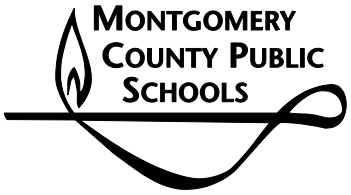



# Impact of the Extended Learning Opportunities Summer Adventures in Learning (ELO SAIL) Program on Student Academic Performance: Part 1, Results From Fall 2012 to Fall 2015

**Office of Shared Accountability**

**April 2016**

**Elizabeth Cooper-Martin, Ph.D.**
**Natalie Wolanin**
**Seong Jang**
**Shahpar Modarresi, Ph.D.**
**Huafang Zhao, Ph.D.**

Montgomery County Public Schools

OFFICE OF SHARED ACCOUNTABILITY

850 Hungerford Drive
Rockville, Maryland 20850
301-279-3553

Mr. Larry A. Bowers
*Interim Superintendent of Schools*

Dr. Maria V. Navarro
*Chief Academic Officer*

# Table of Contents

# List of Tables

# List of Figures

# Executive Summary

This study is an evaluation of Extended Learning Opportunities—Summer Adventures in Learning (ELO SAIL), which is a Montgomery County Public Schools (MCPS) summer program in Title I elementary schools. ELO SAIL has two major goals: 1) to prevent the achievement loss that students may experience in summer and 2) to prepare students for the next grade level. The program is offered in all 24 Title I schools during July; its target includes students who will enter kindergarten, Grade 1, or Grade 2 in the fall after the summer session. The program features a four-hour instructional day of reading, language arts, and mathematics.

The evaluation focuses on the impact of ELO SAIL on student academic achievement. This report addresses the following questions; a subsequent report will analyze the impact of the 2015 ELO SAIL program in greater detail.

1. What were the demographic characteristics of students in Kindergarten–Grade 2 who attended ELO SAIL in 2012, 2013, 2014, and 2015?
2. How did the students who participated in ELO SAIL in 2012, 2013, 2014, and 2015 perform in the fall, compared with students in Title I schools who did not participate? Did the academic impact of the program vary by student subgroups?
3. How did the students who participated in ELO SAIL in 2012, 2013, and 2014 perform in reading and mathematics at the end of the school year, compared with their nonparticipating peers in Title I schools? Did the academic impact of the program vary by student subgroups?

## Summary of Methodology

The study populations were all students who participated in ELO SAIL from 2012 to 2015. The comparison groups were students who did not participate in ELO SAIL and were enrolled in Grades K–2 in Title I schools during 2012–2013, 2013–2014, and 2014–2015. Rasch unit (RIT) scores in mathematics from Measures of Academic Progress-Primary Grades (MAP-P) were used as outcome measures for mathematics. Reading levels from the Assessment Program in Primary Reading (AP-PR) were used as outcome measures for reading. For questions 2 and 3, bivariate tests of significance were used to examine differences by grade level and content area between students who participated in ELO SAIL and those who did not for all students and for seven student subgroups: Asian, Black or African American, Hispanic/Latino, White, and students who received the following services: English for Speakers of Other Languages (ESOL), Free and Reduced-price Meal System (FARMS), and special education.

## Summary of Findings

*Question 1*. Across four summers (2012, 2013, 2014, and 2015), more than 14,000 students in Grades K–2 attended ELO SAIL. Out of this total, about two thirds were Hispanic/Latino and one quarter were Black or African American. About one half of the students received ESOL, five out of six received FARMS, and one out of ten received special education services. The percentage for each subgroup was similar every year.

*Question 2: Kindergarten.* Among all kindergarten students, the only significant difference in fall AP-PR reading results was in one of the four years, when more ELO SAIL attendees were at a pre-reading level (i.e., have mastered foundational reading skills) compared to their peers who did not attend. The impact on fall reading results did not vary across kindergarten subgroups. In six of the seven subgroups (all except for White students), there were statistically significant differences for at least one year in favor of stronger reading performance by ELO SAIL attendees.

Among all kindergarteners, the mean RIT score in mathematics from the fall MAP-P test was significantly lower for ELO SAIL participants than for nonparticipants in two of the three years examined. However, among subgroups of kindergarteners, the math performance in the fall of students who attended ELO SAIL did not differ from non-attendees, with very few exceptions.

*Question 2: Grades 1 and 2.* The analyses for Grade 1 and Grade 2 students concerned changes in performance in the fall after each ELO session, compared to performance in the spring prior to that ELO session; four years were examined. The reading measures concerned whether students increased or stayed at the same AP-PR book level. Among all first graders, there was a significant difference in reading for only one year; ELO SAIL participants experienced less summer loss in reading compared with their peers who did not attend. Among all second graders, there were no differences between ELO SAIL attendees and non-attendees in summer reading loss for any year. There was little variation in summer reading loss by subgroups of first or second graders; ELO SAIL attendees did not differ from non-attendees, with very few exceptions.

The mathematics measures for Grades 1 and 2 concerned gains in RIT scores in mathematics from MAP-P. For all Grade 1 students, the mean gains of ELO SAIL attendees were significantly higher than those of non-attendees in two of the four years. There was little variation in impact across subgroups of first graders. Differences in math gains were statistically significant in favor of ELO SAIL for at least two years among five of the seven subgroups: Black or African American, Hispanic/Latino, ESOL recipients, FARMS recipients, and special education recipients.

Among all second graders, the mean gains in math scores were significantly higher for ELO SAIL participants than nonparticipants in three years. There was some variation by subgroup. Differences between attendees and non-attendees were statistically significant, in favor of ELO SAIL, in three years for two subgroups, ESOL recipients and FARMS recipients, but in only one or two years for three subgroups: Black or African American, Hispanic/Latino, and White students.

*Question 3: Reading*. Reading performance at the end of the year was analyzed for three years; the only statistically significant differences for all students involved kindergarteners. More kindergarteners who attended ELO SAIL met the end-of-the-year AP-PR reading benchmark than non-attendees in two years. There was little variation by subgroup. There were significant differences for two years in favor of ELO SAIL for five of the seven subgroups: Black or African American, Hispanic/Latino, ESOL recipients, FARMS recipients, and special education recipients.

First and second graders who participated in ELO SAIL performed as well in meeting the end-of-the-year reading benchmark as their peers in Title I schools who did not attend. Likewise, for most subgroups of first graders and second graders, end-of-year reading performance did not differ between attendees and non-attendees in any year. An exception was statistically significant differences in favor of ELO SAIL attendees in one year for each of the three services subgroups.

*Question 3: Mathematics.* In analyses of all students, ELO SAIL participants had lower RIT scores on the MAP-P mathematics test at the end of the following year, on average, than their nonparticipating peers for each grade level in each of the three years examined. These differences in mathematics were statistically significant in favor of non-attendees in each year for Grades 1 and 2 but in only one year for kindergarten students.

In contrast, among most subgroups in most years, ELO SAIL attendees and non-attendees did not differ on end-of-the-year mathematics performance. However, there were a few statistically significant differences in favor of ELO SAIL attendees and a few statistically significant differences in favor of non-attendees.

## Conclusion

In conclusion, the positive impact of ELO SAIL was stronger on academic performance in the fall than on performance at the end of the year, based on statistically significant differences between attendees and non-attendees. Consistent with previous evaluations of ELO SAIL, the benefits varied by content area, with more positive findings in mathematics than in reading, and varied by grade level, such that positive findings in reading mainly were for kindergarteners, while positive findings in mathematics were limited mainly to first and second graders. However, in this study, unlike previous ones, a benefit for an entire grade level usually was evident for the majority of subgroups.

# Impact of the Extended Learning Opportunities Summer Adventures in Learning Program (ELO SAIL) on Student Academic Performance: Part 1, Results From Fall 2012 to Fall 2015

The Office of Shared Accountability (OSA) is conducting an evaluation of Extended Learning Opportunities—Summer Adventures in Learning (ELO SAIL) in Montgomery County Public Schools (MCPS) at the request of the Office of the Chief Academic Officer. The mission of MCPS is to ensure that every student will have the academic, creative problem solving, and social emotional skills necessary for success in college and career, as reflected in the district's Strategic Planning Framework (MCPS, 2013). Achieving this mission requires eliminating achievement gaps among student groups. Extended school year and extended school time programs in MCPS provide students in Title I schools additional learning opportunities to further develop academic background knowledge. This document is one of two that examine the impact of ELO SAIL on student academic achievement. This report includes ELO SAIL sessions from summer 2012 through summer 2015 and analyzes data from fall 2012 through fall 2015; the next report will focus on the summer 2015 ELO SAIL session and analyze data available after fall 2015.

## Background

### Program Description

*Overview***.** ELO SAIL is a free summer program for students in Grades K–2 in MCPS Title I elementary schools. The major goals of ELO SAIL are first, to prevent the achievement loss that students may experience in summer, also known as summer loss, and second, to prepare students for the next grade level. ELO SAIL was piloted at 17 Title I schools in 2002 and continued to operate in all 24 Title I schools in summer of 2015 as a part of the district's strategy to focus resources and supports for students in these schools (MCPS, 2015).

*Target population.* The target population for the ELO SAIL program includes students who will enter kindergarten, Grade 1 or, Grade 2 in the fall after the ELO SAIL session. All students in Title I schools are eligible to attend. Participation is voluntary in nature. However, student attendance is monitored closely.

*Program purpose.* The ELO SAIL program is an equity strategy that seeks to serve the following specific purposes:

- Meet the academic needs of each participant by providing opportunities to review grade-level concepts
- Accelerate learning by previewing concepts and skills to be taught in the grades students will enter in fall
- Strengthen basic skills that are preconditions of later learning
- Mitigate the achievement loss that students may experience in summer
- Provide continuing English language instruction for speakers of other languages

*Structure and funding.* In 2015, the ELO SAIL program was conducted for 19 days in July and featured a four-hour instructional day of reading, language arts, and mathematics. Bus transportation, breakfast, and lunch were provided free of charge. ELO SAIL is a core program of the federal Title I programs and is supported mainly with federal Title I funding.

*Staffing.* All teachers must be highly qualified in order to teach in the ELO SAIL program. A "highly qualified teacher" is someone who has a [minimum of a] bachelor's degree from an accredited institution, demonstrates competence in the subject area in which he/she will teach, and is certified to teach in the state of Maryland (Maryland State Department of Education, 2015). In summer 2015, classroom teacher to student ratio was 1:18 for all grades. Each school also had one teacher for English for Speakers of Other Languages (ESOL), one special education resource teacher, one paraeducator for every 75 enrolled students, one summer attendance secretary, one cafeteria support, and one clerical support for registration. The Office of Community Engagement and Partnership in MCPS recruited 230 volunteers to assist staff for ELO SAIL in summer 2015. The number of volunteers assigned depended on ELO SAIL enrollment in the school, ranging from 4 to 15 volunteers per school.

*Major program changes since 2009*. In 2009, ELO SAIL targeted students entering kindergarten through Grade 5 in 22 Title I schools, used an earlier MCPS curriculum, and had staff-student ratios between 1:17 and 1:19 in Grades K–2. Due to fiscal constraints, the program was limited to Grades K–2 in summer 2012. Although stimulus funds permitted ELO SAIL to again serve Grades K–5 in summer 2013, MCPS responded to the threat of economic instability by committing to fund the program for the early learners K–2 from summer 2014 onward. In summer 2015, ELO SAIL served Grades K–2 in all 24 Title I schools, provided instruction with MCPS Curriculum 2.0, and had a staff-student ratio of 1:18 in Grades K–2.

*Expected student outcomes*. The short-term goal of the ELO SAIL program is to provide a stimulating academic summer opportunity for students in Title I schools. Further, the expectation is that students who attend the ELO SAIL program will maintain or improve their skills in reading and mathematics and be ready to succeed at the next grade level. In the long-run, the expectation is that ELO SAIL attendees will continue to make expected academic progress and to meet or exceed grade-level benchmarks in reading and mathematics.

## Previous Evaluations of ELO SAIL

There have been MCPS evaluations of ELO SAIL for three previous years of the program: 2002, 2003, and 2007.

ELO SAIL began in summer 2002; the program was for 20 days and provided a preview of reading and math concepts to students in kindergarten through Grade 3 at 18 schools. The first year of ELO SAIL was evaluated for its impact on student academic outcomes and whether the impact differed across student subgroups of race/ethnicity and services received (Sunmonu, Larson, Horn, Cooper-Martin, & Nielsen, 2002). Students completed pretests in mathematics and reading at the beginning of the ELO program and posttests in September after the program. Sunmonu et al. found modest but statistically significant benefits in mathematics for 1st, 2nd, and 3rd graders who attended all four weeks of the program and modest benefits in reading for students in Grades 1 and 2. The

ELO SAIL program benefits were similar across all ethnic groups and also apparent for students who received Free and Reduced-price Meals System (FARMS) and ESOL services. However, in Grade 2, the ELO SAIL benefits in mathematics were limited to students with the lowest academic needs, while the benefits in reading were limited to students with the highest academic needs.

Sunmonu, Curry-Corcoran, and Mordica (2004) evaluated both implementation and outcomes for the second year of ELO SAIL in 2003, when the program served students in kindergarten through Grade 4 in 18 Title I schools and ran for 20 days. These evaluators found that student recruitment efforts and attendance strategies were largely successful; credential for the teachers at the summer program were equivalent to teachers in Title I schools. Program administrators and teachers, along with parents of attendees, were satisfied with ELO SAIL. To evaluate outcomes, the authors calculated the change in each student's test scores from the spring prior to ELO SAIL to test scores from the fall after the program for students in Grades 1–4; they used fall scores only for kindergarteners. Students who attended the program for at least 16 days had higher spring to fall improvements, compared to their peers who attended five days or fewer, including those who did not attend at all. Although the only statistically and practically significant difference overall was for Grade 4 students in mathematics, the benefit did vary by student subgroup. The authors found significant benefits, in selected grades and academic areas, for ESOL recipients, FARMS recipients, and also for Asian, Black or African American, and Hispanic/Latino students.

Wang (2009) evaluated the 2007 ELO SAIL program for implementation and impact on student academic achievement using multilevel data collection methods. She found significantly higher reading performance in fall for Grade 1 students who attended all four weeks of ELO SAIL (fully participated). Grade 4 students who attended all four weeks of ELO SAIL significantly outperformed their nonparticipating peers in mathematics. While not all racial/ethnic groups in Grades 1 and 4 showed these significant differences, students who were recipients of ESOL or FARMS services benefited more from ELO SAIL than non-recipients for both first and fourth graders.

In summary, the previous MCPS studies found a small to modest positive impact of ELO SAIL on student fall academic performance in reading and mathematics for students with high attendance at the summer program. However, the benefits varied by grade level, content area, and student subgroup.

# Scope of the Evaluation

This evaluation examines the impact of ELO SAIL on student academic achievement as posed by questions that were developed in collaboration with the program administrators in the Office of Title I Programs. This report presents findings on the following evaluation questions; a second report will analyze the impact of the 2015 ELO SAIL program in greater detail.

**Evaluation Questions**

1. What were the demographic characteristics of students in Kindergarten–Grade 2 who attended ELO SAIL in 2012, 2013, 2014, and 2015?

2. How did the students who participated in ELO SAIL in 2012, 2013, 2014, and 2015 perform in the fall, compared with students in Title I schools who did not participate?

   a. Did kindergarten students who attended an ELO SAIL program perform better in reading and mathematics in the following fall, compared with their peers in Title I schools who did not attend?
   b. Did Grade 1 and Grade 2 students who attended an ELO SAIL program experience less summer loss in reading and mathematics, compared with their peers in Title I schools who did not attend?
   c. Did the academic impact of the ELO SAIL program vary by student subgroups, such as race/ethnicity and services received?

3. How did the Title I students who participated in ELO SAIL in 2012, 2013, and 2014 perform in reading and mathematics at the end of the school year, compared with their nonparticipating peers in Title I schools?

   a. Did the program participants in kindergarten, Grade 1, and Grade 2 perform better in reading and mathematics in the following spring, compared with their peers in Title I schools who did not attend?
   b. Did the academic impact of the ELO SAIL program vary by student subgroups, such as race/ethnicity and services received?

# Methodology

## Study Populations

The study populations were composed of all students who participated in ELO SAIL from 2012 to 2015. To answer evaluation questions 2 and 3, the comparison groups were students who did not participate in ELO SAIL and were enrolled in Grades K–2 in Title I schools during the following school years: 2012–2013, 2013–2014, and 2014–2015. Program participants from summer 2012 to 2015 were chosen because these are the most recent cohorts with comparable and more complete assessment data.

## Measures

Measures for this study included academic performance and student characteristics.

*Mathematics.* Measures of Academic Progress-Primary Grades (MAP-P) is an integrated collection of computerized assessments designed for students in kindergarten through second grade (Northwest Education Association, 2008 and 2011). It includes multiple-choice items and a variety of other item types. Task instructions are provided through audio headphones to capitalize on non-readers' or early readers' auditory comprehension more than reading comprehension. The MAP-P are designed to provide educators with instructional information about what students are ready to learn. Rasch unit (RIT) scores for mathematics from MAP-P were used as outcome measures.

To answer evaluation question 2 for mathematics performance in the fall, the measures varied by grade level. For kindergarteners, the measure was the RIT score from the MAP-P in mathematics assessment completed in the fall after the ELO SAIL session. For Grades 1 and 2, the analyses examined differences between the RIT score from the fall assessment following ELO SAIL and the RIT score from the spring prior to ELO SAIL. The measure to answer evaluation question 3 was the RIT score from the spring (i.e., the end of the year) following each ELO SAIL session.

*Reading.* Data from the Assessment Program in Primary Reading (AP-PR) were used as reading measures. The AP-PR is a research-based and locally developed assessment used to measure important concepts and skills in the MCPS reading curriculum. AP-PR results provide formative and summative data. The Text Reading and Comprehension (TRC) subtest of the AP-PR is administered in the fall, winter, and spring each year to students from kindergarten to Grade 2. Teachers and staff can use the data to monitor students' reading accuracy, oral retell, and oral comprehension and to guide instructional decisions. Students are expected to reach grade-specific benchmarks in spring (i.e., Level 4 for K, Level 16 for Grade 1, and Level M for Grade 2). (MAP-P includes scores for reading as well as mathematics. However, most Grade K–2 students did not complete the reading portion of MAP-P from 2012 to 2015, and so RIT scores for reading were not available.)

To answer evaluation question 2 for reading performance in the fall, the measures varied by grade level. For kindergarten, reading performance in the fall, after the summer of each ELO session, was analyzed. For the years of this study, relatively few kindergarten students (about 15%) had a

book level from the AP-PR in fall. Therefore, instead of analyzing each student's book level, the analyses focused on whether students were reading (i.e., had a book level) or not. More information on reading performance was available for AP-PR in 2015–2016 for students who were not reading. There was information on whether students had passed print concepts (foundational, pre-reading behaviors), had attempted the print concepts test and failed it, or were not ready for print concepts. There was also information on whether they had passed reading behaviors, which is part two of print concepts. Therefore, 2015–2016 analyses of fall reading performance for kindergarten students used three categories:

- Non-reading, for students who were not ready for print concepts or attempted but did not pass it
- Pre-reading, for students who passed print concepts or reading behaviors
- Reading for students who had any book level

To answer evaluation question 2 about reading performance in the fall for students in Grades 1 and 2, each student's book level in fall (after ELO SAIL) was compared to his or her book level in the previous spring (prior to ELO SAIL). The analyses focused on summer loss by examining the percentage of students whose fall book level increased or stayed the same compared to their book level the prior spring, meaning they had no summer loss. Analyses for 1st and 2nd graders included only students with a book level from both spring and fall.

To answer evaluation question 3 for reading performance at the end of the academic year, percentages of students meeting grade-specific benchmarks (noted above) in spring were used.

*Student characteristics.* Demographic information on students included grade level, gender, race/ethnicity, and receipt of the following services: ESOL, FARMS, and special education.

## Data Collection

Student-level data on participation in ELO SAIL, characteristics, and outcomes were downloaded from appropriate MCPS databases.

## Analytical Procedures

Descriptive analyses addressed all evaluation questions. For evaluation questions 2 and 3, bivariate tests of significance also were used to examine differences between students who participated in ELO SAIL and those who did not. Specifically $\chi^2$ tests were used for the reading measures because they were categorical (i.e., students did or did not have summer loss, students did or did not meet the end-of-year reading benchmark). For the mathematics measures, t-tests were used because the RIT scores were continuous (i.e., had a wide range of values) and were a ratio scale (i.e., start at zero and had the same distance between values).

## Strengths and Limitations of the Methodology

One strength of this study is that ELO SAIL attendees were compared to other students from the Title I schools that offer ELO SAIL. Thus, the comparison group had similar school experiences. Further, the authors calculated the academic performance of multiple, successive cohorts of students (for four years for fall performance and for three years for end-of-year performance) to estimate the yearly impact of ELO SAIL on student academic achievement. The inclusion of multiple years of results for each question leads to increased confidence in the study's results and conclusions.

There are three caveats when interpreting the results. One, the tests of significance did not control for any differences between attendees and non-attendees at ELO SAIL that could affect their academic performance, such as initial ability. Two, the ELO SAIL participants in this study varied in the level of attendance. The coding of attendance data at ELO SAIL varied across the years included in our analyses, and, therefore, we did not consider the data reliable enough to use. However, prior evaluations of ELO SAIL identified benefits only for students who attended four weeks or at least 16 days. By including students with both high and low attendance, the following results may under-estimate the impact of ELO SAIL. Three, for the measure of reading in the fall used for students in Grades 1 and 2, we calculated whether a student had an increase in book level or stayed the same compared to the prior spring. However, because there are not equal intervals between the book levels, the effort for a student to increase from one book level to the next may not be the same for every book level.

Lastly, it should be noted that causality may not be inferred from this study due to the lack of an experimental design. The underlying assumption of an experimental design is to administer an intervention program (e.g., ELO SAIL) to only one group and use another group who did not receive the same type of treatment as a comparison. Although the comparison group in this study did not attend ELO SAIL, it is not known whether these students received a similar type of academic or enrichment program during the summer.

# Results

## Findings for Question 1: What were the demographic characteristics of students in Grades K–2 who attended ELO SAIL in 2012, 2013, 2014, and 2015?

