Student Outcomes

Final Report

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Child Trends

Photo Credit: Reading Partners

This brief is based on findings from an independent evaluation conducted by Child Trends for Reading Partners.

Overview

Reading Partners, a national literacy nonprofit, engaged Child Trends, a national, nonprofit research group, to learn more about how to improve programming and, ultimately, boost learning outcomes for students who struggle with reading. In California reading centers, Child Trends evaluated five key areas of Reading Partners programs:

- **Dosage:** Document the amount of tutoring each student receives.
- **Tutor engagement and quality:** Examine the extent to which Reading Partners is successful in recruiting, engaging, and retaining tutors. Assess the quality of tutors' interactions with students and the effect those encounters have on children.
- **AmeriCorps member experiences:** Identify skills AmeriCorps members bring to Reading Partners and collect feedback about their experiences.
- **Student reading growth:** Determine how student learning is linked to implementation characteristics and dosage.
- **Social-emotional learning**: Examine at how Reading Partners affects students' social-emotional learning (SEL).

The findings in this report on student outcomes show:

- Students demonstrated significant improvements in early literacy, reading, and SEL skills (reading engagement, social competence, persistence, and self-control) across the year.
- Tutors' perceptions of student-tutor relationship quality (conflict and closeness) were significantly associated with improved SEL skills (as measured by students' regular school day teacher) at post-test.
- Students with sustained and consistent participation in Reading Partners were most likely to improve their Star Early Literacy or Star Reading intervention tier at post-test.

Three companion briefs discuss findings related to the other evaluation focus areas. An accompanying infographic summarizes findings across the study.

Introduction

Reading is a critical academic skill, yet only 37 percent of U.S. fourth graders read proficiently.[1] Reading Partners, a national literacy nonprofit, is seeking to close this literacy gap by partnering with under-resourced schools and engaging community volunteers to provide one-on-one tutoring to elementary school-aged students.

In spring 2016, Reading Partners commissioned Child Trends to conduct an independent evaluation of Reading Partners' California reading centers. This evaluation was designed to build upon the findings of a prior evaluation conducted by MDRC and included an in-depth examination of how key program implementation characteristics (e.g., tutoring dosage, fidelity, student-tutor relationships, and AmeriCorps member characteristics) influence children's learning. The goal was to provide actionable information to improve Reading Partners programs, and enhance the experiences and outcomes of the children, volunteer tutors, and AmeriCorps members who participate in Reading Partners.

This brief highlights key themes and findings from the evaluation regarding student outcomes and provides a snapshot of:

- **Student development in early literacy and reading**
- **Trends in students' Social-Emotional Learning (SEL) development**
- **Predictors of student reading and SEL outcomes**

To learn more about the methods used in this evaluation, please refer to the evaluation plan and the factsheets published in Year 1 of the evaluation.

Evaluation Methods

To answer questions about student early literacy and reading outcomes, researchers used the following data sources:

Administrative Data
We obtained Reading Partners' administrative data on student dosage and early literacy and reading outcomes (as measured by the Star assessment).

AmeriCorps Member Experiences Survey
Each spring we invited all Reading Partners' AmeriCorps members who served in California to complete a survey about their experiences.

Tutor Experiences Survey
In spring 2017, we offered tutors the opportunity to respond to a survey about their experiences as they left the Reading Partners program.

Tutor Fidelity Observations
Using an observation tool developed for this evaluation, Reading Partners staff observed tutors in a selected sub-sample at 11 sites during the 2016–2017 school year.

Tutor Reading Engagement Survey
Reading Partners asked tutors in a sub-sample of 11 sites to report on the quality of their tutor-student relationship and students' level of reading engagement.[5]

Teacher Social-Emotional Learning (SEL) Survey
Teachers in the sub-sample of sites were asked to report on students' SEL skills at students' referral to Reading Partners and at the end of the school year.

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[1] U.S. Department of Education, National Center for Education Statistics (2017). *National Assessment of Educational Progress Reading: Grade 4 National Results.* Retrieved from
https://www.nationsreportcard.gov/reading_2017/#/nation/achievement?grade=4

Research Questions and Sub-Questions

Our research on student outcomes addresses the following evaluation questions:[2]

1. **What factors contribute to or detract from students achieving their grade-specific reading goals?**
   - Do student reading outcomes vary by student demographic factors, tutoring dosage, tutor characteristics, tutor-student relationship quality, tutor fidelity, and AmeriCorps member characteristics?

2. **What factors contribute to or detract from students' social-emotional learning skills development?**
   - To what extent does this vary by student demographic factors, baseline reading level, tutoring dosage, tutor characteristics, tutor-student relation factors, tutoring dosage, tutor characteristics, tutor-student relationship quality, tutor fidelity, and AmeriCorps member characteristics?

To answer these questions, Child Trends used Reading Partners' administrative data, a survey of AmeriCorps members serving at Reading Partners, tutor fidelity observations, and multiple tutor surveys. These data sources are described in the Evaluation Methods text box above and in greater detail below.

The evaluation included two samples from the 2016–2017 and 2017–2018 school years:

- **Full sample:** This included data from students, AmeriCorps members, and volunteer tutors at all California reading centers. Information collected from this sample included administrative data, the AmeriCorps Member Experiences Survey, and the Tutor Experiences Survey.[3]

- **Sub-sample:** This included data from the 11 reading centers in the Los Angeles and Sacramento regions that participated in more intensive data-collection efforts. Data collected from the sub-sample included tutor fidelity observations,[4] the Tutor Social-Emotional Learning Survey,[5] and teacher surveys.

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[2] Some evaluation questions have been re-phrased from the original evaluation plan.
[3] The Tutor Experiences Survey was only administered during the 2016–2017 school year. In addition, we administered the survey to all tutors volunteering in California reading centers, but data linking tutors to children were only available for children in the sub-sample.
[4] Tutor fidelity observations were conducted in the 2016–2017 school year only.
[5] The Tutor Social-Emotional Learning Survey was revised between the 2016-2017 and 2017-2018 school years to focus more on student-tutor relationships.

Student Development in Reading and Early Literacy

This section describes trends in students' development in early literacy and reading across the 2016–2017 and 2017–2018 program years. To assess the influence of Reading Partners participation on students' outcomes we:

- Conducted descriptive analyses of student performance on Star Early Literacy and Star Reading assessments[6] at pre-test (baseline) and post-test (school year end)
- Assessed changes in student performance during the year
- Analyzed the association between students' development in early literacy and reading and student characteristics (i.e., grade level, baseline reading ability, English Language Learner Status), program participation or "dosage" (i.e., total sessions attended, duration, and pacing), and program implementation characteristics (i.e., tutor-student relationship quality, tutor fidelity, tutor characteristics, and AmeriCorps member characteristics)

Baseline early literacy and reading

Upon enrollment into Reading Partners, students take either the Star Early Literacy assessment or the Star Reading assessment. Across both assessments, students' percentile rank scores are used to classify students into four intervention levels:[7]

Urgent	Intervention	On-watch	At or above Benchmark

Only students who score within the At or Above Benchmark level were reading at grade level. Across both Star assessments (Early Literacy and Reading), the majority of Reading Partners students (92 percent) were reading below grade level at baseline. Half of students scored in the lowest level, Urgent, followed by Intervention (29 percent), and On-watch (12 percent), which

