

CORAL Afterschool Program

Improving academic achievement of young people



SPECIAL ANALYSIS OF ACADEMIC OUTCOMES 2008-2011



CORAL Afterschool Program

Special Analysis of Academic Outcomes

2008-2011

Prepared for:



**COMMUNITIES ORGANIZING RESOURCES TO
ADVANCE LEARNING**

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Executive Summary

In Fall 2011, Catholic Charities’ CORAL program engaged Applied Survey Research (ASR) to evaluate the impact of the CORAL after-school program on various academic outcomes. ASR sought to answer the following evaluation questions:

1. Do CORAL participants increase their ELA CST levels after program participation?
2. Which CORAL participants are most likely to change? Are there differences in CST outcomes according to CORAL students’ prior academic level, grade, gender or attendance on CORAL?
3. Do CORAL students increase their reading ability as seen by the “leveling” data?
4. Is participation in CORAL associated with better attendance in school?
5. Are CORAL students more likely than comparison students in the district to increase CST reading levels?

A table summarizing key findings to the guiding research questions is below.

| Question | Answer | |
|---|------------|--|
| 1. Do CORAL participants increase their ELA CST levels after program participation? | YES | CORAL program participants demonstrated increases in their CST ELA proficiency levels across all three years studied. Looking at a matched sample of students with three years of consecutive participation, the number of CORAL students in the Advanced and Proficient ELA proficiency levels increased from 93 students to 119 students by 2010/11, and the number of students in the lowest two categories decreased from 81 students to 58 students (Fig. 6). |
| 2. Which CORAL participants are most likely to improve their ELA CST levels? Are there differences in CST outcomes according to CORAL students’ prior academic level, grade, or gender? | YES | <p>The CORAL participants who showed the most improvement were those who:</p> <ul style="list-style-type: none"> • Had <u>lower initial CST levels</u> (B, BB, FBB): by Spring 2011, 47% of FBB/BB/B level students significantly improved their ELA CST score, as compared to 31% of CORAL students who were proficient (Fig. 7). • Had <u>consistent program attendance</u>, defined as at least 80 days or more. In 2010-11, 50% of CORAL students who participated for 160 days or more moved up one CST level vs. 41% of CORAL students who participated for less than 90 days (Fig. 8). • Had <u>more years in the program</u>: 83% of 3-year participants had gains compared to 66% of 1-year participants (Fig. 9). |

| Question | Answer | |
|--|--|---|
| 3. Do CORAL students increase their reading ability as seen by the “leveling” data ? | YES | From academic year 2010/11 to 2011/12, 53% of students had improved to at or above grade level on the American Reading Program assessment. |
| 4. Is participation in CORAL associated with better attendance in school? | YES | In all years studied, more CORAL days meant significantly fewer absences from school. Students who attended CORAL less than 80 days had an average of 5.6 days absent from school, while students who attended CORAL 80 days or more days had an average of 3.6 absences (Fig.10). Also, students with more years of CORAL participation had significantly fewer absences (4.0) than students who participated for only one year (5.7) (Fig.11). |
| 5. Are CORAL students more likely than comparison students in the district to increase CST reading levels? | YES, when compared to similar students | <p>When comparing any CORAL participant to any non-CORAL student, non-CORAL participants have better CST outcomes. However, CORAL and non-CORAL students are very different demographically. Several subsequent ‘cuts’ of the data revealed salient findings:</p> <ul style="list-style-type: none"> • ELLs fare very differently: CORAL students who were ELLs were more likely (slightly) to increase CST levels than ELL students who were not in CORAL. For non-ELLs, 53% of CORAL students improved on their CSTs, compared to 40% of non-CORAL students (Fig. 20). • CORAL students who were <i>Far Below Basic</i> had better three year CST outcomes than the comparison group (students who were also at the FBB level): 82% of three-year CORAL participants vs. 73% of non-CORAL students (Fig. 17). • CORAL participants who had consistent attendance had better CST gains than CORAL participants who began but never continued with the program: 31% of CORAL students vs. 20% of non-CORAL students (Fig. 24). |

Based on the available data, ASR concludes the following:

- CORAL students are a more at-risk group than non-CORAL students, in terms of academic proficiency and English language proficiency.
- The CORAL students who appeared most likely to improve their CST scores in English Language Arts were those who:
 - Were *Far Below Basic* and *Below Basic*
 - Had consistent program attendance of more than 80 CORAL days, and
 - Were in the program for multiple years.

- CORAL students who had combinations of the above academic and attendance factors had the most consistent academic gains.
- CORAL appears to help ELL students in different ways. For instance, CORAL students who were *Far Below Basic* and ELLs fared better than their comparison group, but for *Below Basic* students, CORAL non-ELLs fared better than their comparison group.

Based on these findings, ASR recommends the following:

- **Ensure continued support for the CORAL students who are *Far Below Basic* and *Below Basic*,** as they are over-presented in the program, and they appear to benefit the most from the program.
- **Ensure continued support for CORAL students who are English Language Learners.** Amongst the CORAL and non-CORAL students who were most at risk academically, we observed a comparative benefit for those CORAL students who were not ELLs, but did not see that same benefit for CORAL ELLs. This suggests a need to increase the supports to students in CORAL who are ELLs and who are at-risk academically.
- **Ensure consistent attendance in the program.** There was a good share of students who did not have at least 80 days of attendance in the CORAL program, yet the students who did have 80 days or more had consistently better outcomes than those with few days or no days in CORAL at all, especially if they were academically at-risk (FBB, BB, B).
- **Strive for multi-year program participation,** as CORAL students with multiple years appeared to make stronger improvements and have better school attendance than those with only a single year of CORAL.

Also, ASR noted that the CORAL participant survey conducted as a pre and post measure of self-reported attitudes and practices appeared to yield highly variable data, which limits its utility as an outcome measure in this analysis (the data are presented in the appendix tables here). We suggest reviewing the survey data in more depth to identify survey questions that had better relative stability and ability to show change (sensitivity), and retaining only those questions in future administrations.

Study Overview

Introduction

The CORAL (Communities Organizing Resources to Advance Learning) program is an after-school program at many Santa Clara County schools. Operated by Catholic Charities, the goal of the program is to improve student achievement through an innovative, curriculum based balance of literacy and enrichment activities. In Fall 2011, CORAL engaged Applied Survey Research (ASR) to evaluate the impact of its program on various academic outcomes including standardized test levels and school absences.

Guiding Evaluation Questions

To investigate the benefits associated with student participation in the CORAL program, ASR sought to answer the following evaluation questions:

1. Do CORAL participants increase their ELA CST levels after program participation?
2. Which CORAL participants are most likely to change? Are there differences in CST outcomes according to CORAL students' prior academic level, grade, gender or attendance on CORAL?
3. Do CORAL students increase their reading ability as seen by the "leveling" data?
4. Is participation in CORAL associated with better attendance in school?
5. Are CORAL students more likely than comparison students in the district to increase CST reading levels?

Methodology

To answer the above evaluation questions, ASR worked with CORAL management to obtain a multi-year data file from the district. The overall analysis included 7,128 individual students across three years. CST levels, CORAL attendance data, and school district absence data for the CORAL program were compiled for each student. However, to reduce the variability within the sample across years, for most of the analyses, ASR restricted the sample to CORAL students and comparison students in the district who had data all three years, and who had good attendance in the program (i.e., 80 days or more).

Findings

Who are the CORAL participants?

The majority of CORAL participants in the 2010-11 school year were Hispanics (77%), boys (52%), and over half of them were English language learners (59%).

Figure 1. **Ethnicity, gender and language, 2010/11**

| Ethnicity | Percentage | |
|--|------------|-----------|
| | CORAL | Non-CORAL |
| Hispanic | 77% | 63% |
| Vietnamese | 16% | 26% |
| Other Asian | 4% | 6% |
| Filipino | 1% | 3% |
| Caucasian | 1% | 2% |
| African American | 1% | 1% |
| Other | 1% | 1% |
| Gender | | |
| Boy | 52% | 51% |
| Girl | 48% | 49% |
| English Language Learner Status | | |
| English language learner | 59% | 37% |

Note: Data based on 1664 CORAL participants in the 10-11 school year, and 1498 non-CORAL participants. Percentages may not sum to 100% due to rounding.

Most CORAL students served during the 2010-2011 school year were 2nd, 3rd and 4th graders, and the majority of CORAL students were from the following elementary schools: Meadows, Los Arboles, Shirakawa and Kennedy.

