Literacy First
BRIGHT FUTURES AHEAD

LITERACY FIRST EVALUATION:

AUSTIN ISD IMPACT ANALYSIS

EVALUATED BY

Agile Analytics

AUSTIN, TEXAS

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EXECUTIVE SUMMARY

The vision of the Literacy First program is to ensure that every student in Central Texas will be a successful reader before third grade. To do so, the program serves struggling readers in Grades K, 1, and 2 at Title 1 campuses in the Austin area (30 schools in 2014-15). After being selected for Literacy First tutoring, each student receives daily one-on-one, 30-minute lessons tailored to his or her literacy level and reading needs. Each child continues working with the same tutor until he or she reaches or exceeds program-determined benchmarks on critical reading skills and "graduates" from the program.

Previous work has shown significant, positive effects of the program using internal data collected by Literacy First staff. This report is the first to use external data to examine the short- medium- and long-term effects of participation on student outcomes. Students in the study were in Grades 1 and 2 in 2013-14 and 2014-15. After being paired with a cohort of students with statistically similar reading abilities before they entered the program, data from the DRA and TPRI reading assessments, STAAR, Special Education status, and attendance were collected until 2016-17.

OVERALL

Literacy First has strong effects on:

- Student reading skills, especially as measured by the DRA and TPRI reading assessments

- Retention – students in Literacy First are more likely to be promoted on time

SHORT TERM EFFECTS

Differences between Literacy First and matched comparison students at the End of Year (EOY) of service

- Higher scores on the Developmental Reading Assessment (DRA) at EOY for all four cohorts
- Less likely to be flagged as below grade level on DRA at EOY for three of four cohorts.
- Fewer errors on the Texas Primary Reading Inventory (TPRI) at EOY
- Grade 1 2014-15 cohort had higher TPRI Story 2 total scores, and more likely to meet the benchmarks for both stories

MEDIUM TERM EFFECTS

Differences between Literacy First and matched comparison students on DRA/TPRI the year after service, able to be assessed for students who were in the Grade 1 2013-14 and 2014-15 cohorts

- Higher DRA scores at Beginning of Year (BOY)
- Even higher DRA scores at EOY – gap in performance widened for both cohorts
- Fewer errors on TPRI at BOY and EOY
- Grade 1 2014-15 Cohort had higher TPRI Story 1 total scores and were more likely to meet the benchmark for Story 1
- More Literacy First students were promoted to Grade 2 on time in both cohorts (as indicated by TPRI grade level)

LONG TERM EFFECTS

Differences between Literacy First and matched comparison students one to two years after service

- Students in the Grade 1 2014-15 Cohort had higher STAAR Grade 3 Reading Scale Scores and were more likely to meet the standard than their peers (75% vs 61%).
- Students in the Grade 2 2013-14 Cohort were less likely to be in Special Education.

Literacy First
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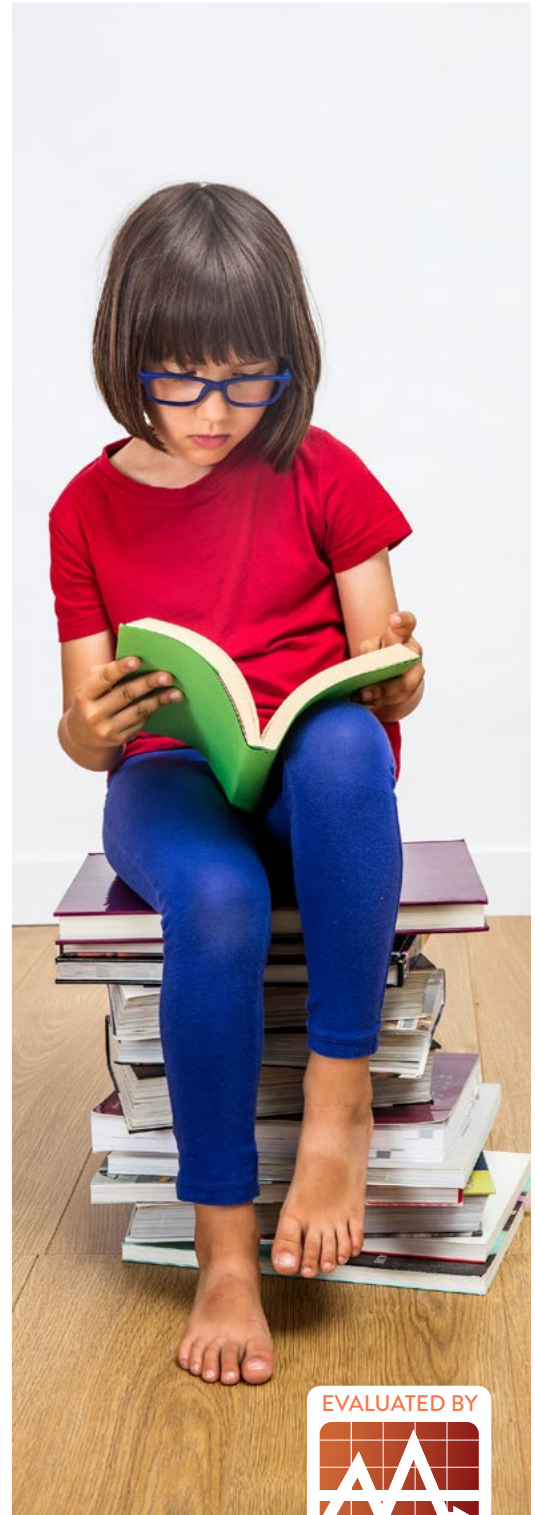
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INTRODUCTION

An increasing body of research is indicating that early reading skills are critical to student success. Students who have low literacy achievement tend to have more behavioral and social problems, be retained, and drop out of school. In fact, the National Research Council has found that high school graduation can be predicted by reading skills at the end of third grade. Students who are not at least moderately skilled at reading at this point are much less likely to graduate from high school.

Low income students have disproportionately poor reading skills – over half of students who attended high-poverty schools were not even at the 'basic' level on the 2009 National Assessment of Educational Progress, and only 15% were 'proficient' readers. Unfortunately, gaps often increase because low-income students are more likely than their peers to have chronic absences, stressors like food and housing insecurity, mobility, and to attend under-resourced schools.

Literacy First's vision is for every student in Central Texas to be a successful reader before the beginning of third grade. The program serves students in Grades K, 1, and 2 at Title 1 campuses in the Austin area (30 schools in 2014-15). Benchmark assessments of critical skills are given to every child in Literacy First campuses at the beginning, middle, and end of year. Students who fall below these benchmarks are eligible to begin the program.

After being selected for Literacy First tutoring, each student receives daily one-on-one, 30-minute lessons tailored to his or her literacy level and reading needs. Each child continues working with the same tutor until he or she reaches or exceeds program-determined benchmarks on critical reading skills and graduates from the program. Students are tutored by AmeriCorps members -- recent college graduates and other community members who commit to a one-year service term. Many are recent college graduates, but members are all ages and from all walks of life. In 2014-15, there were 104 AmeriCorps members and 30 schools in the Austin area served.

Many students who enter the program are more than one grade level behind in reading skills. Overall, 80% of the children served throughout the year made significant, measurable progress in their reading skills. About half of these students (~43% overall) graduated from the program (indicating they were scoring at or above grade level on standardized reading tests). That is, overall, the majority of students closed or worked to close the reading achievement gap.

The purpose of this report is to determine the short-, medium-, and long-term impacts of the Literacy First program on students in Austin ISD. To do so, we matched graduates of the program with students in other similar schools who had similar reading skills at the beginning of the year. We then examined changes in district-administered reading assessments (i.e., DRA and TPRI) during the year of service and the year after service. Next, we examined the long-term effects of participation on STAAR scores, retention, and identification in the Special Education program.

DATA & ANALYSES

Data for over 15,000 AISD students in grades K, 1, and 2 were collected (11,620 comparison and 3,440 Literacy First Students) These data included demographics, attendance, reading assessment scores, and STAAR scores.

Graduates of Literacy First were matched to similar students using Propensity Score Matching. Students were selected to be in the matched comparison group if they were statistically similar to Literacy First graduates on the DRA and TPRI at the beginning of the year.

Initially, we planned to examine outcomes for students at all three grade levels. However, we were not able to obtain a consistent set of TRPI and DRA data for students in Grade K at the beginning of the year. In particular, Kindergarten students do not take the DRA assessment until midyear. Therefore, it was not possible to create a balanced sample.