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[6] Star Assessment data were obtained from Reading Partners' administrative data. The Star Early Literacy assessment is administered to students in grades K–3. The Star Reading assessment is administered to students in grades 3–5. The decision to use the Star Early Literacy or Star Reading assessment for third grade students is based upon Reading Partners staff's perception of the students' reading level. As such, third grade students who demonstrate greater reading challenges are typically administered the Star Early Literacy assessment instead of the Star Reading assessment.
[7] Intervention tiers are based on psychometric analyses conducted by the Star assessment developers. Percentile cut-offs define each intervention tier (0-10 percentile = Urgent Intervention, 11-25 percentile = Intervention, 26-40 percentile = On-Watch, 40=100 percentile = At/Above Benchmark).
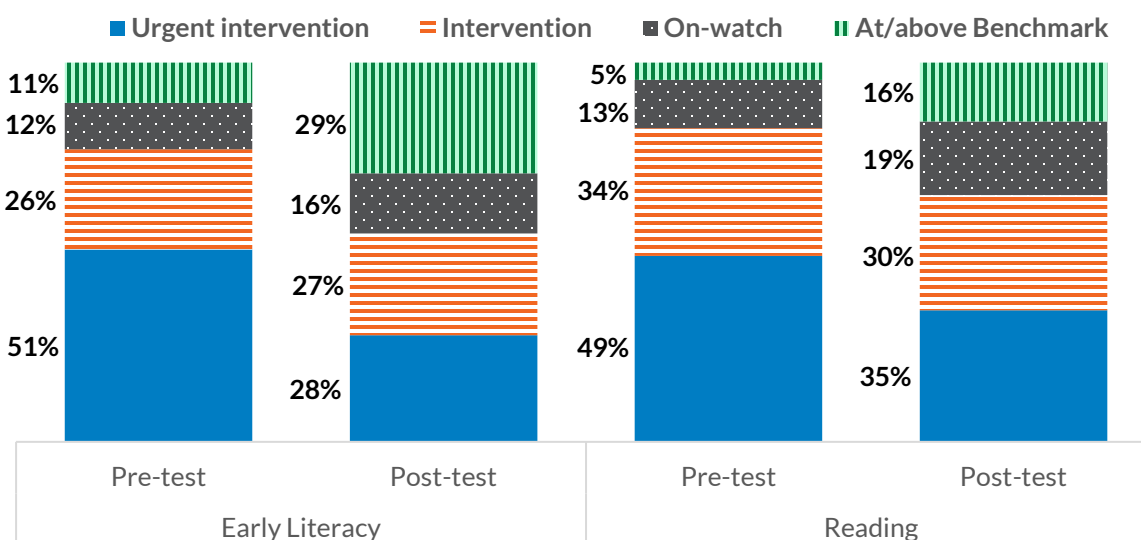Renaissance Learning. (2015). *STAR Early Literacy™ Technical Manual.* Wisconsin Rapids, WI.

describes students who should be closely monitored based on their reading scores. As noted in **Figure 1**, Star assessment scores varied slightly by assessment type, with students who took the Star Early Literacy assessment being somewhat more likely to score within the Urgent level and students who took the Star Reading assessment being somewhat more likely to rank within the Intervention level.

Student development in early literacy and reading

Children were significantly more likely to be reading at grade level at post-test than they were at pre-test.

Figure 1 highlights students' reading levels (Star intervention levels) on the Star Early Literacy and Star Reading assessments at baseline and the end of the school year. Students were significantly more likely to be reading at grade level at post-test than they were at baseline.[8] Across both assessments, a total of 1,515 students (24 percent) were reading at grade level at the end of the school year. In contrast, 523 students (8 percent) were reading at grade level at baseline.

Figure 1: Student Star intervention levels at pre-test and post-test (*N*=6,396)

Note: These data are based on students who have matched pre-test and post-test Star data. Source: Reading Partners administrative data, 2016-2018.
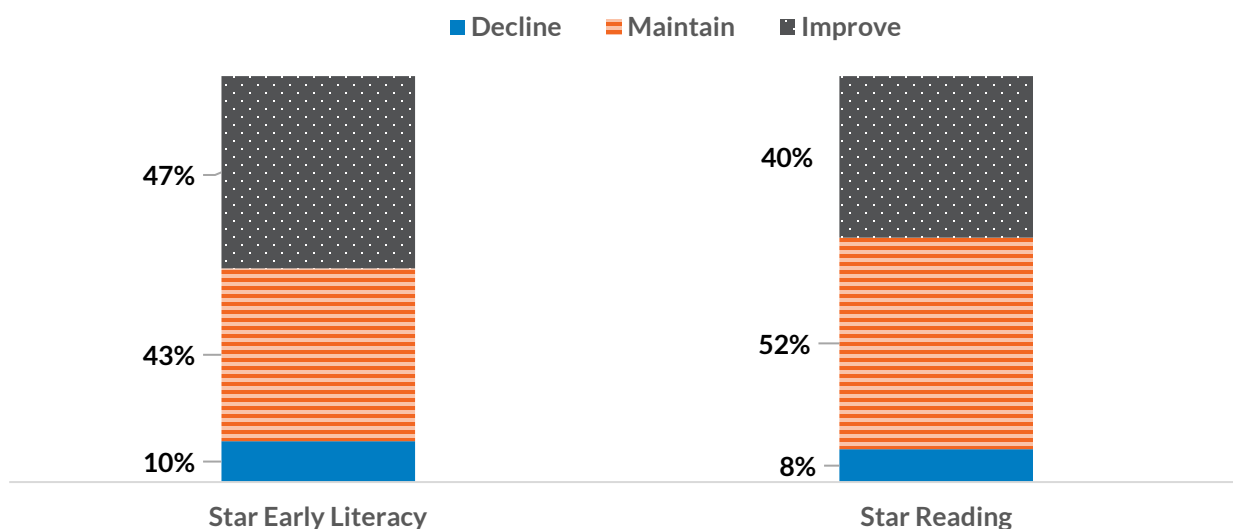
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[8] McNemar's test determined that there was a statistically significant difference in the proportion of students reading at grade level pre- and post-participation in Reading Partners: Early Literacy, $\chi^2(1)=256.7$, $p<.001$; Reading, $\chi^2(1)=87.4$, $p<.001$

In addition to examining whether students were reading at grade level at post-test, we also examined whether students changed intervention levels during the year. Specifically, we looked at whether students improved their reading level (e.g., went from Urgent Intervention to Intervention), maintained their reading level, or decreased their reading level from baseline to the end of the school year. We chose changes in reading level levels as a metric because it enabled us to examine trends in reading involving all students, as Star assessment scale scores and percentile rank scores vary by Star assessment type.

Across both versions of the Star assessments, approximately 44 percent of children improved in reading (scored within a higher intervention level at post-test than at pre-test) and 46 percent maintained their reading level (scored within the same intervention level). Notably, only 9 percent of students scored within a lower intervention level at post-test.