Table 1 presents the demographic characteristics of students in Grades K–2 who attended ELO SAIL in four summers: 2012, 2013, 2014, and 2015. Across the four school years, more than 14,000 students in Grades K–2 attended the ELO SAIL program. Across the four cohorts, about two thirds of the students were Hispanic/Latino (63%) and one quarter (25%) were Black or African American. About one half of them (51%) received ESOL, three quarters (77%) received FARMS, and one tenth (10%) received special education services. The percentage for each subgroup was similar in each year.

Table 1
Characteristics of ELO SAIL Students in Grades K–2 by School Year and Subgroup

| | 2012–2013 | | 2013–2014 | | 2014–2015 | | 2015–2016 | | All cohorts | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *N* | *%* | *N* | *%* | *N* | *%* | *N* | *%* | *N* | *%* |
| Total | 2,871 | 100.0 | 3,545 | 100.0 | 4,072 | 100.0 | 3,836 | 100.0 | 14,324 | 100.0 |
| Grade level | | | | | | | | | | |
| Kindergarten | 1,047 | 36.5 | 1,214 | 34.2 | 1,469 | 36.1 | 1,341 | 35.0 | 5,071 | 35.4 |
| Grade 1 | 993 | 34.6 | 1,232 | 34.8 | 1,354 | 33.3 | 1,327 | 34.6 | 4,906 | 34.3 |
| Grade 2 | 831 | 28.9 | 1,099 | 31.0 | 1,249 | 30.7 | 1,168 | 30.4 | 4,347 | 30.3 |
| Gender | | | | | | | | | | |
| Female | 1,348 | 47.0 | 1,651 | 46.6 | 1,910 | 46.9 | 1,835 | 47.8 | 6,744 | 47.1 |
| Male | 1,523 | 53.0 | 1,894 | 53.4 | 2,162 | 53.1 | 2,001 | 52.2 | 7,580 | 52.9 |
| Race/ethnicity | | | | | | | | | | |
| American Indian | -- | -- | 13 | 0.4 | 12 | 0.3 | 13 | 0.3 | 40 | 0.3 |
| Asian | 207 | 7.2 | 236 | 6.7 | 248 | 6.1 | 226 | 5.9 | 917 | 6.4 |
| Black or African American | 658 | 22.9 | 843 | 23.8 | 1,042 | 25.6 | 1,039 | 27.1 | 3,582 | 25.0 |
| Hispanic/Latino | 1,865 | 65.0 | 2,278 | 64.3 | 2,580 | 63.4 | 2,350 | 61.3 | 9,073 | 63.3 |
| White | 92 | 3.2 | 124 | 3.5 | 121 | 3.0 | 133 | 3.5 | 470 | 3.3 |
| Two or More Races | 44 | 1.5 | 50 | 1.4 | 68 | 1.7 | 75 | 2.0 | 237 | 1.7 |
| Receipt of services during school year | | | | | | | | | | |
| ESOL | 1,553 | 54.1 | 1,898 | 53.5 | 2,093 | 51.4 | 1,796 | 46.8 | 7,340 | 51.2 |
| FARMS | 2,504 | 87.2 | 3,080 | 86.9 | 3,526 | 86.6 | 3,077 | 80.2 | 12,187 | 85.1 |
| Special education | 275 | 9.6 | 335 | 9.4 | 408 | 10.0 | 360 | 9.4 | 1,378 | 9.6 |

*Note*. Numbers are not shown (--) for groups < 10.

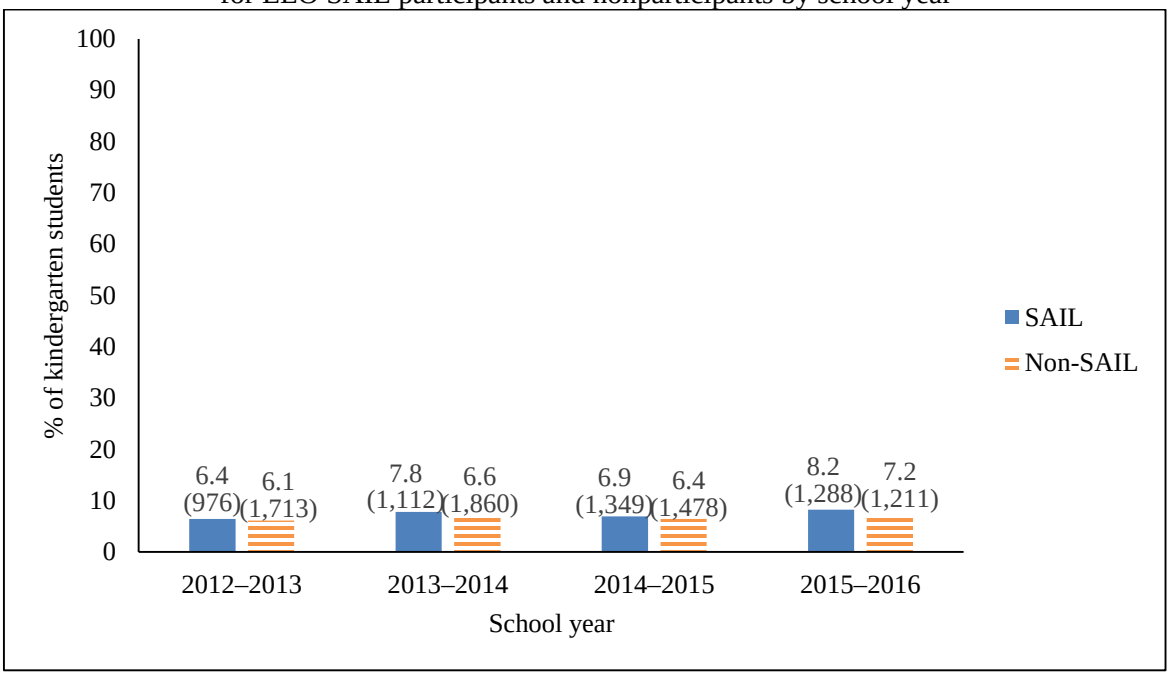
**Findings for Question 2: How did the students who participated in ELO SAIL in 2012, 2013, 2014, and 2015 perform in the fall, compared with students in Title I schools who did not participate?**

Findings are separated by grade level; each grade level includes findings on reading performance, mathematics performance, and variations among student subgroups. This section includes graphs only for the total group; graphs for seven subgroups (Asian, Black or African American, Hispanic/Latino, White, ESOL recipients, FARMS recipients, and special education recipients) are in appendices for each academic area in each grade level.

***Kindergarten***

*Reading*. For the years of this study, relatively few kindergarten students (about 15%) had a book level from the AP-PR in fall. Therefore, instead of analyzing each student's book level, the analyses focused on whether students were reading or not. Among kindergarten students, slightly more ELO SAIL participants than nonparticipants were reading in the fall of each year (Figure 2.0). None of these differences were statistically significant.

*Figure 2.0*
Percentage of kindergarten students who were reading, based on AP-PR in fall, for ELO SAIL participants and nonparticipants by school year




*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

As seen in Appendix A, there was little variation in reading performance of ELO SAIL participants across subgroups of kindergarteners. As with all kindergarteners, there were more readers in ELO SAIL every year for four subgroups: Black or African American, Hispanic/Latino, ESOL recipients, and FARMS recipients. Better performance by ELO SAIL attendees also was apparent

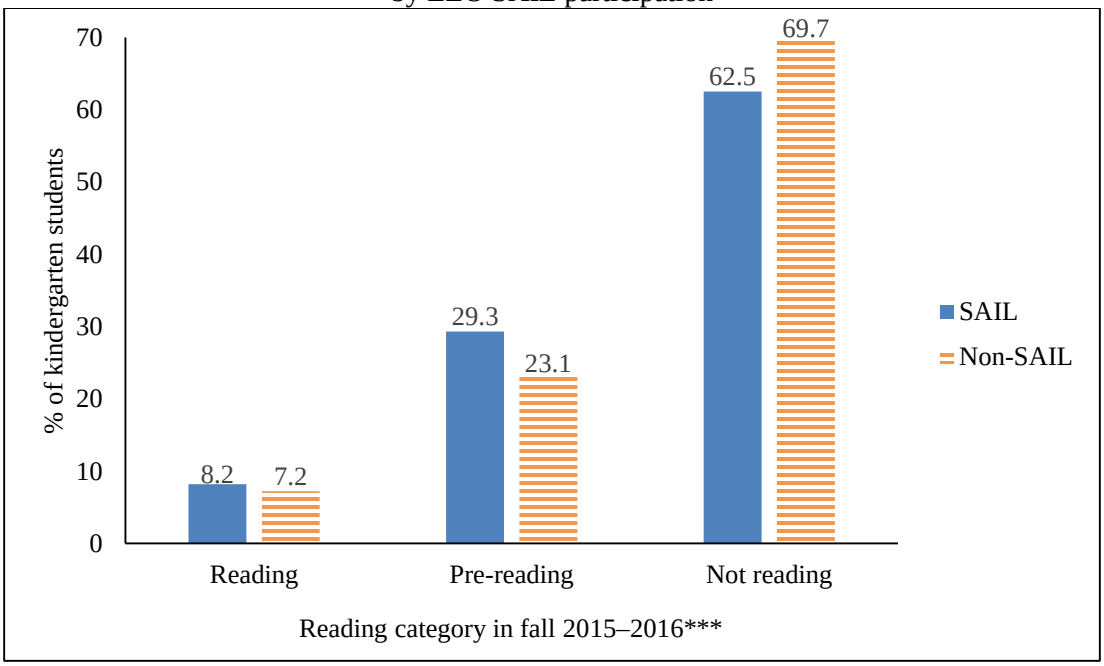
for Asian students in three years and for special education recipients in two years. The following differences in favor of ELO SAIL attendees were statistically significant:

- Asian students in 2015–2016 ($\chi^2(1) = 6.40$, $p < .05$)
- Black or African American students in 2013–2014 ($\chi^2(1) = 5.69$, $p < .05$)
- Hispanic/Latino students in 2013–2014 ($\chi^2(1) = 7.34$, $p < .01$)
- ESOL recipients in 2013–2014 ($\chi^2(1) = 4.53$, $p < .05$)
- FARMS recipients in three years: 2013–2014 ($\chi^2(1) = 5.09$, $p < .05$), 2014–2015 ($\chi^2(1) = 4.64$, $p < .05$), and 2015–2016 ($\chi^2(1) = 5.39$, $p < .05$)

For White students, the pattern was reversed; in every year there were fewer readers among ELO SAIL attendees than non-attendees, although the differences were not statistically significant.

More information on reading performance was available for AP-PR in 2015–2016, so that students without a book level were categorized as pre-reading or not reading. A higher percentage of kindergarteners who attended ELO SAIL were at a pre-reading level, compared to their peers who did not attend (Figure 2.1). This difference was statistically significant ($\chi^2(2) = 14.85$, $p < .001$).

*Figure 2.1*
Percentage of kindergarten students in reading categories from fall AP-PR for 2015–2016 by ELO SAIL participation




*Note.* N for SAIL = 1,288. N for non-SAIL = 1,211.
*$p < .05$, **$p < .01$, ***$p < .001$

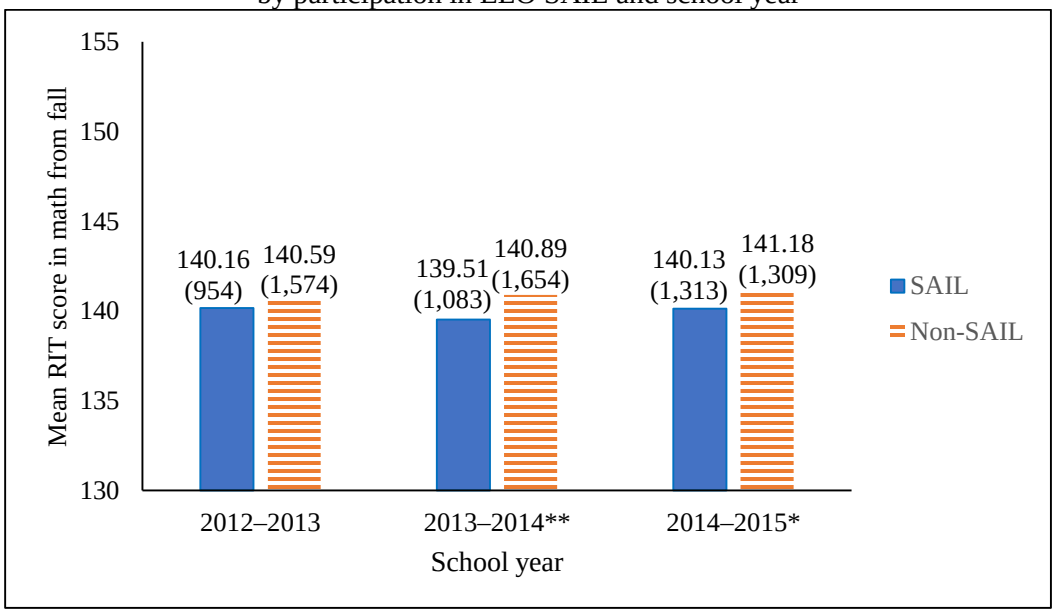
Analyses of the three reading categories from fall 2015–2016 for kindergarten subgroups revealed little variation (Table A2). In five of the seven subgroups, there were more pre-readers among ELO SAIL attendees than non-attendees. Each difference was statistically significant, as follows:

- Black or African American students in 2015–2016 ($\chi^2(2) = 14.96$, $p < .001$)

- Hispanic/Latino students in 2015–2016 ($\chi^2(2) = 11.36$, $p < .01$)
- ESOL recipients in 2015–2016 ($\chi^2(2) = 23.37$, $p < .001$)
- FARMS recipients in 2015–2016 ($\chi^2(2) = 26.98$, $p < .001$)
- Special education recipients in 2015–2016 ($\chi^2(2) = 9.73$, $p < .01$)

*Mathematics.* Figure 2.2 presents the mean RIT score in mathematics from fall MAP-P testing for kindergarten students who participated in ELO SAIL and for students who did not. (Figure 2.2 excludes results from 2015–2016 because there were too few scores. See Table D1 in Appendix.) For each of the three years, the mean RIT score was lower for SAIL participants than for nonparticipants. This difference was statistically significant for two years in favor of non-ELO SAIL students: 2013–2014 (t (2,735) = -2.78. $p < .01$) and 2014–2015 (t (2,620) = -2.20. $p < .05$).

*Figure 2.2*
Mean MAP-P RIT scores in mathematics from fall for kindergarten students by participation in ELO SAIL and school year



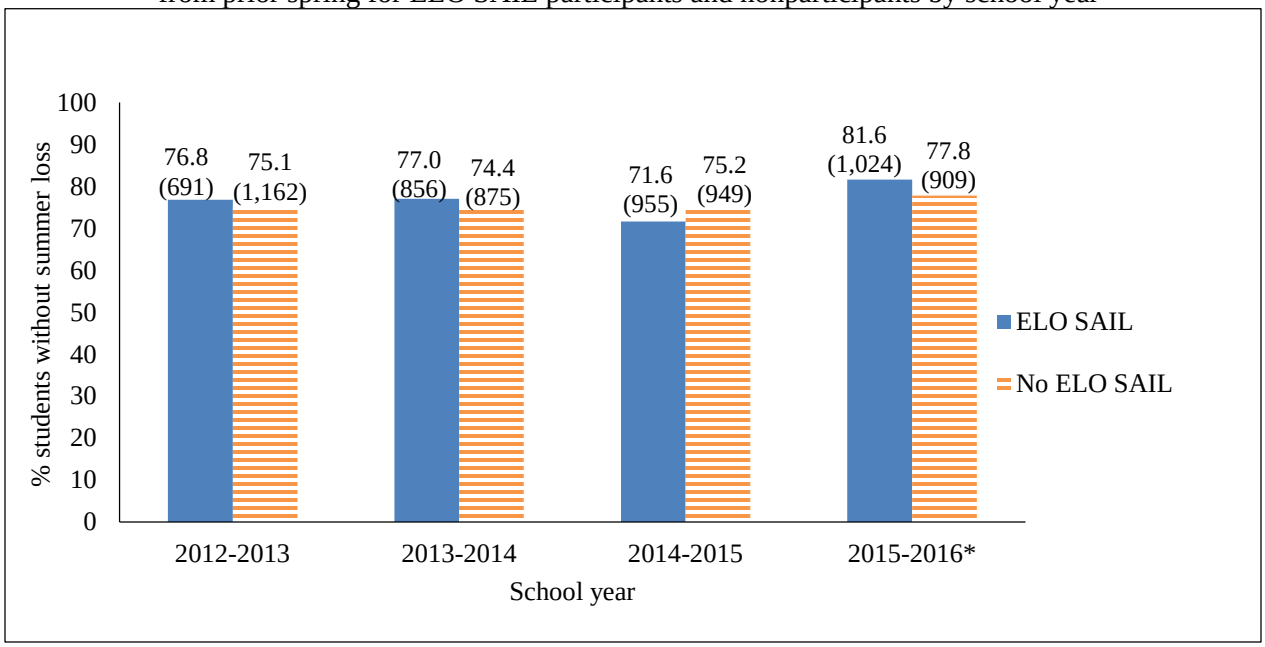

*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

Further analyses showed differential patterns of achievement in mathematics among most of the kindergarten subgroups (Appendix J). The findings for Asian and White students were the same as those for all students: ELO SAIL students had lower mean scores each year. The difference for White students in 2013–2014 was statistically significant in favor of non-attendees (t(216) = -2.54, $p < .05$). By contrast, ELO SAIL participants in four subgroups had higher mean mathematics scores than nonparticipants every year: Black or African American, Hispanic/Latino, ESOL recipients, and FARMS recipients. The difference for Black or African American students in 2012–2013 was statistically significant in favor of ELO SAIL (t(570) = 2.43, $p < .05$). The differences were not statistically significant for the other three subgroups. Among special education recipients, SAIL participants had higher mean scores than nonparticipants for the first two years but had lower mean scores in 2014–2015. This latter difference was statistically significant in favor of non-attendees (t(208) = -2.94 $p < .01$).

### *Grade 1*

*Reading*. To capture changes in reading performance, analyses focused on whether each student had a fall book level that was higher or the same as his or her book level in spring; in other words, whether the student avoided any summer loss in reading. Figure 2.3 displays the percentage of Grade 1 students without summer loss in reading for ELO SAIL participants and nonparticipants. Specifically, the results for 2012–2013 indicated that 77% of the 691 students who attended ELO SAIL had a book level in fall 2012 (after ELO SAIL) that was higher or the same as their book level in spring 2012 (before ELO SAIL), while 75% of the 1,162 nonparticipants had a fall book level that was higher or the same as their book level in spring. Thus, more ELO SAIL participants than nonparticipants avoided summer loss in 2012–2013. Further, this pattern of better performance by ELO SAIL attendees was the same for 2013–2014 and 2015–2016. However, the difference between the two groups in favor of ELO SAIL was statistically significant in only one year 2015–2016 ($\chi^2(1) = 4.46$, $p < .05$). By contrast, in 2014–2015, more nonparticipants than ELO SAIL participants had no summer loss, although this difference was not statistically significant.

*Figure 2.3*
Percentage of Grade 1 students whose AP-PR book level book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year



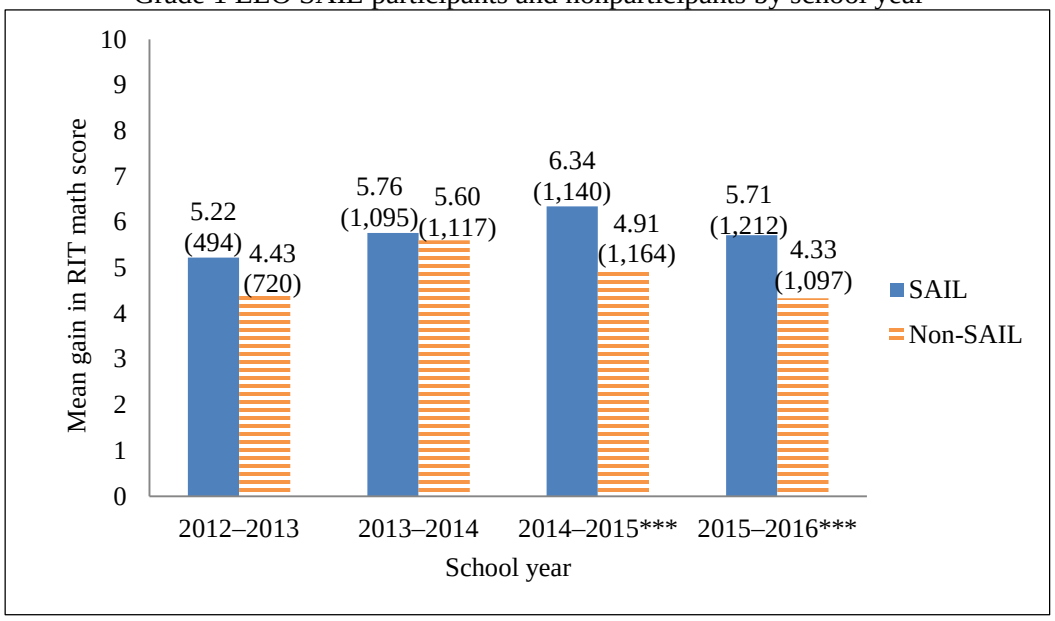

*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

There was little variation in the relative performance of ELO SAIL participants among subgroups of 1st graders (Appendix C). More ELO SAIL students than non-SAIL students avoided summer reading loss in each of three years among five of the seven Grade 1 subgroups: Black or African American, Hispanic/Latino, ESOL recipients, FARMS recipients, and special education recipients. For the Asian and White subgroups, more ELO SAIL participants than nonparticipants avoided summer loss for two years. The difference for FARMS recipients in 2015–2016 was significant ($\chi^2(1) = 6.85$, $p < .01$) in favor of participants. For all subgroups, ELO SAIL students had weaker

performance in 2014–2015, as measured by summer loss in reading. One difference in that year was statistically significant: for special education recipients ($\chi^2(1) = 4.28$, $p < .05$) in favor of nonparticipants. No other differences for subgroups of Grade 1 students were statistically significant.

*Mathematics*. For mathematics, the analyses for first graders examined changes in RIT scores between spring (prior to ELO SAIL) and fall (after ELO SAIL). These changes were summarized by calculating the mean gain across each group of students, as seen in Figure 2.4. Specifically, the results for 2012–2013 indicated that, on average, students who attended ELO SAIL increased their RIT score by 5.2 points in fall 2012 (after ELO SAIL) compared to their score in spring 2012 (before ELO SAIL), while nonparticipants, on average, increased their RIT score by 4.4 points. Thus, the mean RIT gain was higher for ELO SAIL participants than for nonparticipants in 2012–2013. This pattern of better performance by ELO SAIL attendees was the same for the other years examined and was statistically significant in favor of ELO SAIL in both 2014–2015 (t(2,302) = 4.35, $p < .001$) and 2015–2016 (t(2,307) = 4.09, $p < .001$).