Analyses conducted in this report are primarily t-tests and chi-squared analyses. Detailed results are available on request. In addition to p-values for significant results, we also report Cohen's d values as a measure of effect size.

WHAT ARE TPRI AND DRA?

TPRI and DRA are the two elementary school reading assessments that were administered by Austin ISD teachers in 2013-14 and 2014-15.

Texas Primary Reading Inventory (TPRI) is an early reading assessment designed to identify the reading development of students in kindergarten through third grade. This diagnostic instrument is an easy to use one-on-one assessment which helps teachers to identify students at risk in reading and to provide targeted instruction so that students improve as readers. The TPRI benchmark assessment is typically given at the beginning, middle, and end-of-year.

Development Reading Assessment (DRA) is an oral reading task that provides teachers with a method for assessing and documenting kindergarten through third-grade students› development as readers over time. Its purpose is to identify students' reading level, defined as a text on which students meet specific criteria in terms of accuracy, fluency, and comprehension. The assessments are conducted one-on-one, using a set of leveled texts, which increase in difficulty.

Our Sample						
Year	Grade	Comparison	Served by Literacy First	Graduated Literacy First	In Literacy First Sample	Matched Comparison
2013-14	1	1934	574	258	254	254
	2	1896	406	197	192	192
2014-15	1	1860	542	218	213	213
	2	1788	420	169	158	158
Total		7478	1942	842	817	817

First we examined the rate of growth on reading assessments during the year students recieved Literacy First services. Previous evaluations of Literacy First have shown that participants increase decoding and reading fluency as determined by internal assessments. This study examined scores for both participants and non-participants on DRA and TPRI, which are both administered by school teachers unaffiliated with Literacy First. The matched comparison group was created so that at the beginning of the year, all student variables were statistically the same. Differences at the end of the year suggest causal effects of the Literacy First intervention on student outcomes. That is, if Literacy First students' scores on reading assessments were higher than those of their peers at end of year, we can assume that program participation caused the difference.

To assess the short term outcomes of the program, we compared scores for Literacy First graduates and students in the matched comparison groups on DRA and TPRI at the end of the school year. We also examined student attendance (percentage of days attended), to see if participation in the program encouraged students to come to school.

GRADE 1 2013-14 COHORT

DRA

Literacy First Grade 1 2013-14 Cohort students had the same scores on the DRA at the beginning of the year (BOY) as students in the matched comparison group. The majority of students (62%) in both groups were flagged as having a low DRA score (defined by the district in 2013-14 as a score of 3 or below). The average score for students was 3.6.

By the end of year (EOY), scores for both groups increased. Literacy First students had significantly higher average DRA scores than students in the matched comparison group (16.4 vs 15.5, p=.05, d=.17). The same proportion of students in both groups (31%) were flagged as having a low DRA score at EOY.

Despite starting with the same DRA score average at BOY, **Literacy First Grade 1 2013-14** Cohort students had higher average DRA EOY scores than students in the **matched comparison group**.
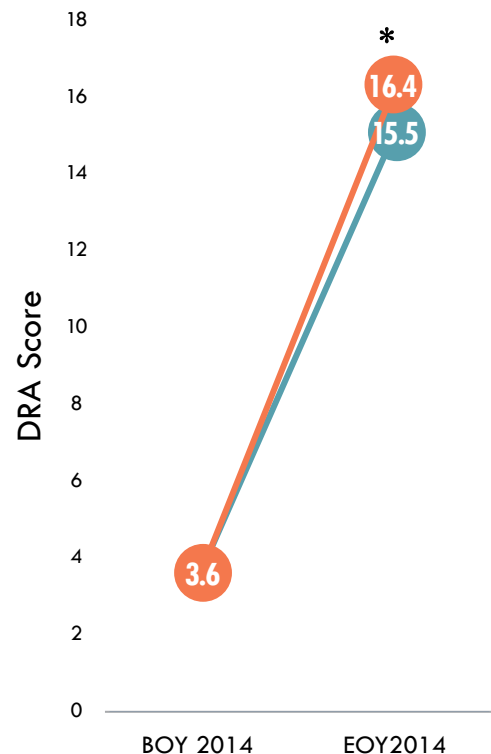
TPRI

On TPRI, there were three items measured for two stories (a total of six items): the total score, the student's status, and the number of errors made. There was only one significant difference between the groups at End of Year (EOY). By EOY, Literacy First students made significantly fewer errors on Story 1 (3.4 vs 4.4, $p < .01$, $d = .29$).

ATTENDANCE

There were no significant differences in attendance between Literacy First participants and students in the matched control sample. Overall, students attended about 96% of available days.
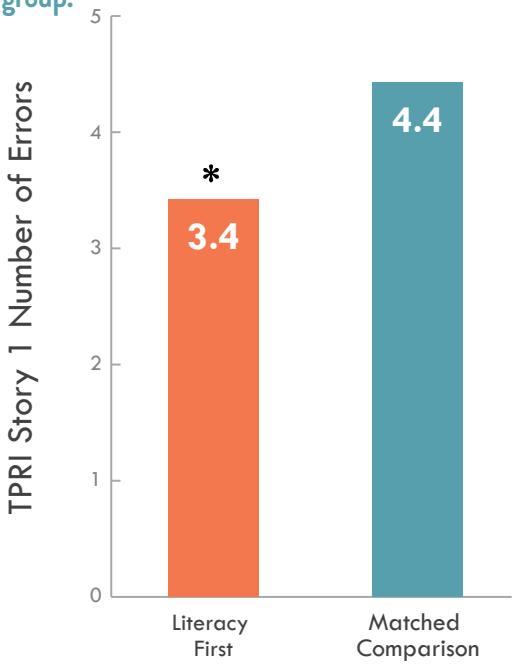
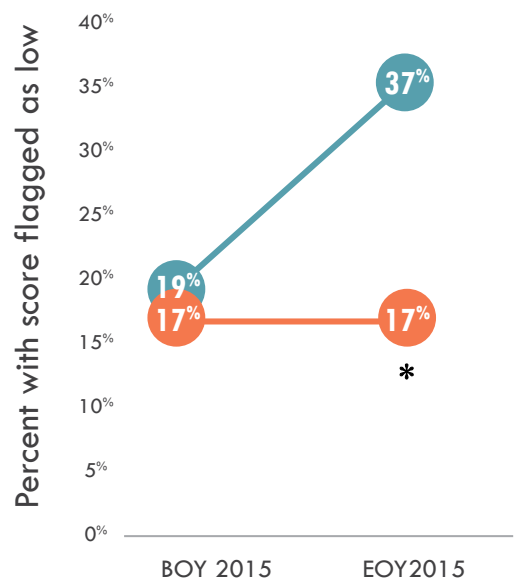## GRADE 1 2014-15 COHORT

DRA

At Beginning of Year (BOY), students in both groups had an average score of 3.9 on the DRA. Fewer students were classified as being below grade level (only 18%) in both groups, but this was due to a change in the criteria to be considered below grade level by the district. In 2014-15, students who scored 2 or below were considered 'below grade level' and those who scored a 3 were considered to be on track. If the same criteria from the prior year was used, 53% of students were below grade level in 2014-15, still slightly lower than the previous cohort (63%).

By End of Year (EOY), scores for both groups improved, but DRA scores for Literacy First Grade 1 2014-15 cohort students were significantly higher than those of the matched comparison group (17.3 vs 15.5, $p < .001$, $d = .42$). Additionally, the percentage of students considered below grade level at EOY (DRA score below 16) had risen dramatically for the matched comparison group, but not for Literacy First students. At EOY, only 17% of Literacy First students were below grade level - less than half of the proportion of students in the matched comparison group (37%). This difference was significant ($p < .001$, $w = .24$)

Despite starting with the same TPRI scores at BOY, **Literacy First Grade 1 2013-14** Cohort students made fewer errors on TPRI Story 1 at EOY than students in the **matched comparison group.**


Despite starting with the same DRA score average at BOY, **Literacy First Grade 1 2014-15** Cohort students were less likely to have their score flagged as low than students in the **matched comparison group.**

TPRI

The EOY results for TPRI revealed similarly strong differences as those for DRA. There were significant differences on five of the six potential areas. First, over 90% of students in the Literacy First Grade 2 2014-15 cohort met the benchmark for Story 1 (91%) compared to only 79% for the matched comparison group ($p < .01$, $w = .16$). And, 58% of Literacy First students met the more challenging Story 2 benchmark compared to only 42% of the comparison students ($p < .001$, $w = .16$). See Figure below.

