

Academic Parent-Teacher Teams (APTT): Parent Participation and Student Outcomes

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Summary of Key Findings

Students whose parents attended 2+ APTT meetings demonstrated statistically significantly greater literacy growth than students whose parents did not attend any APTT meetings. These differences were largest for kindergarten students and Tier 3 (intensive intervention) students.

APTT meeting attendance may have the greatest influence on the kindergarten students who enter kindergarten reading below grade level.

Introduction

Academic Parent-Teacher Teams (APTT) is a family engagement program aimed at addressing family-school partnerships by improving parent-teacher conferences in a way that expands collaboration between school and home. The goal of an APTT meeting is to build rapport with families and to build their capacity to support their students in learning foundational literacy skills. In the APTT model, there are three meetings held throughout the school year. In 2018-19, these three meetings took place in October, February, and April.

A key part of the APTT model is regular meetings, where teachers share student data, guide data-driven conversations, and provide parents with timely information and academic resources to support student learning.

Funded by a grant from the William Penn Foundation, APTT is being piloted in eight School District of Philadelphia (SDP) schools between 2018 and 2020 in grades K-3: Blaine, Brown, Carnell, Key, Kirkbride, Lea, McClure, and Sullivan.¹ This effort

is supported by an external partner and internal SDP offices. WestEd is providing training and support to build the capacity of teachers, families, and administrators to effectively engage families in advancing student achievement. SDP's Family and Community Engagement (FACE) office is assisting in coordinating and supporting implementation. Finally, the Office of Research and Evaluation (ORE) is conducting a two-year evaluation of the APTT program with a focus on fidelity of program implementation in year 1 (2018-19).

¹ The pilot was implemented in nine schools in 2018-19. Welsh withdrew from the program at the end of the first year.

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Research Questions

This brief focuses on one aspect of the larger evaluation of the implementation of APTT: whether there is relationship between parent participation in APTT and changes in student literacy outcomes (measured by changes in aimswebPlus performance between fall and spring – described more in Box 1). More specifically, we examined parent participation in APTT and the following inter-related aimswebPlus metrics:

- a. Number correct (NC)
- b. Rate of Improvement (ROI)
- c. National Percentile Rank (NPR)
- d. Student Growth Percentile (SGP)
- e. Tier Placement

Although it is informative to examine the relationship between parent participation in APTT and student literacy performance, a major limitation of this analysis is that there are a variety of circumstances that could have affected parent/guardian attendance at an APTT meeting. Every individual parent/guardian had varying levels of motivation; differing experiences with the school and school administration; flexibility in their schedule to attend an evening meeting; and differing levels of available child care. These same differences affect the likelihood that parents were able to and motivated to reinforce learning at home. Thus, it is possible that the parents who attended meetings were already more likely to assist their child with learning at home, creating a sample bias.

Data

To examine the relationship between APTT participation and reading achievement, we looked at changes in aimswebPlus performance between fall and spring of 2018-19 and compared that student growth to the number of APTT meetings that students' parents attended. See Box 1 for more information about the aimswebPlus assessment and specific data points used in this analysis. It is important to note that these data points are inter-related and thus, we expect to find similar results for each data point.

Box 1. AimswebPlus Core Assessments and Data Points Used in this Brief

SDP uses aimswebPlus, a universal early literacy screening, benchmarking, and progress-monitoring tool from Pearson, to assess literacy proficiency in SDP for all K-5 students. In grades K-3, teachers score students' performance on each aimswebPlus assessment according to the number of cues students correctly identify in a 60-second period. Each grade level is administered one core assessment (in addition to other standardized measures) each fall, winter, and spring. For the analyses presented in this brief, we looked at student growth on the following assessments:

- The kindergarten **Letter Naming Fluency (LNF) assessment**, which measures letter identification;
- The first-grade **Nonsense Word Fluency (NWF) assessment**, which measures phonemic awareness;
- The second- and third-grade **Oral Reading Fluency (ORF) assessment**, which measures oral reading fluency.

For each of these three assessments, we looked closely at five key data points related to performance on the assessments.

1. **Number Correct (NC)**: The number of cues correctly identified during the timed test.
2. **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]
3. **National Percentile Rank (NPR)**: A norm-referenced measure that compares students' raw scores to a national sample of students
4. **Tier Level**: Based on their raw scores, students are placed into Tier 1 (At Target), Tier 2 (Strategic Intervention), or Tier 3 (Intensive Intervention)
5. **Student Growth Percentile (SGP)**: SGP describes a student's ROI compared to other students in that national sample with a similar baseline performance.

Analytic Sample

Nine schools implemented APTT in 87 K-3 classrooms during the 2018-19 school year. Based on enrollment and attendance records, a total of 1,736 students² were enrolled in an APTT classroom for a full academic year.³ Of those 1,736 students, 92% (n=1,605) had the fall and spring

² For more information on student participation and sample composition by school see Table A1 in the Appendix.

³ The analysis included only the students enrolled for the full year (enrolled on or before October 1, 2018 and continually enrolled until June 4, 2019) as it was the only way a student had the opportunity to have a parent/guardian participate in all three APTT meetings.

aimswebPlus data required to be included in this analysis (Table 1). Of these 1,605 students, half (50%) had a parent/guardian(s) attend at least one APTT meeting. Less than a quarter of students (22%) had a parent/guardian(s) attend two or three (2+) APTT meetings.⁴

Table 1. Student analytic sample by APTT meeting attendance

Number of APTT meetings attended	Students with fall and spring aimswebPlus data	
	Number of Students	Percentage of Total Sample
0	798	50%
1	455	28%
2+	352	22%
Total student analytic sample	1,605	100%

The number of students included in the full sample varied by school primarily because of the school-level variation in total K-3 enrollment and in number of K-3 classrooms at each school (Table 2).⁵ For this analysis, over one-fifth (22%) of the overall sample was comprised of students from McClure Elementary as compared to 7% from Blaine and Carnell.