Figure 2. **Percentage of students by school grade, 2010/11**

| Grades | Percentage | |
|-----------------------|------------|-----------|
| | CORAL | Non-CORAL |
| 1 st Grade | 1% | 0% |
| 2 nd Grade | 19% | 20% |
| 3 rd Grade | 18% | 15% |
| 4 th Grade | 18% | 12% |
| 5 th Grade | 15% | 11% |
| 6 th Grade | 14% | 12% |

| Grades | Percentage | |
|-----------------------|------------|-----------|
| | CORAL | Non-CORAL |
| 7 th Grade | 8% | 13% |
| 8 th Grade | 7% | 16% |

Note: Sample size for CORAL participants' grades in 2010-11 n=1664, and non-CORAL participants n=1498.

Figure 3. **Percentage of students by school, 2010/11**

| Schools | Percentage | | Other Programs Offered in the School |
|-----------------------------|------------|-----------|---|
| | CORAL | Non-CORAL | |
| Meadows Elementary | 11% | 7% | School Enrichment Services & Reading Partners |
| Los Arboles Elementary | 9% | 4% | --- |
| Shirakawa Elementary | 9% | 9% | --- |
| Kennedy School | 9% | 10% | Reading Partners |
| Seven Trees Elementary | 8% | 5% | School Enrichment Services |
| Santee Elementary | 8% | 3% | --- |
| Hellyer Elementary | 8% | 6% | --- |
| Franklin Elementary | 7% | 12% | --- |
| Windmill Springs Elementary | 7% | 8% | --- |
| Stonegate Elementary | 7% | 11% | --- |
| McKinley Elementary | 7% | 4% | School Enrichment Services |
| Dahl Elementary | 5% | 12% | --- |
| Ramblewood Elementary | 4% | 7% | --- |
| Success Academy | 3% | 2% | --- |

Note: Sample size for CORAL participants' school of attendance in 2010-11 n= 829, and non-CORAL participants n=1123. Percentages may not sum to 100% due to rounding.

The 2010/2011 school year had the largest share of CORAL participants who had attended for 160 or more days (35% as compared to 14% in 08/09).

Figure 4. **Percentage of students participating in CORAL program by number of days, across three years**

| School Year in CORAL | Number of CORAL days | | |
|----------------------|----------------------|-------------|-----------|
| | 1-79 days | 80-159 days | 160+ days |
| 2008-2009 | 56% | 29% | 14% |
| 2009-2010 | 39% | 37% | 24% |
| 2010-2011 | 29% | 37% | 35% |

Note: Sample size for 08-09 = 4206; for 09-10 = 3056; for 10-11 = 2158. Percentages sum to more than 100% due to rounding.

As noted in the figure below, second and third graders tended to remain in CORAL for longer periods of time (160 days or more) than other grades.

Figure 5. **Percentage of students participating in CORAL program by grade level and number of days**

| School Grade | Number of CORAL days | | |
|-----------------------|----------------------|-------------|-----------|
| | 1-79 days | 80-159 days | 160+ days |
| 1 st Grade | 38% | 33% | 29% |
| 2 nd Grade | 27% | 35% | 38% |
| 3 rd Grade | 20% | 39% | 41% |
| 4 th Grade | 24% | 39% | 37% |
| 5 th Grade | 29% | 36% | 35% |
| 6 th Grade | 30% | 35% | 35% |
| 7 th Grade | 35% | 38% | 27% |
| 8 th Grade | 47% | 33% | 20% |

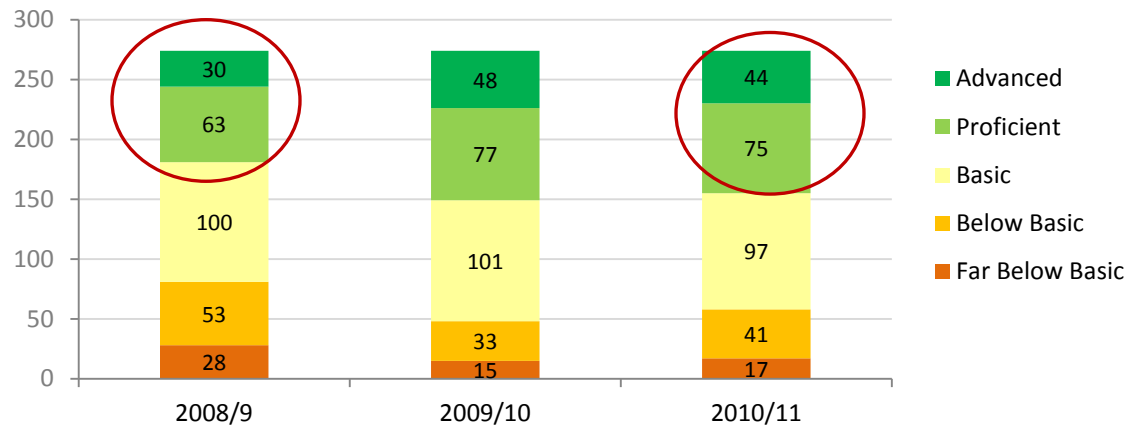
Note: Sample size for grades 1 through 8 = 2151.

I. Do CORAL participants increase their ELA CST levels after program participation?

In this and the following analyses, an increase in CST ELA is defined as a movement upward from any baseline category to any category higher than the initial assessment. The baseline assessment is the student's CST ELA proficiency level for the prior year. When comparing students from year to year, we use a matched sample of participants across years (the same students year after year).

As seen in the figure below, when comparing CORAL participants' CST proficiency levels from the first to the third academic year, more CORAL participants moved up to *Advanced* and *Proficient* CST proficiency levels, and fewer participants were *Far Below Basic* and *Below Basic* levels: **CORAL students in the *Advanced* and *Proficient* ELA proficiency levels increased from 93 students to 119 students by 2010/11, and the number of students in the lowest two categories decreased from 81 students to 58 students.**

Figure 6. **Number of CORAL students at each level of ELA CST proficiency, by school year**



Source: District data. Note: Analyses based on 274 CORAL participants matched across all three academic years 2008-2011, with attendance of 80+ CORAL days per year.

2. Which CORAL participants are most likely to improve their CST levels in English Language Arts?

Students with Lower Academic Levels at Baseline

Target participants, those in the three lowest CST proficiency levels, evidenced higher increases in CST levels than those in the proficient group. As the figure below illustrates, from Spring 2010 to Spring 2011, **47%** of CORAL students in the three lowest ELA CST levels and with good CORAL participation (80+ days) had increased significantly by at least one level, compared to **31%** of CORAL students who were at the level of *proficient*.

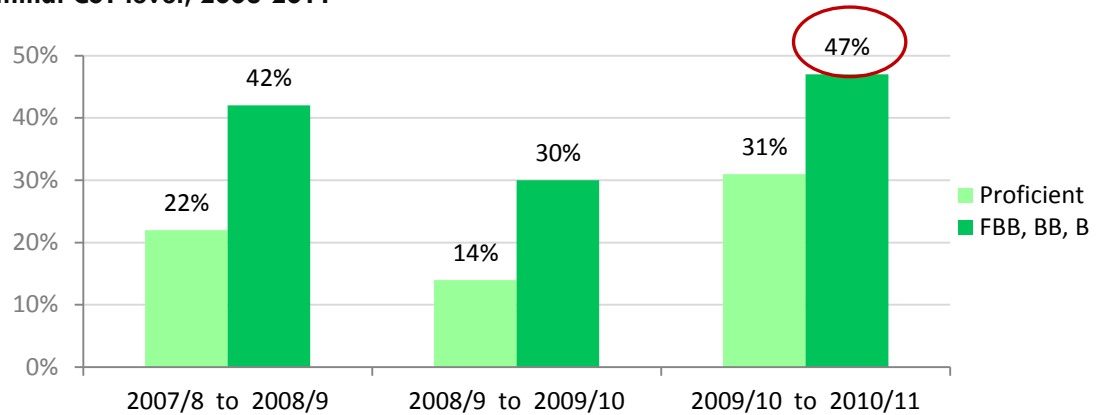
I liked the program because it was fun and it helped me improve my grades.

I learned how [to do] my homework better.

I always had my teacher or classmates to help me with my homework and reading. They were very helpful.