Figure 2 depicts changes in children's intervention level from pre-test to post-test, by Star assessment type. Students who were administered the Star Early Literacy assessment were slightly more likely to improve their intervention level than students who were administered the Star Reading assessment.

Figure 2: Students' change in intervention level from pre-test to post-test (*N*=6,396)

Note: These data are based on students who have matched pre-test and post-test Star data. Source: Reading Partners administrative data, 2016-2018.

Predictors of student development in early literacy and reading

Researchers also analyzed the associations between students' development in early literacy and reading and student characteristics (i.e., grade level, English Language Learner status, and baseline reading ability), program participation or "dosage" (i.e., total sessions attended, duration, and pacing), and program implementation characteristics (i.e., Reading Partners' region, tutor-student relationship quality, tutor fidelity, tutor characteristics, and AmeriCorps member characteristics). Multi-level statistical models[9] were used to examine associations between student outcomes and each of the predictor variables.[10] For each set of analyses, we first examined associations between predictor variables and outcome variables across all students.[11] Then, we disaggregated the data by type of Star assessment (Early Literacy or Reading) to assess whether the patterns that emerged were consistent across both assessment types. Unless otherwise noted (in footnotes), findings were consistent across both Star assessments.

Reading at grade level at post-test

We first tested the associations between the predictor variables and the likelihood that students would be reading at grade level at post-test. Results for each set of predictor variables are described below.

Student characteristics

Student characteristics included in the analyses are grade level, baseline reading level, and English Language Learner (ELL status). Only student grade levels and baseline reading levels were

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[9] Students (Level 1) were nested within reading centers (Level 2). All AmeriCorps member characteristics were entered at Level 2, as were dummy-coded variables that were used to control for regional differences.

[10] Given that tutor data were only available for students from a subsample of sites within two regions (Los Angeles and Sacramento), we were unable to estimate multi-level models for these analyses. Accordingly, we estimated path models, controlling for school-level differences by entering a series of dummy-coded variables into the models.
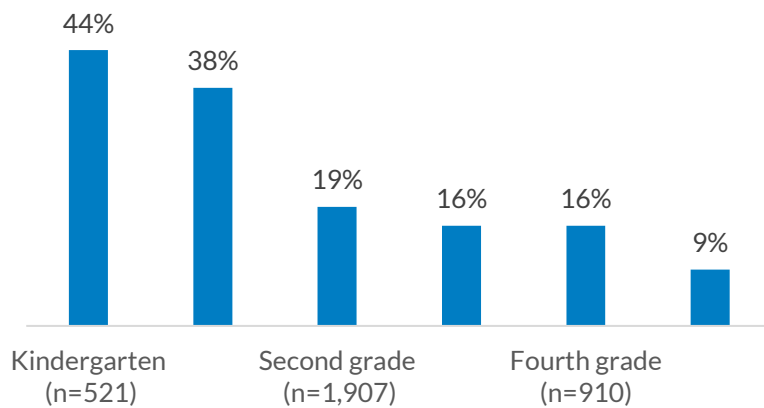
[11] Findings presented in the text are based on multivariate models that include relevant control variables (e.g., baseline reading, ELL status). Findings presented in figures are based on descriptive statistics and do not account for relevant controls.

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significantly associated with the likelihood that a student would be reading at grade level. Even after controlling for students' baseline performance, students in lower grades were significantly more likely to be reading at grade level at post-test than students in upper grades.[12] As can be seen in **Figure 3**, the proportion of children reading at grade level at post-test decreased dramatically in second grade and remained relatively stable in grades two through four, before declining again in fifth grade.

In terms of reading intervention level, as one would expect, students who scored in a higher intervention level at baseline were significantly more likely to be reading at grade level at post-test (**Figure 4**).[13]
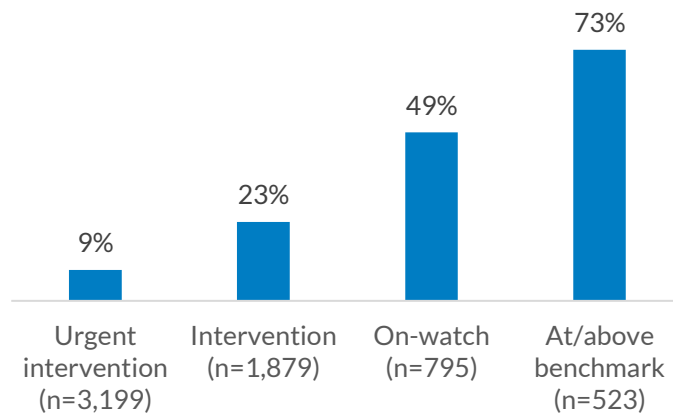
When the data were disaggregated by type of Star assessment, we found that for students who took the Star Reading Assessment, ELL status was significantly associated with the likelihood a student would be reading at grade level.[14] Students identified as ELL were significantly less likely to be reading at grade level than were students not identified as ELL. This pattern was not observed for students who took the Star Early Literacy Assessment.

Figure 3: Proportion of students reading at grade level at post-test, by student grade level (*N*=6,396)

44% 38% 19% 16% 16% 9%

Kindergarten (n=521)   Second grade (n=1,907)   Fourth grade (n=910)

Note: These data are based on students who have matched pre-test and post-test Star data. Reading at grade level is defined as scoring within the "At or Above Benchmark" tier. Source: Reading Partners administrative data, 2016-2018.

Figure 4: Proportion of students reading at grade level at post-test, by baseline intervention tier (*N*=6,396)

73% 49% 23% 9%

Urgent intervention (n=3,199)   Intervention (n=1,879)   On-watch (n=795)   At/above benchmark (n=523)

Note: These data are based on students who have matched pre-test and post-test Star data. Reading at grade level is defined as scoring within the "At or Above Benchmark" tier. Source: Reading Partners administrative data, 2016-2018.

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[12] B = -.448, SE .05, p<.001
[13] B = 1.10, SE=.05, p<.001
[14] B = - 0.55, SE=.15, p<.05

Dosage

Overall, student dosage levels were not significantly associated with the likelihood that a student would be reading at grade level at post-test. However, when the data were disaggregated by Star assessment type, for those students who took the Star Reading assessment, there was a significant association between duration of participation and the likelihood that students would be reading at grade level. Students who remained in the program for a longer time were significantly more likely to be reading at grade level than students who took part in the program for shorter durations.[15]

Figure 5: Proportion of students reading at grade level, by region (*N*=6,396)

Note: These data are based on students who have matched pre-test and post-test Star data. Reading at grade level is defined as scoring within the "At or Above Benchmark" tier. Source: Reading Partners administrative data, 2016-2018.