Table 2. Student sample by school

School Name	Number of K-3 Classrooms Participating in APTT	Number of Students in Participating Classrooms with Fall and Spring aimswebPlus data	Percentage of Analytic Sample
Blaine	11	114	7%
Brown, J.H.	6	136	8%
Carnell	5	110	7%
Key	9	165	10%
Kirkbride	10	220	14%
Lea	9*	174	11%
McClure	16	356	22%
Sullivan	13	211	13%
Welsh	8	119	7%
Total	87	1605	100%

*Note: Only students in grades K, 1, 3 participated in APTT at Lea. Second grade classrooms did not participate.

The sample was fairly evenly distributed by grade level (Table 3). There were slightly more third-grade students (28%) included in the sample than kindergarten (26%) and first- and second-grade students (23%).

⁴Due to generally low participation, the sample of parents who attended two and three meetings was combined into “attending two or three (2+) meetings.”

Table 3. Student analytic sample by grade

Grade Level	Number of Students in Participating Classrooms with Fall and Spring aimswebPlus Data	Percentage of Analytic Sample
K	421	26%
1	367	23%
2	371	23%
3	446	28%
Total	1605	100%

The sample was overwhelming comprised of economically disadvantaged students (85%) (Table 4).⁶ Additionally, the sample was comprised of nearly one-quarter (24%) English Learners (ELs) which is double the percent of ELs enrolled in grades K-3 District-wide.⁷ Three-quarters (76%) of the students in the sample identified as either Black/African American or Hispanic/Latino.

The majority of students in the sample (57%) performed in the Tier 3 range on their baseline fall aimswebPlus assessment (Table 5). Tier 3 placement indicates that a student is performing significantly below grade level and is in need of intensive intervention. Another 19% performed in the Tier 2 range. This tier includes students performing below grade level who are in need of strategic intervention. Less than one-quarter of the students in the sample performed in Tier 1 on their fall aimswebPlus assessment. Tier 1 placement indicates grade level performance.

⁶“Economically Disadvantaged” refers to students who are eligible and are not subject to verification/students who participate in SNAP, TANF, or other social service programs. The percent of students who participate in free or reduced-price lunch (“universal feeding”) is based on the Community Eligibility Provision (CEP), which is the percent of students eligible for free meals (i.e., students who are eligible and are not subject to verification/students who participate in SNAP, TANF, or other social service programs) multiplied by a factor of 1.6 and capped at 100%.

⁷ The percent of District K-3 students classified as English Learners in 18-19 was 12.6% (Source: Qlik Enrollment App, January, 2020)

Table 4. The analytic sample by demographic characteristics

Student Characteristic	Number of Students in Sample	Percentage of Analytic Sample
Gender		
Female	784	49%
Male	821	51%
Race/Ethnicity		
Asian	141	9%
Black/African American	580	36%
Hispanic/Latino	650	40%
Multi-racial/Other	80	5%
White	151	9%
Socio-Economic Status		
Economically Disadvantaged	1,367	85%
Not Economically Disadvantaged	238	15%
English Learner Status		
English Learner	382	24%
Not an English Learner	1,223	76%
Special Education Status		
Receives Special Education Services	176	11%
Does Not Receive Special Education Services	1,429	89%

Note: Students may be represented multiple times in the table above. For example, a student may be an Asian female who is not economically disadvantaged but is both an English Learner and receives Special Education services.

Table 5. More than half of the students in the analytic sample performed in Tier 3 on their fall aimswebPlus assessment

Fall aimswebPlus Tier Placement	Number of Students in Sample	Percentage of Analytic Sample
Tier 1 (At Target)	390	24%
Tier 2 (Strategic Intervention)	299	19%
Tier 3 (Intensive Intervention)	916	57%
Total	1605	100%

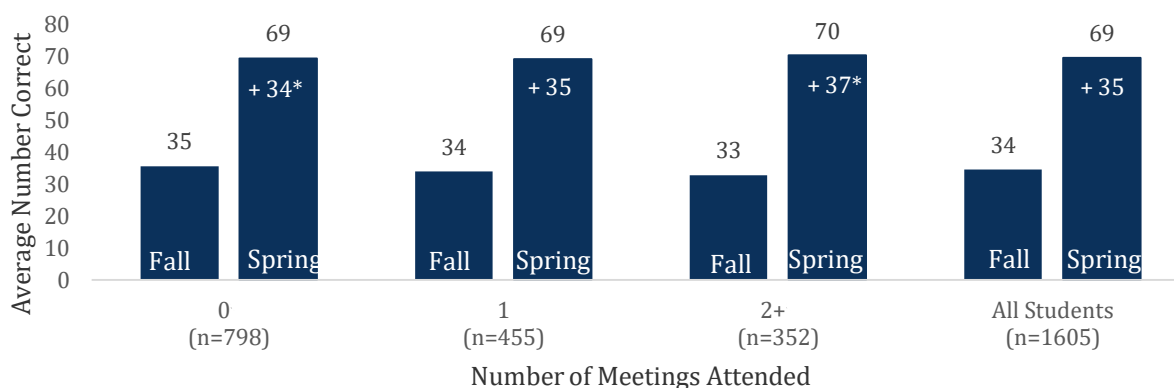
Findings

Number Correct: There is a statistically significant difference in the increase of the number of correct responses between students whose parents attended two or three APTT meetings and those whose parents did not attend any meetings.