- CORAL Students

Figure 7. **Percentage of students whose ELA CST proficiency increased from previous year, by initial CST level, 2008-2011**

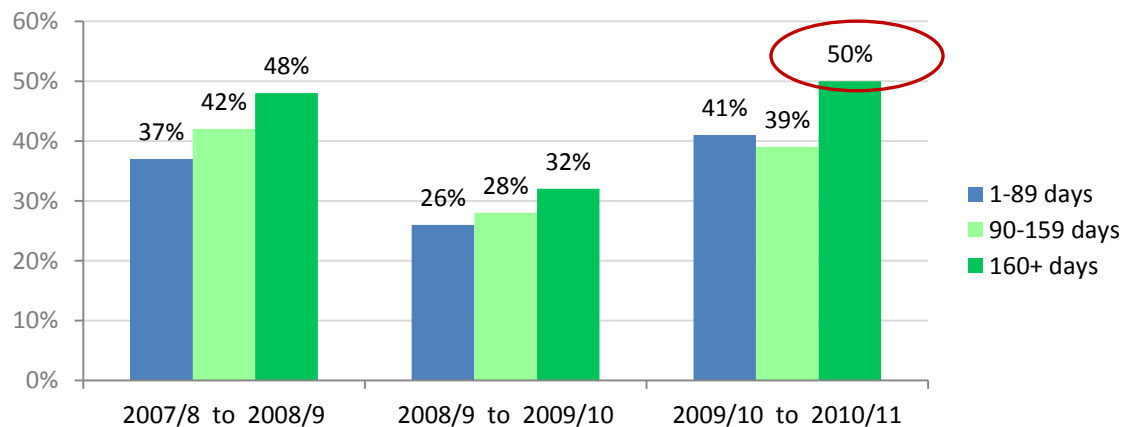


Note: Analyses based on n=256 for 2008-09, n=244 for 2009-10, and n=243 for 2010-11. This analysis excludes students who were categorized as *Advanced*. Differences are statistically significant at $p < .05$. Includes only those with 80+ CORAL days per year.

Students with Consistent CORAL Program Attendance

This analysis investigated whether consistent attendance in CORAL was related to increases in students' CST ELA proficiency levels. The figure below indicates a general pattern whereby the students with greater program attendance are more likely to experience gains in their CST levels. For example, during the 2010-11 academic year, **50%** of CORAL students who participated for 160 days or more had moved up one CST level, or nine percentage points higher than CORAL students who participated for less than 90 days (a marginally significant difference).

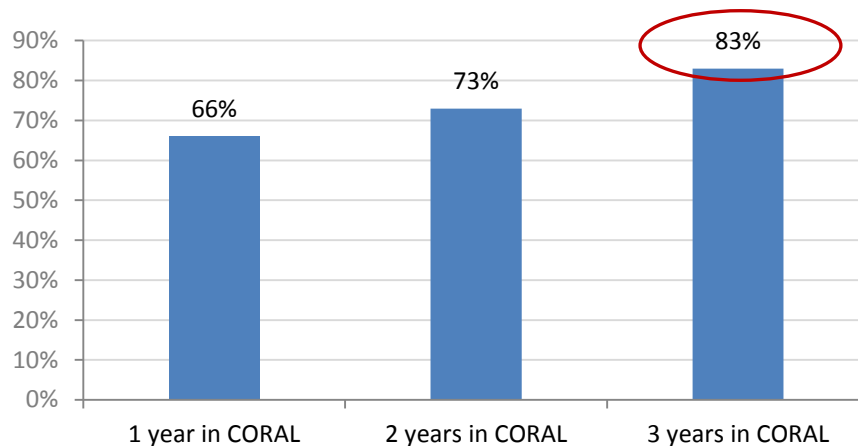
Figure 8. **Percentage of at-risk students whose ELA CST proficiency increased from previous years, by days in CORAL, 2008-2011**



Note: These analyses include CORAL students in the target baseline CST ELA groups (FBB, BB, B). Analyses based on n=406, 379, and 468 for 2008-09, 2009-10, 2010-11 respectively. Differences in 2009-10 to 2010-11 are marginally significant ($p = .10$), while differences in prior years are not statistically significant.

We also assessed whether more years of CORAL participation was related to increased likelihood of improvement on ELA CSTs. As the figure below illustrates, the initial pattern indicates that the more years of CORAL participation, the more likely a student is to improve on their CSTs: **83%** of students who participated for 3 years had improved their proficiency level, compared to **66%** of students who participated for only one year. The differences are however not statistically significant, potentially due to small sample size.

Figure 9. **Percentage of at-risk students whose ELA CST proficiency increased from previous year, by number of CORAL program years**



Note: These analyses are based on 243 CORAL participants. The differences are not statistically different.

3. Do CORAL students increase their reading ability as seen by the “leveling” data?

In addition to CST levels, CORAL students are now assessed periodically through the year to assess their grade level reading abilities. This assessment process is part of the American Reading program that CORAL uses. The assessment, conducted by an adult about the student, determines what level the student’s reading ability is at, relative to their grade level, hence the term “leveling” data. ASR obtained the leveling data for all students served in 2010-11 and 2011-12.

Generally, students tended to improve on the “leveling” data. **On average, students gained almost one full grade level (.93) from August 2010 to May 2011, and a full grade level (1.02) from August 2011 to May 2012.** Among those who were performing below grade level at the start of the 10/11 school year, 40% had improved to at/above grade level by the end of the school year, and 51% had improved at/above grade level by the end of the 11/12 school year.

I liked reading different stories with my class.

I really liked reading with my teachers and classmates.

I’m always going to remember my reading because it was fun and exciting.

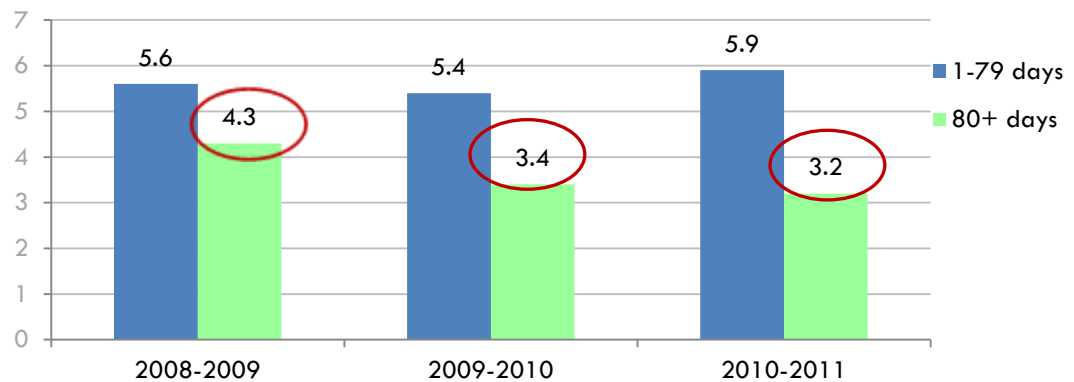
- CORAL Students

Of those who participated in both school years and who started out below grade level, **53% had improved to at/above grade level in the 11/12 school year, and 80% had improved to some extent.** This finding highlights the benefits of multi-year participation in the program.

4. Is participation in CORAL associated with better attendance in school?

As the previous analyses demonstrate, CORAL program participation is related to improvement in CST ELA proficiency levels. However, the CORAL program may also be related to other aspects of students' success in school. An analysis of absenteeism among CORAL students revealed a strong and consistent relationship between the number of days of CORAL attendance and the number of absences from school: **students with consistent CORAL program attendance had significantly fewer absences per school year than students with fewer days in the CORAL program.** The figure below demonstrates that from 2008 to 2011, CORAL students who attended the program for 80 or more days had an average of three to four absences from school, compared to an average of five to six absences for those students attending CORAL less than 80 days.

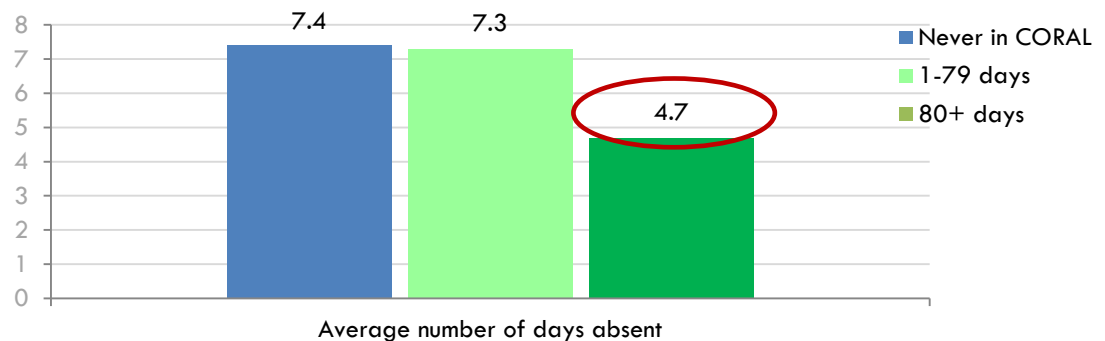
Figure 10. Average number of school day absences, by CORAL program days, 2008-2011



Note: Analyses based on n=995 for 2008-09, n=926 for 2009-10, and n=743 for 2010-11 respectively. All differences are statistically significant at $p < .01$.