Region

Geographic region was significantly associated with the likelihood that a student would be reading at grade level.[16,17] As seen in **Figure 5**, students in the Los Angeles region were the most likely to be reading at grade level at post-test, followed by students in the Sacramento region. Few differences emerged among students in the San Francisco Bay Area and Silicon Valley regions.
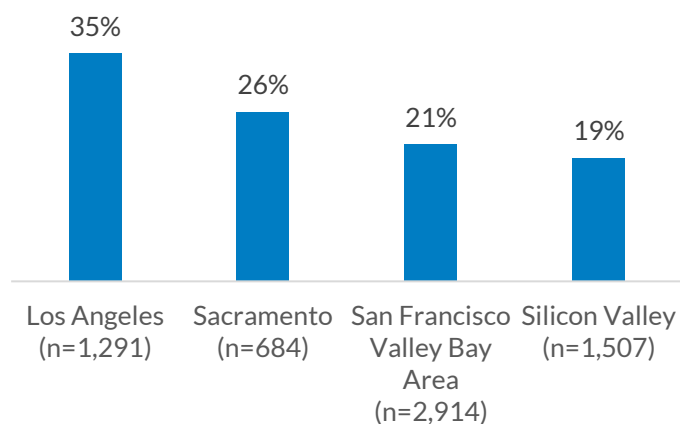
AmeriCorps member characteristics

AmeriCorps member characteristics (tenure, satisfaction with service, satisfaction with school partners, and job efficacy) were not significantly associated with the likelihood that a student would be reading at grade level at post-test.

Tutor characteristics

For students attending reading centers in the sub-sample, we were able to examine the association between tutor characteristics and student outcomes. Most tutor characteristics (overall tutor satisfaction, tutor efficacy, tutor satisfaction with support from the site coordinator, tutor-student relationship, and tutor fidelity) were not significantly associated with the likelihood

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[15] B = 0.33, SE=.15, p<.05

[16] In the multi-level models, region was dummy coded so that three of the four regions were compared to a reference group (the fourth region). Given that pair-wise comparisons were not made across all regions, statistical coefficients are omitted.

[17] When data were disaggregated by Star assessment type, this relationship was only observed among students who took the Star Early Literacy assessment.
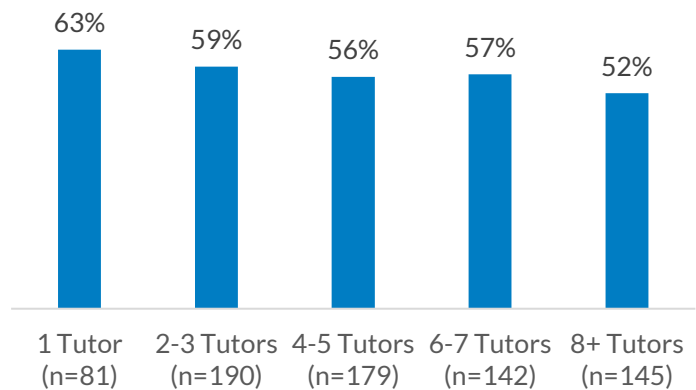
that students would be reading at grade level at post-test.[18] However, there was a significant association between the number of tutors that a student had and the likelihood that a student would be reading at grade level at post-test. Students who had more than one tutor were less likely to be reading at grade level at post-test (**Figure 6**).[19,20]

Improvement in intervention level

To further examine factors associated with students' development in early literacy and reading, we analyzed associations between the likelihood that students improved their intervention level at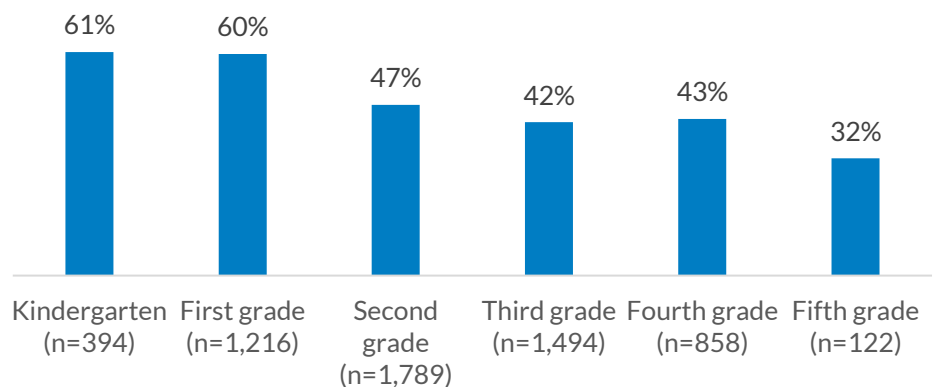 post-test and the predictor variables. Improving an intervention level was defined as being categorized in a higher intervention level at post-test than at pre-test (e.g., moving from Urgent Intervention at pre-test to Intervention at post-test). Because students who scored At or Above Benchmark at pre-test (n=523) could not score in a higher intervention level at post-test, these

Figure 6: Proportion of students reading at grade level at post-test, by number of tutors (*N*=737)

| | 1 Tutor (n=81) | 2-3 Tutors (n=190) | 4-5 Tutors (n=179) | 6-7 Tutors (n=142) | 8+ Tutors (n=145) |

Note: These data are based on the subsample of students who have pre-test and post-test Star data as well as matched student-tutor data. Reading at grade level is defined as scoring within the "At or Above Benchmark" tier. Source: Reading Partners administrative data, 2016-2018.

Figure 7: Proportion of Students who improved their intervention level, by grade (*N*=5,873)

| | Kindergarten (n=394) | First grade (n=1,216) | Second grade (n=1,789) | Third grade (n=1,494) | Fourth grade (n=858) | Fifth grade (n=122) |

Note: These data are based on students who have matched pre-test and post-test Star data. Improving an intervention level was defined as scoring in a higher intervention tier at post-test than at pre-test. Source: Reading Partners administrative data, 2016-2018.

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[18] Tutor satisfaction, tutor efficacy, tutor satisfaction with support from the site coordinator, and tutor fidelity were only assessed in Year 1 (2016-17).
[19] B= -.05, SE=.02, *p*<.05
[20] When data were disaggregated by Star assessment type, this relationship was only observed among students who took the Star Early Literacy assessment.

observations were excluded from the analyses. Results for each set of predictor variables are described below.

Student characteristics

As illustrated in **Figure 7**, students' grade level was significantly associated with the likelihood that a student would improve their intervention level at post-test. Students in lower grade levels were significantly more likely to improve than students in upper grade levels.[21,22] In contrast, students who were in lower intervention levels at baseline were significantly more likely to improve than students in higher intervention levels.[23,24] Finally, students who were identified as ELL were significantly less likely to improve their intervention level at post-test (42 percent) than students who were not identified as ELL (48 percent).[25]

Students with more intense participation and longer durations in Reading Partners were significantly more likely to improve intervention levels at post-test than their peers.
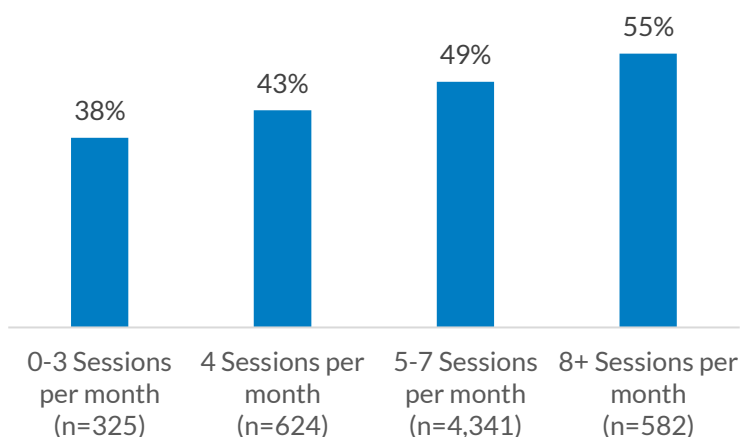
Dosage

Students who, on average, attended a greater number of Reading Partners sessions per week were significantly more likely to improve their intervention level at post-test than students who attended fewer sessions per week.[26,27]

Figure 8 highlights the proportion of children who improved their intervention level based on their intensity of participation. The sessions-per-month breakdowns selected represent students who, on average, attended Reading Partners sessions less than once per week, about

Figure 8: Proportion of students who improved intervention level, by intensity of participation (pacing; *N*=5,872)

Note: These data are based on students who have matched pre-test and post-test Star data. Improving an intervention tier was defined as scoring in a higher intervention level at post-test than at pre-test. Source: Reading Partners administrative data, 2016-2018.