The figures below (1-3) compare the increases in number of correct responses on the aimswebPlus assessment by the number of APTT meetings that parents attended. For kindergarten students, the number correct represents the number of letters identified correctly. For first grade students, number correct represents that number of nonsense words pronounced correctly. For second- and third-grade students, number correct represents the number of words read correctly on a grade-level passage. On average, students enrolled in APTT classrooms improved from 35 correct responses in the fall to 69 correct responses in the spring, an increase of 35 correct responses.

Students whose parents attended two or more meetings demonstrated small but statistically significantly greater growth in their number of correct responses (+37) compared to students whose parents did not attend any APTT meetings (+34) (Figure 1).

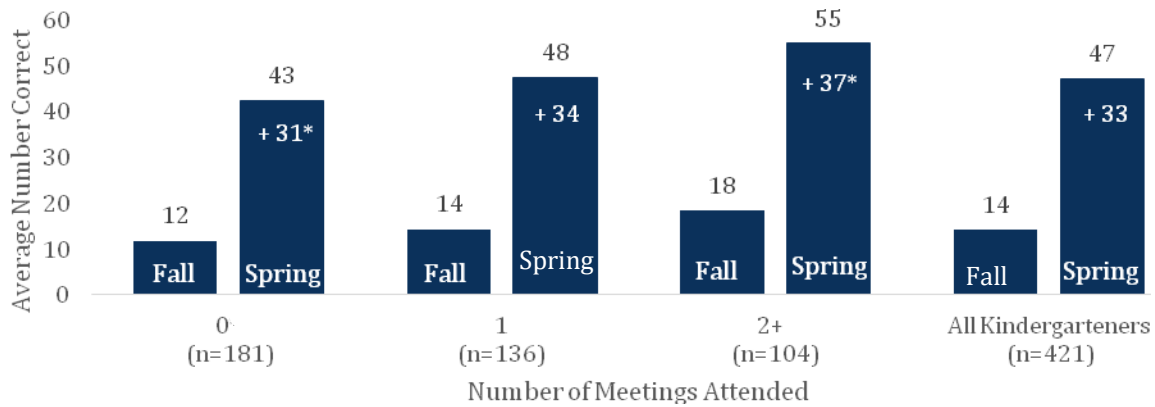
Figure 1. Change in number correct between fall and spring by APTT meeting attendance for all students



*A statistically significant difference exists in fall to spring score increases between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

When changes in number of correct responses were examined by grade level, kindergarten was the only grade in which there was a statistically significant difference in the increase of number correct by APTT parent attendance. On average, kindergarten students demonstrated an increase of 33 correct responses between fall and winter. Students whose parents did not attend any APTT meetings demonstrated an increase of 31 correct responses as compared to an increase of 37 correct responses for students whose parents attended two or three APTT meetings (Figure 2).

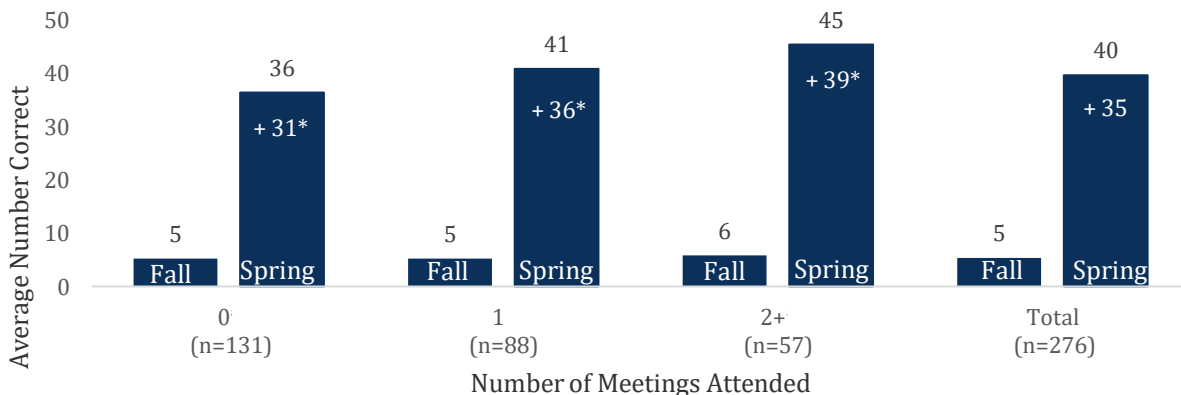
Figure 2. Change in number correct between fall and spring by APTT meeting attendance for kindergarten students



*A statistically significant difference exists in fall to spring score increases between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

The difference in score increases by APTT parent attendance by student Tier level is statistically significant only for kindergarten students who were classified as Tier 3 (intensive intervention) in the fall. On average, Tier 3 kindergarten students enrolled in APTT classrooms demonstrated a 35 point increase in number correct between fall and spring. Students whose parents did not attend any meetings demonstrated an increase of 31 correct responses as compared to an increase of 39 correct responses for students whose parents attended two or three meetings.