Even the most at-risk CORAL participants (*Far Below Basic* and *Below Basic*) had fewer absences than similarly-situated non-CORAL participants. Specifically, **students who had participated in CORAL for 80 days or more had significantly fewer absences than non-CORAL students** ($p < .01$): **4.7** as compared to **7.4**, respectively.

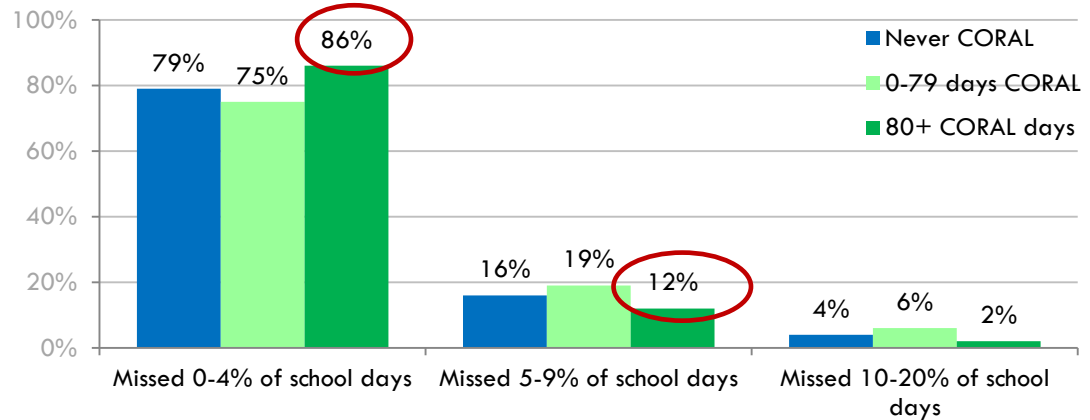
Figure 11. Average number of school day absences for *Far Below Basic* and *Below Basic* students, by CORAL program days, 2010-2011



Note: N=689. The difference between the "80+ days" cohort and the other two cohorts is statistically significant at $p < .01$.

The following analysis investigated whether program participation had any impact on chronic absenteeism (missing 10% or more of school days). The figure below indicates that **students who had participated in the program for 80 days or more were significantly less likely to have missed 0-4% and 5-9% of school days than their non-CORAL peers.**

Figure 12. **Percentage of students with chronic absenteeism, by CORAL program days, 2010-2011**



Note: N=3408. The difference between the “80+ days” cohort and the “Never CORAL” cohort is statistically significant at $p < .05$ for the 0-4% range and 5-9% range but not the 10-20% range.

In all years studied, more days in the CORAL program meant fewer absences from school. This finding suggests that CORAL program participation may in fact boost school attendance, which ultimately could lead to improved academic outcomes across all domains of achievement.

Further, **students with successive years of CORAL program attendance had significantly fewer school absences than those with less years of CORAL participation.** In order to examine the relationship between successive years of CORAL attendance and absence patterns, only the 2010-2011 school year attendance could be analyzed since it was the third year of the program and the only in which some students had recorded three years of CORAL participation. As the figure below illustrates, students with three years of participation in CORAL recorded an average of **four absences** in the 2010-11 school year. This compares to five absences for those with two years of CORAL participation and about **six absences** for those whose first and only year in the program was in 2010-11.

Figure 13. **Average school absences, by years of CORAL participation, 2010-2011**

| Number of Years in CORAL | Total Number of Students | Average Absences |
|--------------------------|--------------------------|------------------|
| 1 Year | 1276 | 5.7 |
| 2 Years | 892 | 5.0 |
| 3 Years | 1060 | 4.0 |

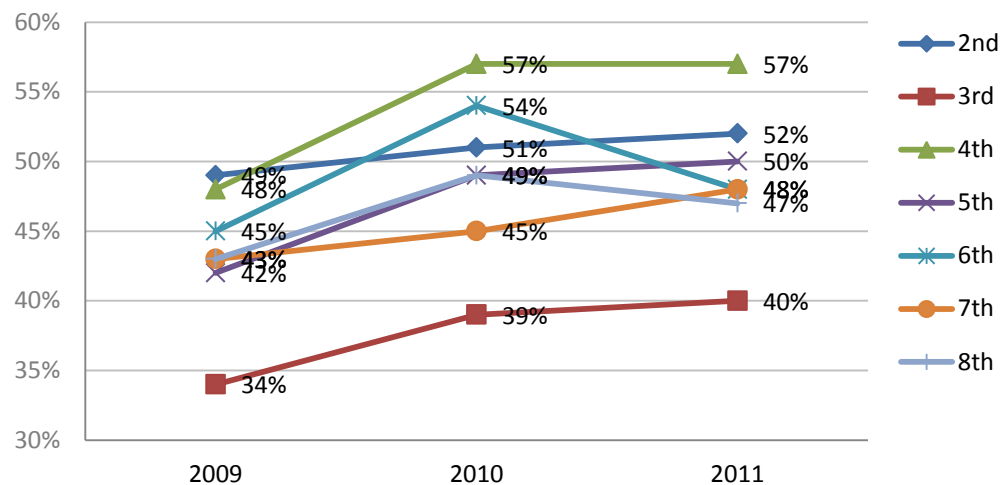
Note: N= 3228. All differences are statistically significant at $p < .001$.

5. Are CORAL students more likely than comparison students in the district to increase CST reading levels?

Setting the Stage: How Do We Compare the Impact of the CORAL Program?

The first caveat to these comparative analyses is that any district-wide improvements may mask effects of participation in certain programs such as CORAL, in that these efforts are helping to **“raise all ships.”** Indeed, we found that all students in the district are improving on their ELA test levels, and thus any subgroup differences may be masked by these overall improvements across the district.

Figure 14. Percentage of district students at or above grade level for ELA, by grade



Source: Dataquest, 2012.

A second factor to bear in mind is that the CORAL participants may be demographically or academically different because of either program eligibility criteria, or self-selection bias, in that certain families are drawn to the program more than others. Demographic data across the two groups was limited, but based on the limited data we do have (for a subset of CORAL participants only), the CORAL participants did indeed appear to be different than district students as a whole. For example:

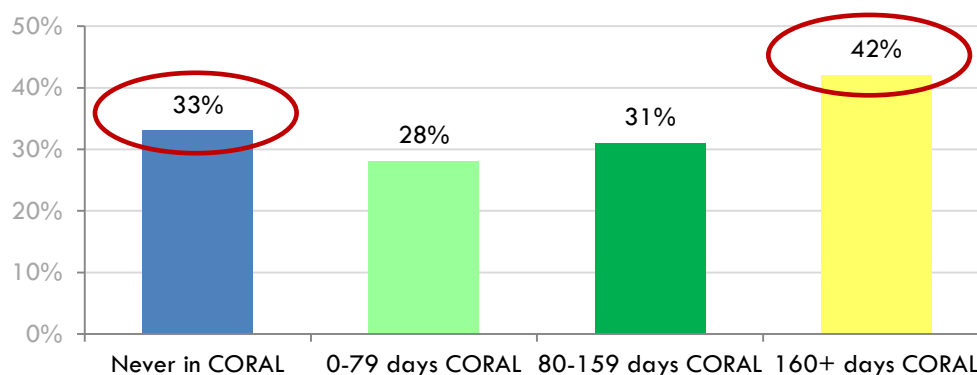
- CORAL participants are more likely to be Latino:** The CORAL program had a greater percentage of Hispanic/Latino students than the district as a whole during the 2008-2009 school year (**72%** of CORAL students versus **62%** of students district-wide in 2008-09).
- CORAL students are more likely to be struggling academically:** The students enrolled in CORAL had significantly poorer performance on their English Language Arts CSTs than their peers who did not enroll in CORAL in 2008-2009: **73%** of students who enrolled in CORAL were below grade level, compared to **55%** of students who did not go on to enroll in CORAL. See Appendix Table 1.
- CORAL students are more likely to be English Language learners:** **54%** of students in CORAL were classified as ELLs, compared to **41%** of students who never participated in CORAL.

Because of these differences, and because of the factors observed to be associated with better CST gains, such as consistent CORAL program attendance, school year, academic risk, and ELL status, we have focused on the comparative analyses on children who share these factors in order to uncover associations between CORAL participation and academic gains.