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[21] B = -.26, SE .03, p<.001
[22] When data were disaggregated by Star assessment type, this relationship was only observed among students who took the Star Early Literacy assessment.
[23] B = -.11, SE .04, p<.05
[24] When data were disaggregated by Star assessment type, this relationship was only observed among students who took the Star Early Literacy assessment.
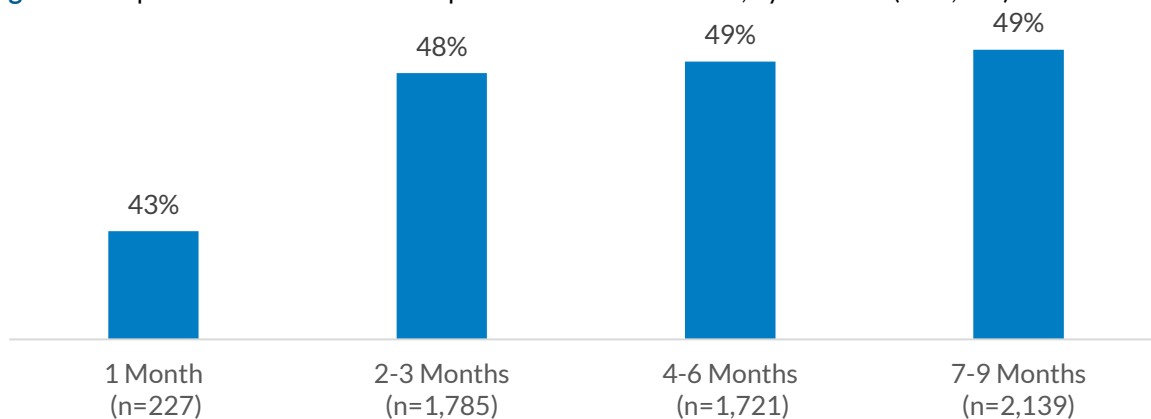[25] B = -.22, SE .07, p<.01
[26] B=.08, SE=.03, *p*<.01
[27] When data were disaggregated by Star assessment type, this relationship was only observed among students who took the Star Reading assessment.

once per week, once or twice per week, and two or more times per week. As noted in **Figure 8**, just over half of the students attending Reading Partners eight or more times per month (2+ times per week) improved intervention levels, compared with about one third of students who attended 0 to 3 sessions per month (less than once a week). Additionally, as reflected in **Figure 9**, students enrolled in Reading Partners for the longest time frames were significantly more likely to improve their intervention levels at post-test than those enrolled for shorter periods.[28] [29]

When Star Reading and Star Early Literacy assessment data were combined, there was not a significant association between total sessions attended and the likelihood students would improve their intervention level. However, when data were disaggregated, a significant pattern emerged. For students who took the Star Early Literacy assessment, there was a positive relationship, wherein students who attended more sessions were more likely to improve their intervention level than students who attended fewer sessions.[30] In contrast, an opposite pattern emerged for students who took the Star Reading assessment.[31] It is unclear why this conflicting pattern emerged. However, given that the Star Reading assessment is administered to older students (grades 3–5) and older students typically experience more challenges with reading, this finding may suggest that different levels of participation are more beneficial for students with different reading needs.

Figure 9: Proportion of students who improved intervention level, by duration (N=5,872)

| 1 Month (n=227) | 2-3 Months (n=1,785) | 4-6 Months (n=1,721) | 7-9 Months (n=2,139) |
| 43% | 48% | 49% | 49% |

Note: These data are based on students who have matched pre-test and post-test Star data. Improving an intervention level was defined as scoring in a higher intervention level at post-test than at pre-test. Source: Reading Partners administrative data, 2016-2018.

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[28] B=.05, SE=.02, *p*<.01
[29] When data were disaggregated by Star assessment type, this relationship was only observed among students who took the Star Reading assessment.
[30] B=.01, SE=.002, *p*<.01
[31] B=-.03, SE=.01, *p*<.01

Region

Geographic region was significantly associated with the likelihood that a student would improve their reading intervention level at post-test.[32] As noted in **Figure 10**, students in the Los Angeles region were most likely to improve their intervention level at post-test, followed by those in Sacramento, Silicon Valley, and the San Francisco Bay Area.

AmeriCorps member characteristics

AmeriCorps member characteristics were not significantly associated with the likelihood that students would improve their intervention level at post-test.

Tutor characteristics

Figure 10: Proportion of students who improved intervention levels, by region (*N*=5,873)

Note: These data are based on students who have matched pre-test and post-test Star data. Improving an intervention level was defined as scoring in a higher intervention level at post-test than at pre-test. Source: Reading Partners administrative data, 2016-2018.

Tutor characteristics were not significantly associated with the likelihood that students would improve their intervention level at post-test.
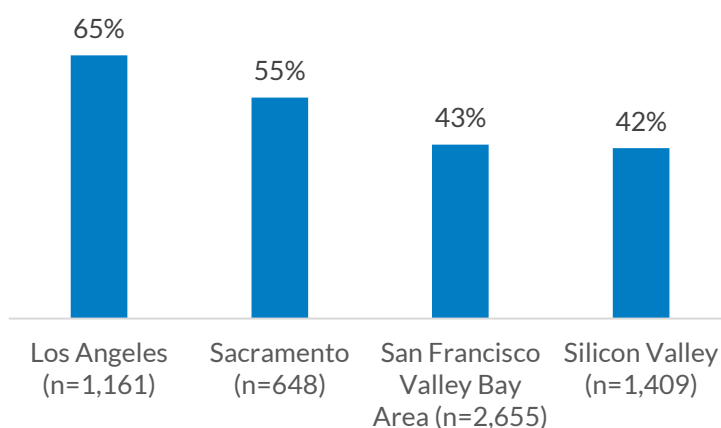
Declining in intervention level

Our final analyses examined the association between the likelihood that students declined in their intervention level at post-test and student characteristics, region, student dosage, and AmeriCorps member and tutor characteristics. Declining in an intervention level was defined as being categorized in a lower intervention level at post-test than at pre-test. Because students who scored in the Urgent level at pre-test (n=3,199; 50 percent of the sample) could not score in a lower intervention level at post-test, these observations were excluded from the analyses. Results for each set of predictor variables are described below.

