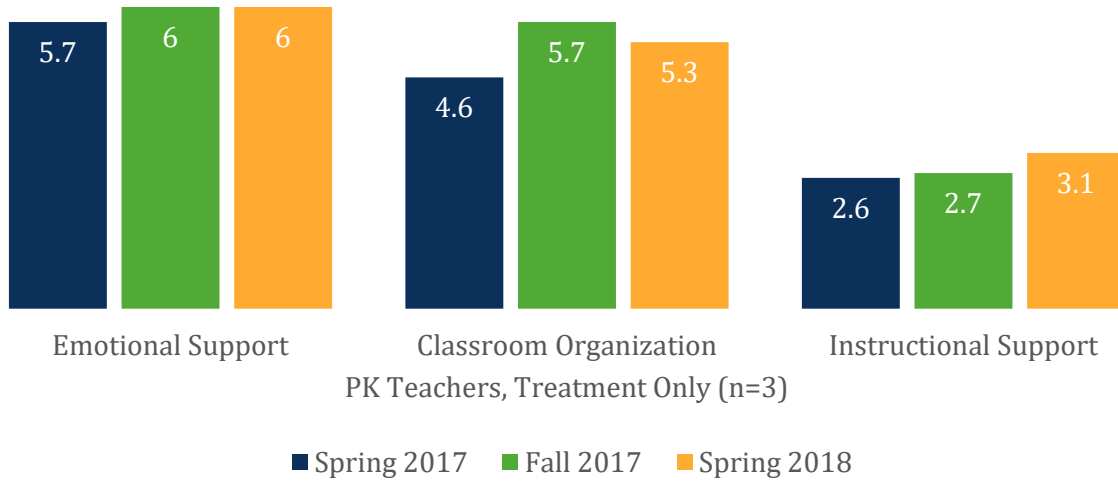
Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

Figure C4: Haverford Teachers Scored Increases in the Emotional Support Domain



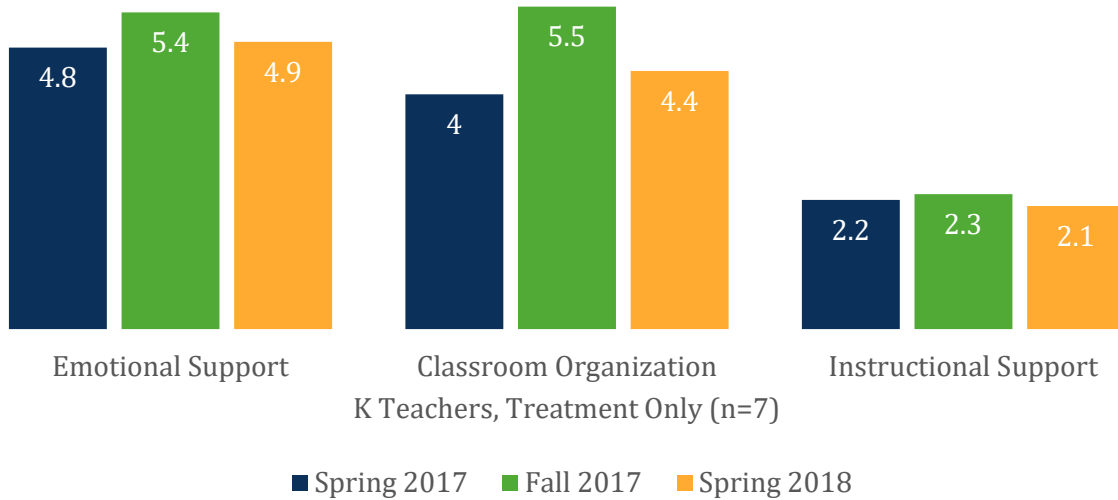
Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