Comparative Analysis #1: CORAL students in 2010 had slightly better outcomes than non-CORAL students

CORAL staff reported that 2010/11 was the strongest of the three program years we evaluated, in terms of program fidelity. Indeed, the previous analyses in this report have borne out that hypothesis. This analysis constricts the sample to just CORAL participants (and their peers) in 2010/11. When matched by race, gender and grade, CORAL participants who had participated for 160+ days were significantly more likely than their ‘matched’ peers to improve from Spring 2010 to Spring 2011: **42%** had CST gains from 2010 to 2011, as compared to **33%** of the matched comparison group ($p < .05$).

Figure 15. Percentage of 2010 students who had improved CST levels in 2011, by amount of CORAL participation

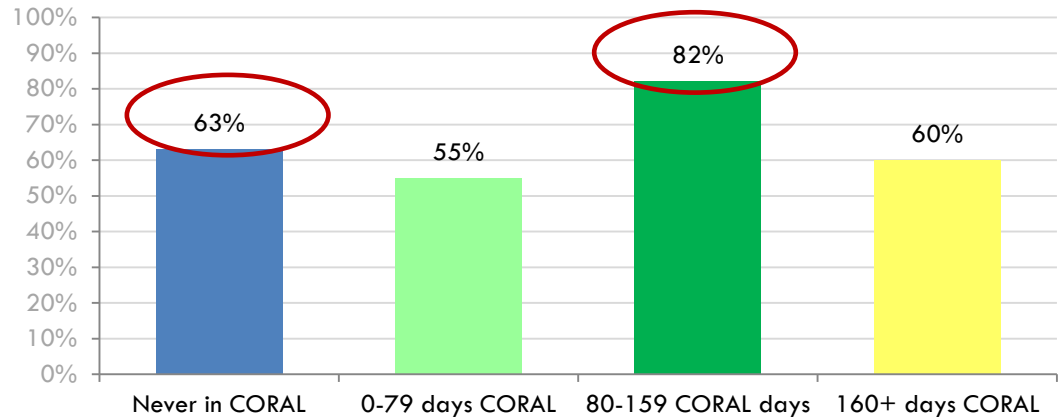


Note: $n=1306$. The difference between the “160+ days” cohort and the “Never in CORAL” cohort is statistically significant at $p < .05$.

Comparative Analysis #2: Far Below Basic students in CORAL had better outcomes than those Far Below Basic students not in CORAL

ASR also analyzed the trends for the most at-risk students (*Far Below Basic*) to see if CORAL helped “lift” those students out of this category and into more academically proficient CST categories. As seen in the figure below, over half of all CORAL participants had improved CST levels in 2011, especially those who had participated for 80-159 days: **82%** of CORAL students with favorable program attendance increased at least a level on their CST levels from 2010 to 2011, compared to **63%** of students who have never been in CORAL, a statistically significant difference ($p < .05$).

Figure 16. **Percentage of 2010 *Far Below Basic* students who had improved CST levels in 2011, by amount of CORAL participation**



Note: N=83. The difference between the “80-159 days” cohort and the “Never in CORAL” cohort is statistically significant at $p < .05$.

ASR also analyzed improvements over the course of several years. The analysis below includes CORAL students with baseline CST level of *Far Below Basic* in 2008/09, compared to non-CORAL students also at the *Far Below Basic* level on their CST levels.

When looking only at the students who had scored *Far Below Basic* in their baseline year, the number of years of CORAL seems to make a difference. Notably, the percentage of three-year CORAL participants who were able to improve their proficiency level by at least one level in 2011 was **higher** than the percentage of non-CORAL participants (**82%** versus **73%**, respectively), but that difference is not statistically significant.

Figure 17. **Percentage of *Far Below Basic* students with improved CST levels in later years, by years of CORAL participation**

| | Never in CORAL as of test year | 1 year of CORAL as of test year | 2 years of CORAL as of test year | 3 years of CORAL as of test year |
|---------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Improved as of 2009 | 59.1% | 58.9% | | |
| Improved as of 2010 | 74.2% | 66.7% | 69.1% | |
| Improved as of 2011 | 73.1% | 64.6% | 73.1% | 81.8% |

Note: N=222. Includes only those with 80+ CORAL days per year. The differences between years of participation were not statistically significant.

A larger percentage of *Far Below Basic* CORAL participants at Ramblewood, Franklin and Kennedy had experienced gains in their CST levels in 2011 (100%, 63% and 56%, respectively) as compared to the other schools. Additionally, *Far Below Basic* CORAL participants were more likely to have improved CST levels

than non-CORAL participants in the following 6 of the 14 schools: Los Arboles, Hellyer, Franklin, McKinley, Dahl and Ramblewood.

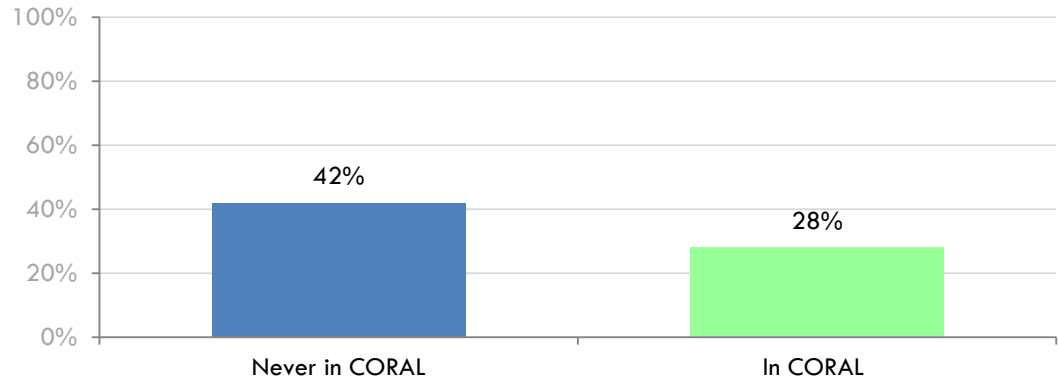
Figure 18. **Percentage of Far Below Basic students with improved CST levels by school, 2010-2011**

| Schools | Other programs on site or CORAL only ("CLEAN") | Percentage of FBB students | |
|-----------------------------|--|----------------------------|----------------|
| | | CORAL participant | Never in CORAL |
| Meadows Elementary | SES, RP | 40% | 58% |
| Los Arboles Elementary | CLEAN | 50% | 0% |
| Shirakawa Elementary | CLEAN | 40% | 50% |
| Kennedy School | RP | 56% | 67% |
| Seven Trees Elementary | SES | 41% | 60% |
| Santee Elementary | CLEAN | 19% | 67% |
| Hellyer Elementary | CLEAN | 38% | 0% |
| Franklin Elementary | CLEAN | 63% | 40% |
| Windmill Springs Elementary | CLEAN | 25% | 40% |
| Stonegate Elementary | CLEAN | 0% | 40% |
| McKinley Elementary | SES | 41% | 29% |
| Dahl Elementary | CLEAN | 50% | 31% |
| Ramblewood Elementary | CLEAN | 100% | 70% |
| Success Academy | CLEAN | 0% | 50% |

Note: N=266.

When excluding schools that offered programs such as Reading Partners and School Enrichment Services from the analysis, **the most at-risk non-CORAL participants outperformed the most at-risk CORAL participants: 42% of non-CORAL students in the "CLEAN" schools had improved CST levels as compared to 28% of CORAL participants.** The difference is however not statistically significant. This finding may point to the added benefits of having a range of mutually complementary programs in schools, especially for CORAL participants.

Figure 19. **Percentage of Far Below Basic students with improved CST levels in “clean” schools, 2010-2011**

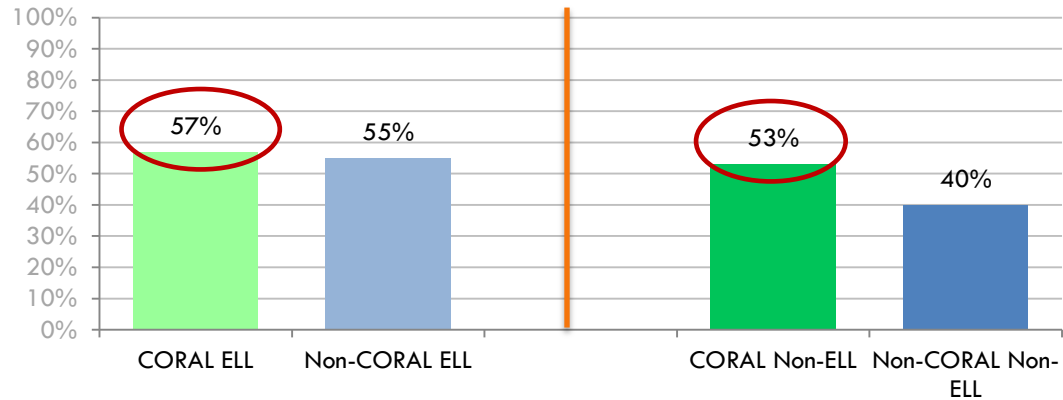


Note: N=115. The difference is not statistically significant.