*Figure 2.4*
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 1 ELO SAIL participants and nonparticipants by school year




*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

There was little variation in the stronger performance of ELO SAIL participants when analyzing subgroups of 1st graders (Appendix D). As with all Grade 1 students, mean gains in mathematics scores were higher among ELO SAIL students than non-ELO SAIL students in every year for every subgroup, except for Asian students in 2012–2013. Many of these differences were statistically significant in favor of ELO SAIL:

- Asian students in one year: 2015–2016 (t(117) = 2.11, $p < .05$)
- Black or African American students in one year: 2014–2015 (t(561) = 2.13, $p < .05$)

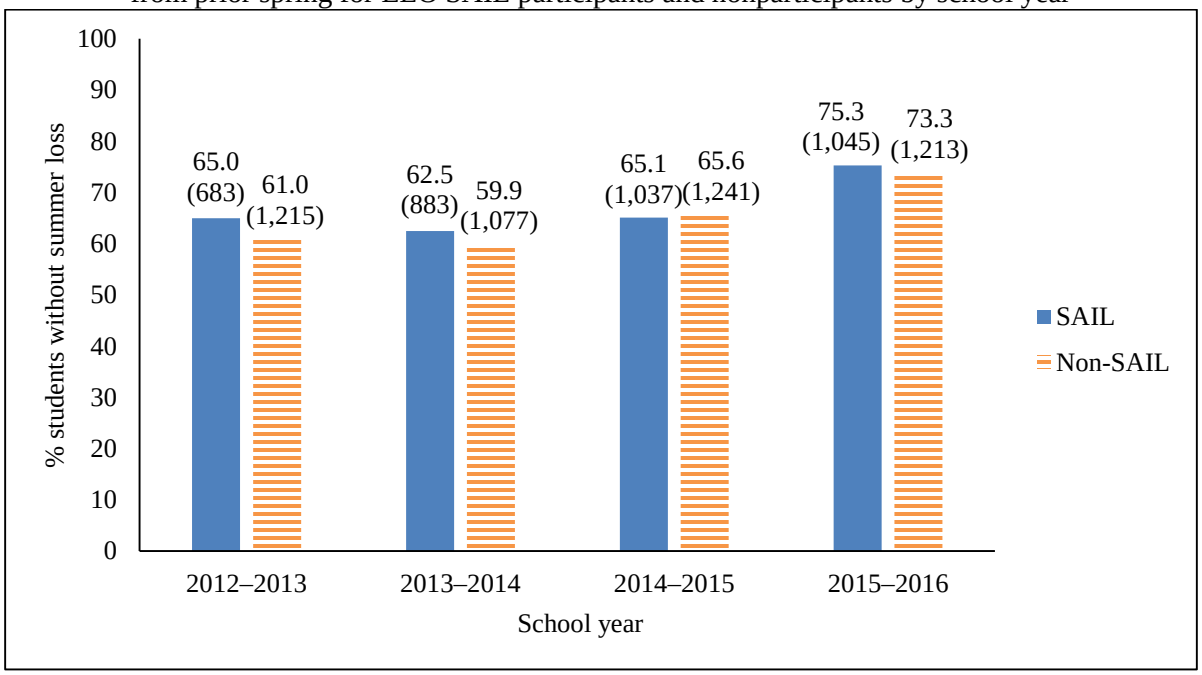
- Hispanic/Latino students in two years: 2014–2015 (t(1,348) = 3.69, $p < .001$) and 2015–2016 (t(1,461) =3.71, $p < .001$).
- ESOL recipients in three years: 2013–2014 (t(1,193) = 2.02, $p < .05$), 2014–2015 (t(1,204) = 4.05, $p < .001$), and 2015–2016 (t(1,204) = 3.03, $p < .01$)
- FARMS recipients in two years: 2014–2015 (t(1,770) = 4.53, $p < .001$) and 2015–2016 (t(1,821) =3.91, $p < .001$)
- Special education recipients in two years: 2014–2015 (t(192) = 2.02, $p < .05$) and 2015–2016 (t(180) =2.16, $p < .05$).

### *Grade 2*

For Grade 2, the analyses concerned changes in performance in the fall after each ELO session, compared to performance in the spring prior to that ELO session, as was done with Grade 1.

*Reading*. Figure 2.5 displays the percentage of Grade 2 students without summer loss in reading by participation in ELO SAIL. Specifically, the results for 2012–2013 indicated that 65% of 2nd graders who attended ELO SAIL had a book level in fall 2012 (after ELO SAIL) that was higher or the same as their book level in spring 2012 (before ELO SAIL), while 61% of nonparticipants had a fall book level that was higher or the same as their book level in spring. Thus, more ELO SAIL participants had no summer loss in 2012–2013 compared to nonparticipants. This pattern of higher performance by ELO SAIL attendees was the same for 2013–2014 and 2015–2016, but in 2014–2015, slightly more nonparticipants than ELO SAIL participants had no summer loss. However, none of the differences was statistically significant.

*Figure 2.5*
Percentage of Grade 2 students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year



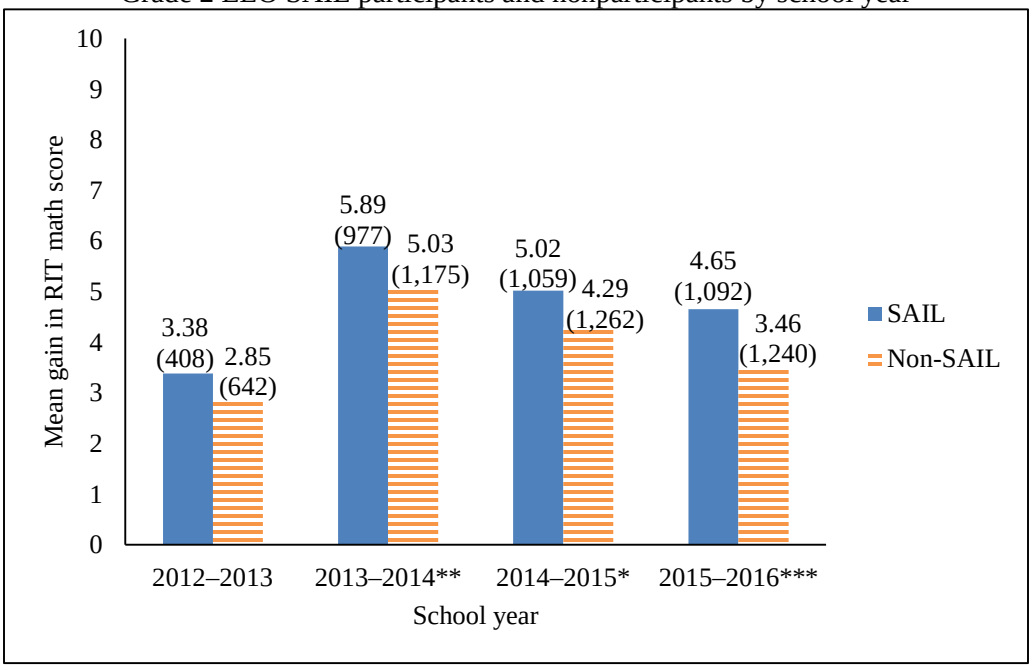

*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

Analyses of summer loss in reading for subgroups of Grade 2 by participation in ELO identified few variations (Appendix E). More attendees than non-attendees avoided summer reading loss in each year among the following four subgroups: Black or African American, Hispanic/Latino, ESOL recipients, and FARMS recipients. For the remaining three subgroups (i.e., Asian, White, and special education recipients), 2nd graders who attended ELO SAIL had less summer loss compared to non-attendees in only two years. The following three differences were statistically significant in favor of ELO SAIL:

- Black or African American students in 2012–2013 ($\chi^2(1) = 5.13$, $p < .05$)
- ESOL recipients in 2013–2014 ($\chi^2(1) = 4.33$, $p < .05$)
- FARMS recipients in 2015–2016 ($\chi^2(1) = 6.40$, $p < .05$).

*Mathematics*. For 2nd graders, analyses for mathematics examined changes in RIT scores between spring (prior to ELO SAIL) and fall (after ELO SAIL), as was done for first graders. As seen in Figure 2.6, the changes were summarized as the mean gain for each group of students. Specifically, the results for 2012–2013 indicated that, on average, students who attended ELO SAIL increased their RIT score by 3.4 points in fall 2012 (after ELO SAIL) compared to their score in spring 2012 (before ELO SAIL), while nonparticipants, on average, increased their RIT score by 2.9 points. Thus, the mean gain in math scores was higher for ELO SAIL participants than for nonparticipants. This pattern of better performance by ELO SAIL attendees was the same for the other years examined. Further, the difference between the two groups was statistically significant in three years in favor of attendees: 2013–2014 ($t(2,150) = 2.80$, $p < .01$), 2014–2015 ($t(2,319) = 2.38$, $p < .05$), and 2015–2016 ($t(2,330) = 3.90$, $p < .001$).

*Figure 2.6*
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 2 ELO SAIL participants and nonparticipants by school year




*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

There was little variation in the relative performance of ELO SAIL participants when analyzing subgroups of second graders (Appendix F). As with all Grade 2 students, SAIL attendees had higher gains than non-attendees every year for four of the seven subgroups: Black or African American, Hispanic/Latino, ESOL recipients, and FARMS recipients. Most of these differences were statistically significant in favor of ELO SAIL:

- Black or African American students in 2015–2016 ($t(610) = 2.66$, $p < .01$)
- Hispanic/Latino students in two years: 2014–2015 ($t(1450) = 2.56$, $p < .05$) and 2015–2016 ($t(1,355) = 3.01$, $p < .01$)
- ESOL recipients in three years: 2013–2014 ($t(1,123) = 2.14$, $p < .05$), 2014–2015 ($t(1,166) = 2.09$, $p < .05$), and 2015–2016 ($t(1,158) = 3.18$, $p < .001$)
- FARMS recipients in three years: 2013–2014 ($t(1,690) = 2.99$, $p < .01$), 2014–2015 ($t(1,785) = 1.97$, $p < .05$) , and 2015–2016 ($t(1,836) = 3.84$, $p < .001$).

Among special education recipients, ELO SAIL participants had a greater mean gain in mathematics score during three school years. Among White students, ELO SAIL participants had higher performance only during the first two years analyzed; the difference for 2013–2014 was statistically significant in favor of ELO SAIL ($t(148) = 2.97$, $p < .05$). There was no consistent pattern of differences for Asian students.

***Summary for Question 2***

*Kindergarten.* Among all kindergarten students, the only significant difference in fall AP-PR reading results was in one of the four years, when more ELO SAIL attendees were at a pre-reading level (i.e., have mastered foundational reading skills) compared to their peers who did not attend. The impact on fall reading results was positive for kindergarten subgroups. In six of the seven subgroups (all except for White students), there were statistically significant differences for at least one year in favor of stronger reading performance by ELO SAIL attendees.

Among all kindergarteners, the mean RIT score in mathematics from the fall MAP-P test was significantly lower for ELO SAIL participants than for nonparticipants in two of the three years examined. However, among subgroups of kindergarteners, the math performance in the fall of students who attended ELO SAIL did not differ from non-attendees, with very few exceptions.

*Grades 1 and 2*. The analyses for Grade 1 and Grade 2 students concerned changes in performance in the fall after each ELO SAIL session, compared to performance in the spring prior to that ELO SAIL session; four years were examined. The reading measures concerned whether students increased or stayed at the same AP-PR book level. Among all first graders, there was a significant difference in reading for only one year; ELO SAIL participants experienced less summer loss in reading compared with their peers who did not attend. Among all second graders, there were no differences between ELO SAIL attendees and non-attendees in summer reading loss for any year. There was little variation in summer reading loss by subgroups of first or second graders; ELO SAIL attendees did not differ significantly from non-attendees, with very few exceptions.

The mathematics measures for Grades 1 and 2 concerned gains in RIT scores in mathematics from MAP-P. For all Grade 1 students, the mean gains of ELO SAIL attendees were significantly higher than those of non-attendees in two of the four years. The positive impact of ELO SAIL for two years also was evident in subgroups of first graders. Differences in math gains were statistically significant in favor of ELO SAIL for at least two years among five of the seven subgroups: Black or African American, Hispanic/Latino, ESOL recipients, FARMS recipients, and special education recipients.

Among all second graders, the mean gains in math scores were significantly higher for ELO SAIL participants than for nonparticipants in three years. There was some variation among subgroups. Differences between attendees and non-attendees in Grade 2 were statistically significant in favor of ELO SAIL in three years for two subgroups, ESOL recipients and FARMS recipients, but in only one or two years for three subgroups: Black or African American, Hispanic/Latino, and White students.

**Findings for Question 3: How did the Title I students who participated in ELO SAIL in 2012, 2013, and 2014 perform in reading and mathematics at the end of the school year, compared with their nonparticipating peers in Title I schools?**

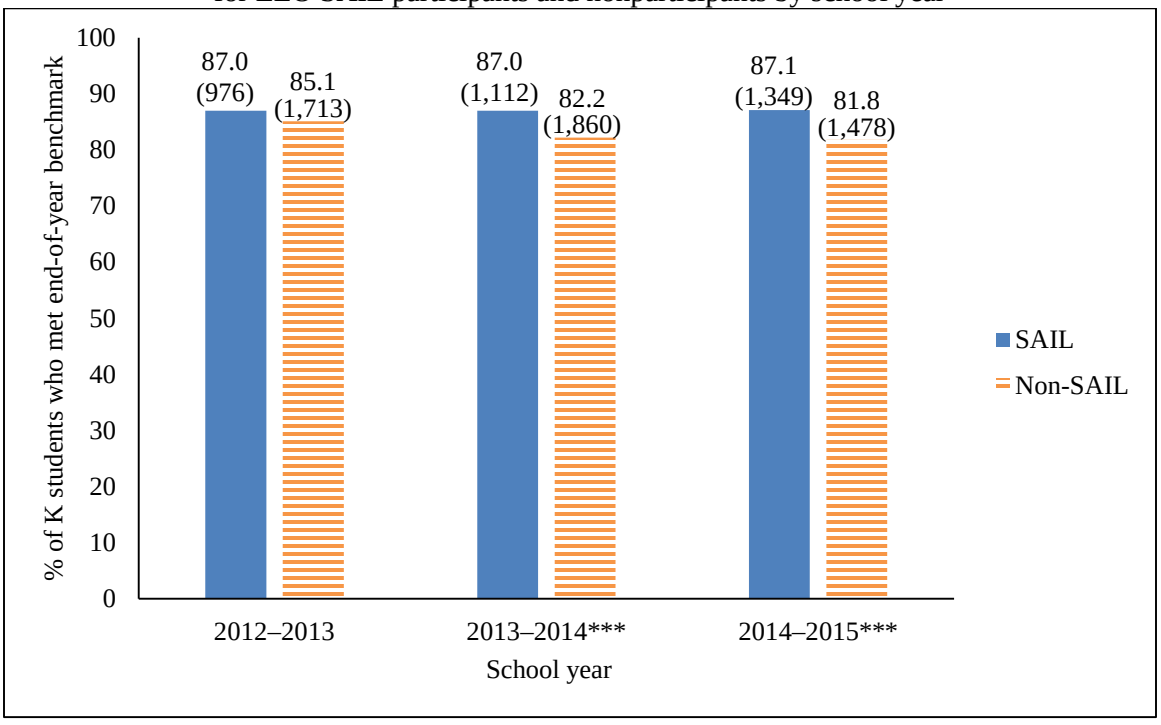
Findings are presented first for reading and then mathematics, with figures only for the total group. Figures for seven subgroups (Asian, Black or African American, Hispanic/Latino, White, ESOL recipients, FARMS recipients, and special education recipients) are in appendices.

***Reading***

The measure of reading performance was meeting the end-of-year grade-level reading benchmark on AP-PR (i.e., Level 4 for kindergarten, Level 16 for Grade 1, and Level M for Grade 2).

*Kindergarten.* Among kindergarten students, a higher percentage of SAIL participants (87% in each year) met the end-of-year benchmark in reading than nonparticipants (85% in 2012–2013 and 82% in 2013–2014 and 2014–2015) in each of the three years (Figure 3.0). This difference was statistically significant in two years: 2013–2014 ($\chi^2$ (1) = 11.95, $p < .001$) and 2014–2015 ($\chi^2$ (1) = 15.00, $p < .001$).

*Figure 3.0*
Percentage of kindergarten students who met the end-of-year AP-PR reading benchmark for ELO SAIL participants and nonparticipants by school year




*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

There was little variation in the reading performance of ELO SAIL participants versus nonparticipants for kindergarten subgroups (Appendix G). As with all kindergarteners, more ELO SAIL students than their nonparticipating peers met the end-of-year reading benchmark each year

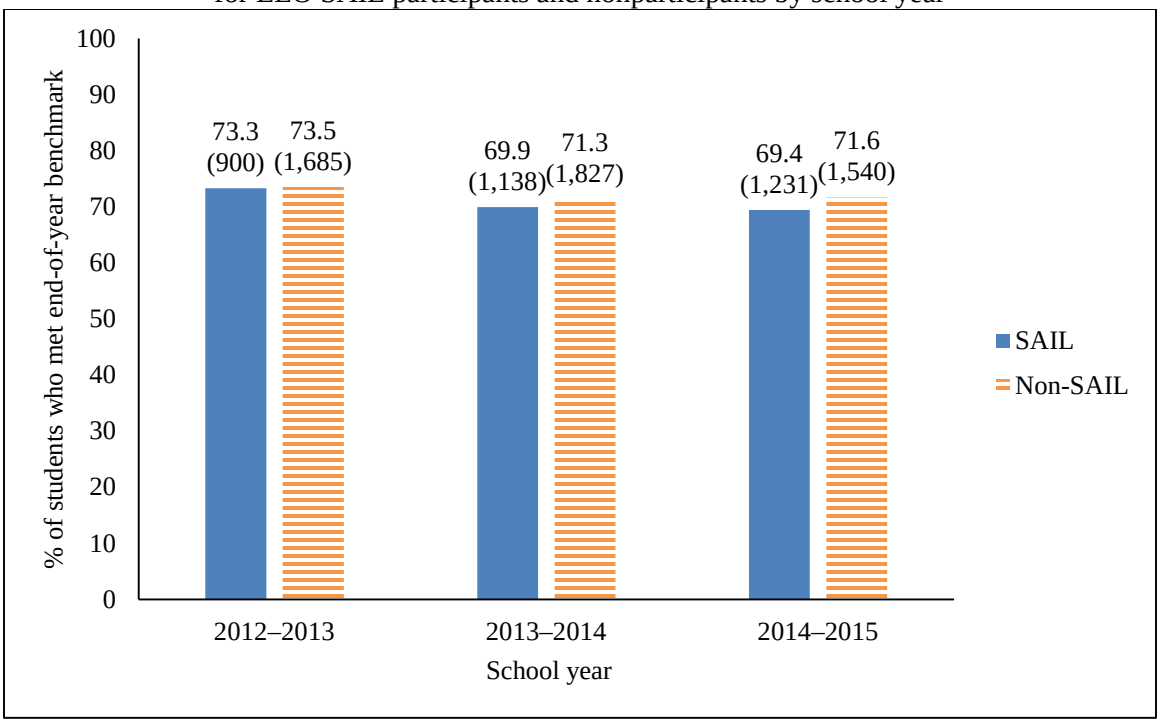
among five subgroups: Black or African American, Hispanic/Latino, ESOL recipients, FARMS recipients, and special education recipients. Also, more Asian students who attended the summer program met the reading benchmark than non-attendees for two of the three years. Most of these differences in favor of ELO SAIL were statistically significant:

- Black or African American students in all three years: 2012–2013 ($\chi^2(1) = 4.74$, $p < .05$); 2013–2014 ($\chi^2(1) = 5.05$, $p < .05$); and 2014–2015 ($\chi^2(1) = 14.44$, $p < .001$).
- Hispanic/Latino students in two years: 2013–2014 ($\chi^2(1) = 11.63$, $p < .001$) and 2014–2015 ($\chi^2(1) = 8.92$, $p < .01$).
- ESOL recipients in two years: 2013–2014 ($\chi^2(1) = 13.29$, $p < .001$) and 2014–2015 ($\chi^2(1) = 17.20$, $p < .001$).
- FARMS recipients in two years: 2013–2014 ($\chi^2(1) = 12.25$, $p < .001$) and 2014–2015 ($\chi^2(1) = 21.95$, $p < .001$).
- Special education recipients in two years: 2013–2014 ($\chi^2(1) = 8.91$, $p < .01$) and 2014–2015 ($\chi^2(1) = 12.50$, $p < .001$).

The only variation involved White kindergarteners; among this subgroup, better performance in reading by ELO SAIL students occurred for only one year.

*Grade 1.* Grade 1 ELO SAIL participants performed slightly lower than their nonparticipating counterparts in each year analyzed, as measured by meeting the end-of-year reading benchmark (Figure 3.1). None of these differences were statistically significant.