Figure 3. Change in “number correct” between fall and spring by APTT meeting attendance for Tier 3 kindergarten students



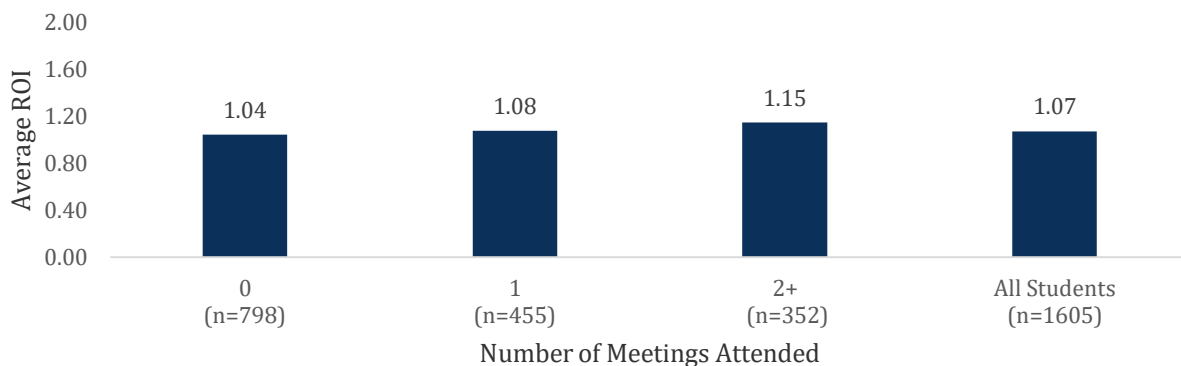
*A statistically significant difference exists in fall to spring score increases between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

Rate of Improvement (ROI): For all students enrolled in APTT classrooms in 2018-19, there was no statistically significant difference in the ROI of students based on the number of APTT meetings that their parents/guardians attended.

Figures 4-6 compare the average rate of improvement (ROI) on core assessments between fall and spring assessment windows by the number of APTT meetings that students' parents attended. ROI represents the average increase in the number correct that student improved each week between assessments windows. For example, the students that had a parent attend all three meetings improved an average of 1.15 correct responses per week between their fall and spring aimswebPlus assessment. Because students may take assessments at slightly different points in time with an assessment window, ROI controls for the possible differences in learning that could be attributed to the varying length of time that may pass between assessment periods for different students. On average, students enrolled in APTT classrooms improved at a rate of 1.07 correct responses per week.

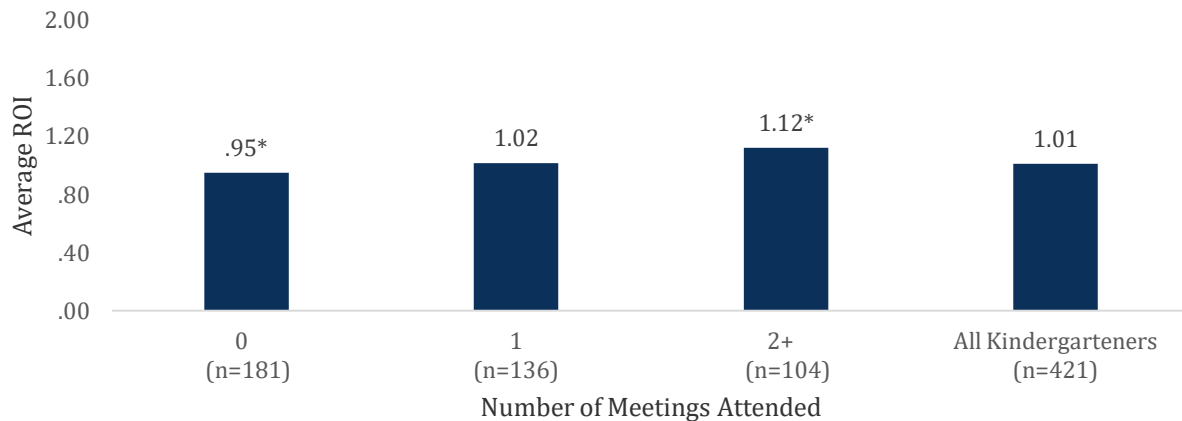
Although students whose parents attended two or three meeting had a higher ROI with an increase of 1.15 correct responses per week, this difference was not statistically significant (Figure 4). Students whose parents did not attend any APTT meetings demonstrated an increase of 1.04 correct responses per week.

Figure 4. Differences in Rate of Improvement by APTT meeting attendance for all students



When changes in ROI were examined at the grade level, kindergarten was the only grade level in which there was a statistically significant difference in the ROI of students by APTT parent attendance (Figure 5). On average, kindergarten students had an increase of 1.01 correct responses per week between fall and winter. Students whose parents attended no APTT meetings had an ROI of 0.95 as compared to the significantly higher ROI of 1.12 correct responses per week for students whose parents attended two or three APTT meetings.

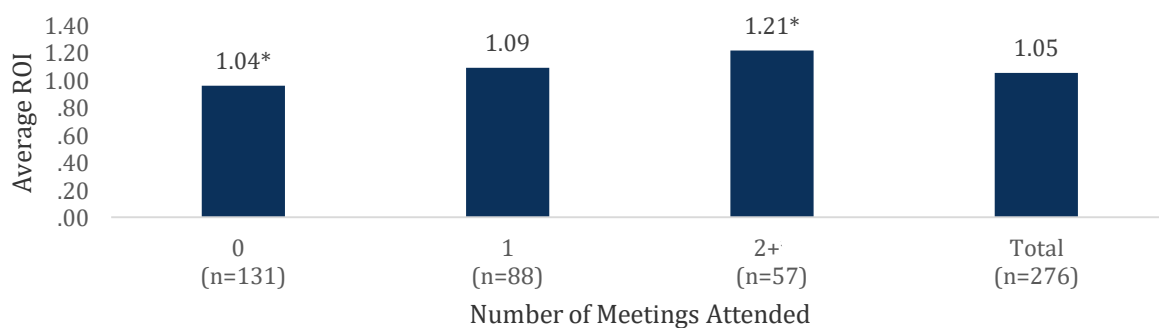
Figure 5. Differences in Rate of Improvement by APTT meeting attendance for **kindergarten students**



* A statistically significant difference exists in ROIs between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

At the kindergarten level, it the differences in ROI by APTT parent attendance were statistically significant only for students who were classified in Tier 3 (Intensive Intervention) in the fall (Figure 6). On average, Tier 3 kindergarten students enrolled in APTT classrooms had an ROI of 1.05 correct answers per week. Students whose parents did not attend any meetings had an ROI of 0.96 as compared to as compared to an ROI of 1.21 for students with a parent who attended two or three meetings.