Literacy First Grade 1 2014-15 Cohort students were more likely to meet the benchmark for both TPRI stories than students in the **matched comparison group.**
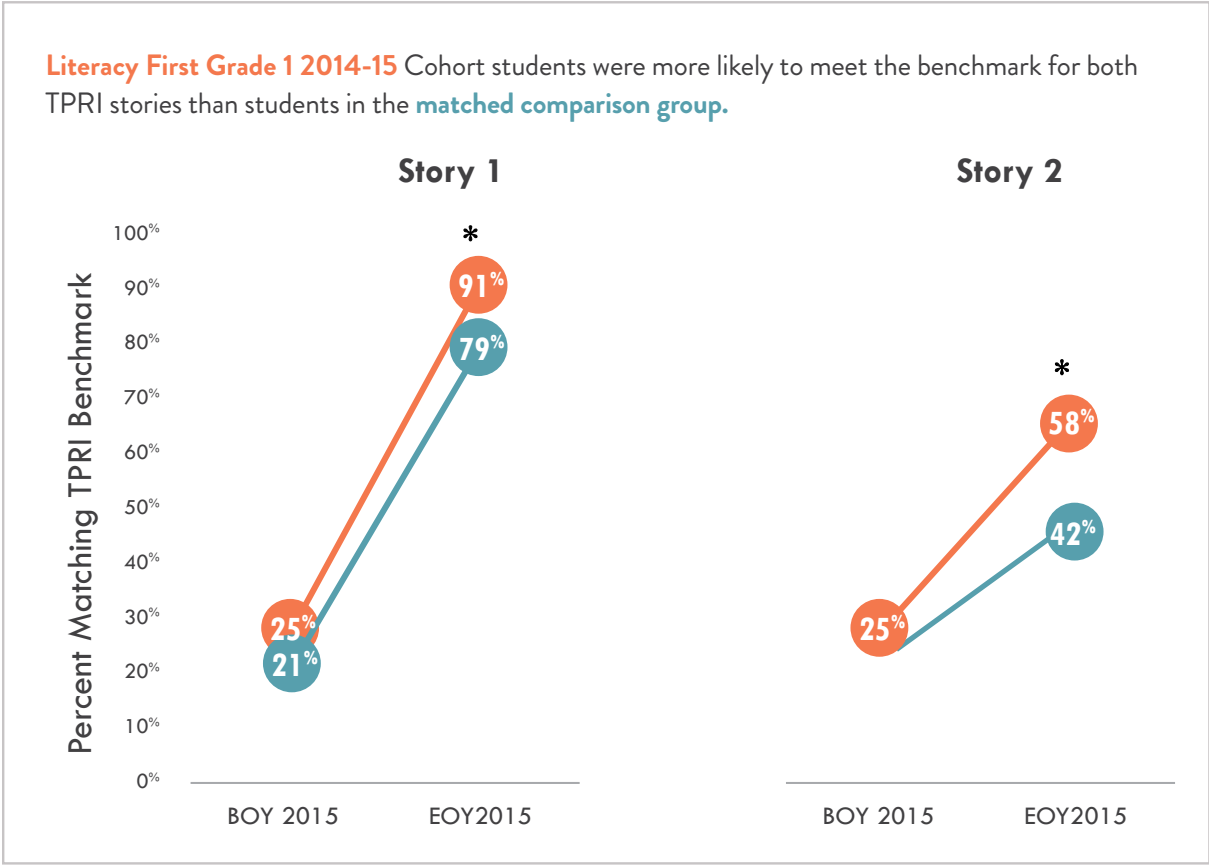
Additionally, Literacy first students had fewer errors on Story 1 at EOY (3.1 vs 4.0, $p < .001$, $d = .41$) and Story 2 (4.1 vs 5.7, $p < .01$, $d = .34$). Finally they had higher overall scores on Story 2 (5.6 vs 4.9, $p < .001$, $d = .33$). There was not a difference in overall score for Story 1.

ATTENDANCE

There were no significant differences between groups in terms of the percentage of days attended. Overall, the attendance rate was 96% for students in both groups.

DRA

At Beginning of Year (BOY) in 2013-14, Grade 2 students in Literacy First and the matched comparison group had the same DRA average of 14.9. The majority (64%) of students in both groups were considered below grade level (i.e., DRA score of below 16). By End of Year (EOY) both groups of students had large increases in score. Literacy First students, however, had higher EOY scores than students in the matched comparison (26.9 vs 24.9, $p < .01$, $d = .33$). Additionally, fewer students in Literacy First were flagged as having a 'low' EOY DRA score (below 26) than students in the matched comparison group (37% vs 48%, $p < .05$, $w = .11$)

TPRI

On TPRI, there was only one EOY difference (of six variables examined) between Literacy First and matched comparison students. Literacy First students made fewer errors on Story 2 than their counterparts (3.2 vs 3.9, $p = .05$, $d = .20$). There were no differences in the total scores for either story or for meeting the TPRI benchmark at EOY. Overall, 70% of students met the benchmark for Story 1 and 82% met the benchmark for Story 2.

ATTENDANCE

There were no significant differences between groups in terms of the percentage of days attended. Overall, the attendance rate was 96% for students in both groups.

Literacy First Grade 2 2013-14 Cohort students had higher EOY DRA scores than the **matched comparison group.**

DRA
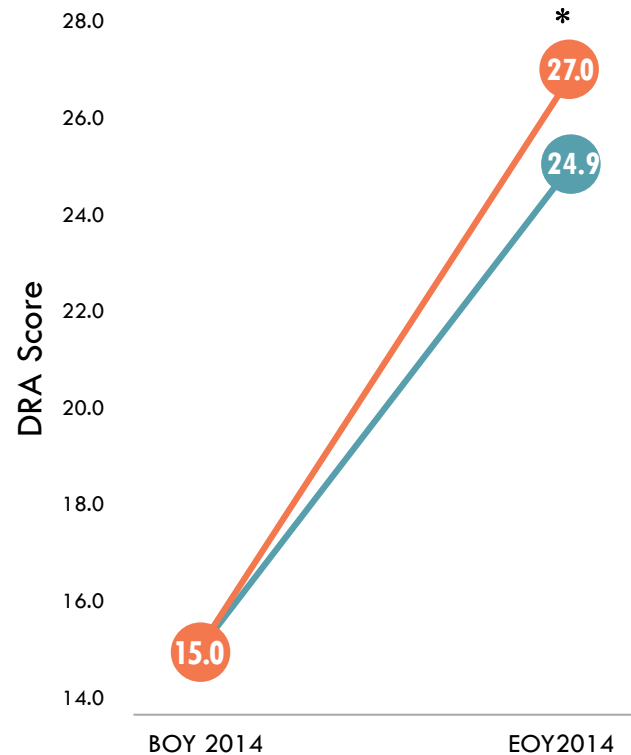
At the Beginning of Year (BOY), students in both the Literacy First Grade 2 2014-15 Cohort and the matched comparison had average DRA scores of 14.4. About half of students (48%) in both groups were flagged as being below grade level. The district changed the standard for being below grade level for Grade 2 as for Grade 1 in 2014-15. For Grade 2, the standard changed from 16 or below to 14 or below. When using the previous benchmark, about 61% of students in both groups would have been flagged as having a score that was below grade level.