*Figure 3.1*
Percentage of Grade 1 students who met the end-of-year AP-PR reading benchmark for ELO SAIL participants and nonparticipants by school year

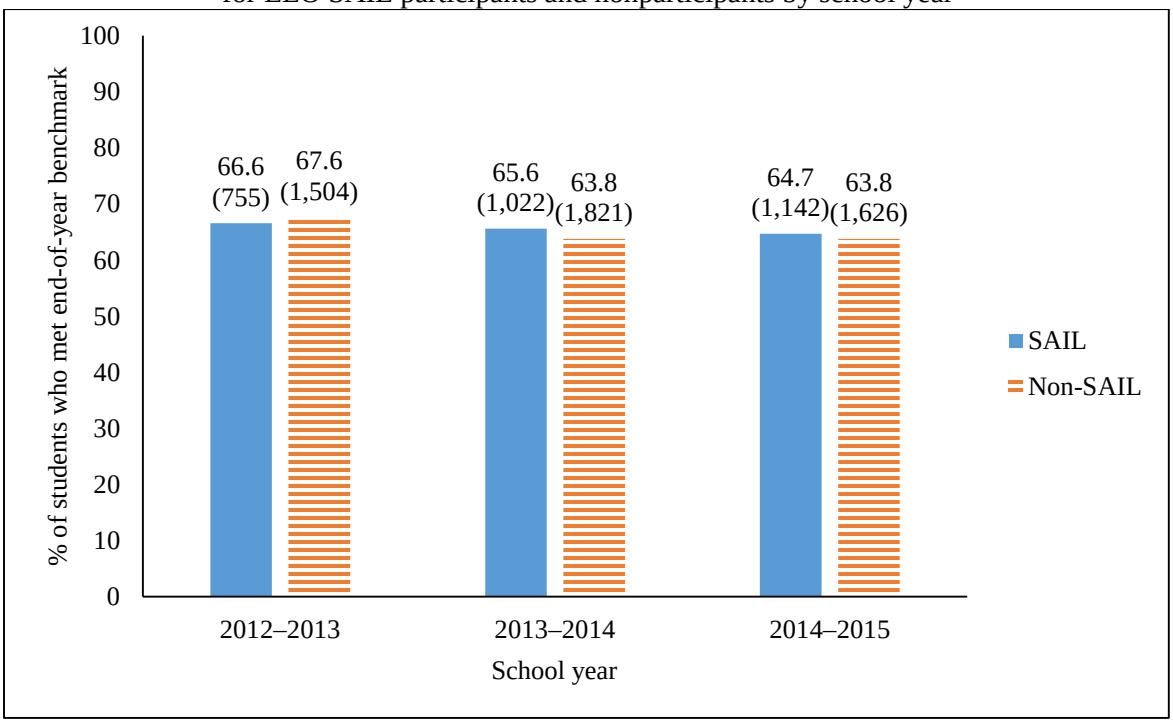



*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

Further analyses showed differential patterns of achievement among Grade 1 subgroups (Appendix H). Among five subgroups (Asian, Black or African American, plus students receiving ESOL, FARMS, or special education), more ELO participants than nonparticipants reached the end of the year reading benchmark in two years, usually 2013–2014 and 2015–2016. However, among White students, SAIL participants performed slightly lower than their nonparticipant counterparts in each year analyzed; there was no consistent pattern among Hispanic/Latino students. Across all these comparisons, two were significant, both in favor of ELO SAIL participants receiving special education services in 2012–2013 ($\chi^2$ (1) = 7.73, $p < .01$) and in 2013–2014 ($\chi^2$ (1) = 4.25, $p < .05$).

*Grade 2*. Overall, Grade 2 ELO SAIL participants performed slightly lower in 2012–2013 than their non- ELO SAIL peers in meeting the end-of-year reading benchmark, but outperformed nonparticipants in 2013–2014 and 2014–2015 (Figure 3.2). None of these differences were statistically significant.

*Figure 3.2*
Percentage of Grade 2 students who met the end-of-year AP-PR reading benchmark for ELO SAIL participants and nonparticipants by school year




*Note.* (#) refers to total number of students in group.
*$p < .05$, **$p <. 01$, ***$p <. 001$

The reading performance of ELO SAIL participants versus nonparticipants varied across Grade 2 subgroups in 2012–2013 but showed little variation in the other two years studied (Appendix I). In 2012–2013, among four subgroups (i.e., Asian, Hispanic/Latino, ESOL recipients, FARMS recipients), more ELO SAIL participants than nonparticipants met the end-of-year reading benchmark, while in two other subgroups (i.e., Black or African American, students receiving special education services), fewer participants met the benchmark. In both 2013–2014 and 2014–2015, more ELO SAIL attendees met the reading benchmark, compared to non-attendees, in five

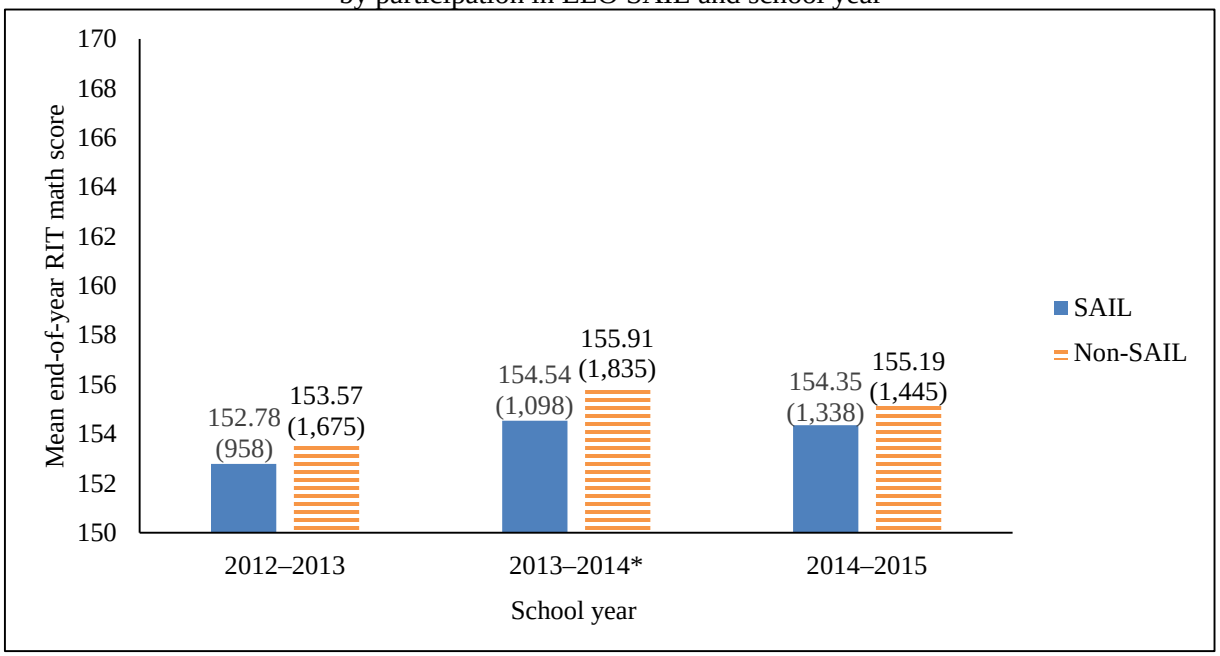
or six subgroups. Out of all these comparisons, two were significant, both in favor of ELO SAIL participants in 2013–2014; one for students receiving ESOL services ($\chi^2$ (1) = 4.9P1, $p < .05$) and the second for students receiving FARMS services ($\chi^2$ (1) = 4.91, $p < .05$).

### *Mathematics*

The measure to analyze mathematics performance at the end of the year was the MAP-P RIT score in mathematics from the spring following each ELO SAIL session.

*Kindergarten*. On average, the end-of-year RIT scores in mathematics of ELO SAIL participants were lower than nonparticipants in each year analyzed (Figure 3.3). The difference in 2013–2014 was statistically significant (t(2,931) = -2.54, $p < .05$).

*Figure 3.3*
Mean end-of-year MAP-P RIT scores in mathematics for kindergarten students by participation in ELO SAIL and school year



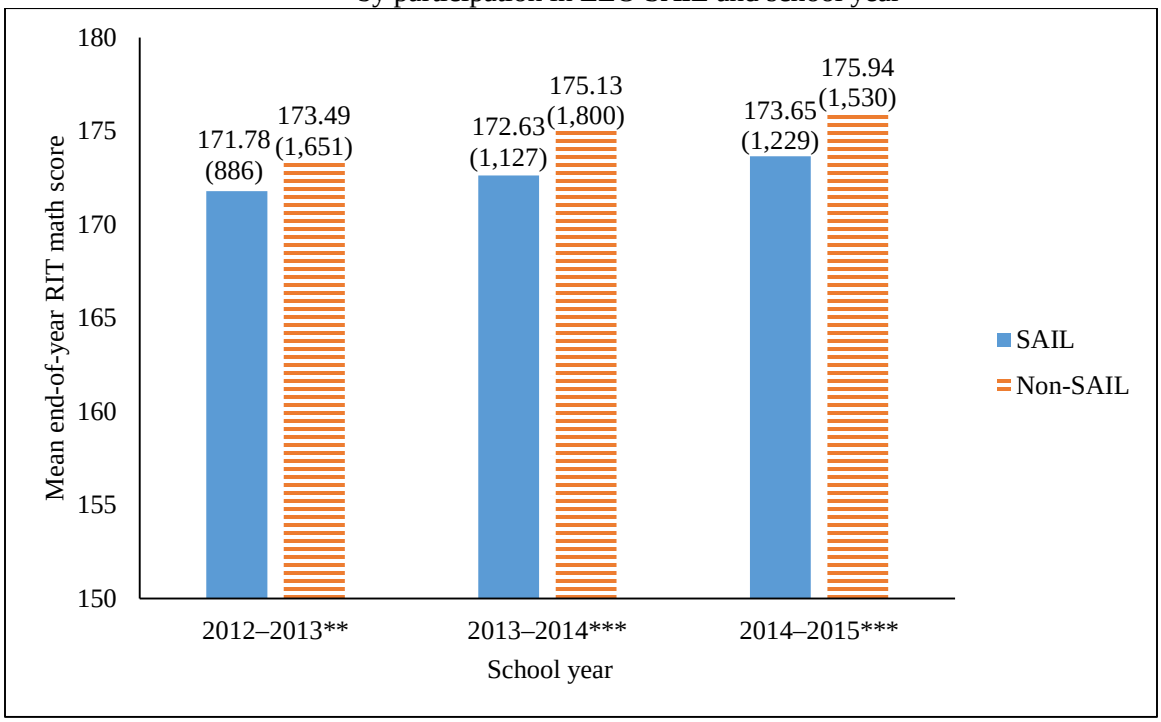

*Note.* (#) refers to total number of students in group.
**p<.05, **p<.01, ***p<.001*

As seen in Appendix J, there were some variations by subgroups. There were almost no differences between ELO SAIL attendees and non-attendees in each year for Hispanic/Latino students, ESOL recipients, and special education recipients, except for 2014–2015. While both Black or African American students and FARMS recipients who attended ELO SAIL performed at least slightly better than their non-SAIL participant peers in every year, Asian and White SAIL students performed worse in each year. Three of these differences were statistically significant in 2014–2015:

- Black or African American students in favor of ELO SAIL: (t(670) = 2.73, $p < .01$)
- White students in favor of non-ELO SAIL: (t(181) = -2.08, $p < .05$)
- FARMS recipients in favor of ELO SAIL: (t(2,136) = 2.60, $p < .01$).

*Grade 1*. On average, the end-of-year RIT scores in mathematics of ELO SAIL first graders were lower than non-participating first graders in each year analyzed (Figure 3.4). The difference was statistically significant, in favor of non-SAIL students, in each year: 2012–2013 ($t(2,535) = -3.01$, $p < .01$), 2013–2014 ($t(2,925) = -4.80$, $p < .001$), and 2014–2015 ($t(2,757) = -4.06$, $p < .01$).

*Figure 3.4*
Mean end-of-year MAP-P RIT scores in mathematics for Grade 1 students by participation in ELO SAIL and school year

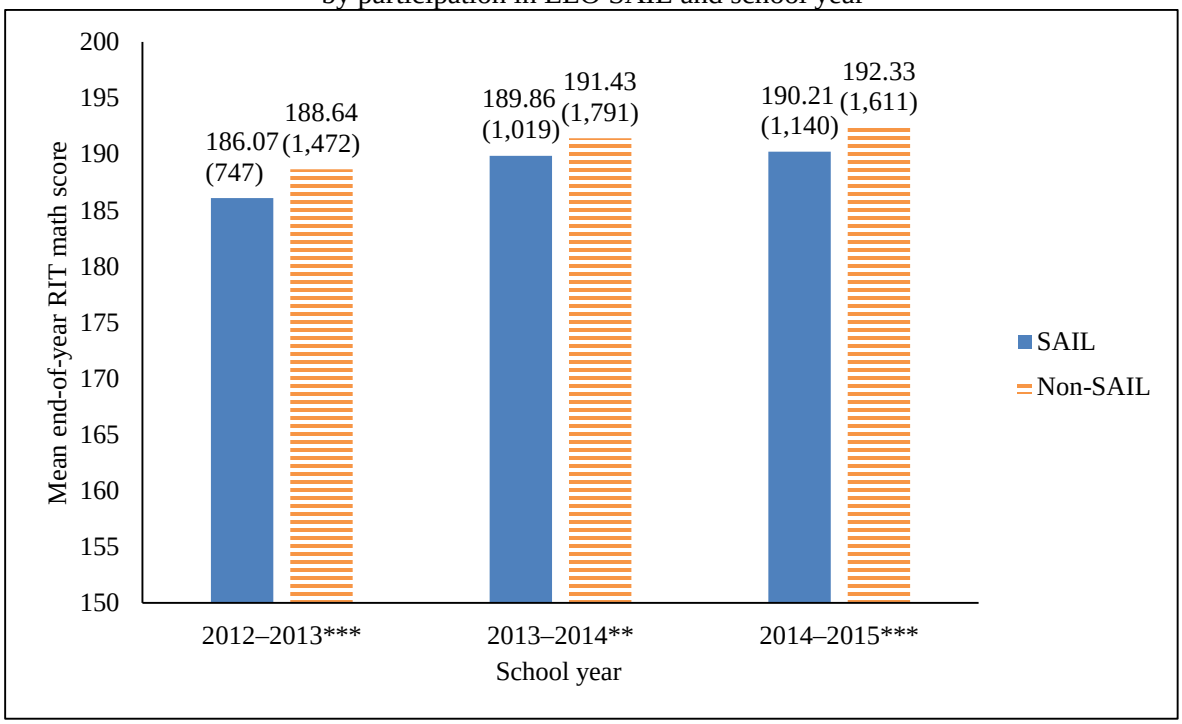



*Note.* (#) refers to total number of students in group.
**p<.05, **p<.01, ***p<.001*

The lower performance by ELO SAIL participants compared to nonparticipants differed for some Grade 1 subgroups in 2012–2013, but not in the other two years (Appendix K). In 2012–2013, some subgroups of ELO SAIL students had higher, mean end-of-year scores in mathematics, than non-ELO students, while there was almost no difference for other subgroups, and both Black or African American and White participants had lower mean scores. In each year, the mean scores of White students who attended ELO SAIL were lower than non-attendees; these differences were statistically significant in favor of nonparticipants in two years: 2012–2013 ($t(188) = -4.11$, $p < .001$) and in 2013–2014 ($t(186) = -2.58$, $p < .05$). In both 2013–2014 and 2013–2014, there was little variation across subgroups; ELO SAIL participants in six of the seven subgroups had lower performance than nonparticipants. In 2013–2014, two differences (in addition to that for White students) were statistically significant in favor of non-ELO SAIL attendees: students receiving ESOL services ($t(1,815) = -2.01$, $p < .05$) and students receiving FARMS ($t(2,219) = -2.19$, $p < .05$).

*Grade 2*. As with the findings for Grade 1, ELO SAIL participants in Grade 2 performed lower than their nonparticipant peers, as measured by mean RIT scores in mathematics, for each year analyzed (Figure 3.5). The difference was statistically significant, in favor of non-SAIL students, in each year: 2012–2013 (t(2,217) =-4.09, $p < .001$), 2013–2014 (t(2,808) = -2.76, $p < .01$), and 2014–2015 (t(2,749) = -3.45, $p < .001$).

*Figure 3.5*
Mean end-of-year MAP-P RIT scores in mathematics for Grade 2 students by participation in ELO SAIL and school year




*Note.* (#) refers to total number of students in group.
**p<.05, **p<.01, ***p<.001*

Appendix L presents figures with mean, end-of-year math scores for each subgroup of Grade 2 students. As with all second graders, ELO SAIL participants in every subgroup had lower performance compared to nonparticipants in 2012–2013. For that year, the difference for students receiving special education services was statistically significant (t(213) = -2.25, $p < .05$), in favor of non-ELO SAIL participants. In the other two years, some ELO SAIL subgroups had better performance than their non-ELO SAIL peers, including Black or African American students; the difference in 2014–2015 for this subgroup was statistically significant, in favor of ELO SAIL (t(666) = 2.02, $p < .05$). By contrast, for two subgroups, Hispanic/Latino and White, ELO SAIL participants had lower mean end-of-year math scores than nonparticipants in both 2013–2014 and 2014–2015, as well as 2012–2013. The difference for White students was statistically significant in 2014–2015 (t(164) = -3.63, $p < .001$), in favor of nonparticipants.

***Summary for Question 3***

*Reading*. With respect to reading performance at the end of the year, the only statistically significant differences for all students involved kindergarteners; more kindergarteners who attended ELO SAIL met the end-of-the-year AP-PR reading benchmark than non-attendees, in two of the three years analyzed. First and second graders who participated in ELO SAIL performed as well in meeting the end-of-the-year reading benchmark as their peers in Title I schools who did not attend.

The impact of ELO SAIL on end-of-year reading performance varied little across student subgroups. As among all kindergarteners, there were significant differences for two of the three years in favor of ELO SAIL among five of the seven subgroups: Black or African American, Hispanic/Latino, ESOL recipients, FARMS recipients, and recipients of special education services. For first graders and second graders, as with all students, attendees and non-attendees did not differ among most subgroups. However, there were a few variations (i.e., in favor of ELO SAIL attendees) that were statistically significant: in two years for first graders receiving special education services, in one year for second graders receiving ESOL services, and in one year for second graders receiving FARMS services.

*Mathematics.* In analyses of all students, participants in ELO SAIL had lower scores on the MAP-P mathematics test at the end of the following year, on average, than their nonparticipating peers for each grade level in each of the three years examined. These differences in mean RIT scores in mathematics were statistically significant in favor of non-attendees in each year for Grades 1 and 2 but in only one year for kindergarten students.

In contrast, among most subgroups, ELO SAIL attendees and non-attendees did not differ on end-of-the-year mathematics performance. However, there were a few statistically significant differences for one year in favor of non-attendees among subgroups of first and second graders as follows: first graders receiving ESOL services, first graders receiving FARMS, second graders receiving special education services, and White second graders. Also, among White first graders, there were significant differences in favor of non-attendees for two years. There were even fewer significant differences that were in favor of ELO SAIL attendees; each was for only one year and included three subgroups of kindergarteners (Black or African American, White, and FARMS recipients) and one subgroup of second graders (Black or African American).

# Conclusion

In conclusion, the positive impact of ELO SAIL was stronger on academic performance in the fall than on performance at the end of the year, based on statistically significant differences between attendees and non-attendees. Consistent with previous evaluations of ELO SAIL, the benefits varied by content area, with more positive findings in mathematics than in reading, and varied by grade level, such that positive findings in reading mainly were for kindergarteners, while positive findings in mathematics were limited mainly to first and second graders. However, in this study, unlike previous ones, a benefit for an entire grade level usually was evident for the majority of subgroups. Further, the following subgroups had more significant differences than other subgroups: African American or Black students, students receiving ESOL services, and students receiving FARMS services.

Across four years of analysis, there was a positive impact on reading in the fall for kindergarten in one year, including all kindergarteners and the majority of subgroups, and for Grade 1 in one year, for all first graders, but not for subgroups. Because the positive impact for kindergarteners was in the only year with more detailed data on non-readers, the lack of positive findings in earlier years may reflect a lack of more detailed data. The only positive impact on end-of-the-year reading was for kindergarten in two of the three years studied; the stronger performance was apparent for all kindergarteners and the majority of subgroups. There were no significant differences in end-of-the year reading performance between ELO SAIL attendees and non-attendees in Grades 1 and 2.

Out of four years analyzed, the positive impact of ELO SAIL on mathematics performance in the fall was evident for two or three years, for both Grades 1 and 2, among all students and the majority of subgroups in both grade levels. However, this benefit did not carry through to the spring; ELO SAIL participants had lower end-of-the-year mathematics scores than nonparticipants in three years for both first and second graders. These differences were evident for all students in each grade level, but not for most subgroups. For kindergarten students, there was no evidence for a positive impact of ELO SAIL on mathematics performance in the three years studied; attendees had lower scores than non-attendees in the fall for two years and at the end of the year for one year, although these differences were evident only for all kindergarteners, not for subgroups.

# References

Maryland State Department of Education. (2015). *General definition of a highly qualified teacher.* Retrieved on September 10, 2015 from http://www.marylandpublicschools.org/msde/programs/esea/docs/TQ_Regulations/general_definition.htm.

Montgomery County Public Schools. (2013). *Building our future together: Strategic planning framework*. Rockville, MD: Montgomery County Public Schools.

Montgomery County Public Schools. (2015). *Extended Learning Opportunities Summer Adventures in Learning 2015.* Retrieved July 29, 2015 from http://www.montgomeryschoolsmd.org/departments/titleone/includes/elo.shtm.

Northwest Evaluation Association. (2008). *RIT scale norms for use with Measures of Academic Progress*. Lake Oswego, OR: Northwest Evaluation Association.

Northwest Evaluation Association. (2011). *Technical manual for Measures of Academic Progress and Measures of Academic Progress for primary grades*. Lake Oswego, OR: Northwest Evaluation Association.

Sunmonu, K., Curry-Corcoran, D. and Mordica J. (2004). *2003 summer evaluation of the Extended Learning Opportunities (ELO) program evaluation report*. Rockville, MD: Montgomery County Public Schools.

Sunmonu, K., Larson, J., Horn, Y. V., Cooper-Martin, E. & Nielsen, J. (2002). *Evaluation of Extended Learning Opportunities summer program.* Rockville, MD: Montgomery County Public Schools.

Wang, H. (2009). *Evaluation of 2007 Extended Learning Opportunities Summer Adventures in Learning (ELO SAIL) Program*: Implementation and Outcomes. Rockville, MD: Montgomery County Public Schools.