Comparative Analysis #3: **ELL status is strongly associated with CORAL vs non-CORAL outcomes**

Among ELL students who were *Far Below Basic* in 2010, **57%** of CORAL students and **55%** of non-CORAL students improved by at least one CST level in 2011. For non-ELLs, **53%** of CORAL students improved compared to **40%** of non-CORAL students.

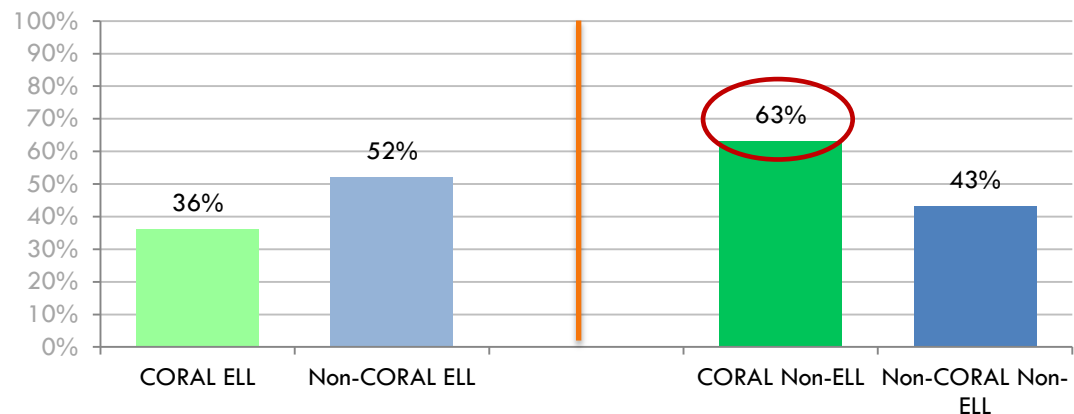
Figure 20. **Percentage of 2010 Far Below Basic Students who had improved CST levels in 2011, by CORAL participation and ELL status**



Note: N=163. The differences within each cohort are not statistically significant.

For those students who were *Below Basic* in 2010, 36% of CORAL ELLs and 52% of non-CORAL ELLs improved by at least one CST level in 2011; for non-ELLs, **63%** of CORAL students improved compared to **43%** of non-CORAL.

Figure 21. **Percentage of 2010 Below Basic Students who had improved CST levels in 2011, by CORAL participation and ELL status**



Note: N=337. The difference in the ELL cohort is statistically significant at $p < .05$, and the difference in the non-ELL cohort is marginally significant at $p < .10$.

Among ELLs of Vietnamese background, **24%** of those participating in CORAL improved from 2010 to 2011, as compared to **17%** of those not in CORAL. However, among ELLs of Hispanic/Latino background, 29% of those participating in CORAL improved, compared to 34% of those not participating in CORAL.

Comparative Analysis #4: Students with more CORAL participation had better outcomes than students with less CORAL participation

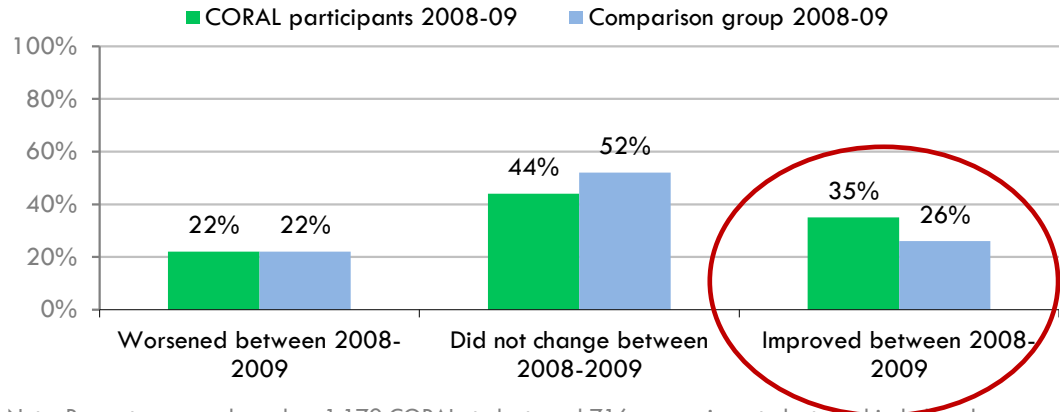
In the absence of a perfectly matched sample of students who never enrolled in CORAL, a comparison group for demonstrating CORAL’s potential impact on students would include students who enrolled in CORAL but rarely attended it. By using this group of students, we are able to focus on those students who may have met the target criteria for CORAL, but who did not receive the full intervention. For this alternate comparison group, CORAL students were included if they attended the program less than once per week, which corresponds to a total number of 35 or fewer visits over the course of the school year.

Between the “MORE CORAL” and “LESS CORAL” students, we still see some differences in the samples, but those differences are much smaller. For instance, 70% of the “MORE” CORAL participants were Hispanic/Latino, compared to 76% of the “LESS” CORAL comparison group, and 46% of the MORE CORAL participants were English learners, as compared to 41% of the comparison group. Both groups are similar in terms of likelihood of academic proficiency.¹

The figure that follows shows results for each of the three program years.² In the 2008-09 school year and the 2010-11 school year, **a larger percentage of CORAL students showed improvements in their ELA proficiency levels from one year to the next than did comparison students.** In the 2009-10 school year, positive impacts were not observed, however.

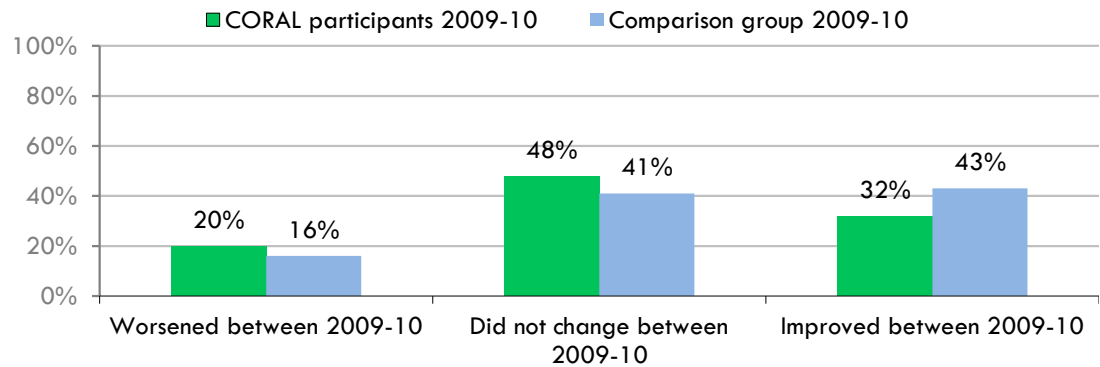
¹ These figures break down CORAL participants into each of the three cohorts of CORAL students, with the second and third CORAL years including new CORAL students only so that carryover impacts from previous CORAL experiences would not be captured. See “Additional Data Table 2.”

Figure 22. **Students' change in ELA proficiency levels from 2008 to 2009**



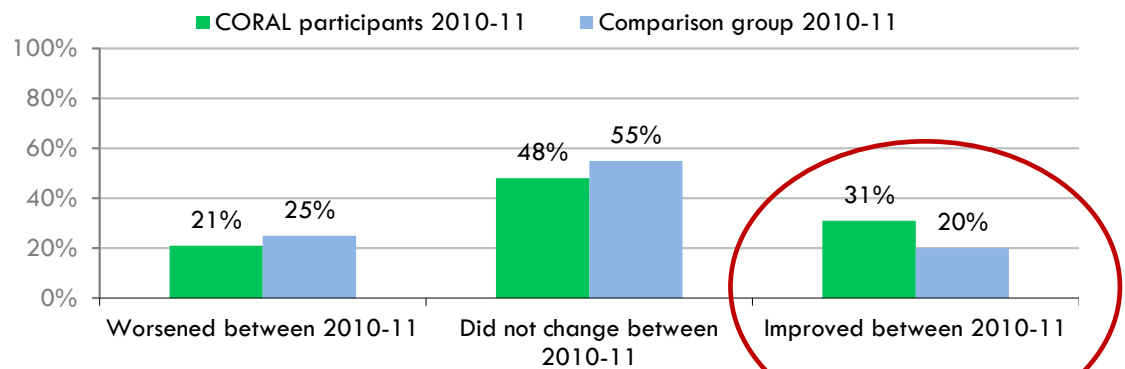
Note: Percentages are based on 1,179 CORAL students and 716 comparison students and include only those students who had a proficiency level at both time points. Percentages may not sum to 100% due to rounding. Average change levels were marginally different for the two groups, according to t-tests at $p < .07$.