Student characteristics

Perhaps unsurprisingly, students with higher intervention levels at pre-test were significantly more likely to decline in intervention level than their peers.[33] As seen in **Figure 11**, 26 percent of students who scored At or Above Benchmark at pre-test declined in intervention level, compared

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[32] In the multi-level models, region was dummy coded so that three of the four regions were compared to a reference group (the fourth region). Given that pair-wise comparisons were not made across all regions, statistical coefficients are omitted.
[33] B= .653, SE=.146, *p*<.001

to 15 percent of students who scored in the Intervention level at pre-test. When data were disaggregated by Star assessment type, a significant association emerged between student grade level and the likelihood a student's reading level would decline. Among students who took the Star Early Literacy assessment, those in higher grades were significantly more likely to experience a decline than students in lower grades. Given that third grade students only take the Star Early Literacy assessment if they are identified as too far behind in reading to take the Star Reading assessment, this finding is unsurprising.

Dosage

Student dosage was not significantly associated with the likelihood a student would decline in intervention level at post-test.

Region

Student's region was significantly associated with the likelihood that a student would decline an intervention level at post-test. As seen in **Figure 12**, students in the Los Angeles region were the least likely to experience a decline, followed by the San Francisco Bay Area, Sacramento, and Silicon Valley regions.
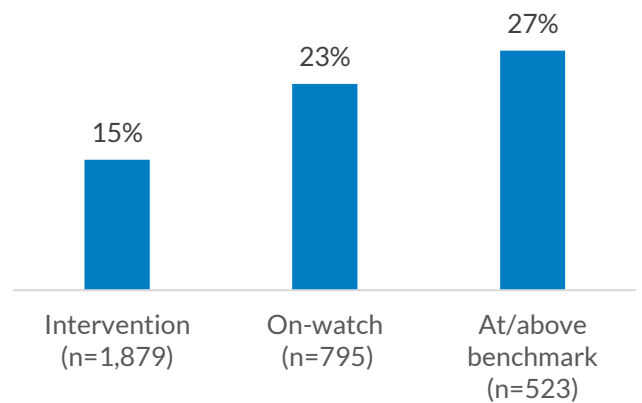
AmeriCorps member characteristics

AmeriCorps member characteristics were not significantly associated with the likelihood that students would decline in their intervention level at post-test.
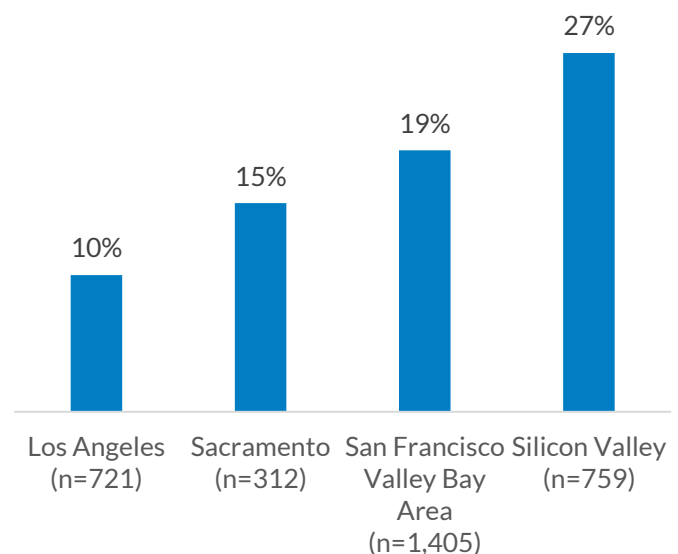
Tutor characteristics

Tutor characteristics were not significantly associated with the likelihood that students would decline in their intervention level at post-test.

Figure 11: Proportion of students who declined intervention levels, by baseline intervention level (*N*=3,197)

Note: These data are based on students who have matched pre-test and post-test Star data. Declining in an intervention level was defined as scoring in a lower intervention level at post-test than at pre-test. Source: Reading Partners administrative data, 2016-2018.

Figure 12: Proportion of students who declined intervention levels, by region (*N*=3,197)
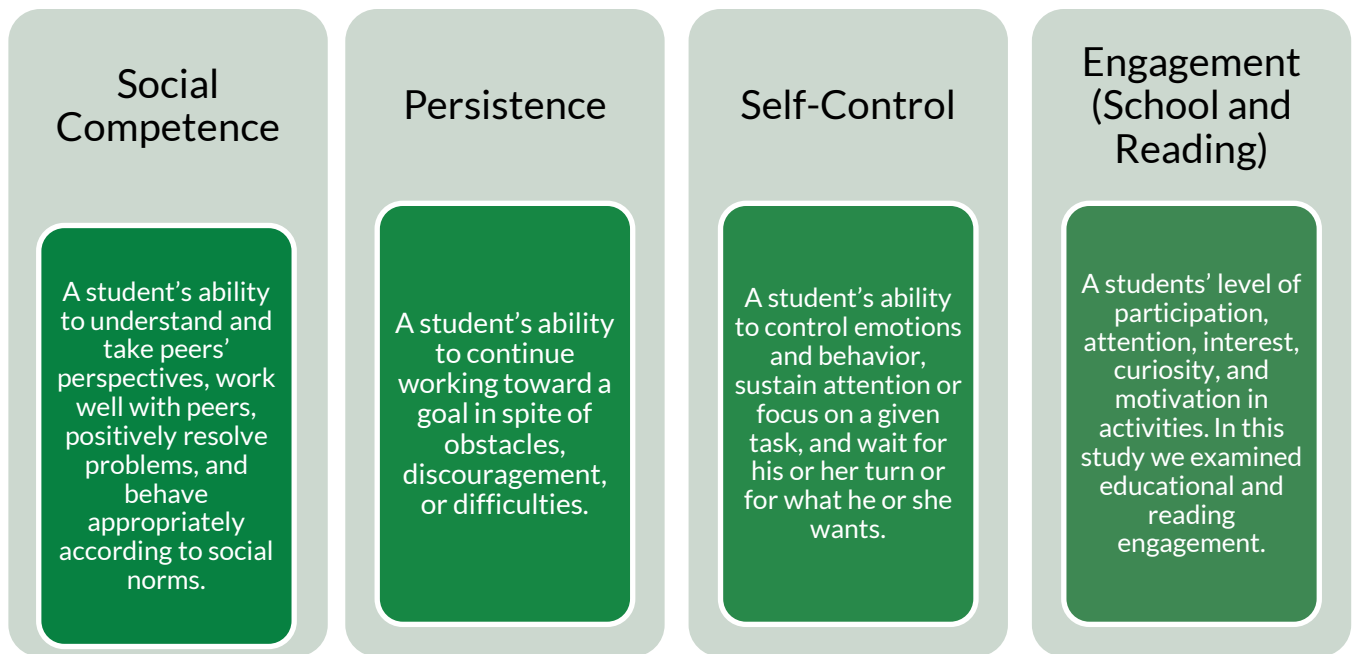

Note: These data are based on students who have matched pre-test and post-test Star data. Declining in an intervention level was defined as scoring in a lower intervention level at post-test than at pre-test. Source: Reading Partners administrative data, 2016-2018.