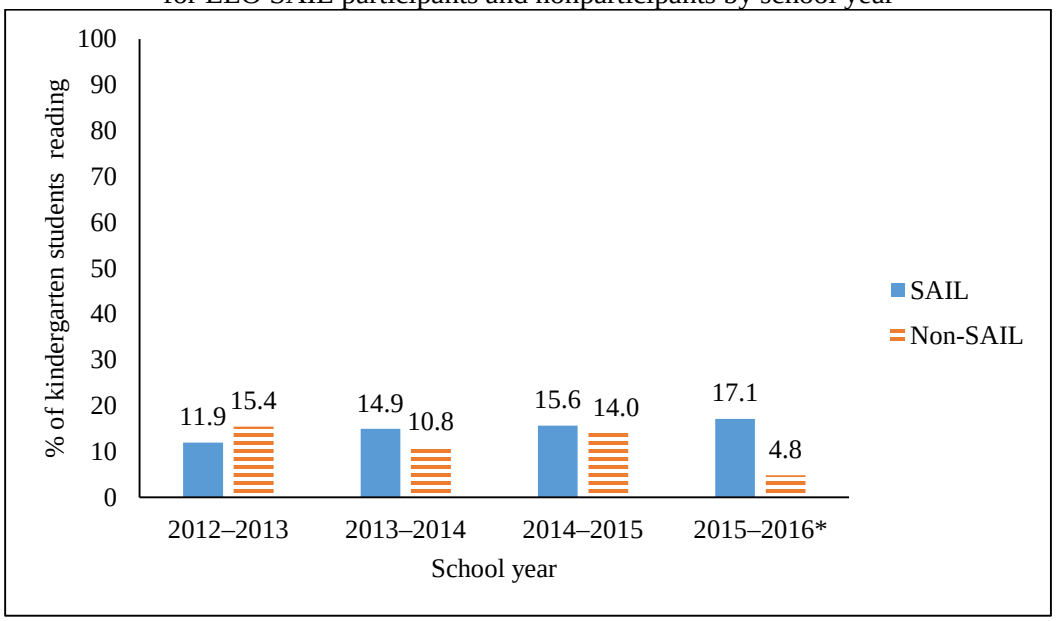
# Appendix A
# Findings for Question 2 on Fall Performance: Reading for Subgroups of Kindergarten Students

Table A1
Number of Kindergarten Students With AP-PR Reading Data From Fall by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | | 2015–2016 | |
|---|---|---|---|---|---|---|---|---|
| Kindergarten | SAIL | Non | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 976 | 1,713 | 1,112 | 1,860 | 1,349 | 1,478 | 1,288 | 1,211 |
| Race/ethnicity | | | | | | | | |
| Asian | 59 | 117 | 74 | 139 | 64 | 86 | 76 | 84 |
| Black or African American | 198 | 428 | 253 | 487 | 325 | 358 | 338 | 313 |
| Hispanic/Latino | 666 | 954 | 717 | 965 | 897 | 835 | 51 | 97 |
| White | 34 | 164 | 43 | 187 | 39 | 150 | 792 | 671 |
| Receipt of services during school year | | | | | | | | |
| ESOL | 615 | 879 | 700 | 908 | 845 | 740 | 770 | 562 |
| FARMS | 813 | 1,227 | 917 | 1,315 | 1,124 | 1,041 | 1,027 | 855 |
| Special education | 92 | 136 | 79 | 170 | 122 | 121 | 117 | 99 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

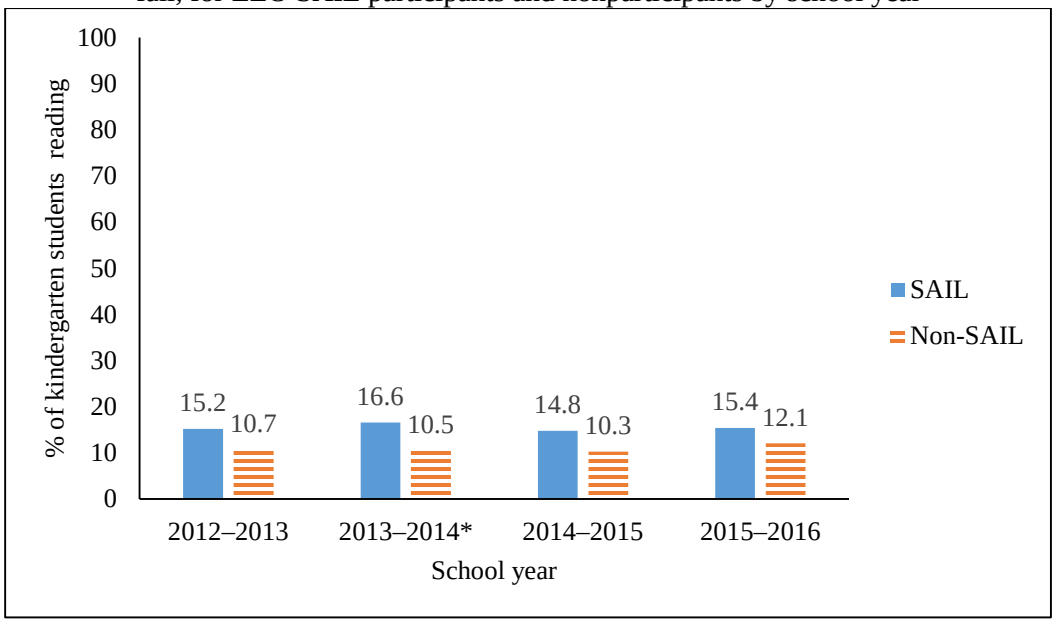
*Figure A1*
Percentage of Asian American kindergarten students who were reading, based on AP-PR in fall, for ELO SAIL participants and nonparticipants by school year




*Note.* See Table A1 for number of students in each group.
*$p$ <. 05, **$p$ < .01, ***$p$ < .001

*Figure A2*

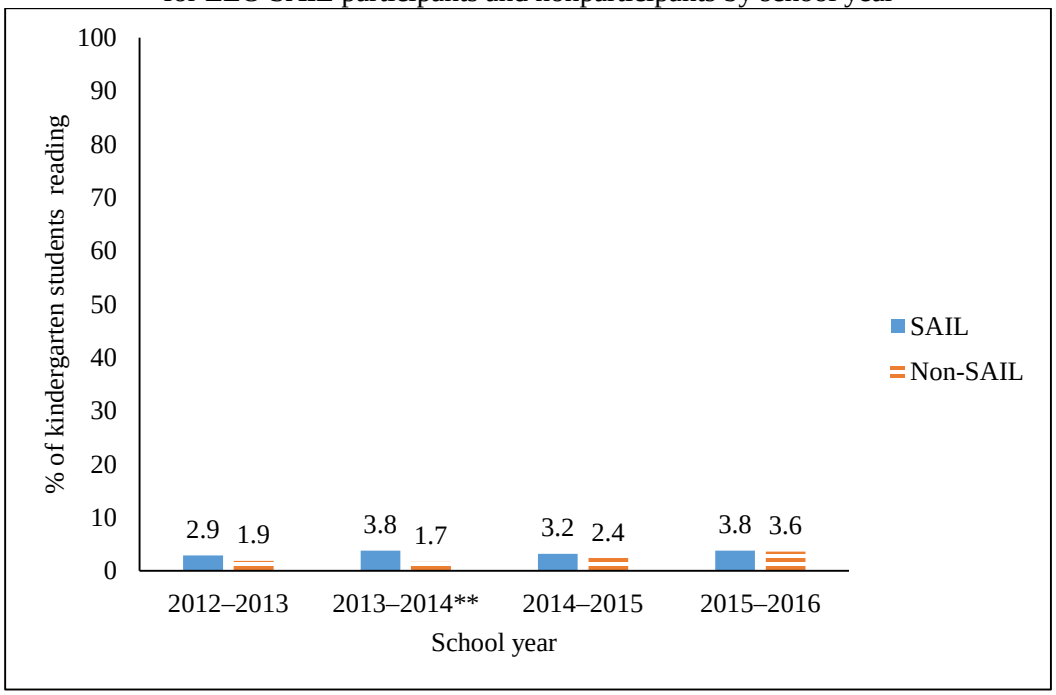
Percentage of Black or African American kindergarten students who were reading, based on AP-PR in fall, for ELO SAIL participants and nonparticipants by school year




*Note.* See Table A1 for number of students in each group.
*$p$ <. 05, **$p$ < .01, ***$p$ < .001

*Figure A3*

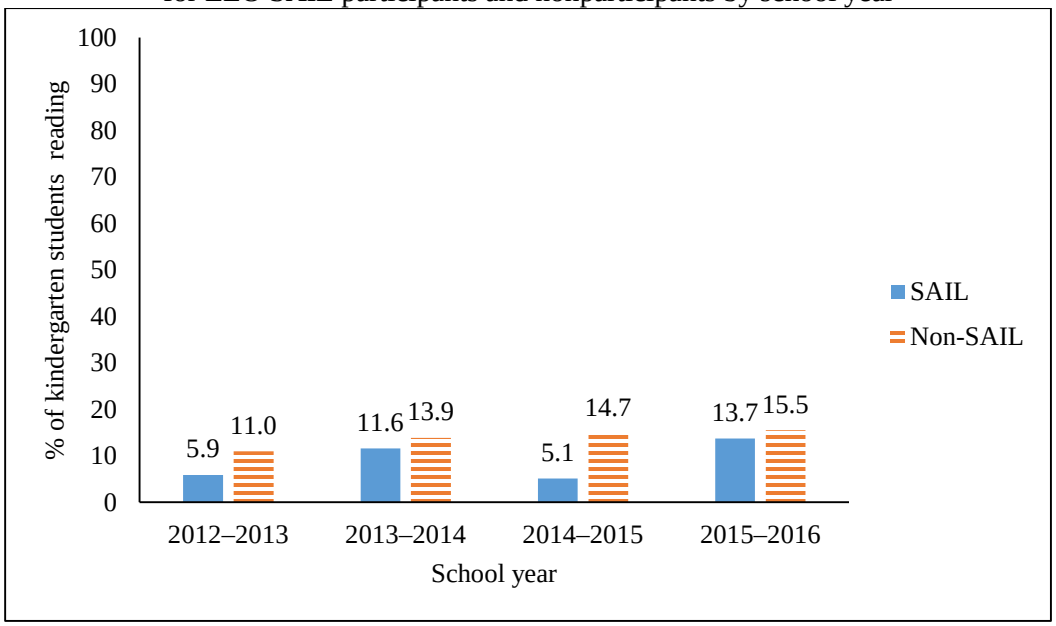
Percentage of Hispanic/Latino kindergarten students who were reading, based on AP-PR in fall, for ELO SAIL participants and nonparticipants by school year




*Note.* See Table A1 for number of students in each group.
*$p$ <. 05, **$p$ < .01, ***$p$ < .001

*Figure A4*

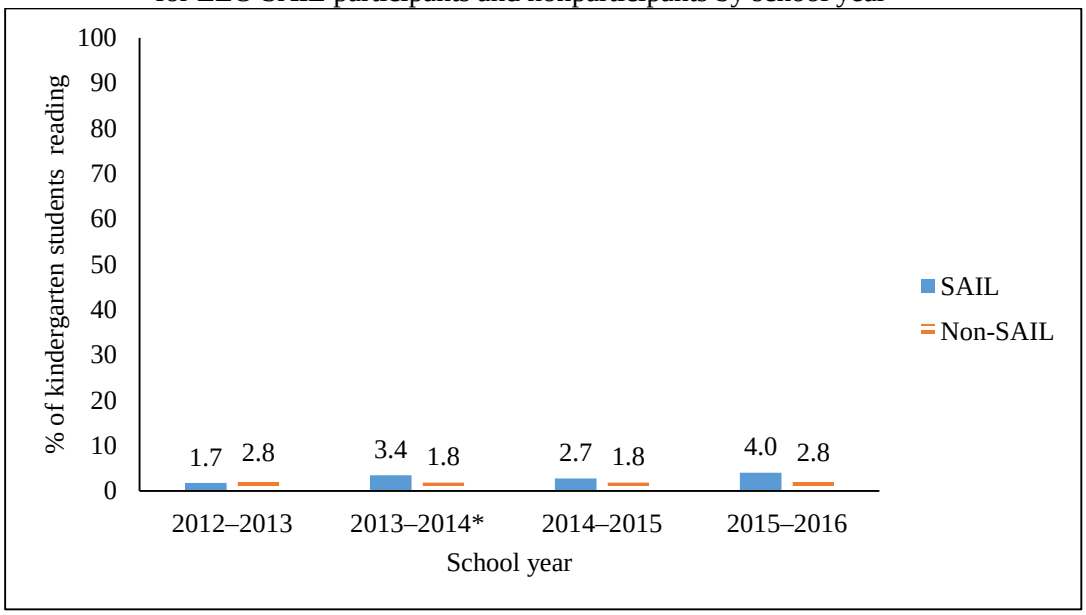
Percentage of White kindergarten students who were reading, based on AP-PR in fall, for ELO SAIL participants and nonparticipants by school year




*Note.* See Table A1 for number of students in each group.
*$p$ <. 05, **$p$ < .01, ***$p$ < .001

*Figure A5*

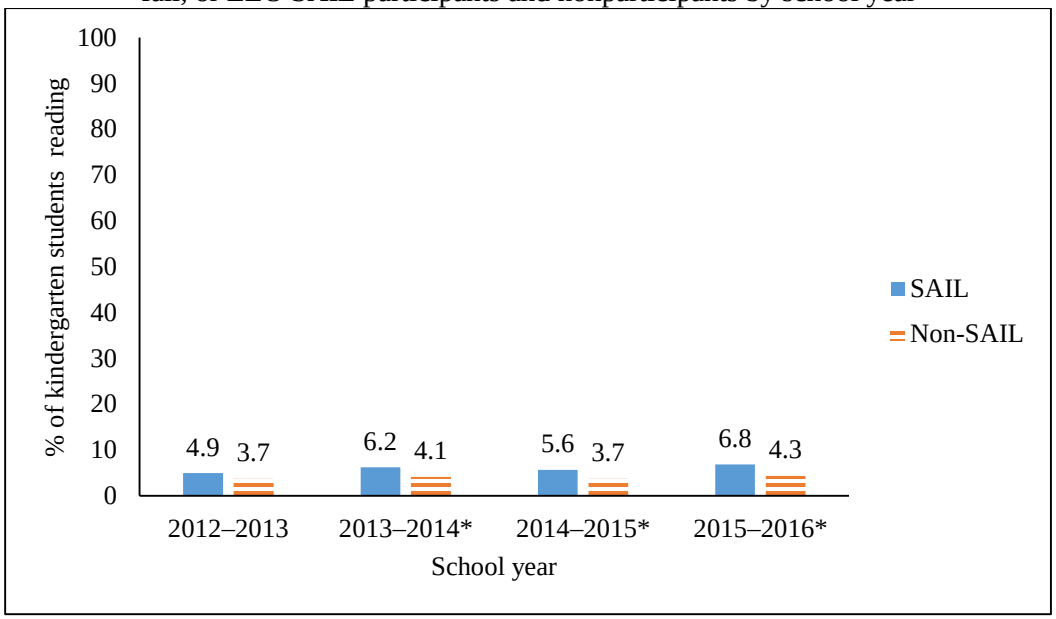
Percentage of kindergarten students receiving ESOL services who were reading, based on AP-PR in fall, for ELO SAIL participants and nonparticipants by school year




*Note.* See Table A1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure A6*

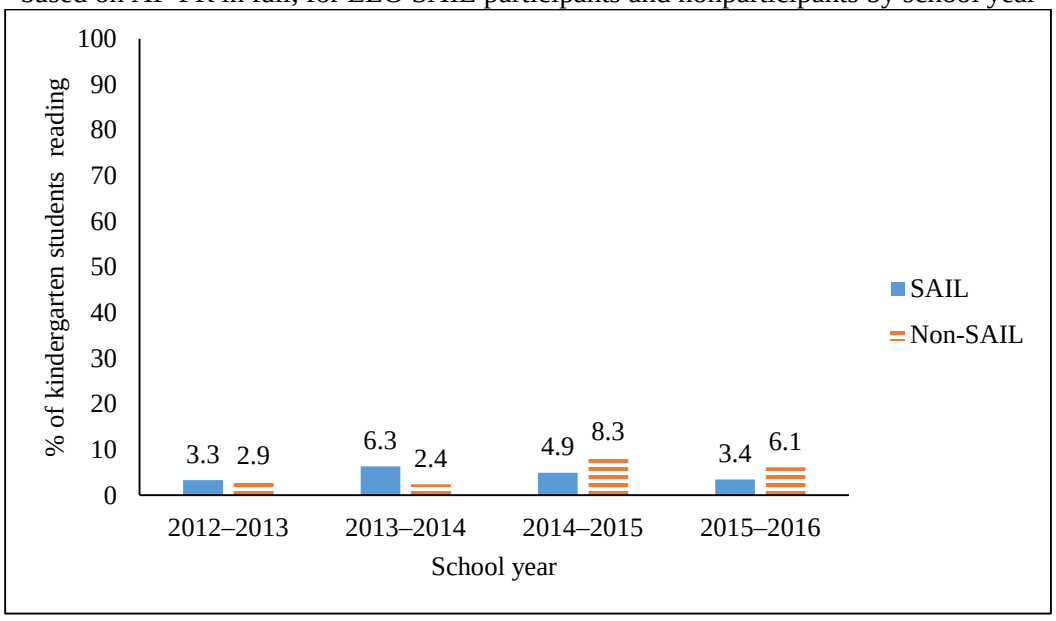
Percentage of kindergarten students receiving FARMS services who were reading, based on AP-PR in fall, or ELO SAIL participants and nonparticipants by school year




*Note.* See Table A1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure A7*

Percentage of kindergarten students receiving special education services who were reading, based on AP-PR in fall, for ELO SAIL participants and nonparticipants by school year




*Note.* See Table A1 for number of students in each group.
**p* <. 05, ***p* < .01, ****p* < .001

Table A2
Categories of AP-PR Reading Performance for Kindergarten Students in 2015–2016 by ELO SAIL Participation and Selected Subgroups

| | Reading | | Pre-reading | | Not reading | |
|---|---|---|---|---|---|---|
| Kindergarten | SAIL % | Non % | SAIL % | Non % | SAIL % | Non % |
| Total*** | 8.2 | 7.2 | 29.3 | 23.1 | 62.5 | 69.7 |
| Race/ethnicity | | | | | | |
| Asian | 17.1 | 4.8 | 35.5 | 35.7 | 59.5 | 47.4 |
| Black or African American*** | 15.4 | 12.1 | 37.3 | 25.6 | 47.3 | 62.3 |
| Hispanic/Latino*** | 3.8 | 3.6 | 24.2 | 17.1 | 72.0 | 79.3 |
| White | 13.7 | 15.5 | 31.4 | 39.2 | 54.9 | 45.4 |
| Receipt of services during school year | | | | | | |
| ESOL*** | 4.0 | 2.8 | 24.8 | 14.6 | 71.2 | 82.6 |
| FARMS*** | 6.8 | 4.3 | 28.5 | 20.0 | 64.7 | 75.7 |
| Special education*** | 3.4 | 6.1 | 26.5 | 10.1 | 70.1 | 83.8 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.
*$p$ <. 05, **$p$ < .01, ***$p$ < .001

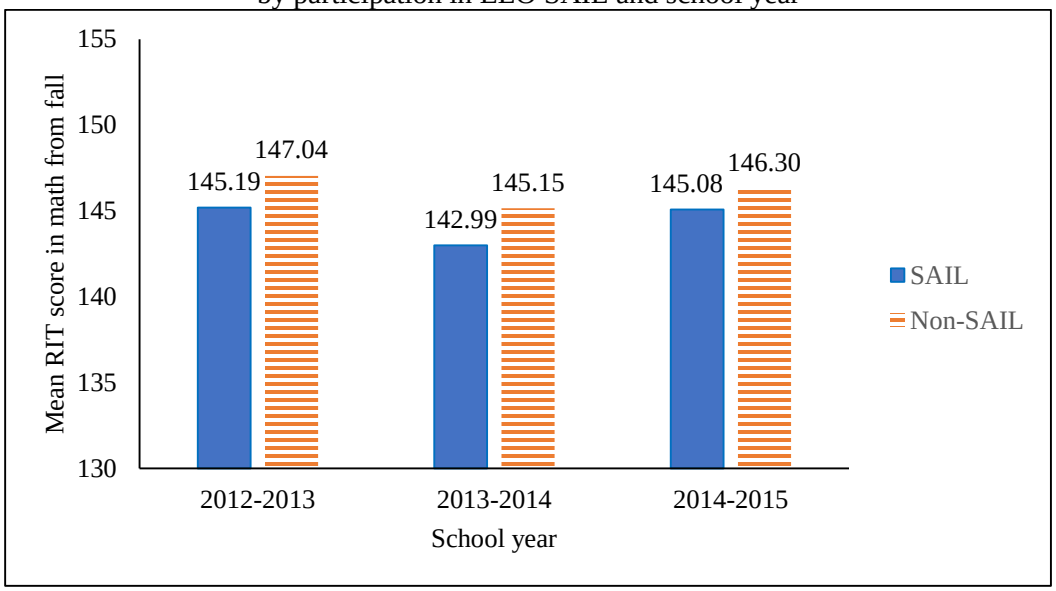
# Appendix B
# Findings for Question 2 on Fall Performance: Mathematics for Subgroups of Kindergarten Students

Table B1
Number of Kindergarten Students With MAP-P RIT Scores in Mathematics From Fall by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | | 2015–2016 | |
|---|---|---|---|---|---|---|---|---|
| Kindergarten | SAIL | Non | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 954 | 1,574 | 1,083 | 1,654 | 1,313 | 1,309 | 11 | 5 |
| Race/ethnicity | | | | | | | | |
| Asian | 59 | 113 | 42 | 176 | 60 | 77 | -- | -- |
| Black or African American | 189 | 383 | 248 | 405 | 320 | 319 | -- | -- |
| Hispanic/Latino | 654 | 882 | 697 | 871 | 871 | 737 | -- | -- |
| White | 34 | 150 | 42 | 176 | 38 | 132 | -- | -- |
| Receipt of services during school year | | | | | | | | |
| ESOL | 602 | 807 | 679 | 811 | 820 | 657 | -- | -- |
| FARMS | 794 | 1,121 | 891 | 1,165 | 1,094 | 923 | -- | -- |
| Special education | 91 | 115 | 76 | 140 | 115 | 95 | -- | -- |

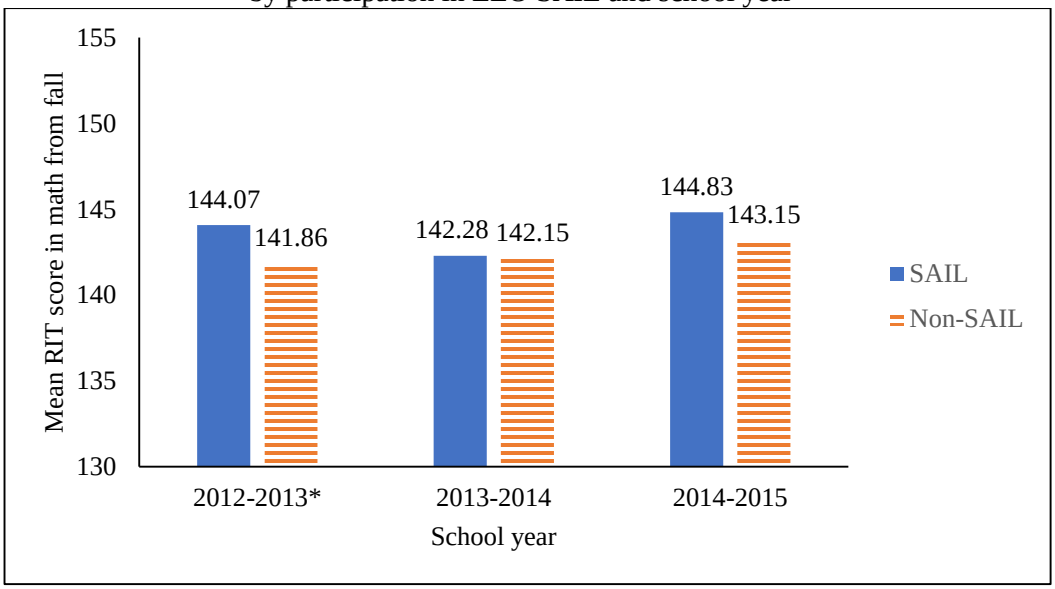
*Note.* Results not shown (--) for a group with less than 5 students.