Figure 6. Differences in Rate of Improvement by APTT meeting attendance for **Tier 3 kindergarten students**



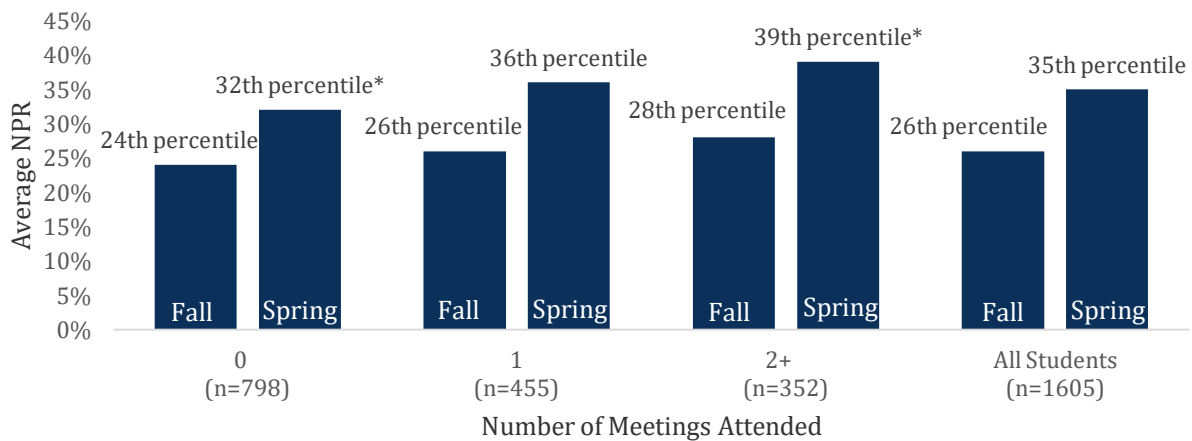
* A statistically significant difference exists in ROIs between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

National Percentile Rank (NPR): There was a statistically significant difference in the increase in NPR between students whose parents attended two or three APTT meetings and students whose parents did not attend any meetings.

Figures 7-9 compare the change in average national percentile rank (NPR) on students' core assessment between fall and spring assessments windows by the number of APTT meeting that the student's parent attended. NPR represents students' performance compared to the performance of the nationally-normed sample. For example, an NPR of 35% indicates that on average, students are performing better than 35% of the nationally-normed sample based on their number of correct responses during a specific administration window. On average, students enrolled in APTT classrooms increased their NPR nine percentage points, from the 26th percentile in the fall to the 35th percentile in the spring.

Students whose parents attended two or three meetings demonstrated a statistically significantly larger increase in their NPR (+11 percentage points) compared to students whose parents did not attend any APTT meetings (+8 percentage points) (Figure 7).

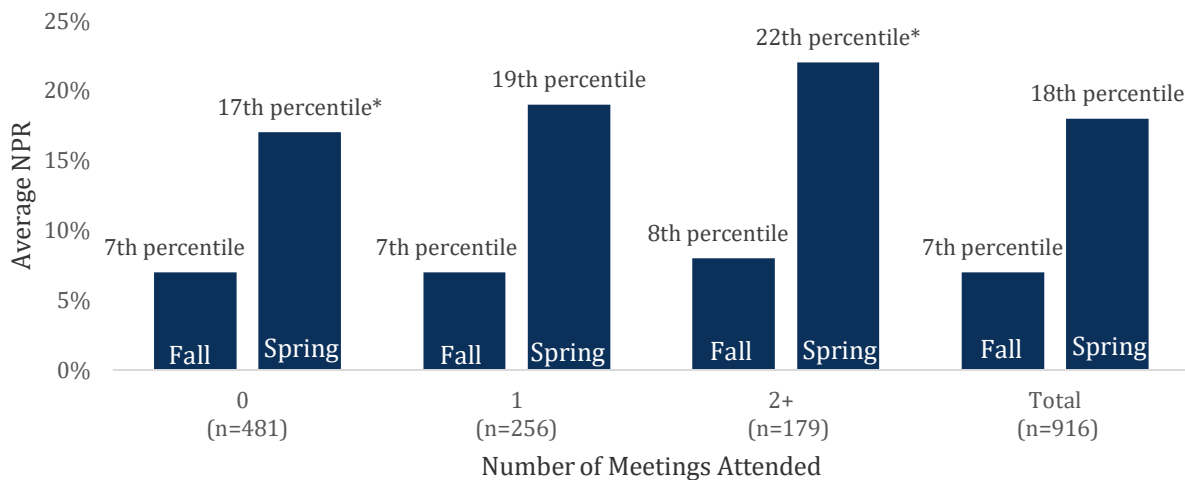
Figure 7. Change in NPR between fall and spring by APTT meeting attendance for all students



* A statistically significant difference exists in fall to spring NPR increases between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

There were no differences in NPR changes in relation to parent APTT attendance and grade level. However, there was a statistically significant difference in the increase in NPR based on the student's fall Tier level. On average, kindergarten through third-grade students in APTT classrooms who were classified as Tier 3 on their fall core assessment increased their NPR from 7% to 18% between fall and spring, an increase of 11 percentage points. Students whose parents attended two or three meetings had a larger increase in their NPR (+14 percentage points) as compared to students whose parents did not attend an APTT meeting (+10 percentage points) (Figure 8).