By the End of Year (EOY), students in Literacy First had significantly higher DRA scores than their counterparts (27.0 vs 24.9; $p < .05$, $d = .36$). They were also significantly less likely to be flagged as being below grade level at EOY (a DRA score of 24 or below) than students in the matched comparison (31% vs 43%, $p < .05$, $w = .12$)
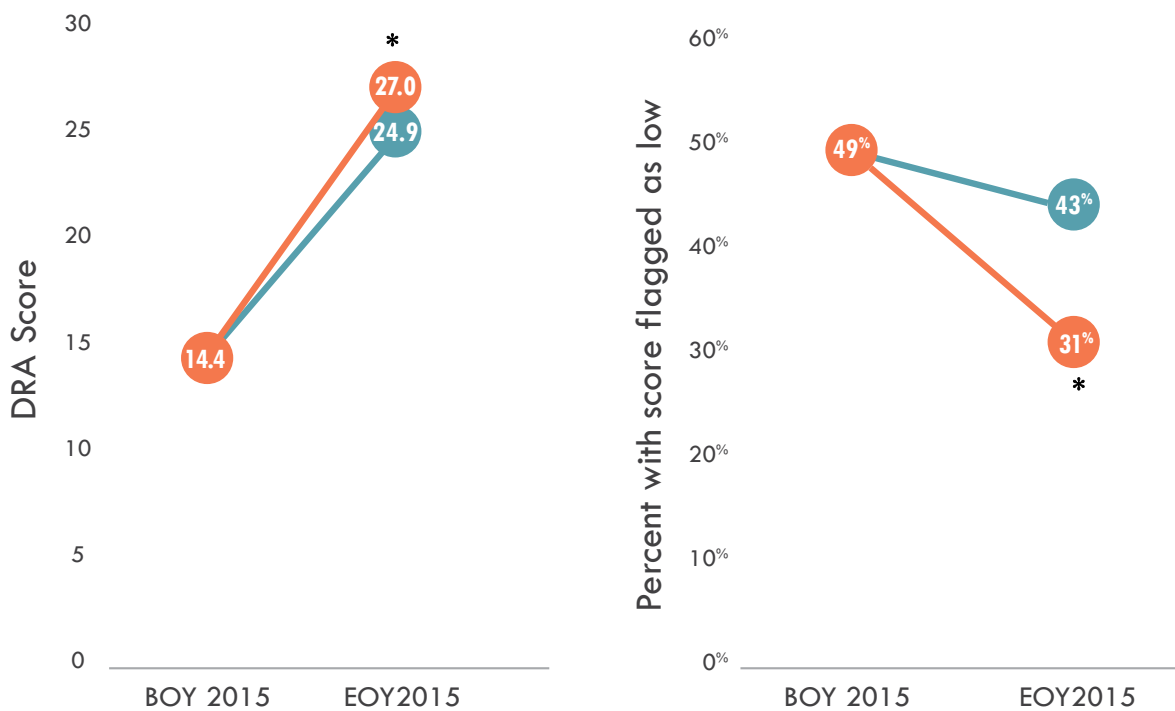
Despite starting with the same DRA score average at BOY, **Literacy First Grade 2 2014-15** Cohort students had higher average DRA EOY scores and were less likely to have their score flagged as low than students in the **matched comparison group.**

TPRI

On TPRI, there were two significant differences between the Grade 2 Literacy First 2014-15 cohort and matched comparison students (of six possible). Literacy First students made significantly fewer errors on both Story 1 and Story 2 at EOY than students in the matched comparison group ($p < .001$ and $p < .01$; $d = .44$ and $d = .34$, respectively). There were no significant differences in total score or in the percentage of students who met the standard for TPRI. On average, 70% of students met the standard for Story 1 and 79% for Story 2.
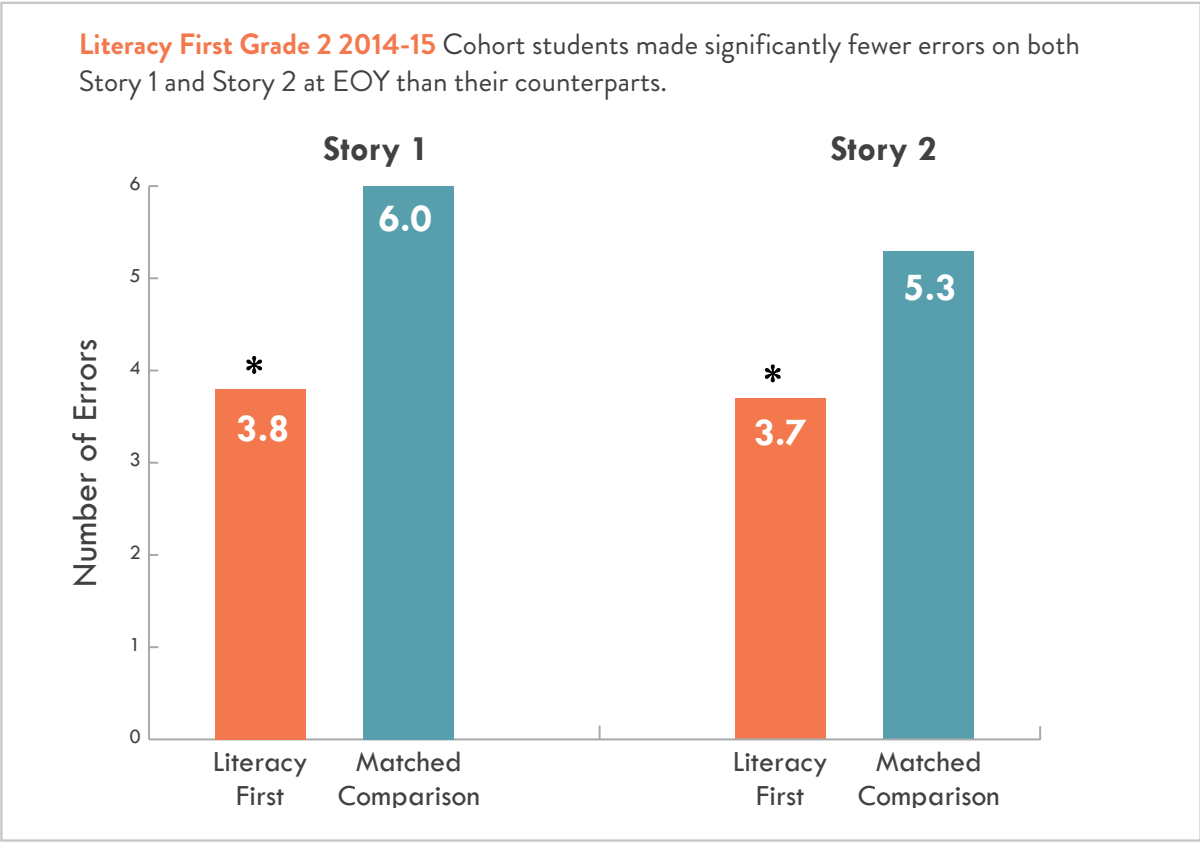
Literacy First Grade 2 2014-15 Cohort students made significantly fewer errors on both Story 1 and Story 2 at EOY than their counterparts.

ATTENDANCE

There were no significant differences between groups in terms of the percentage of days attended. Overall, the attendance rate was 96% for students in both groups.

SUMMARY: SHORT TERM OUTCOMES

There were clear short-term benefits to participation in Literacy First across all four cohorts. Results were most consistent for DRA scores – despite having statistically the same DRA scores at BOY, students in every Literacy First cohort had higher EOY DRA scores than their counterparts in the matched comparison. In all cohorts but the Grade 1 2013-14 cohort, they also were less likely than their peers to have an EOY score that was flagged as being below grade level.

TPRI Scores were less consistent, but there was at least one significant difference in each cohort at EOY that favored students who participated in Literacy First. In all four cohorts, Literacy First students made fewer errors on Story 1, Story 2, or both. Additionally, in the Grade 1 2014-15 cohort, Literacy First students had higher total scores on Story 1 and were more likely to meet the TPRI benchmark on both Story 1 and Story 2.

In the previous section, it was clear that Literacy First had an impact on the reading assessment scores of its students in the same year. Would those effects carry to subsequent years? We were able to obtain DRA and TPRI data from the next year for most of the students in the Grade 1 cohorts (82% and 86% of students for the 2013-14 and 2014-15 cohorts, respectively). In addition to scores on the assessments, we also examined data about students' grade level the subsequent year (i.e., 2014-15 for students in the 2013-14 cohort and 2015-16 for students in the 2014-15 cohort).
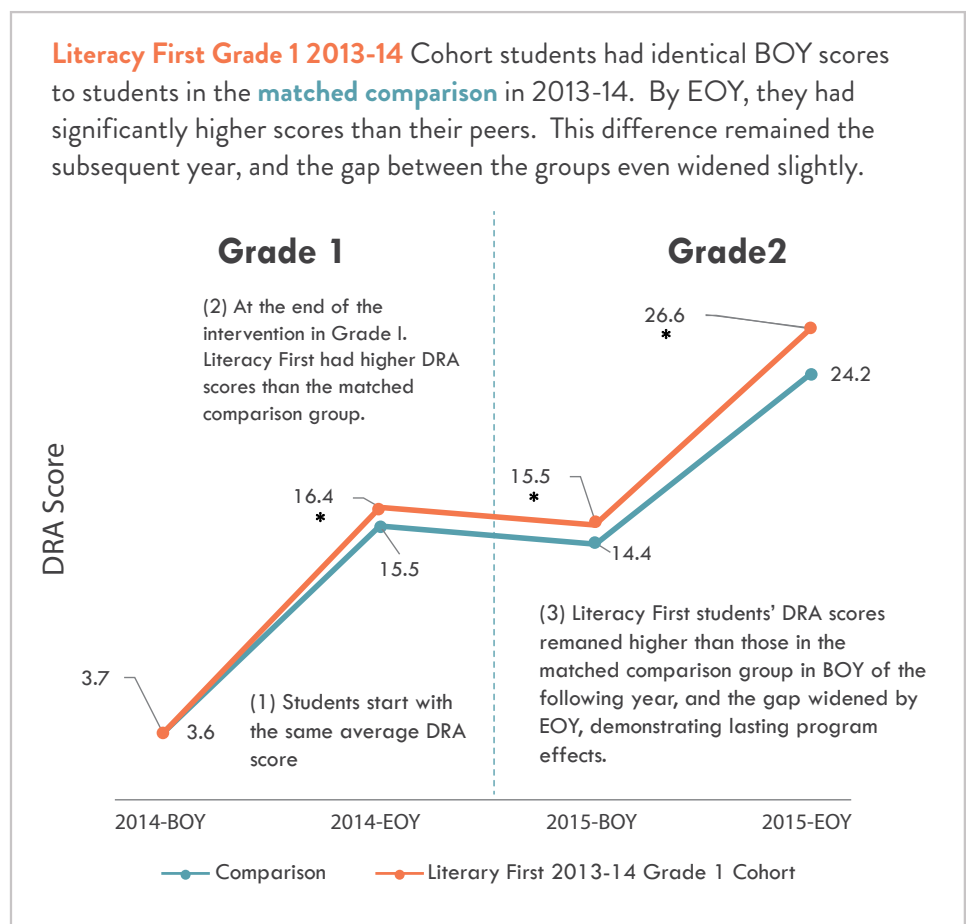
DRA and TPRI were not administered consistently in Grade 3. Only a few students in both Literacy First Grade 2 cohorts (and their respective comparisons) took the assessments. Therefore, we were not able to examine medium-term outcomes on DRA and TPRI for students in the Grade 2 2013-14 and Grade 2 2014-15 cohorts.