*Figure B1*
Mean MAP-P RIT scores in mathematics from fall for Asian kindergarten students by participation in ELO SAIL and school year



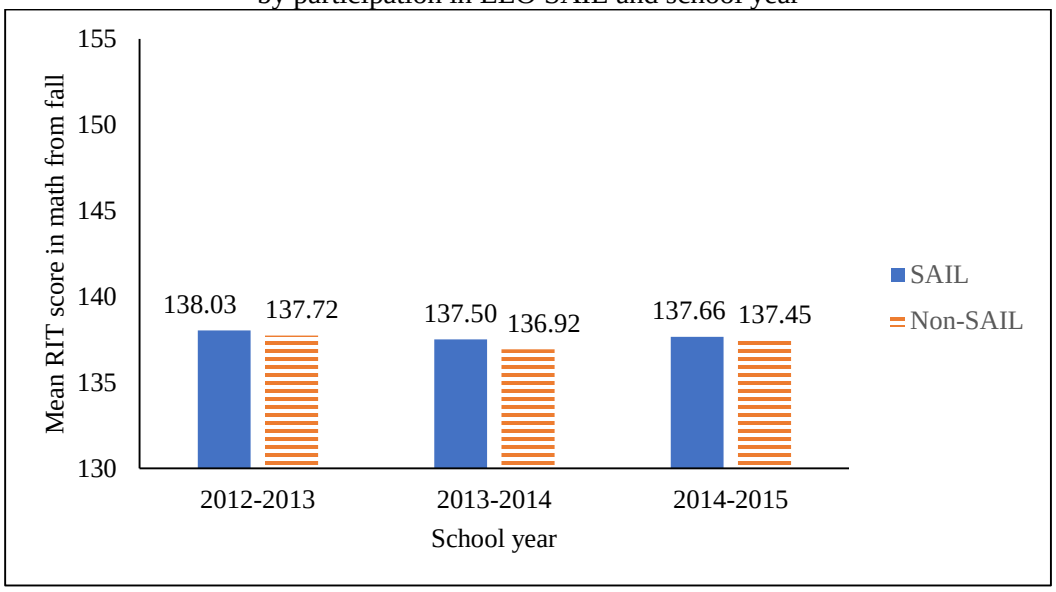

*Note.* See Table B1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure B2*
Mean MAP-P RIT scores in mathematics from fall for Black or African American kindergarten students by participation in ELO SAIL and school year



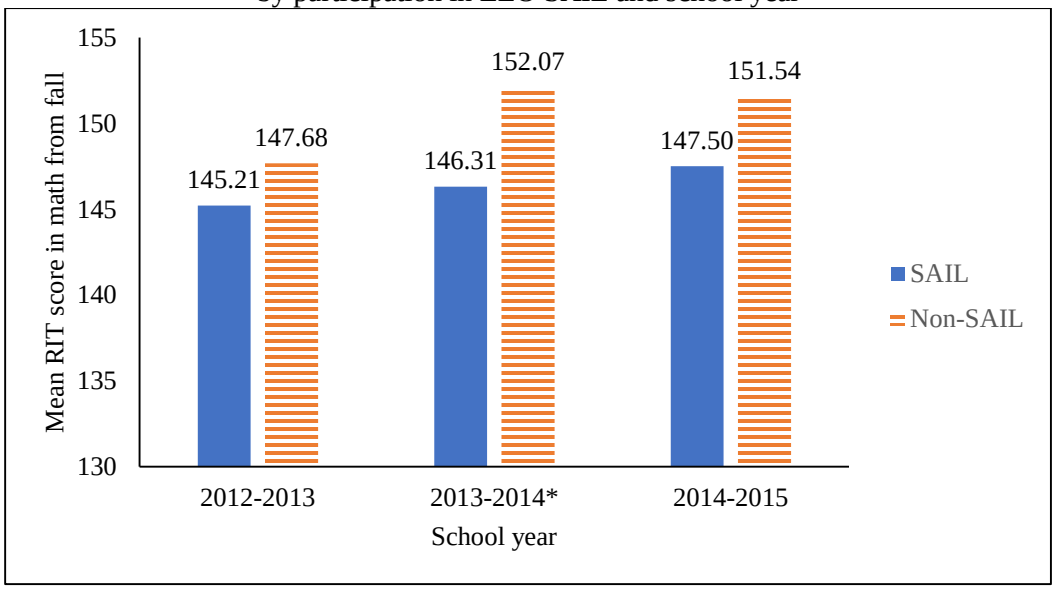

*Note.* See Table B1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure B3*
Mean MAP-P RIT scores in mathematics from fall for Hispanic/Latino kindergarten students by participation in ELO SAIL and school year



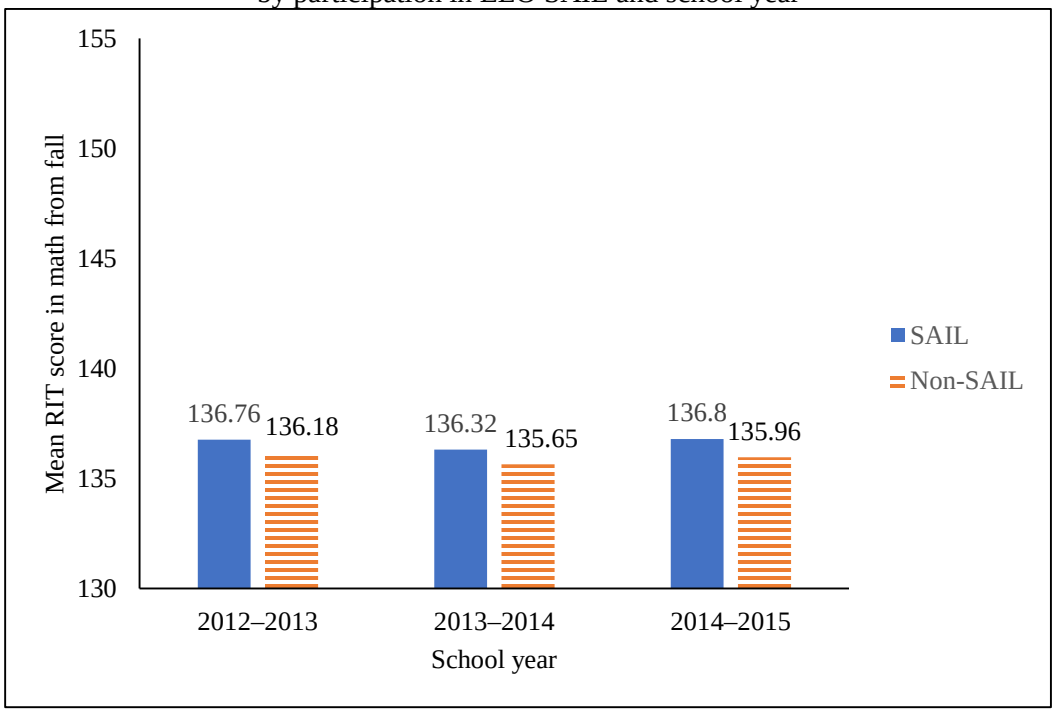

*Note.* See Table B1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure B4*
Mean MAP-P RIT scores in mathematics from fall for White kindergarten students by participation in ELO SAIL and school year



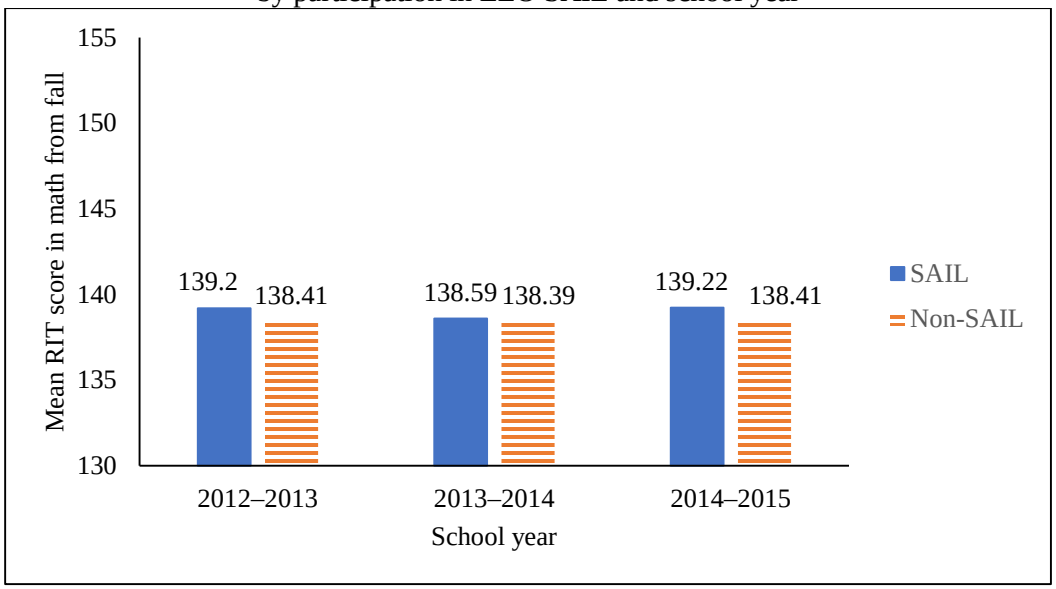

*Note.* See Table B1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure B5*
Mean MAP-P RIT scores in mathematics from fall for kindergarten students receiving ESOL services by participation in ELO SAIL and school year



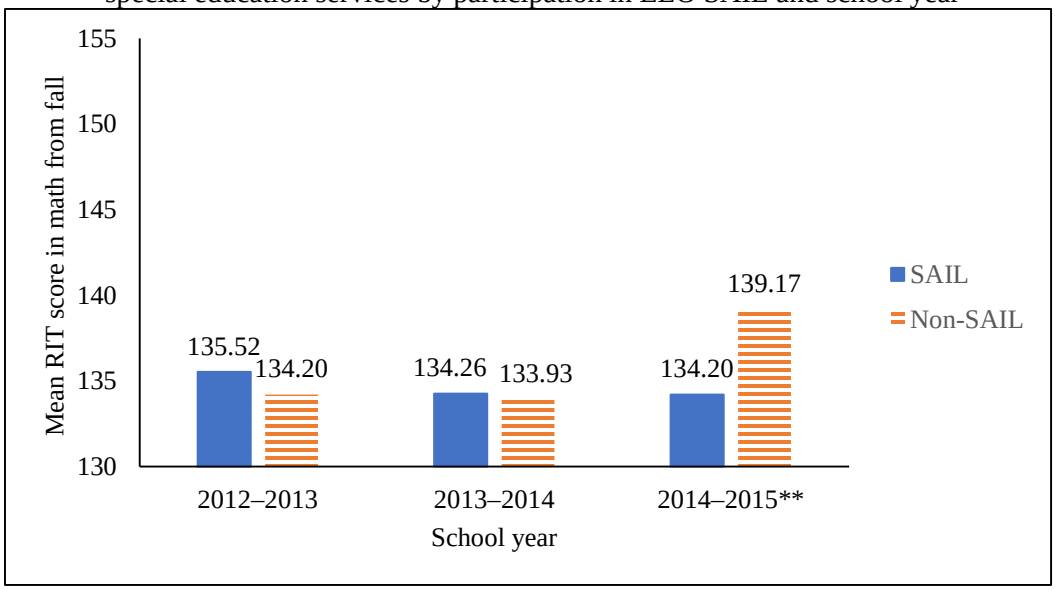

*Note.* See Table B1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure B6*
Mean MAP-P RIT scores in mathematics from fall for kindergarten students receiving FARMS services by participation in ELO SAIL and school year




*Note.* See Table B1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure B7*
Mean MAP-P RIT scores in mathematics from fall for kindergarten students receiving special education services by participation in ELO SAIL and school year




*Note.* See Table B1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

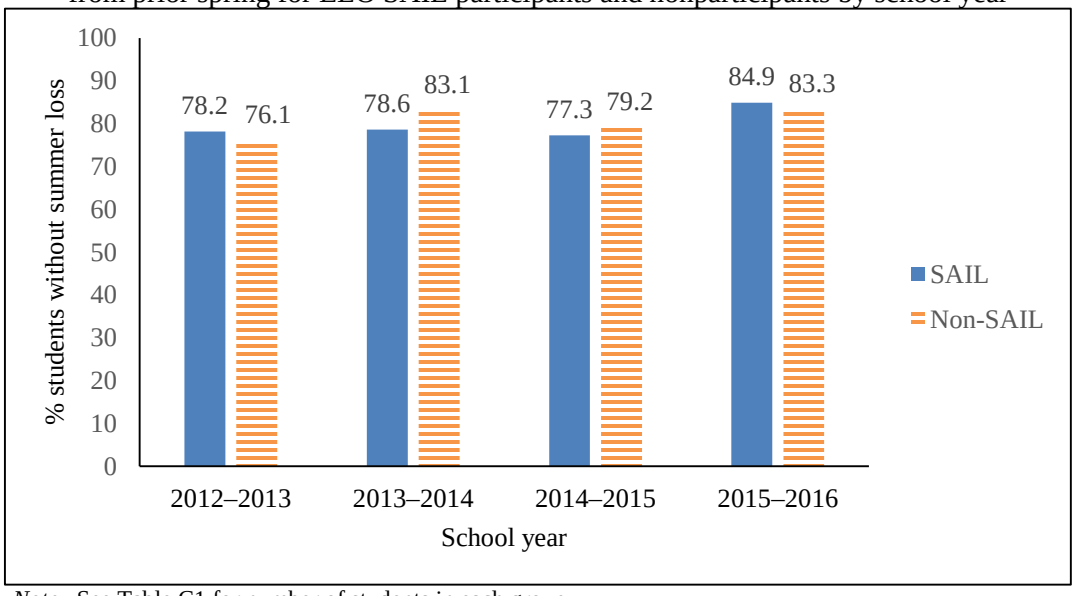
# Appendix C
# Findings for Question 2 on Fall Performance: Reading for Subgroups of Grade 1 Students

Table C1
Number of Grade 1 Students With AP-PR Book Levels in Fall and Prior Spring by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | | 2015–2016 | |
|---|---|---|---|---|---|---|---|---|
| Grade 1 | SAIL | Non | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 691 | 1,162 | 856 | 875 | 955 | 949 | 1,024 | 909 |
| Race/ethnicity | | | | | | | | |
| Asian | 55 | 92 | 56 | 77 | 75 | 77 | 53 | 54 |
| Black or African American | 177 | 280 | 219 | 194 | 259 | 242 | 290 | 213 |
| Hispanic/Latino | 418 | 631 | 529 | 482 | 562 | 483 | 635 | 540 |
| White | 27 | 122 | 35 | 91 | 32 | 110 | 28 | 71 |
| Receipt of services during school year | | | | | | | | |
| ESOL | 388 | 520 | 463 | 377 | 523 | 372 | 549 | 372 |
| FARMS | 570 | 829 | 676 | 604 | 767 | 655 | 840 | 658 |
| Special education | 45 | 59 | 56 | 38 | 66 | 40 | 89 | 32 |

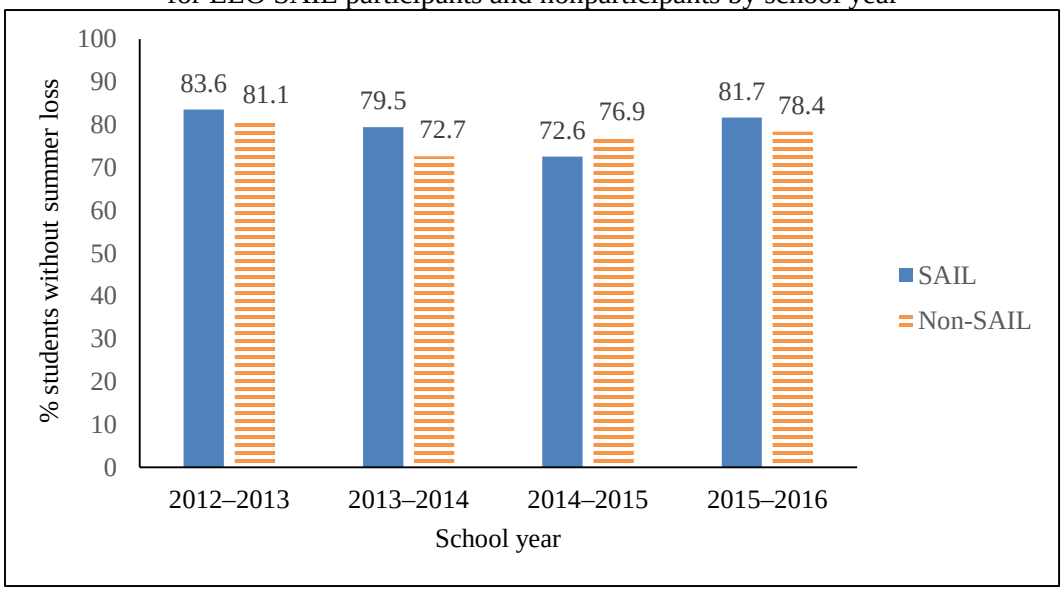
*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

*Figure C1*
Percentage of Grade 1 Asian students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year



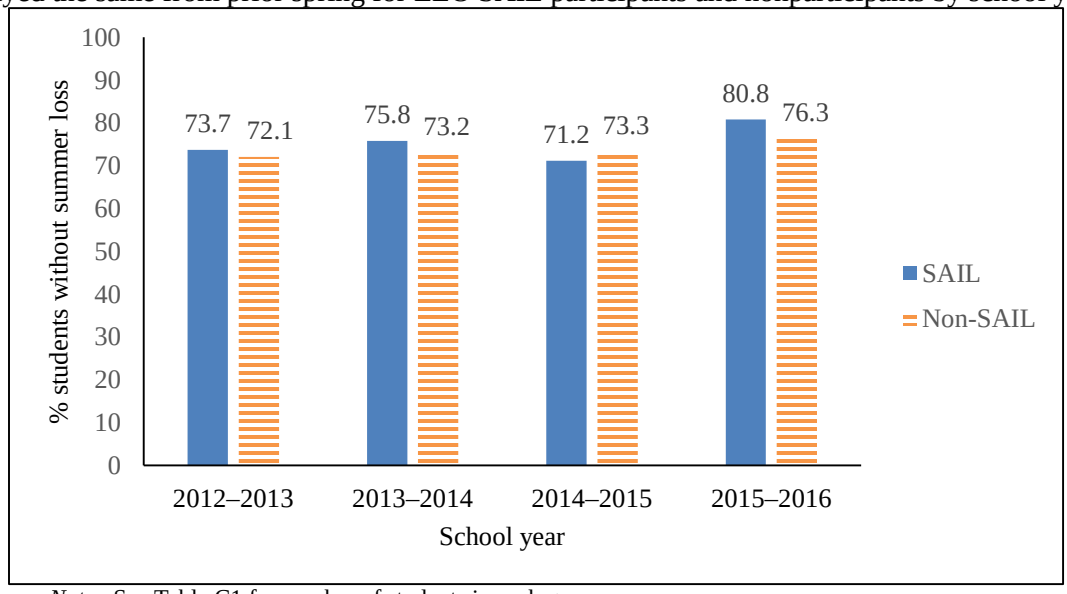

*Note.* See Table C1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure C2*
Percentage of Grade 1 Black or African American students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table C1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

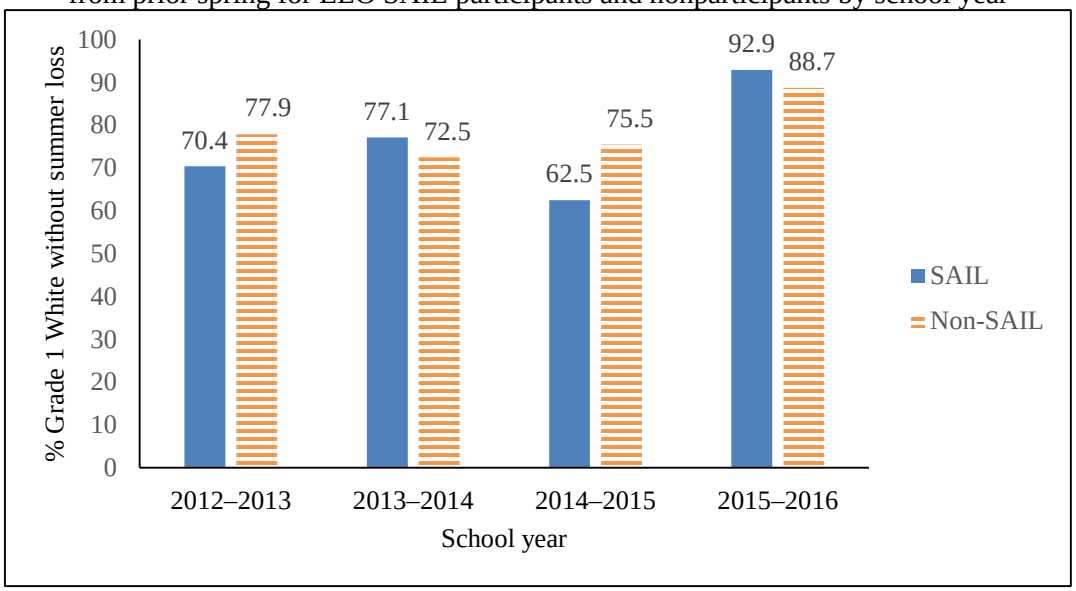
*Figure C3*
Percentage of Grade 1 Hispanic/Latino students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table C1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure C4*