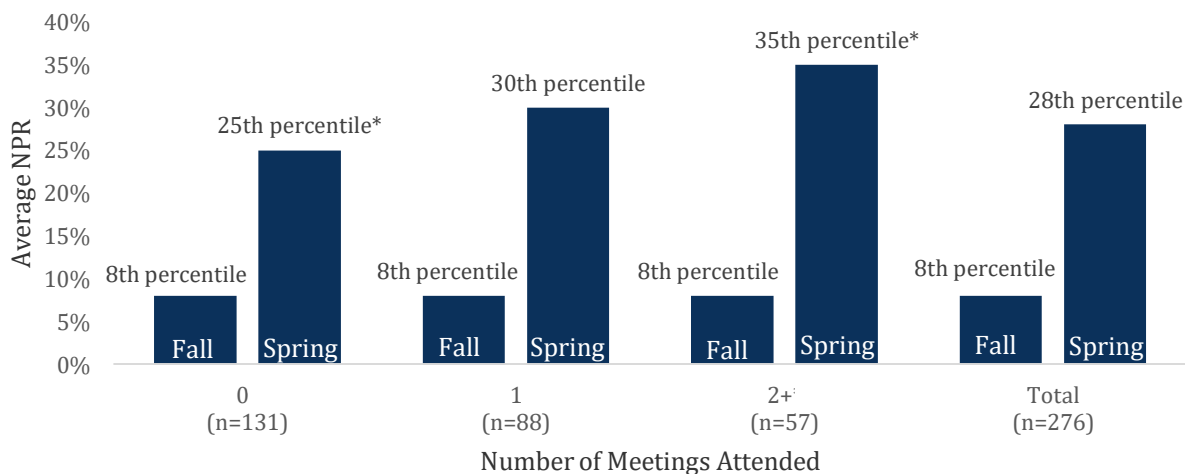
Figure 8. Change in NPR between fall and spring by APTT meeting attendance for **Tier 3 students**



* A statistically significant difference exists in fall to spring NPR increases between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

The differences in NPR increase by APTT parent attendance was statistically significant only for Tier 3 Kindergarten students. On average, Tier 3 Kindergarten students enrolled in APTT classrooms demonstrated a 20 percentage point increase in their NPR from fall and spring. Tier 3 Kindergarten students whose parents did not attend any meetings increased their NPR by 17 percentage points as compared to an increase of 27 percentage points for students whose parents attended two or three meetings (Figure 9).

Figure 9. Change in NPR between fall and spring by APTT meeting attendance for **Tier 3 kindergarten students**



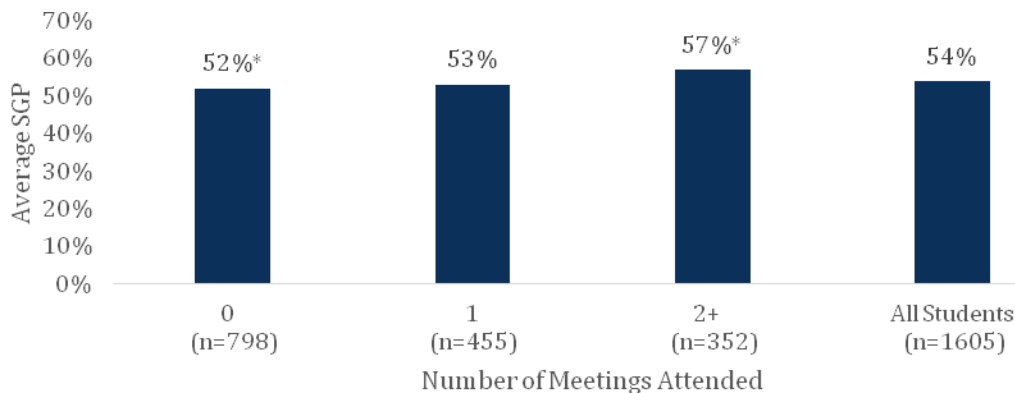
* A statistically significant difference exists in fall to spring NPR increases between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

Student Growth Percentile (SGP): Students whose parents attended two or three APTT meetings grew at a statistically significantly faster rate than their peers in a national sample compared to other students.

Figures 10-12 compare the average student growth percentile (SGP) on the core assessment between fall and spring assessments window by the number of APTT meeting that the student’s parents attended. SGP represents the rate at which a student improves compared to other students with similar baseline proficiency levels. For example, the students who had a parent attend two or three meetings had an SGP of 57%, meaning they improved at a faster rate than 57% of a nationally-normed sample with similar baseline (fall) performance. On average, students enrolled in APTT classrooms had an SPR of 54%, meaning they grew faster than 54% of a national sample of students who performed similarly on their baseline assessment (Figure 10).

Students whose parents attended two or more meetings demonstrated a statistically significantly greater SGP (57%) compared to students whose parents did not attend any APTT meetings (52%)

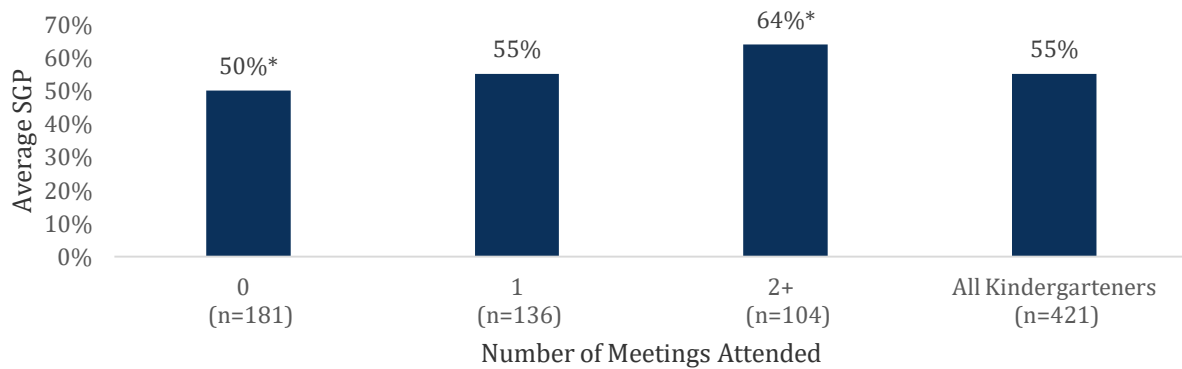
Figure 10. Differences in SGP by APTT meeting attendance for **all students**