GRADE 1 2013-14 COHORT

DRA

Literacy First students in the Grade 1 2013-14 Cohort had higher scores at EOY 2013-14 on the DRA than students in the matched comparison group (16.4 vs 15.5). This difference remained at the beginning of the next school year (15.5 vs 14.4, p=.05, d=.17). Students in both groups lost an average of one DRA level between years. This "summer loss" has been well documented (see Atteberry & McEachin, 2016, for a recent review) and particularly affects low-income and minority students.

At the end of the school year, students' DRA scores had increased substantially. Interestingly, despite the fact that Literacy First students were no longer being served by the program, their DRA scores not only remained higher than their peers, but the gap actually increased significantly (26.6 vs 24.2, p<.001, d=.33), indicating longer term effects of the program.

Literacy First Grade 1 2013-14 Cohort students had identical BOY scores to students in the **matched comparison** in 2013-14. By EOY, they had significantly higher scores than their peers. This difference remained the subsequent year, and the gap between the groups even widened slightly.

Grade 1 / Grade 2

(2) At the end of the intervention in Grade I. Literacy First had higher DRA scores than the matched comparison group.

(1) Students start with the same average DRA score

(3) Literacy First students' DRA scores remaned higher than those in the matched comparison group in BOY of the following year, and the gap widened by EOY, demonstrating lasting program effects.

3.7
3.6
16.4 *
15.5
15.5 *
14.4
26.6 *
24.2

DRA Score

2014-BOY   2014-EOY   2015-BOY   2015-EOY

— Comparison   — Literary First 2013-14 Grade 1 Cohort

TPRI

At EOY in 2013-14, students in the Literacy First Grade 1 2013-14 Cohort made fewer errors on TPRI Story 1. This same trend held true at BOY the subsequent school year. Literacy First students made significantly fewer errors than students in the matched comparison (8.3 vs 9.9, *p*<.05, *d*=.21). At EOY, there was no longer a difference between the number of errors made on Story 1. However, Literacy First students now made significantly fewer errors on Story 2 (*p*<.05, *d*=.25). There were no significant differences between the groups on total score on TRPI status.

RETENTION

Finally, there appeared to be an effect of Literacy First on retention, as measured by grade level of TPRI testing in the subsequent school year. All students who had graduated from Literacy First were promoted to Grade 2 in the year after service. However, 7% of students in the matched comparison group were retained (16 of 220 students). As the state of Texas must pay for each additional year of schooling for retained students, this represents a potential cost savings to the state of over $135,000. Given a cost estimate of $8,459 per year per student[1] within Austin ISD, translating to a cost savings of $135,000 for the state of Texas for graduates of Literacy First for an additional year of schooling, in addition to savings for both the state and district for remedial programming.
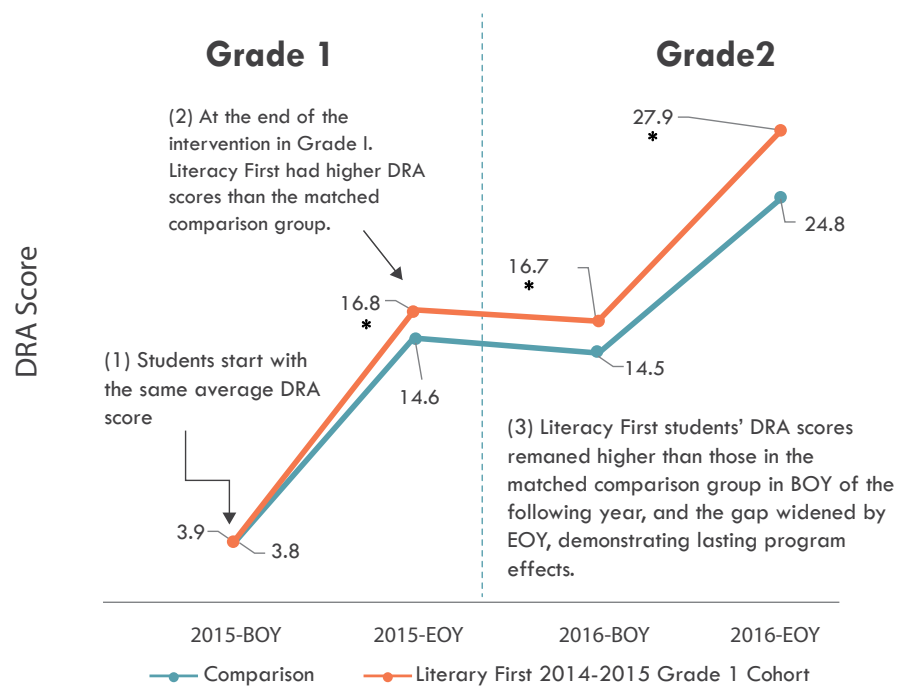
<div style="background:#EF7B52;color:white;text-align:center;padding:8px;">GRADE 1 2014-15 COHORT</div>

DRA

Literacy First students in the Grade 1 2014-15 Cohort continued to have higher DRA scores at the beginning of the year in 2015-16 (when they were in Grade 2) than students in the matched comparison group (16.8 vs 14.6, *p*<.001, *d*=.42). About the same proportion in both groups had their scores flagged as 'low' (17%).

Similar to the 2013-14 cohort, the difference between groups actually increased over the course of Grade 2, with Literacy First students ending the year more than three DRA levels above students in the matched comparison group (27.9 vs 24.8, *p*<.01, *d*=.43). In 2016, the district did not record whether students were 'low' on DRA at EOY. However, the majority of students in both groups did not

Literacy First Grade 1 2014-15 Cohort students started with almost identical DRA scores to students in the **matched comparison** group. After being served by the program, scores were significantly higher than their peers, and remained higher through the end of second grade.

Figure: DRA Score line graph comparing Comparison and Literary First 2014-2015 Grade 1 Cohort across Grade 1 and Grade 2.

(1) Students start with the same average DRA score

(2) At the end of the intervention in Grade I. Literacy First had higher DRA scores than the matched comparison group.

(3) Literacy First students' DRA scores remaned higher than those in the matched comparison group in BOY of the following year, and the gap widened by EOY, demonstrating lasting program effects.