Student Social-Emotional Learning Outcomes

This section focuses on how participation in Reading Partners was related to students' development in social-emotional learning (SEL) skills. "Social and emotional learning (SEL) is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions."[34] To assess the influence of Reading Partners participation on students' SEL skills, we:

- Assessed changes in students' SEL skills assessment scores from pre-test (baseline) to post-test (end of school year)
- Analyzed the association between students' post-test SEL skills and student dosage and program implementation characteristics

Only students attending select schools in our subsample regions (Los Angeles and Sacramento) have data on their SEL skills. Students' SEL skills were assessed through their regular school day teachers' reports during students' referral to Reading Partners (pre-test) and at the end of the school year (post-test). In each of these surveys, teachers reported on four key SEL skills:[35]
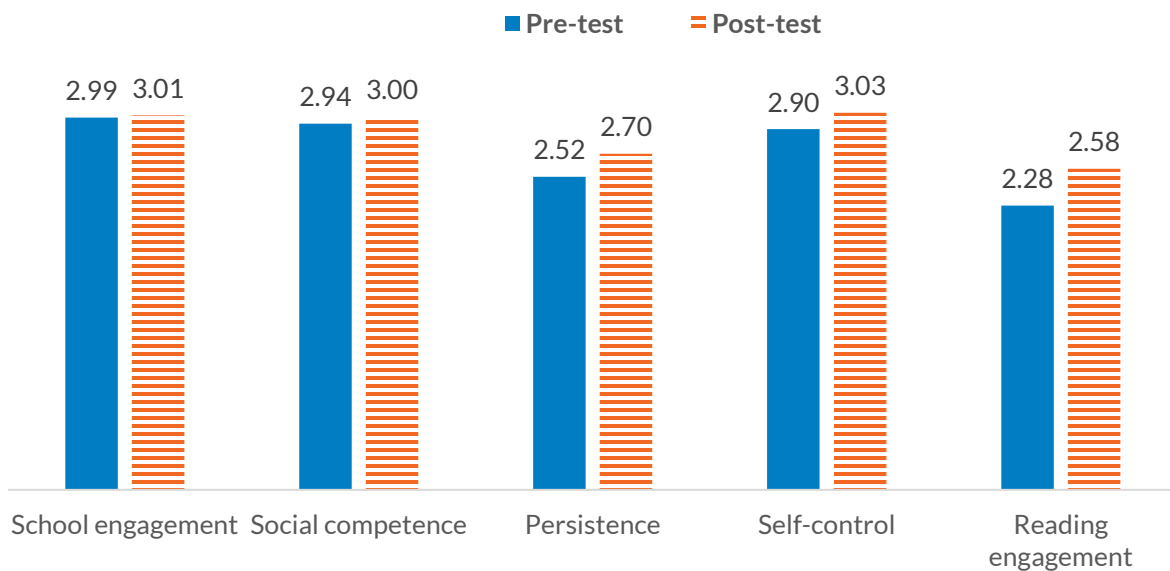
Social Competence	Persistence	Self-Control	Engagement (School and Reading)
A student's ability to understand and take peers' perspectives, work well with peers, positively resolve problems, and behave appropriately according to social norms.	A student's ability to continue working toward a goal in spite of obstacles, discouragement, or difficulties.	A student's ability to control emotions and behavior, sustain attention or focus on a given task, and wait for his or her turn or for what he or she wants.	A students' level of participation, attention, interest, curiosity, and motivation in activities. In this study we examined educational and reading engagement.

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[34] CASEL. (2016). What is SEL? A Systemic Framework [Website]. Retrieved from http://www.casel.org/what-is-sel/.
[35] Tauck Family Foundation. (2014). Measuring Elementary School Students' Social and Emotional Skills. Bethesda, MD: Child Trends. Hidden curriculum (2014, August 26). In S. Abbott (Ed.), The glossary of education reform. Retrieved from http://edglossary.org/hidden-curriculum.

Figure 13 displays teachers' ratings of students SEL skills at pre-test and post-test. Students demonstrated moderate levels of SEL skills. Notably, students' lowest-rated SEL skill was their engagement in reading, providing further evidence that Reading Partners is successful in recruiting a population

Students' largest gains in SEL skills were observed in reading engagement.

of students that needs additional support in reading. Except for school engagement, students demonstrated significant increases[36] in SEL skills from pre-test to post-test across each SEL skill, with the largest gain observed in students' reading engagement.

Figure 13: Student development in social-emotional learning (SEL) skills (*N*=716)

Note: These data are based on students who have matched pre-test and post-test teacher SEL data. SEL Skills were rated on a 4-point scale (1= *None of the time; 4=All of the time).* Source: Child Trends' adapted versions of Reading Partners' Teacher Referral Form and End of Year Teacher Survey, 2016-2018.

Predictors of SEL skill development

We also examined the association between students' development of SEL skills (school engagement, reading engagement, persistence, self-control, and social competence) and student characteristics (grade level, ELL status, and baseline reading ability), as well as program

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[36] Social Competence: $t(715)=-2.39$, p<.01; Persistence: $t(715)=-7.39$, *p*<.001; Self-Control $t(715)=-5.83$, *p*<.001; Reading Engagement: $t(715)=-14.49$, *p*<.001
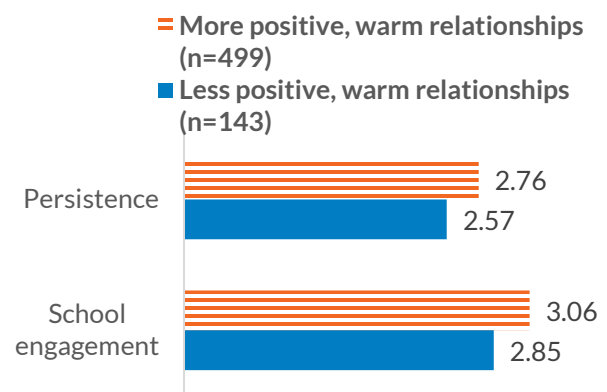
participation or "dosage" (total sessions attended, duration, and pacing), and program implementation characteristics (region, tutor-student relationship quality, tutor fidelity, tutor characteristics, and AmeriCorps member characteristics), net of students' pre-test scores.[37]

Across each SEL skill, the only variables that were consistently related to teachers' ratings of students' SEL skills at post-test were those characterizing the quality of the tutor-student relationship: closeness and conflict. Specifically, positive, warm relationships between tutors and students were favorably associated with students' growth in school engagement [38] and persistence.[39] After controlling for students' pre-test scores, students whose tutors perceived more positive student-tutor relationships were rated by their teachers as having significantly higher persistence and school engagement than students whose tutors perceived less positive student-tutor relationships, net of pre-test scores (**Figure 14**).

Similarly, there were also significant associations between tutors' perceptions of conflict in the tutor-student relationship and students' development in social competence,[40] reading engagement,[41] and self-control.[42] Students whose

Warm and positive student-tutor relationships were favorably associated with children's development of SEL skills, while student-tutor relationships with conflict were negatively associated with children's development of SEL skills.