* A statistically significant difference exists in SGPs between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

Kindergarten was the only grade level in which there was a statistically significant difference in SGP of students by APTT parent attendance. On average, kindergarten students had an SGP of 55%. Students whose parents attended no APTT meetings had an SGP of 50% as compared to the significantly higher SGP of 64% for students whose parents attended two or three APTT meetings (Figure 11). We did not examine differences at the Tier level because SGP accounts for baseline performance.

Figure 11. Differences in Rate of Improvement by APTT meeting attendance for **kindergarten students**



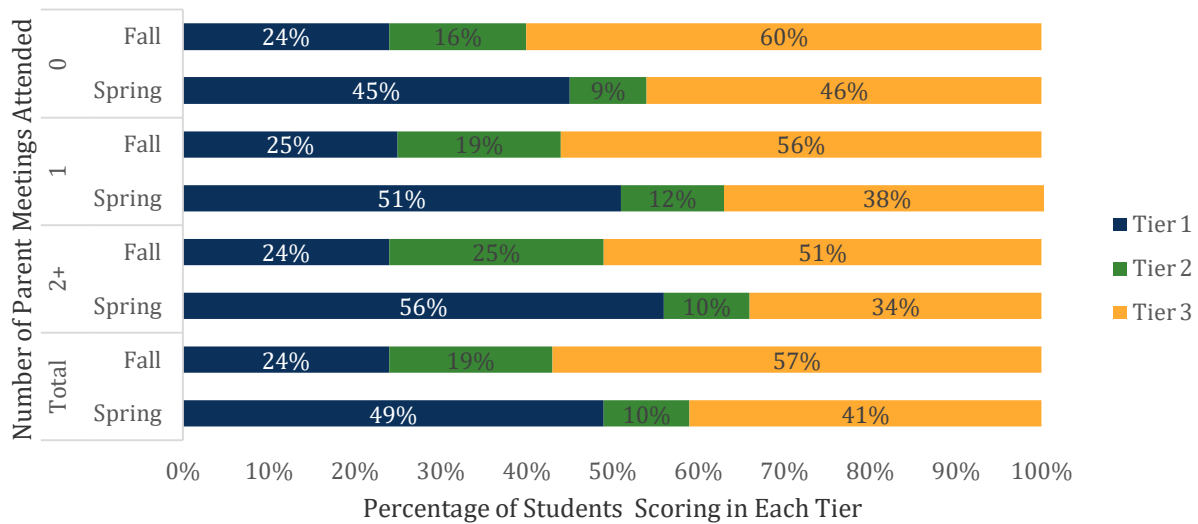
* A statistically significant difference exists in SGPs between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

Tier Change: Students whose parents attended two or three APTT meetings demonstrated a significantly larger reduction in Tier 3 placement between fall and spring compared to other students.

Figures 12-14 compare the tier transitions, or movement between tiers, of students by parental APTT participation. Based on the number correct that a student achieves on their fall core assessment, students are assigned to either Tier 1, Tier 2, or Tier 3, indicating the level of intervention that a student may need to meet grade level literacy performance standards. Tier 1 students are considered to be reading on grade level. Tier 2 students are reading somewhat below grade level and are in need of a strategic intervention. Tier 3 students are reading considerably below grade level and are in need of an intensive intervention.

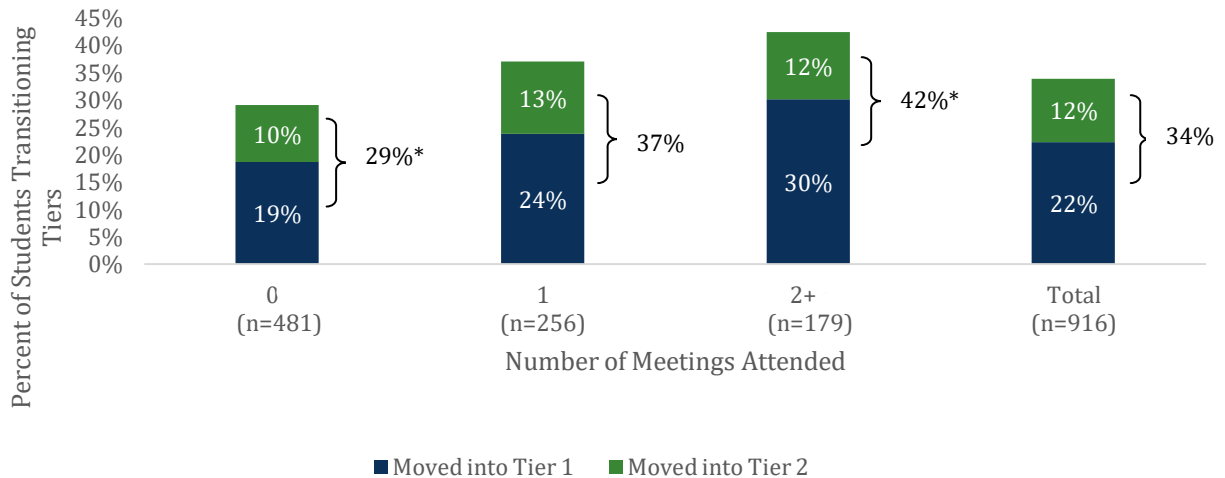
For students whose parents attended two or three APTT meetings, there was a 32 percentage point increase in the percent of students who scored in the Tier 1 range between fall and spring. Students whose parents attended one meeting saw a 26 percentage point increase in the percentage of students who were classified as Tier 1 between fall and spring. The percentage of Tier 1 students whose parents did not attend a meeting increased by 21 percentage points.