Data points: 2015-BOY: 3.9 / 3.8; 2015-EOY: 16.8* / 14.6; 2016-BOY: 16.7* / 14.5; 2016-EOY: 27.9* / 24.8

reach the standard criteria of reaching level 28 or higher (63% of Literacy First students, and 83% of students in the matched comparison group, χ^2 = 13.8, p <.01, w=.25).
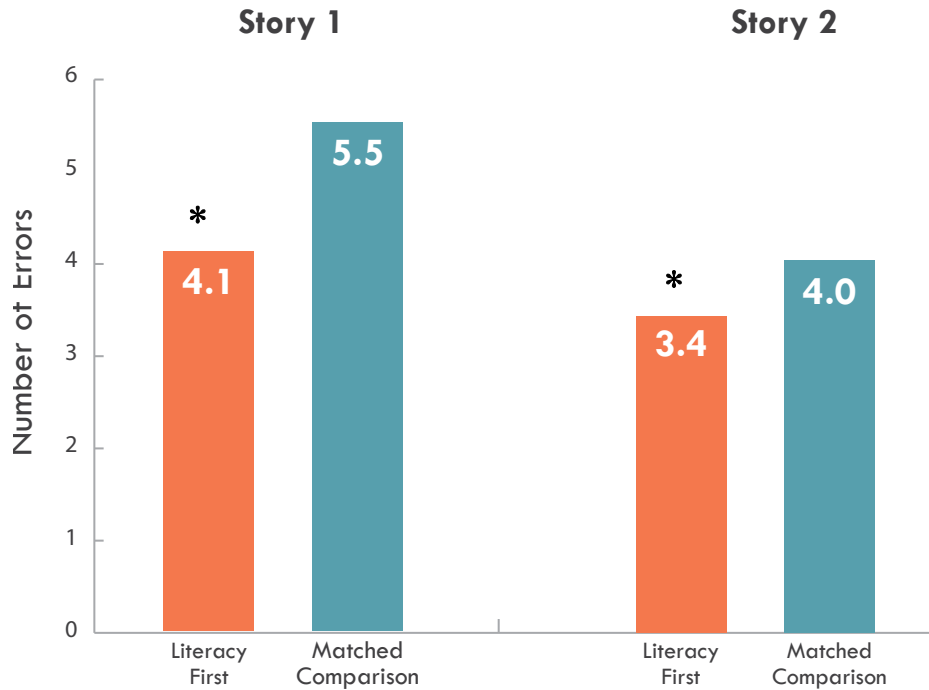
TPRI

There were only two significant differences (of six possible) between Literacy First students and their peers at the Beginning of Year (BOY) for TPRI the year after service. Literacy First students made fewer errors on Story 1 than students in the matched comparison (9.9 vs 7.8, p <.01, d =.28). Second, they had marginally higher total scores on Story 1 (5.3 vs 5.0, p = .05, d = .22).

At End of Year (EOY), there were four items with differences. First, Literacy First students made fewer errors on both Story 1 (4.1 vs 5.5, p <.01, d= .29) and Story 2 (3.4 vs 4.0, p <.01, d=.31). Second, they had higher total scores on Story 1 (6.2 vs 5.8, p <.05, d = .27). Finally, Literacy first students were more likely to meet the EOY benchmark on Story 2 than their counterparts (91% vs 77%, p <.001, w = .20).

Literacy First Grade 1 2014-15 Cohort students made significantly fewer errors at BOY 2015-16 on TRPI Story 1 than the **matched comparison**.
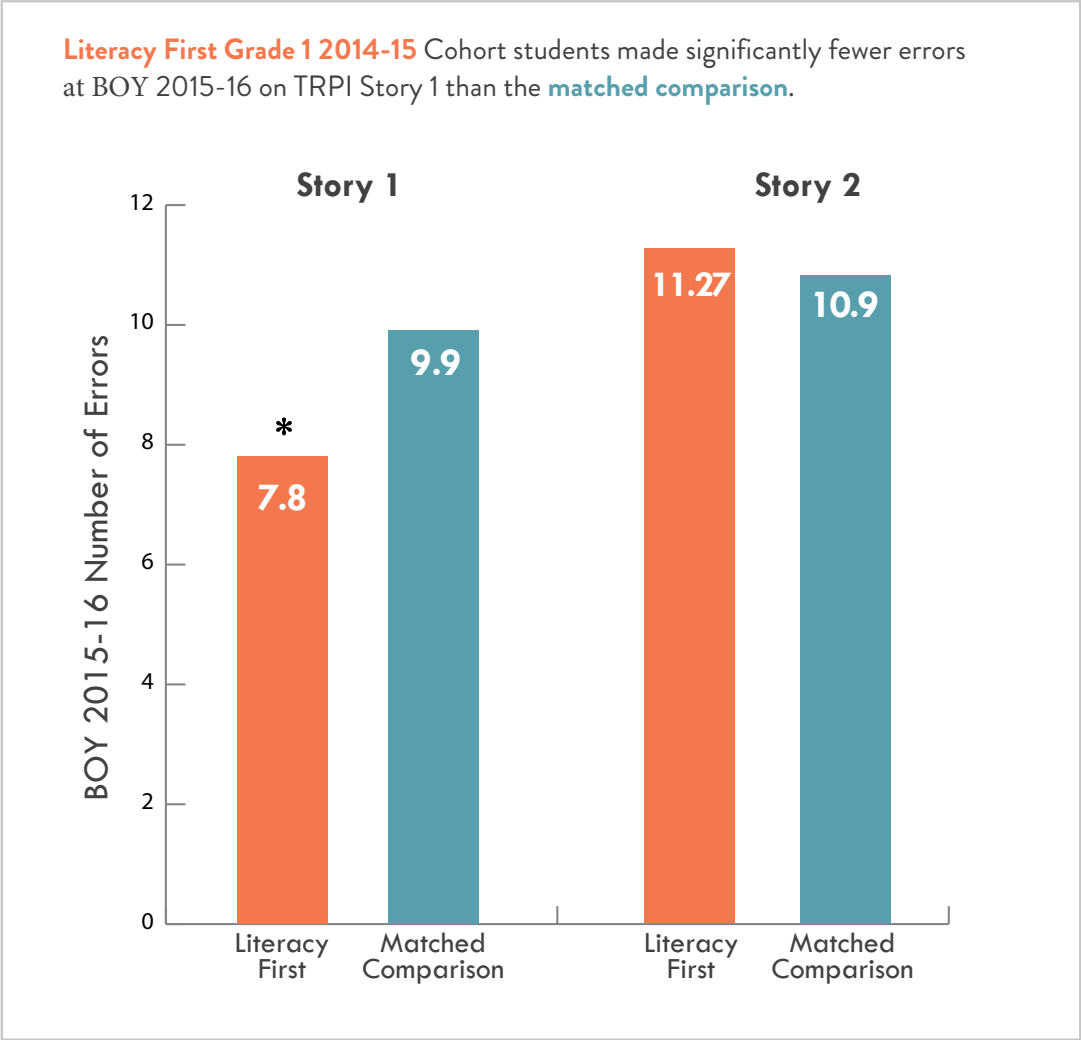
Literacy First Grade 1 2014-15 Cohort students made fewer errors on TPRI at EOY than students in the **matched comparison** on **both** Story 1 and Story **2**.

Story 1   Story 2

Number of Errors

	Story 1			Story 2	
	Literacy First (*)	Matched Comparison		Literacy First (*)	Matched Comparison
	4.1	5.5		3.4	4.0

RETENTION

There was a marginal effect of Literacy First on retention as measured by TPRI grade level data, (p = .08, d = .20). Ninety-nine percent (99%) of Literacy First students were in Grade 2 at BOY 2015-16, compared to only 96% of students in the matched comparison group. Specifically, two students were retained from the Literacy First cohort, and seven students were retained in the matched comparison group.

SUMMARY: MEDIUM TERM OUTCOMES – DRA AND TPRI

The evidence that Literacy First had longer term effects on DRA and TPRI scores for students who participated in Grade 1 in 2013-14 and 2014-15 was fairly strong. First, there was a consistent difference in DRA scores: Literacy First students maintained higher scores than their peers at the beginning of the year after service. And, for both cohorts, at end of year, the gap between the two groups widened, supporting the theory that intervention in first grade is critical for future reading success.

We found fewer medium term effects for TPRI, but there were still some significant differences. First, in the Grade 1 2013-14 Cohort, we found that students in Literacy First made fewer errors on Story 1 at Beginning of Year (BOY) and on Story 2 at End of Year (EOY). In the Grade 1 2014-15 Cohort, we found that Literacy First students made fewer errors on Story 1 at BOY and EOY, and Story 2 at EOY. Additionally, they had higher total scores on Story 1, and were more likely to meet the benchmark for Story 2 than their peers.