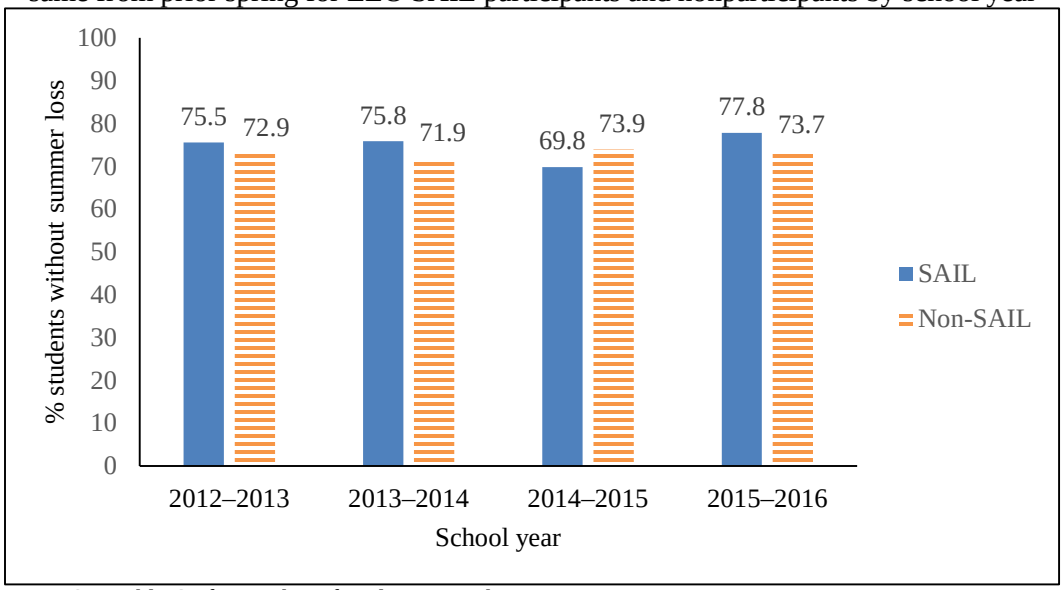
Percentage of White Grade 1 students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table C1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure C5*

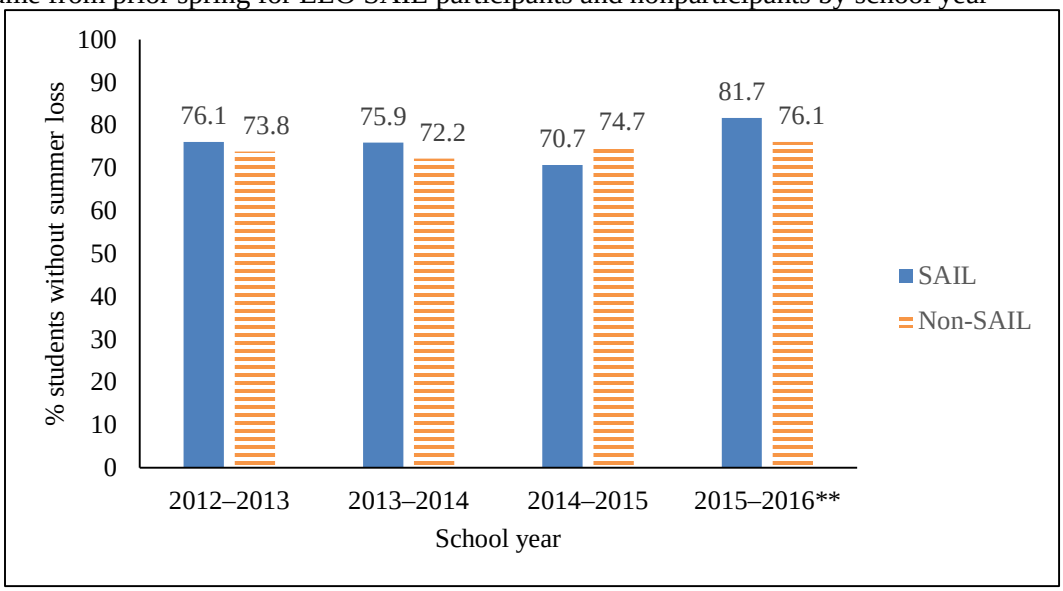
Percentage of Grade 1 ESOL recipients whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table C1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure C6*

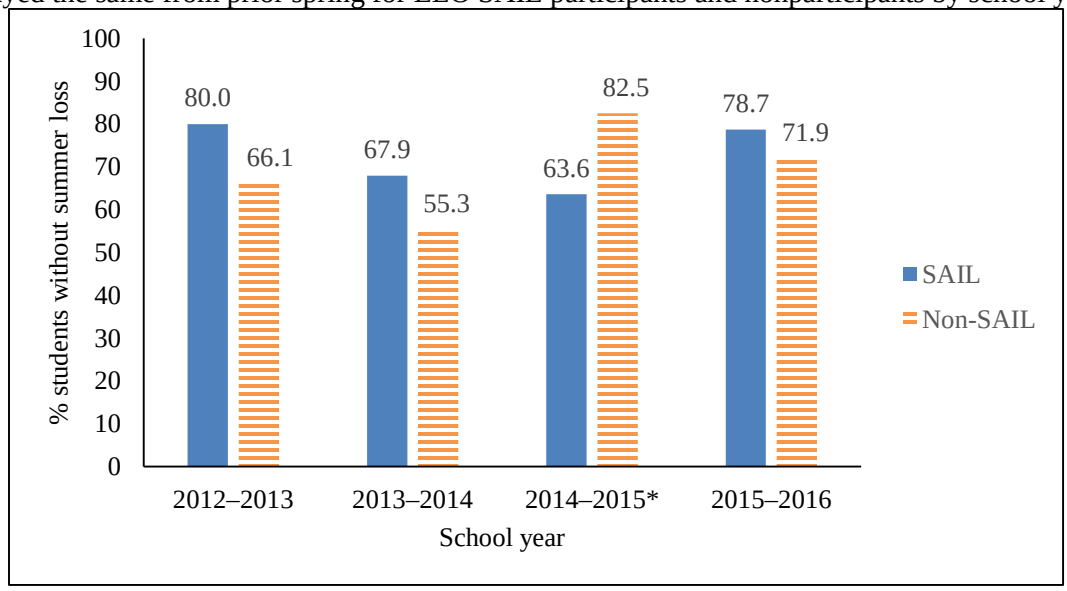
Percentage of Grade 1 FARMS recipients whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table C1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure C7*

Percentage of Grade 1 recipients of special education whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table C1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

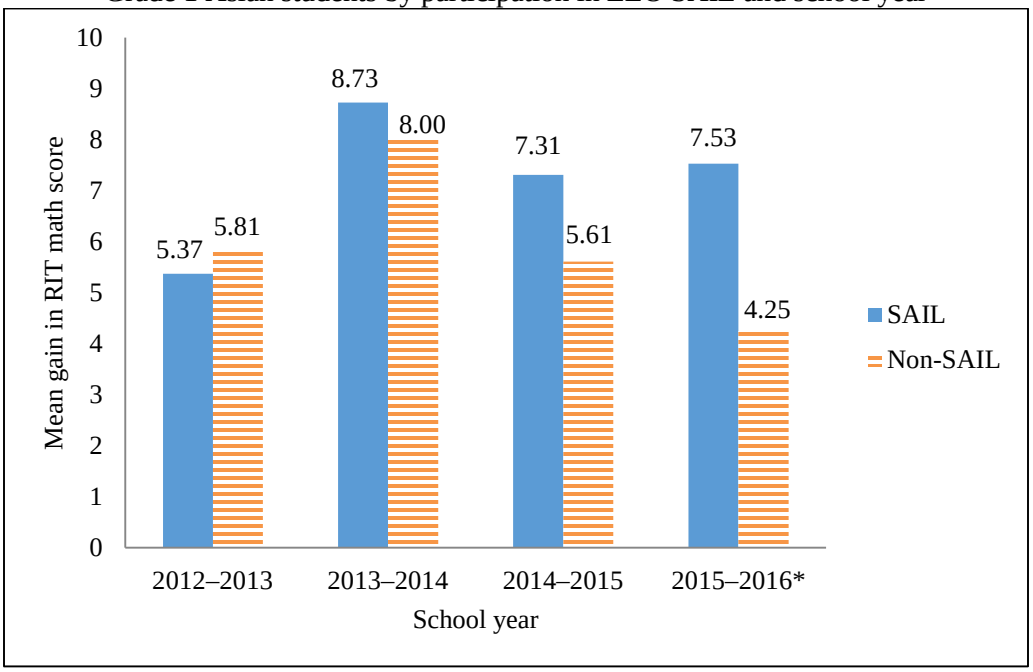
# Appendix D
# Findings for Question 2 on Fall Performance: Mathematics for Subgroups of Grade 1 Students

Table D1
Number of Grade 1 Students With MAP-P RIT Scores in Mathematics From Fall and Prior Spring by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | | 2015–2016 | |
|---|---|---|---|---|---|---|---|---|
| Grade 1 | SAIL | Non | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 494 | 720 | 1,095 | 1,117 | 1,164 | 1,140 | 1,212 | 1,097 |
| Race/ethnicity | | | | | | | | |
| Asian | 30 | 54 | 64 | 83 | 78 | 82 | 58 | 61 |
| Black or African American | 66 | 121 | 250 | 224 | 288 | 275 | 317 | 244 |
| Hispanic/Latino | 370 | 469 | 726 | 673 | 705 | 645 | 788 | 675 |
| White | 21 | 57 | 36 | 102 | 38 | 121 | 30 | 83 |
| Receipt of services during school year | | | | | | | | |
| ESOL | 330 | 367 | 657 | 538 | 676 | 530 | 702 | 504 |
| FARMS | 428 | 556 | 898 | 806 | 932 | 840 | 1,004 | 819 |
| Special education | 47 | 63 | 107 | 85 | 112 | 82 | 117 | 65 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

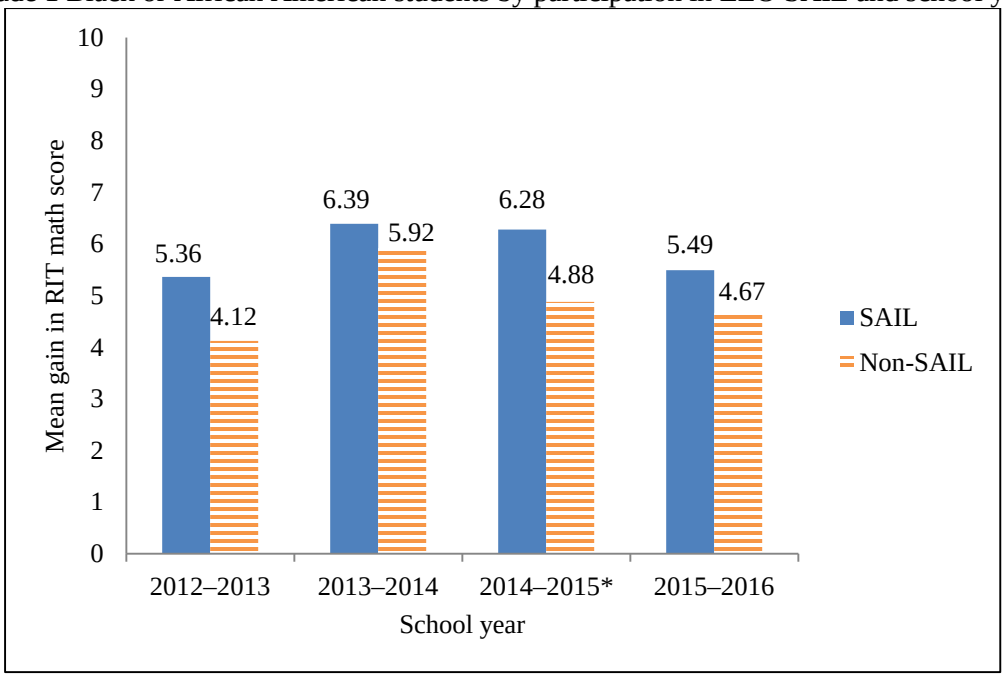
*Figure D1*
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 1 Asian students by participation in ELO SAIL and school year




*Note.* See Table D1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure D2*

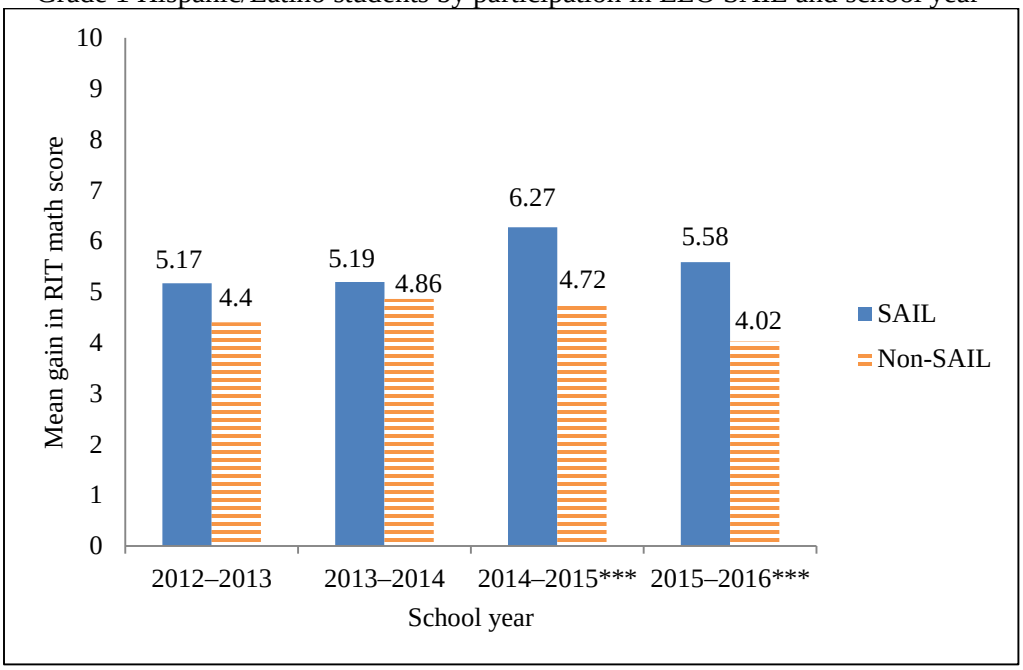
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 1 Black or African American students by participation in ELO SAIL and school year




*Note.* See Table D1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure D3*

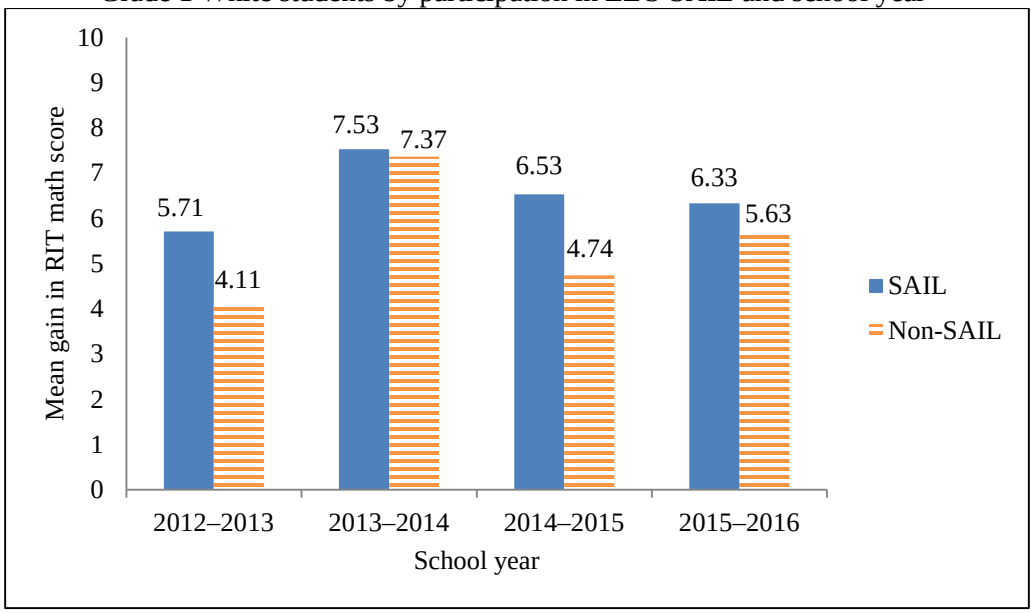
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 1 Hispanic/Latino students by participation in ELO SAIL and school year




*Note.* See Table D1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure D4*

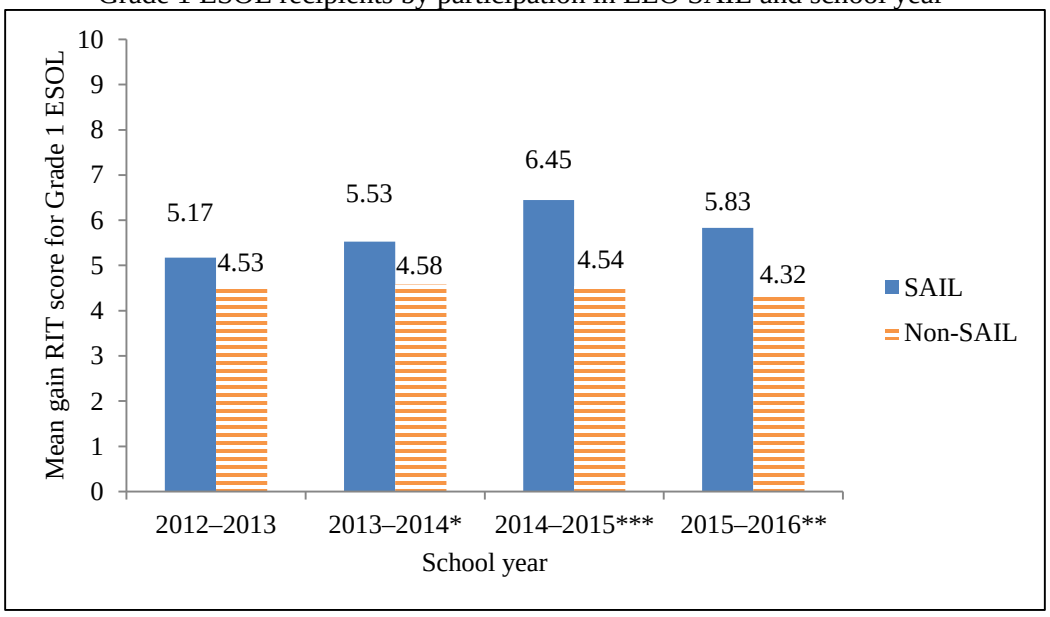
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 1 White students by participation in ELO SAIL and school year




*Note.* See Table D1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure D5*

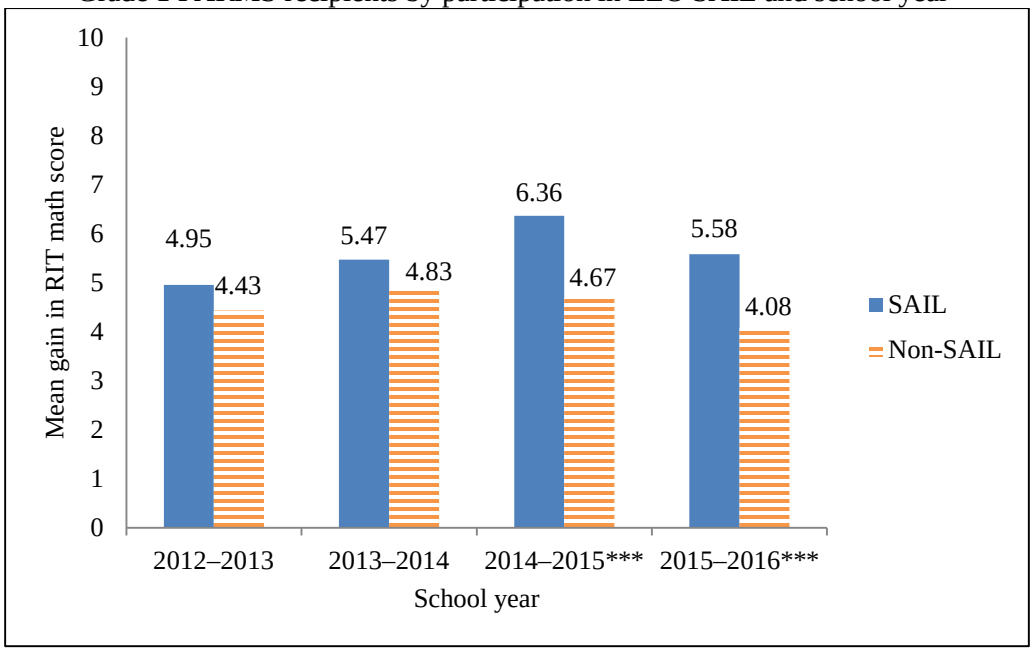
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 1 ESOL recipients by participation in ELO SAIL and school year