Figure 12. Fall to spring Tier transitions for all students



Students who were classified as Tier 3 in the fall and whose parents attended two or more meetings were significantly more likely to move into Tier 1 or Tier 2 by the spring compared to other Tier 3 students. Approximately 42% of students who scored in the Tier 3 range in the fall and whose parents attended two or three meetings moved out of Tier 3 into Tier 2 (12%) or Tier 1 (30%). Less than one-third of students (29%) whose parents did not attend a meeting moved out of Tier 3 into Tier 2 (10%) or Tier 1 (19%) (Figure 13).

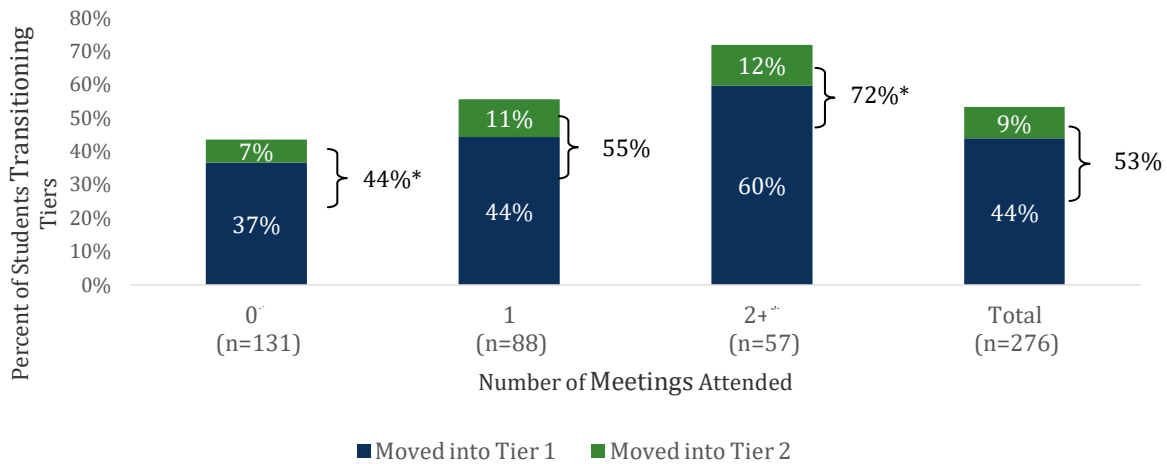
Figure 13. Tier transition for all students classified as Tier 3 in the fall



*Statistically significant differences exist in the percent of students increasing tiers between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

Kindergarten was the only grade level in which there was a significant difference in the reduction of Tier 3 students by APTT parent attendance. On average, 53% of kindergarten students who were classified as Tier 3 in the fall moved into Tier 2 (9%) or Tier 1 (44%). The percent of Tier 3 students whose parents attended no APTT meetings was reduced by 44% compared to the significantly larger Tier 3 reduction of 72% for students whose parents attended two or three APTT meetings (Figure 14).

Figure 14. Tier transition for **kindergarten** students classified as **Tier 3 in the fall**



*Statistically significant differences exist in the percent of students increasing tiers between students whose parents attended two or three meetings and those whose parents did not attend any meetings (ANOVA, $p < 0.05$).

Conclusion

On average, students whose parents attended two or three APTT meetings (2+) demonstrated statistically significantly greater increases in number correct and National Percentile Rank between fall and spring than students whose parents did not attend any meetings. Related, students whose parents attended two or three APTT meetings (2+) demonstrated higher average Rates of Improvement and Student Growth Percentiles and were more likely to move out of Tier 3 than students whose parents did not attend any APTT meetings.

All of these statistically significant differences are primarily due to the relationships between parent attendance and student outcomes for Tier 3 kindergarten students. There were not any statistically significant differences in the outcomes of students in first, second, or third grade or for Tier 1 and Tier 2 students. **These findings suggest that APTT meeting attendance may have the greatest influence on the kindergarten students who enter the kindergarten reading below grade level.**

Across all metrics, there were no statistically significant differences between changes in fall to spring student performance for students whose parents only attended one APTT meeting. This suggests that parents must attend at least two meetings (and likely implement suggested practices at home) in order to see any possible influences on student performance. However, as noted in the limitations section, it is also possible that parents who attended at least two meetings had additional availability and motivations to assist their child in learning at home which may have influenced student outcomes despite APTT attendance.

Appendix: Student Sample by School

Table A1. Student participation and sample composition by school

School	Grade levels	Number of classrooms	Number of students whose parent/guardian attended at least one APTT meeting	Number of students located in SDP enrollment files whose parent/guardian participated	Number of students enrolled for the full academic year whose parent/guardian participated
Lea	K, 1,3	9	86	86	80
Key	K-3	9	157	157	144
Kirkbride	K-3	10	123	121	118
Blaine	K-3	11	72	72	64
Welsh	K-3	8	64	62	55
Carnell	K-3	5	69	67	58
McClure	K-3	16	220	220	195
Sullivan	K-3	13	83	83	75
J.H. Brown	K-3	6	71	69	62
TOTAL		78	945	937	851