Finally, we saw some evidence that participation in Literacy First might decrease retention: in the Grade 1 2013-14 cohort, all of the students in Literacy First had a TPRI grade level of 2 listed in 2014-15, compared to only 95% of students in the matched comparison group, and in the Grade 1 2014-15 cohort, 99% of students in Literacy First had a TPRI grade level of 2 listed, compared to only 96% of students in the matched comparison group. In total, Literacy First had 21 fewer students that were retained in this grade level, resulting in a minimum cost savings to the state of $177,639. [2]

LONG TERM OUTCOMES

Next, we examined long term outcomes of the program. First, we were interested to examine differences in performance on the State of Texas Assessments of Academic Readiness (STAAR).

In Grade 3, students take the Reading and Mathematics STAAR assessments. In Grade 4, students take Reading, Mathematics, and Writing. In Grade 5, students take Reading, Mathematics, and Science (we did not obtain Science scores, however). The chart to the right shows what STAAR exams each cohort took.

We also examined Special Education status in 2016-17 as a way of determining long term outcomes. That is, we theorized that participation in Literacy First may serve to keep a few students out of Special Education services.

Percentage of students in the sample with STAAR data and tests taken

	Percent with Data	2015 STAAR	2016 STAAR	2017 STAAR
Grade 1 2013-14	70%	---	Grade 3 Math Reading	Grade 4 Math Reading Writing
Grade 1 2014-15	72%	---	---	Grade 3 Math Reading
Grade 2 2013-14	79%	Grade 3 Math Reading	Grade 4 Math Reading Writing	Grade 5 Math Reading
Grade 2 2014-15	86%	---	Grade 3 Math Reading	Grade 4 Math Reading Writing

GRADE 1 2013-14 COHORT

STAAR

Students in the Grade 1 2013-14 cohort were in Grade 3 in 2015-16 and Grade 4 in 2016-17. We were able to compare scale scores and passing information for 70% of students in the sample.

There were no differences in STAAR scale scores or passing rates between Literacy First and matched comparison students at either grade level. On average, 59% of students passed STAAR Reading in Grade 3, and 57% passed in Grade 4. Fifty-one percent (51%) of students passed STAAR Writing in Grade 4.

SPECIAL EDUCATION

There was not a significant difference in Special Education status between the two groups in 2016-17. On average, 6% of students in both samples participated in Special Education.

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[2] Source – Austin ISD Budget https://www.austinisd.org/sites/default/files/dept/budget/docs/FY2017_Austin_ISD_Official.pdf
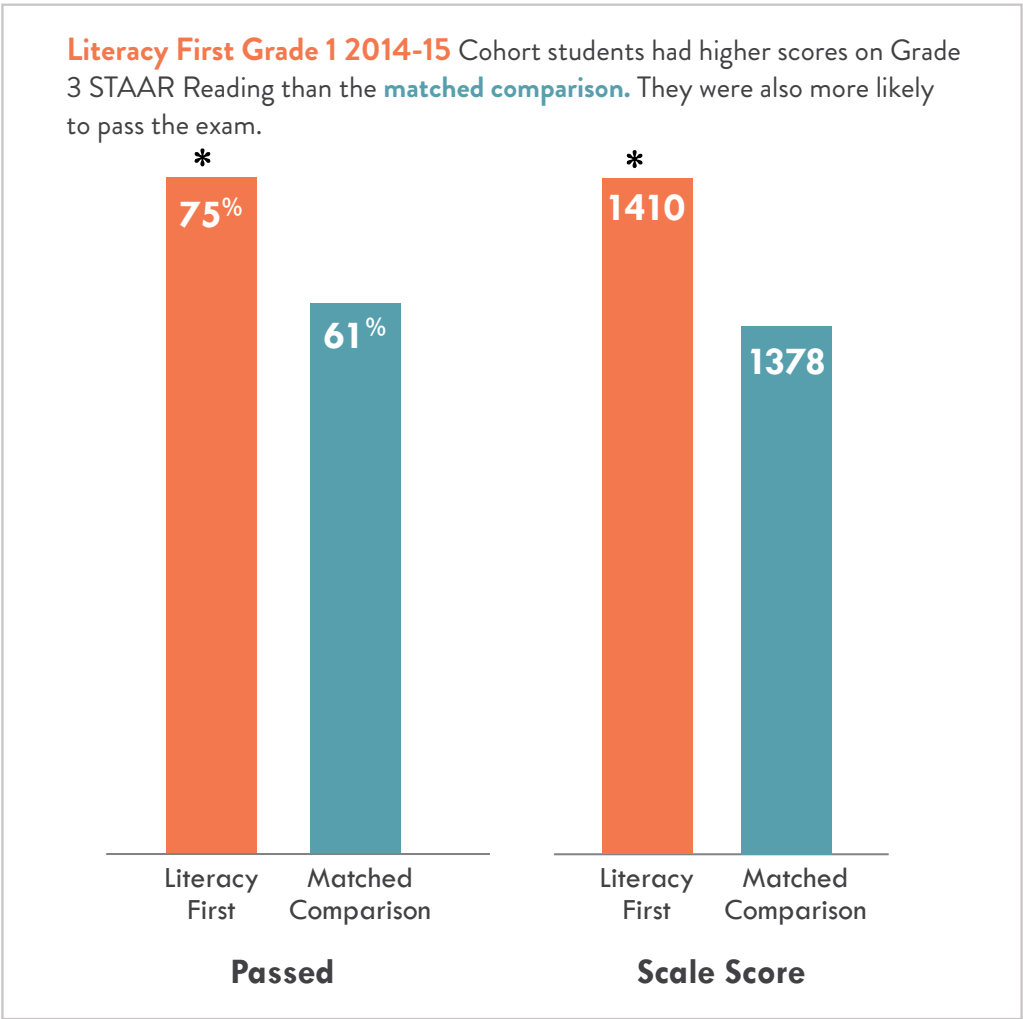
RETENTION

There was a marginally significant difference between Literacy First students and students in the matched comparison in terms of retention as measured by the grade level of STAAR test taken in 2016-17. More students in Literacy First took the Grade 4 STAAR assessments than their peers (96% vs 91%, p = .07, d = .21), indicating that they were marginally more likely to be in Grade 4 than their peers.

GRADE 1 2014-15 COHORT

STAAR

Students in the Grade 1 2014-15 cohort were in Grade 3 in 2016-17. We were able to obtain STAAR Reading and Mathematics scores for 72% of students in the sample. There was a significant difference between Literacy First and matched comparison students on STAAR Reading. Literacy First Grade 1 2014-15 Cohort students had higher Scale Scores (1410 vs 1378, p <.05, d = .26). Additionally, they were more likely to pass STAAR Reading (75% vs 61%, p <.05, w = .14), than their counterparts.

There were no differences between groups on STAAR Mathematics (on average, 75% of students in both groups passed STAAR Math).

Literacy First Grade 1 2014-15 Cohort students had higher scores on Grade 3 STAAR Reading than the **matched comparison.** They were also more likely to pass the exam.

	Passed	Scale Score
Literacy First	75% *	1410 *
Matched Comparison	61%	1378

SPECIAL EDUCATION

There was not a significant difference in Special Education status between the two groups in 2016-17. On average, 6% of students in both samples participated in Special Education.

RETENTION

Retention could not be assessed in 2016-17 using available data, because students were in Grade 3, and therefore, the only test available was Grade 3 STAAR.

GRADE 2 2013-14 COHORT

STAAR

Students in the Grade 2 2013-14 cohort were in Grade 3 in 2014-15, Grade 4 in 2015-16, and Grade 5 in 2016-17. There were no differences in scores, passing, or advanced rates between Literacy First and matched comparison students at either grade level. On average, 65% of students passed STAAR Reading in Grade 3 60% in Grade 4, and 72% in Grade 5. Fifty-seven percent (57%) of students passed STAAR Writing in Grade 4.

SPECIAL EDUCATION

There was a significant difference between groups in the percentage of students who received Special Education services in 2016-17. Only 3% of students who graduated from Literacy First were in Special Education, compared to 8% of students in the matched comparison group ($p < .05$, $d = .22$).

RETENTION

There was a marginally significant effect of Literacy First participation on retention as measured by Grade 5 STAAR data. 97% of students in Literacy First, compared to only 91% of students in the matched comparison, took the Grade 5 STAAR examinations ($p = .09$, $d = .25$).

GRADE 2 2014-15 COHORT

STAAR

Students in the Grade 2 2014-15 cohort were in Grade 3 in 2015-16 and Grade 4 in 2016-17, and there were no differences in scores, passing, or advanced rates between Literacy First and matched comparison students at either grade level. On average, 68% of students passed STAAR Reading in Grade 3 and 62% passed in in Grade 4. 59% of students passed STAAR Writing in Grade 4.

SPECIAL EDUCATION

There was not a significant difference in Special Education status between the two groups in 2016-17. On average, 6% of students in both samples received Special Education services.