Figure 23. **Students' change in ELA proficiency levels from 2009 to 2010**



Note: Percentages are based on 278 CORAL students and 107 comparison students and include only those students who had a proficiency level at both time points. Percentages may not sum to 100% due to rounding. Average change levels were marginally different for the two groups, according to t-tests at $p < .09$.

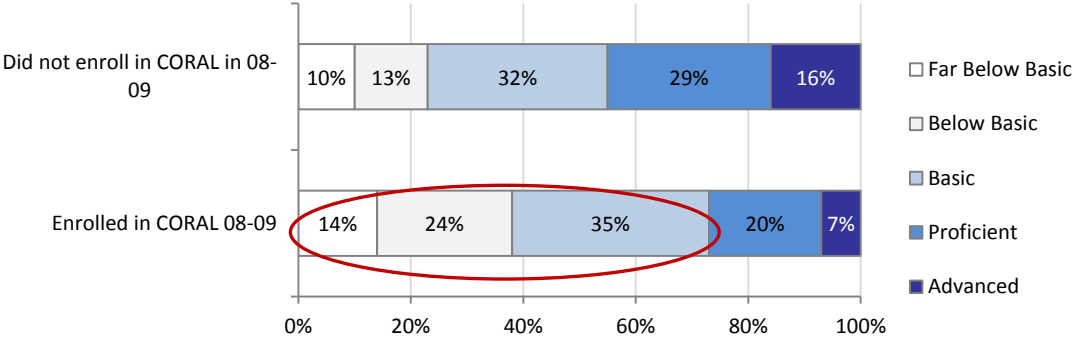
Figure 24. **Students' change in ELA proficiency levels from 2010 to 2011**



Note: Percentages are based on 228 CORAL students and 229 comparison students and include only those students who had a proficiency level at both time points. Percentages may not sum to 100% due to rounding. Average change levels were statistically different for the two groups, according to t-tests at $p < .05$.

Additional Table I: Baseline academic proficiency of students who went on to participate in CORAL vs those who did not

Comparison of ELA CST baseline levels, CORAL participants vs Non participants

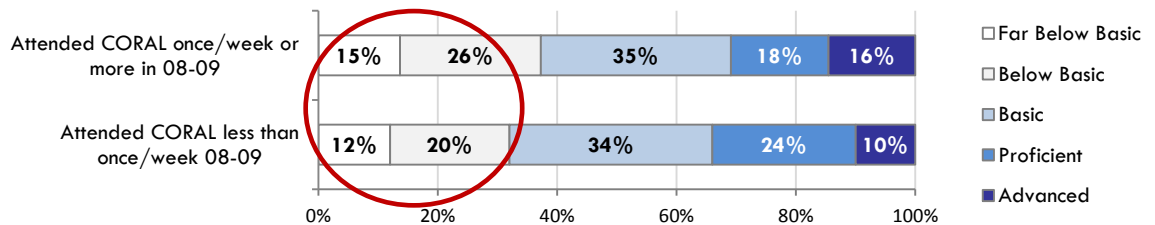


Note: Percentages are based on 2,539 CORAL students and 31 56 non-CORAL students. Percentages may not sum to 100 due to rounding. Groups were statistically different according to chi-square tests at $p < .001$.

Additional Table 2: Baseline academic proficiency of students who went on to participate in CORAL vs those who began but ended their participation

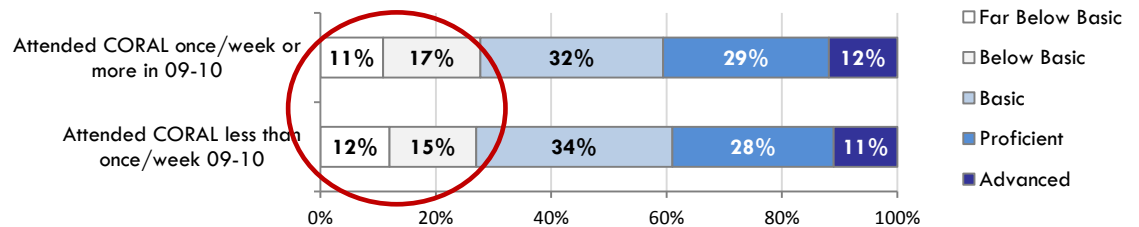
Comparison of baseline CST levels, by with 'more' or 'less' CORAL participation

2008/09 CORAL Cohort



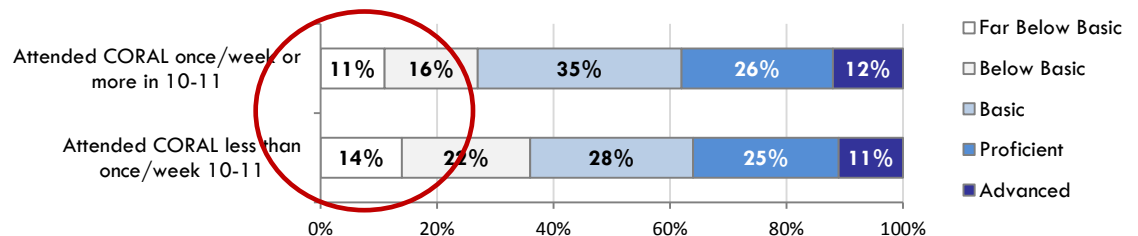
Note: Percentages are based on 1072 higher-frequency CORAL students and 1467 infrequent CORAL students. Percentages may not sum to 100 due to rounding. Groups were statistically different according to chi-square tests at $p < .001$.

2009/10 CORAL Cohort (New Enrollees Only)



Note: Percentages are based on 358 higher-frequency CORAL students and 204 infrequent CORAL students. Percentages may not sum to 100 due to rounding. Groups were not statistically different according to chi-square tests.

2010/11 CORAL Cohort (New Enrollees Only)



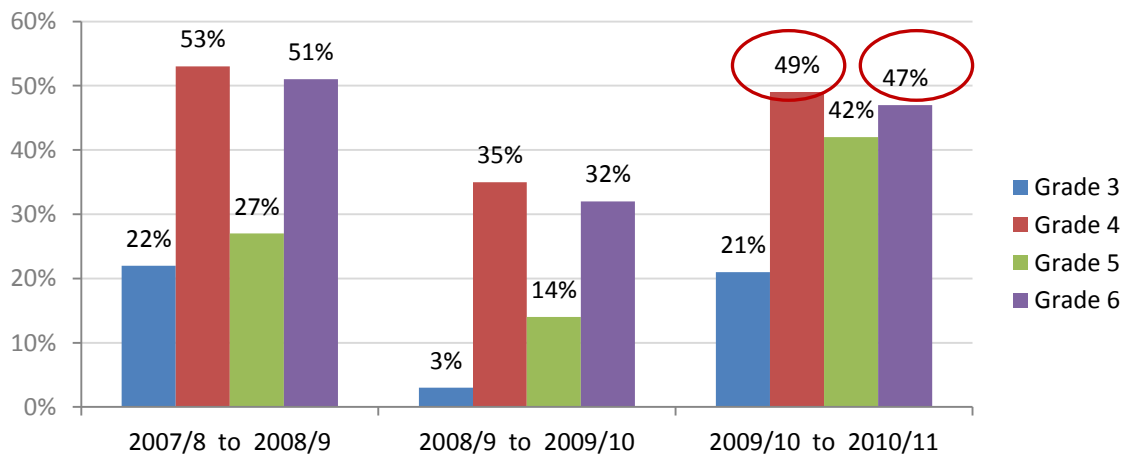
Note: Percentages are based on 233 higher-frequency CORAL students and 79 infrequent CORAL students. Percentages may not sum to 100 due to rounding. Groups were not statistically different according to chi-square tests.

Additional Table 3: CST gains, by grade

A more detailed analysis assessed the impact of grade level on increases in CST ELA proficiency levels among CORAL students. This analysis was constrained to those students in the target CST baseline groups (FBB, BB, B). CORAL students in grades three through six demonstrated more gains in CST ELA proficiency levels than did students in other grades.