Figure 14: Average teacher rating of social-emotional learning (SEL) skills at post-test, by tutor perceptions of student-tutor relationship closeness (*N*=642)

Note: These data are based on students who have matched pre-test and post-test teacher SEL data and spring tutor SEL data. SEL Skills were rated on a 4-point scale (1= *None of the time;* 4=*All of the time)*. More positive, warm relationships were defined as scale scores that fall between 3 and 4, and less positive relationships were defined as scale scores that fall between 1 and 2.9. Source: Child Trends' adapted versions of Reading Partners' Teacher Referral Form and End of Year Teacher Survey and the Tutor Reading Engagement Survey, 2016-2018.

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[37] Given that SEL data were only available for students from a subsample of sites within two regions (Los Angeles and Sacramento), we were unable to estimate multi-level models for these analyses. Accordingly, we estimated path models, controlling for school-level differences by entering a series of dummy-coded variables into the models.
[38] B=.13, SE=.04, p<.01
[39] B=.15, SE=.04, p<.01
[40] B=-.08, SE=.03, p<.01
[41] B=-.13, SE=.04, p<.01
[42] B=-.10, SE=.03, p<.01

tutors perceived more conflict had significantly lower social competence, reading engagement, and self-control at post-test (net of pre-test scores) than students whose tutors perceived less conflict in their student-tutor relationship (**Figure 15**).
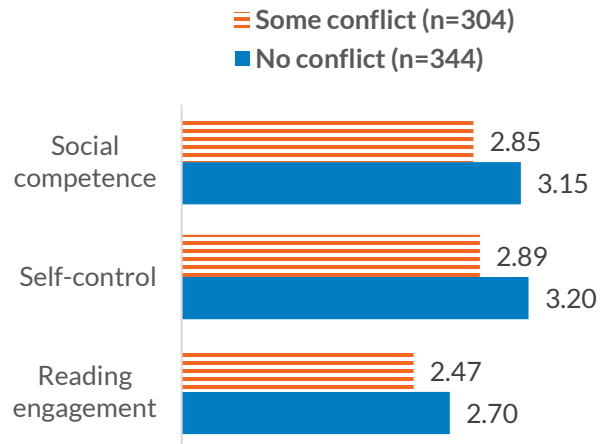
Summary and Conclusions

Reading Partners is successful in recruiting a group of students who are in high need of additional supports in reading—92 percent of students were reading below grade level upon joining Reading Partners, with half of the students scoring in the lowest reading level (Urgent Intervention). Moreover, among students' SEL skills, teachers rated students' reading engagement the lowest at both pre-test and post-test.

Figure 15: Average social-emotional learning (SEL) skills by tutor perceptions of student-tutor relationship conflict (*N*=648)

Note: These data are based on students who have matched pre-test and post-test teacher SEL data and spring tutor SEL data. SEL Skills were rated on a 4-point scale (1= *None of the time;* 4=*All of the time).* Some conflict was defined as conflict scale scores greater than one (none of the time). Source: Child Trends' adapted versions of Reading Partners' Teacher Referral Form and End of Year Teacher Survey and spring Tutor SEL Survey, 2016-2018.

Across both the Star Early Literacy assessment and the Star Reading assessment, nearly 45 percent of students improved their intervention levels by the end of the school year. Approximately 20 percent of students who entered Reading Partners reading below grade level left the program reading at or above grade level—a difference that was statistically significant. Furthermore, excluding school engagement, children made significant gains in all SEL skills (reading engagement, social competence, persistence, and self-control), with the greatest gains occurring in reading engagement.

Consistent differences in children's early literacy and reading emerged among students at different grade levels and students attending reading centers in different regions. Notably, students in upper grade levels tended to be less likely to improve intervention levels and to read at grade level at post-test than their peers at lower grade levels. This conclusion is aligned with the

research base, which finds that reading problems are more persistent among older children,[43] and indicates that this population of Reading Partners participants may be particularly at-risk for poor reading outcomes.

Across all enrollees, more intense participation (pacing) and longer durations in Reading Partners were associated with a greater likelihood of improving intervention levels at post-test. This suggests that students who attend Reading Partners consistently may be benefiting the most. When data were disaggregated by assessment type, inconsistent patterns between dosage and reading and early literacy outcomes emerged. For students who took the Star Early Literacy assessment,[44] the only significant association between dosage and early literacy outcomes was between total sessions attended and the likelihood a student would improve intervention levels.

For students who took the Star Reading assessment, duration was associated with an increased likelihood that they would be reading at grade level and improve their intervention levels at post-test. Additionally, there was a positive association between pacing and the likelihood that students who took the Star Reading assessment would improve intervention levels.

In contrast, there was a significant, negative association between total sessions attended and the likelihood that students who took the Star Reading assessment would improve intervention level. This paints a somewhat unclear portrait of how, among students who took the Star Reading assessment, student dosage is related to improvements in reading. Given that the Star Reading assessment is administered to older students (grades 3-5), and that older students typically experience more challenges with reading, this finding may suggest that different levels of participation are more beneficial for students with different reading needs.

There were no other associations between program dosage and students' development in reading, early literacy, and SEL skills. One reason for this may be that, on average, students attended Reading Partners quite regularly.[45] In fact, more than 75 percent of students met or exceeded the recommended tutoring dosage threshold of 16 hours of tutoring (~21 sessions). In addition, more

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[43] National Institute for Literacy (2008). Developing Early Literacy: Report of the National Early Literacy Panel. Jessup, MD: National Institute for Literacy. https://www.nichd.nih.gov/publications/pubs/documents/NELPReport09.pdf
[44] The Star Early Literacy assessment is administered to students in grades K-3. The Star Reading assessment is administered to students in grades 3-5. The decision to use the Star Early Literacy or Star Reading assessment for third grade students is based upon Reading Partners staff's perception of the students' reading level. As such, third grade students who demonstrate greater reading challenges are typically administered the Star Early Literacy assessment instead of the Star Reading assessment.
[45] See the Student Participation Trends companion brief for more information.

than one third of students were enrolled in Reading Partners for nearly the full school year, and an additional 29 percent were enrolled in Reading Partners for most of the school year (4 to 6 months). This limited variability in student dosage patterns may have hindered our ability to identify consistent patterns between student dosage and student outcomes. Moreover, given that we examined changes in students' Star intervention levels rather than changes in continuous measures such as scale scores or percentile ranks, we may have limited our ability to sensitively assess changes in students reading levels, as some students may have demonstrated improvements through obtaining higher scores at post-test while remaining in their same intervention level.

Students' development in SEL skills across the year was significantly associated with tutors' ratings of student-tutor relationship quality where, in general, relationships characterized by tutors as positive, warm, and conflict-free were associated with gains in students' development of school engagement and persistence. Similarly, there were significant associations between tutor-student relationship quality and students' social competence, reading engagement, and self-control. Students made fewer gains in social competence, self-control, and reading engagement when there were conflicts in their relationships with their tutors.

Ultimately, Reading Partners is reaching students most in need of reading support and engaging them at high levels in terms of attendance and tutoring dosage. Participating in Reading Partners results in more positive outcomes reflected in children's development of SEL skills and growing strength in early literacy and reading.