Figure C5: PK Teachers Scored Highly in the Emotional Support Domain



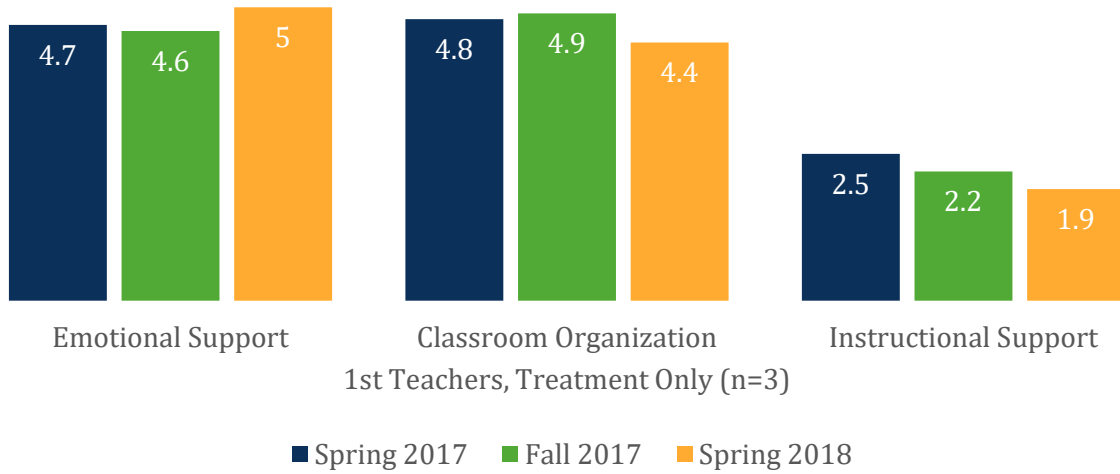
Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

Figure C6: Kindergarten Teachers Showed Slight Increases in Classroom Organization



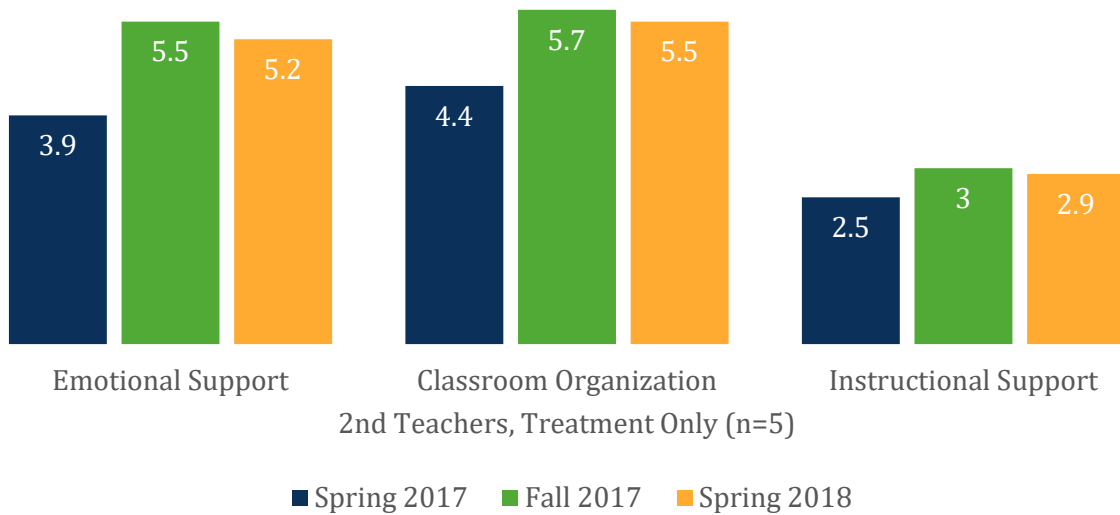
Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

Figure C7: 1st Grade Teachers Showed Slight Increases in Emotional Support



Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.

Figure C8: 2nd Grade Teachers Showed Increases in Emotional Support and Classroom Organization



Only includes teachers with observations in spring 2017, fall/winter 2017-18, and spring 2018.