In particular, CORAL **fourth and sixth graders were the most likely to show increases in their CST proficiency levels**. As the figure below illustrates, in all three years studied, and across all grades, fourth grade CORAL students were the most likely to show gains in CST ELA proficiency levels from their previous grade, followed by sixth graders. In both 2009 and 2011, about half (53% in 2009 and 49% in 2011) of all CORAL fourth graders improved their CST ELA proficiency from the previous year's score. While the results for 2010 are not quite as striking, more than one third (35%) of CORAL fourth graders did increase their CST ELA proficiency levels.

Percentage of students whose CST ELA increased from previous year, by grade, 2008-2011



Note: These analyses include CORAL students in the target baseline CST ELA groups (FBB, BB, B). Analyses based on n=457, 566, and 963 for 2008-09, 2009-10, 2010-11 respectively. All differences are statistically significant at $p < .001$.

Additional Table 4: Results of Student Surveys

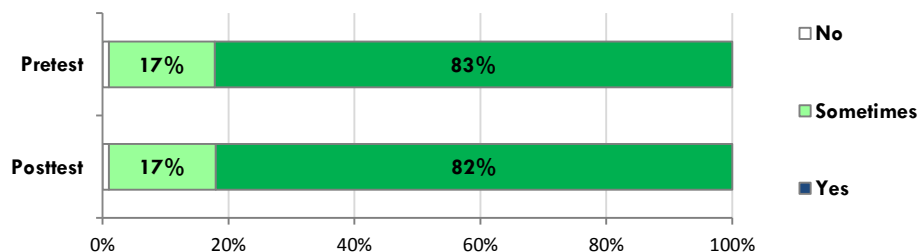
Students also completed a survey at the beginning and end of the 2011-12 school year. Results from students who completed both surveys (N=1544) indicate that CORAL had a positive impact on students' enjoyment of and participation in reading and school.

The table below lists several statements and the percentage of those who said "No" at pretest who had changed their answers at post-test. In most cases, over half of the students who had previously responded "No" endorsed these statements as either "Sometimes" or "Yes" at the end of the school year.

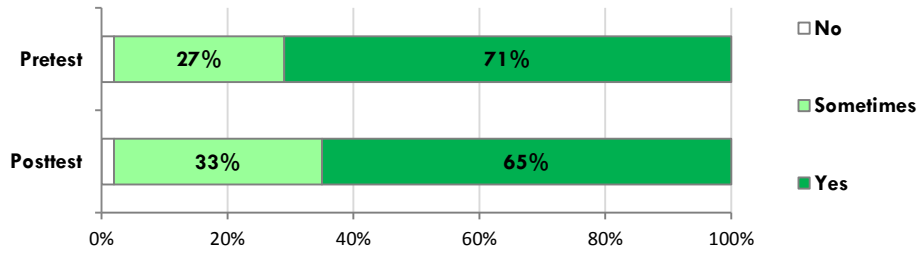
| | Moved from "No" to "Sometimes" | Moved from "No" to "Yes" |
|--|--------------------------------|--------------------------|
| "Reading is my favorite thing to do" | 28% | 28% |
| "Reading is fun" | 33% | 25% |
| "I'm very good at reading" | 20% | 36% |
| "I read at home with my parents" | 16% | 14% |
| "This past summer I spent time reading/This upcoming summer I will spend time reading" | 26% | 27% |
| "I work very hard on my schoolwork" | 25% | 75% |
| "I pay attention and concentrate in class" | 19% | 57% |
| "I like school a lot" | 21% | 21% |

The figures below display graphically the pre- and post-test results for several questions of interest (N=1544).

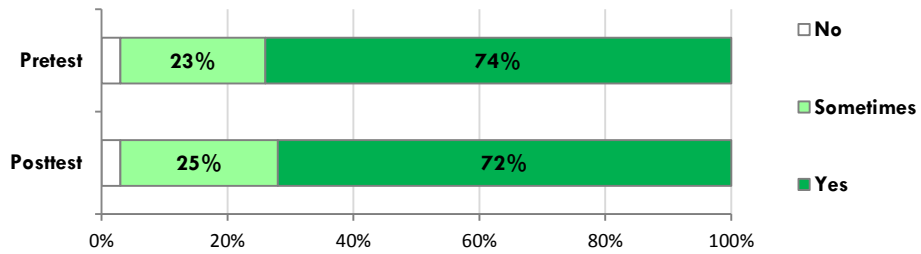
I work very hard on my schoolwork



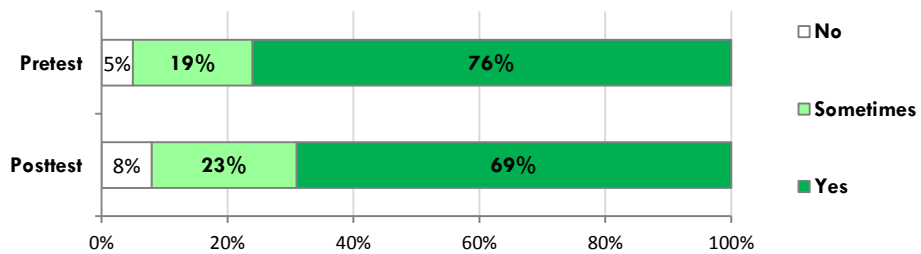
I pay attention and concentrate in class



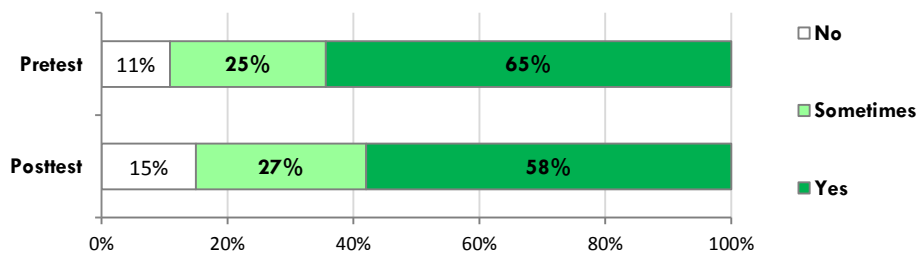
I always come to class having finished my homework



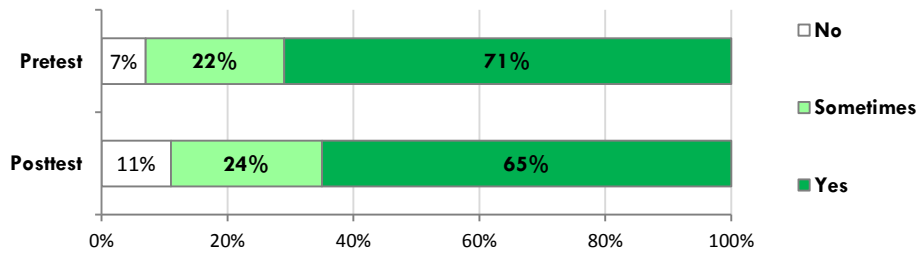
I like school a lot



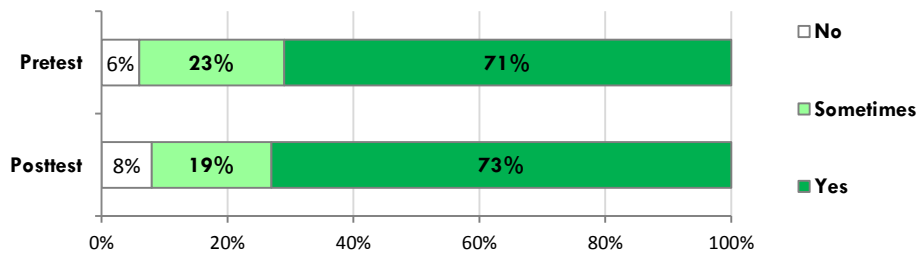
Reading is one of my favorite things to do



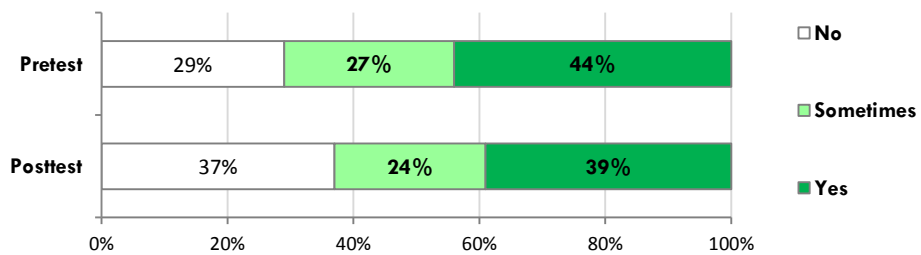
Reading is fun



I'm very good at reading



I read at home with my parents



This past summer I spent time reading/This upcoming summer I will spend time reading