RETENTION

There was a marginally significant effect of Literacy first on retention in 2016-17, as measured by the grade level of STAAR taken. Students who were served by Literacy First were more likely to take the Grade 4 STAAR exams (99%) compared to only 95% of students in the matched comparison (p = .05, d = .25).

SUMMARY: LONG TERM OUTCOMES

There was evidence of a long-term effect of Literacy First on STAAR scores in the 2014-15 Grade 1 Cohort. Literacy First students in this cohort had higher Grade 3 Reading STAAR scores and were more likely to pass STAAR than their peers. There was no relationship between Literacy First participation and STAAR scores for any other cohort.

In terms of Special Education status, there was a significant difference only for the 2013-14 Grade 2 Cohort: students served by Literacy First were less likely than their peers to receive Special Education services in 2016-17.

Finally, in terms of retention, as measured by the grade level of STAAR test that students took after Grade 3, we found a significant difference in the Grade 1 2013-14 Cohort, and a marginally significant difference in retention in the Grade 2 2013-14 and 2014-15 Cohort. Students in Literacy First were less likely to be retained than their peers: 96 – 99% took the STAAR on grade level, compared to only 91%-95% of their peers.

SUMMARY

Data for Literacy First graduates in grades 1 and 2 in 2013-14 and 2014-15 was collected for the year of service until the end of the 2016-17 school year. Next, a matched comparison group was created for each cohort using scores on the district-administered DRA and TPRI reading assessments at Beginning of Year (BOY). Students in the matched comparison group were statistically the same as students in the Literacy First group before the program began, which allows us to draw some interpretations about the causal nature of the Literacy First program.

In the short term, there were strong effects of Literacy First on reading in all four cohorts. By End of Year (EOY), students in all cohorts had higher DRA scores than students in the matched comparison groups. Literacy First students were less likely to be flagged as having a DRA score that was below grade level in the Grade 1 2014-15 Cohort, and both of the Grade 2 cohorts. On TPRI, differences between groups were less consistent, but Literacy First students had better TPRI outcomes in at least one section than students in the matched comparison for all cohorts. Students in the Grade 1 2014-15 Cohort had particularly strong TPRI results, with significantly better results in five of six areas.

We were able to examine medium-term outcomes for students in both Grade 1 cohorts as they took TRPI and DRA in Grade 2. We found strong evidence that the reading gains Literacy First students in both cohorts made in Grade 1 stayed through the summer (despite summer loss) and even increased over the span of Grade 2 on the DRA. Additionally, Literacy First students in both cohorts made fewer errors on TPRI than students in the matched comparison. Students in the Grade 1 2014-15 Cohort had had stronger subsequent year performance than those in the Grade 1 2013-14 Cohort, having higher total scores on Story 1 and being more likely to meet the EOY benchmark on Story 2 than their counterparts.

In addition to examining DRA and TPRI scores, we were also able to use the grade level of TPRI taken to interpret which grade students were in the year after service. Students served by Literacy First were more likely to have been promoted to Grade 2 than their peers in both cohorts – 100% vs 93% in the Grade 1 2013-14 Cohort and 99% vs 96% in the Grade 1 2014-15 Cohort.

When examining long-term outcomes of Literacy First, there was some evidence of a continuing effect of the program, although it was not as consistent as the short- and medium-term effects. First, Literacy First graduates in the Grade 1 2014-15 Cohort had higher Scale Scores on Grade 3 STAAR Reading than students in the matched comparison. They were also more likely to reach the passing standard – 75% of students in Literacy First, compared to only 61% of students in the comparison group met the standard. In other cohorts, we did not see any differences on STAAR.

Why such consistent effects on DRA and TPRI but not on STAAR for three of four cohorts? According to the STAAR Reading Resources page[3], to meet the standards on STAAR, students must be able to both understand and *analyze* texts. They must use this analysis to make inferences and draw conclusions about themes and patterns in the text. Finally, they must use these abilities to choose the best answer in situations where several may be "correct" (see box to the right).

Students in the 2014-15 Grade 1 Cohort did have higher scores on STAAR Reading than their peers. What was the difference between students in this cohort and the other cohorts? First, Literacy First significantly increased their graduation standards between 2013-14 and 2014-15. Therefore, students who graduated in 2014-15 and beyond were more prepared than students in previous cohorts. It is possible that the standards should be raised even further for students in Grade 2.

Second, it is also possible that being on grade level by Grade 1 is critical for high achievement on Grade 3 STAAR Reading; that is, because reading skills likely accumulate over time, students who are not on grade level by the end of Grade 1 will have a hard time catching up with peers by Grade 3. Evidence for this premise has been documented in several research studies (see Cain & Oakhill, 2011, Kempe et al., 2011, and Duff et al., 2015, for examples).

We also theorized that Literacy First participation may have an effect on Special Education referrals – that is, early reading intervention might help push students on the cusp of being identified for Special Education services for a learning disability just enough that they do not need services. We found evidence of this effect for the Grade 2 2013-14 Cohort, but not for the other three cohorts. One potential reason for this is that when Literacy First tutors work intensely with their students on a daily basis, they may notice learning disabilities that would have gone unchecked otherwise for some students. Therefore, it's possible that this effect is a "wash."

[3] https://tea.texas.gov/student.assessment/staar/reading/

SNACKS MADE EASY BY MARTHA GOLD

After school, Mika came running from the school bus into her house.

"Mom, I'm starving," she said, dropping her school bag on the kitchen floor and opening the refrigerator.

"What do we have to eat?" "Not much," said her mother. "I have to go shopping today."

"Do we still have those cheese crackers?" asked Mika.

"We're all out," said Mika's mother. "If you want, we can make some."

"MAKE them?" asked Mika. "You mean with cheese and stuff?"

"There is a recipe I want to try," said Mika's mother. "Why don't we make some? Then we can go shopping."

"But I want something NOW," whined Mika. "Have some fruit," said her mother, holding out an apple.

"Okay," said Mika, taking the apple. "Now, how do you make these crackers?"

[Recipe truncated for space]

W**hy did Mika's mother want to make cheese crackers?**

a. Because Mika was hungry
b. Because they were out of cheese crackers
c. Because Mika's mother wanted to try a new recipe
d. Because Mika didn't want an apple

In this example, answers a, b, and c are all technically correct (only answer d is factually incorrect). To get credit for the question, students must correctly interpret that "c" is the best answer. Additionally, most of the stories on STAAR Grade 3 Reading span at least two pages.

One long term area that we did see consistent effects in was on-time grade promotion, as measured by the grade level of STAAR testing after Grade 4. We were able to examine on-time grade promotion for three of the four cohorts, and in all three, Literacy First cohorts were more likely than their peers to be on grade level. This mirrors the effect seen in the medium-term outcomes section, where we saw evidence that Literacy First students in both Grade 1 cohorts were more likely to be promoted on-time to Grade 2 than their peers.

The 2014-15 Grade 1 Cohort had the most and strongest differences from the matched comparison than the other cohorts. There were some changes made to the program that may have caused these differences. First, beginning in 2014-15, tutors started receiving Observation Feedback Forms after every observation by program staff, which likely helped them to quickly notice areas to improve in. Second, the criteria to exit the program changed in 2014-15 for students in Grade 1: students were now required to get to grade level on the program administered Oral Reading Fluency (ORF) test before they could graduate from the program. It appears that instituting this requirement helped change the results of the program so that they were stronger for a longer period of time. Strong fluency skills may be key to performing well on the STAAR.

The results of this study should be considered in light of the following potential limitations. First, the students in the Literacy First sample were graduates of the program, and not just students who had been identified to receive services. Although students in the matched comparison groups were statistically similar on the measured academic and demographic variables at BOY of the service year, there may have been other existing differences (e.g., parent or teacher support, internal motivation) that were not measured. Second, because the study took place in only one school district, the findings may not be consistent at other districts. Third, because there was no way of accessing data for students who left Austin ISD, student attrition, mobility, and data quality are potential limitations. Finally, data on other outcomes was limited. For example, we were not able to obtain data on student grades, so it is unclear the full extent of the academic impact of program participation.

Despite these limitations, this evaluation report indicates strong evidence that Literacy First has strong short-term effects on participants, as well as moderate influence on their reading skills in the long term. Students in Literacy First enter the program with significant difficulty in reading. By the end of the program, they have better reading abilities and are less likely to be retained than their peers. This early intervention could change the course of their lives – helping them to perform better in school, graduate from high school on time and have the best chance of success for their futures.

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