*Note.* See Table D1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure D6*

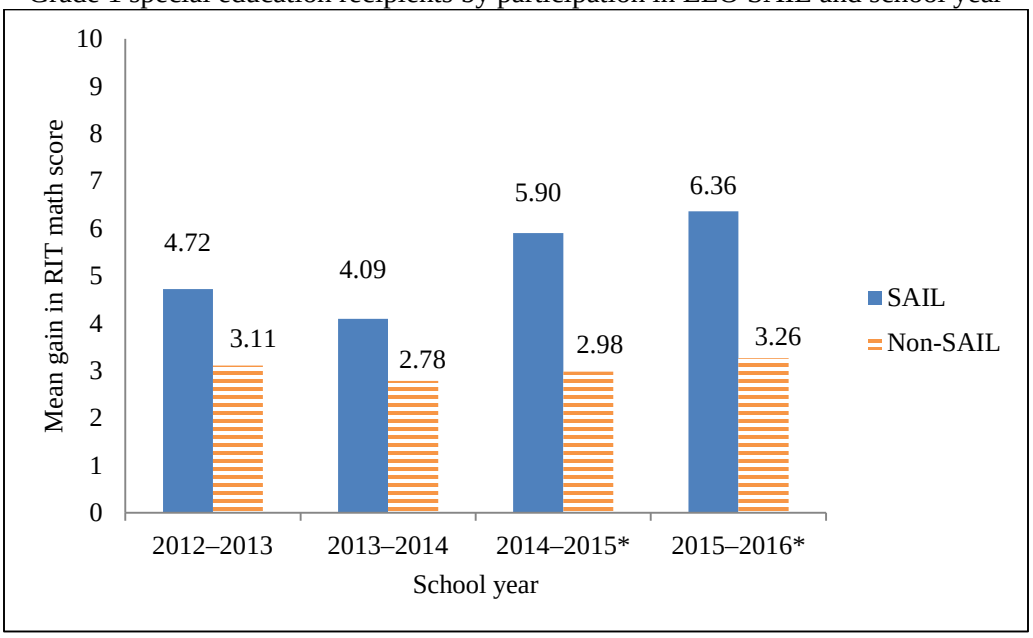
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 1 FARMS recipients by participation in ELO SAIL and school year




*Note.* See Table D1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure D7*

Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 1 special education recipients by participation in ELO SAIL and school year




*Note.* See Table D1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

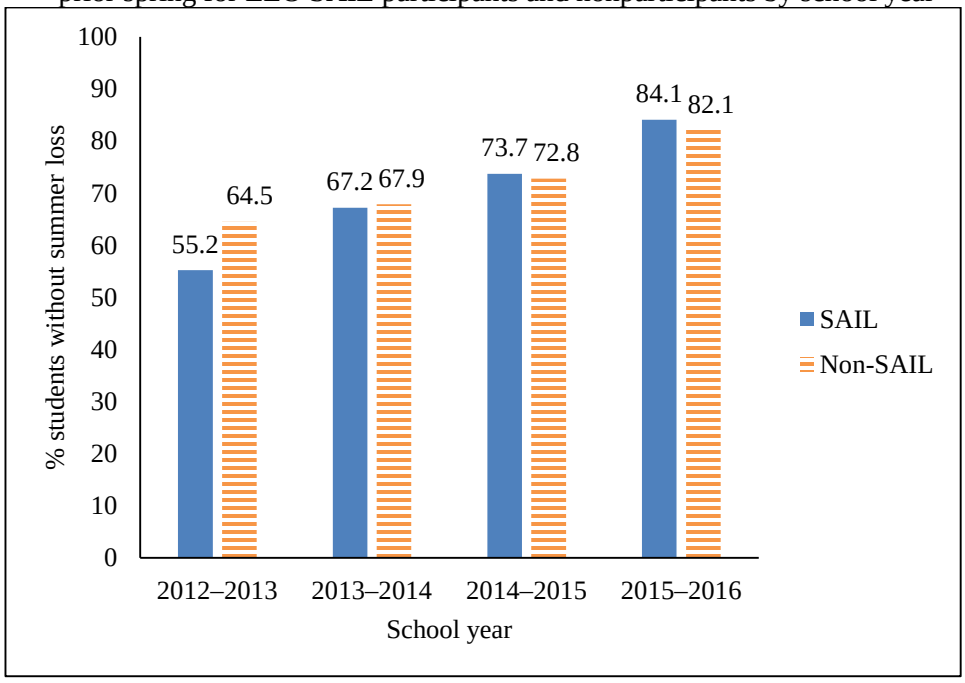
# Appendix E
# Findings for Question 2 on Fall Performance: Reading for Subgroups of Grade 2 Students

Table E1
Number of Grade 2 Students With AP-PR Book Levels in Fall and Prior Spring by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | | 2015–2016 | |
|---|---|---|---|---|---|---|---|---|
| Grade 2 | SAIL | Non | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 683 | 1,215 | 883 | 1,077 | 1,037 | 1,241 | 1,045 | 1,213 |
| Race/ethnicity | | | | | | | | |
| Asian | 58 | 107 | 67 | 78 | 57 | 81 | 69 | 78 |
| Black or African American | 160 | 297 | 219 | 237 | 257 | 273 | 292 | 303 |
| Hispanic/Latino | 439 | 658 | 563 | 605 | 691 | 729 | 619 | 701 |
| White | 16 | 116 | 23 | 118 | 21 | 109 | 35 | 90 |
| Receipt of services during school year | | | | | | | | |
| ESOL | 416 | 572 | 513 | 480 | 597 | 533 | 583 | 537 |
| FARMS | 574 | 857 | 741 | 783 | 869 | 881 | 864 | 923 |
| Special education | 61 | 94 | 95 | 80 | 105 | 75 | 97 | 67 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

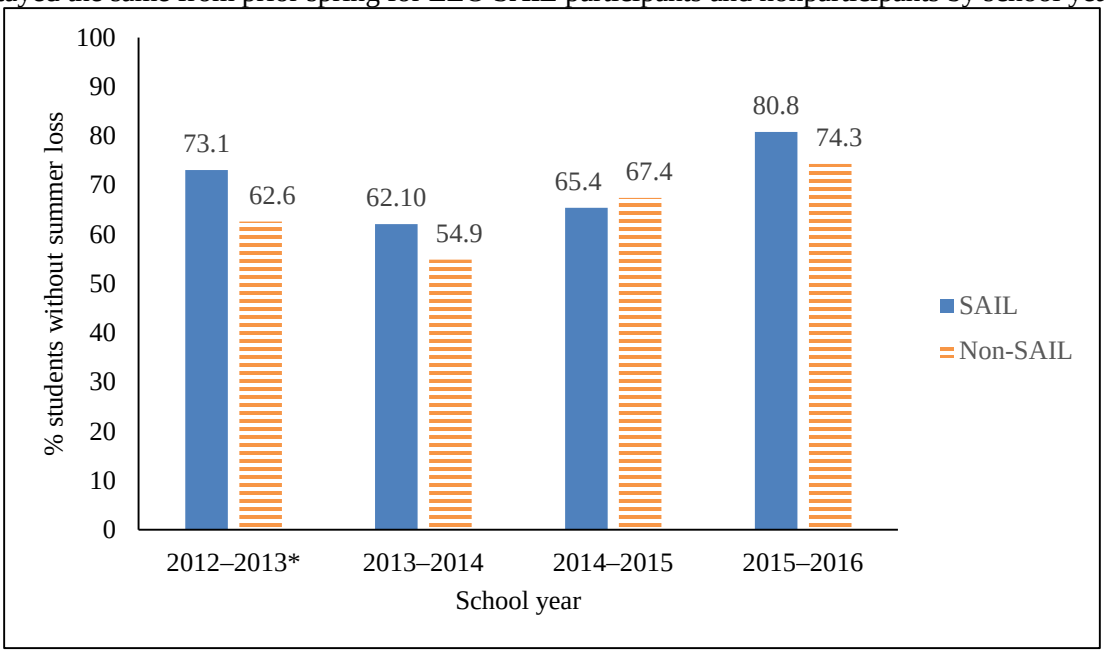
*Figure E1*
Percentage of Grade 2 Asian students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table E1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure E2*

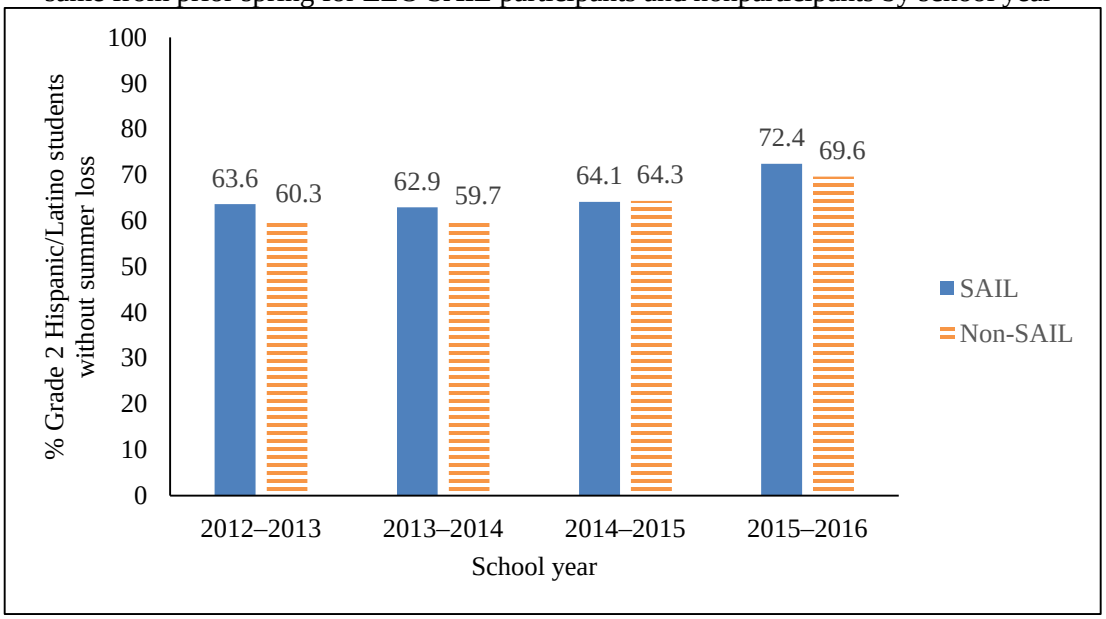
Percentage of Grade 2 Black or African American students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table E1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure E3*

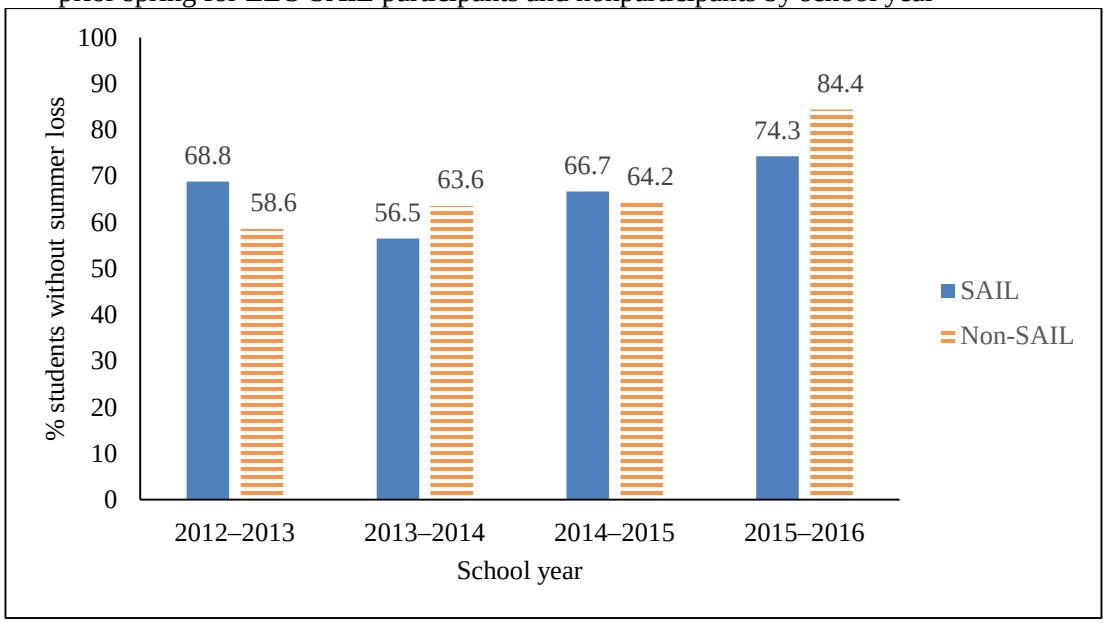
Percentage of Grade 2 Hispanic/Latino students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table E1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure E4*

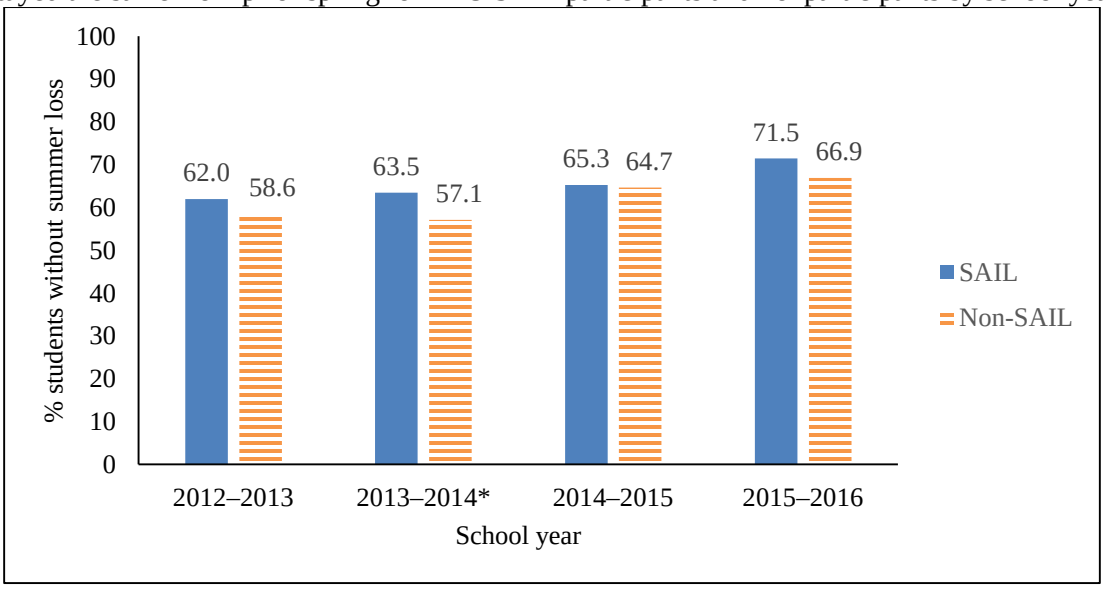
Percentage of Grade 2 White students whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table E1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

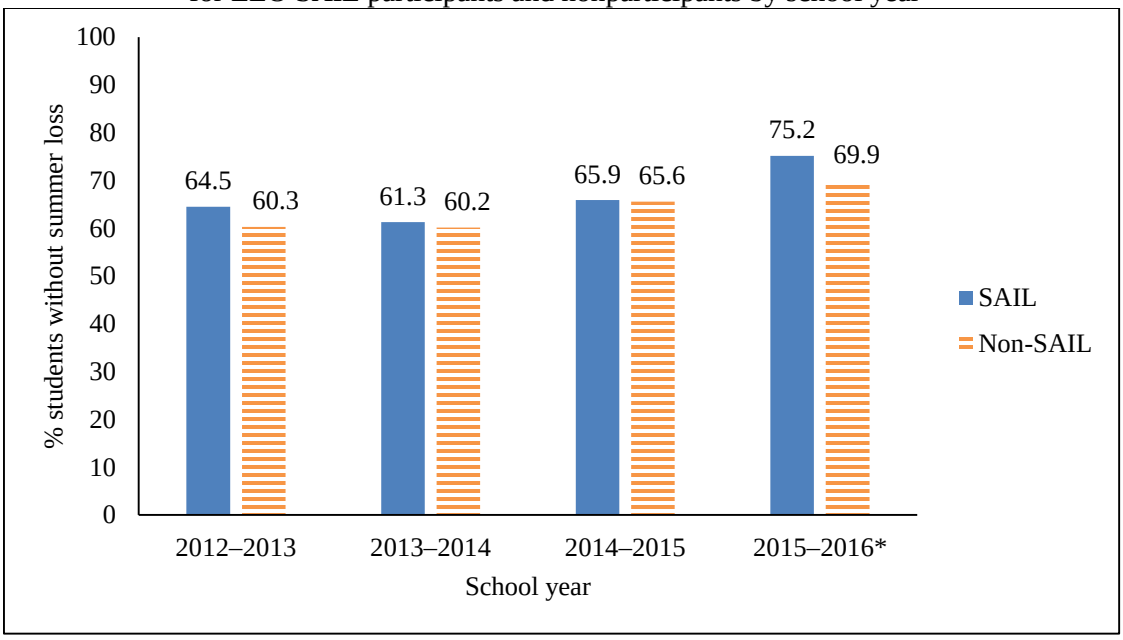
*Figure E5*

Percentage of Grade 2 students receiving ESOL services whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year



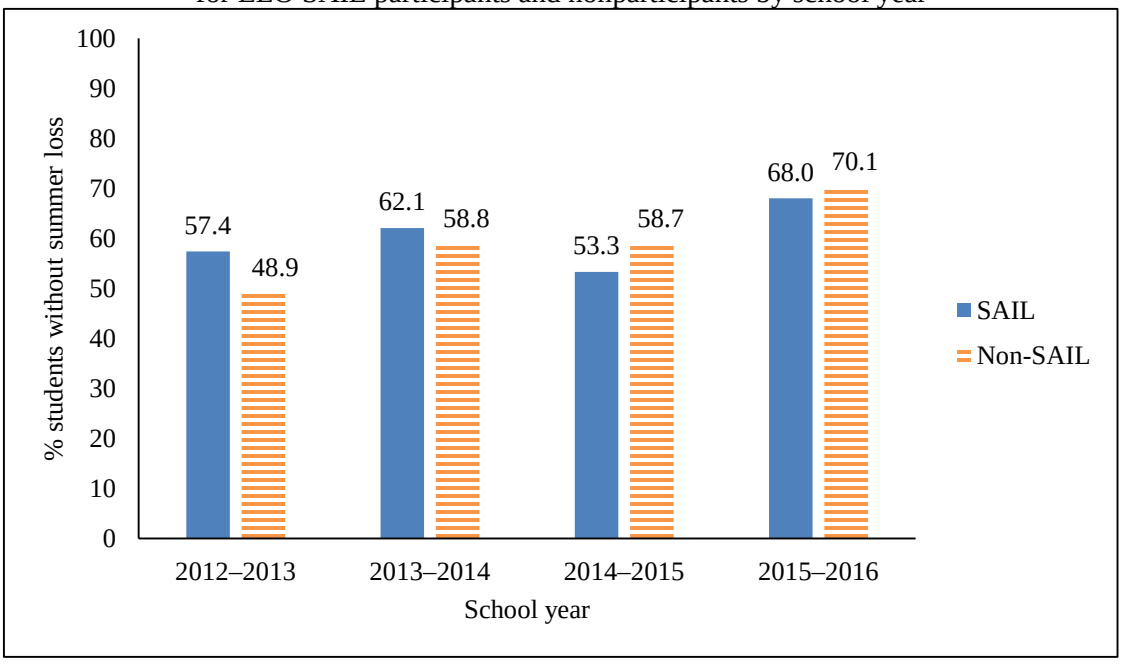

*Note.* See Table E1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure E6*
Percentage of Grade 2 students receiving FARMS services whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table E1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

*Figure E7*
Percentage of Grade 2 students receiving special education services whose AP-PR book level in fall increased or stayed the same from prior spring for ELO SAIL participants and nonparticipants by school year




*Note.* See Table E1 for number of students in each group.
**p<.05, **p<.01, ***p<.001*

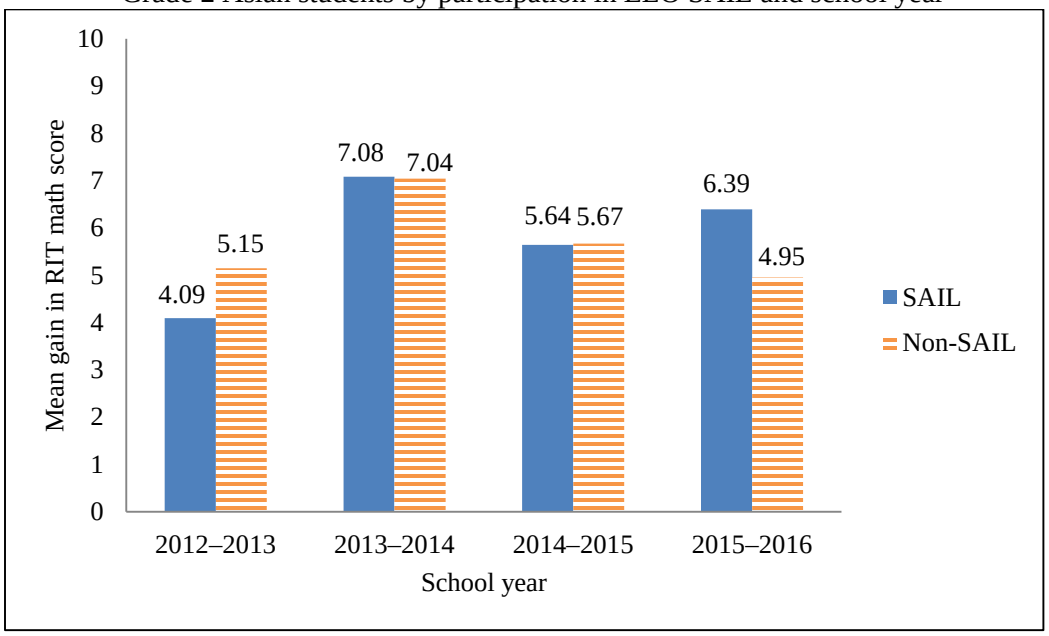
# Appendix F
# Findings for Question 2 on Fall Performance: Mathematics for Subgroups of Grade 2 Students

Table F1
Number of Grade 2 Students With MAP-P RIT Scores in Mathematics From Fall and Prior Spring by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | | 2015–2016 | |
|---|---|---|---|---|---|---|---|---|
| Grade 2 | SAIL | Non | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 408 | 642 | 977 | 1,175 | 1,059 | 1,262 | 1,092 | 1,240 |
| Race/ethnicity | | | | | | | | |
| Asian | 32 | 60 | 72 | 81 | 58 | 83 | 74 | 83 |
| Black or African American | 75 | 122 | 227 | 246 | 258 | 275 | 303 | 309 |
| Hispanic/Latino | 286 | 387 | 645 | 676 | 709 | 743 | 647 | 710 |
| White | 7 | 58 | 21 | 129 | 23 | 110 | 36 | 96 |
| Receipt of services during school year | | | | | | | | |
| ESOL | 279 | 341 | 592 | 533 | 615 | 553 | 614 | 546 |
| FARMS | 350 | 468 | 833 | 859 | 889 | 898 | 901 | 937 |
| Special education | 48 | 65 | 116 | 95 | 121 | 90 | 105 | 76 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

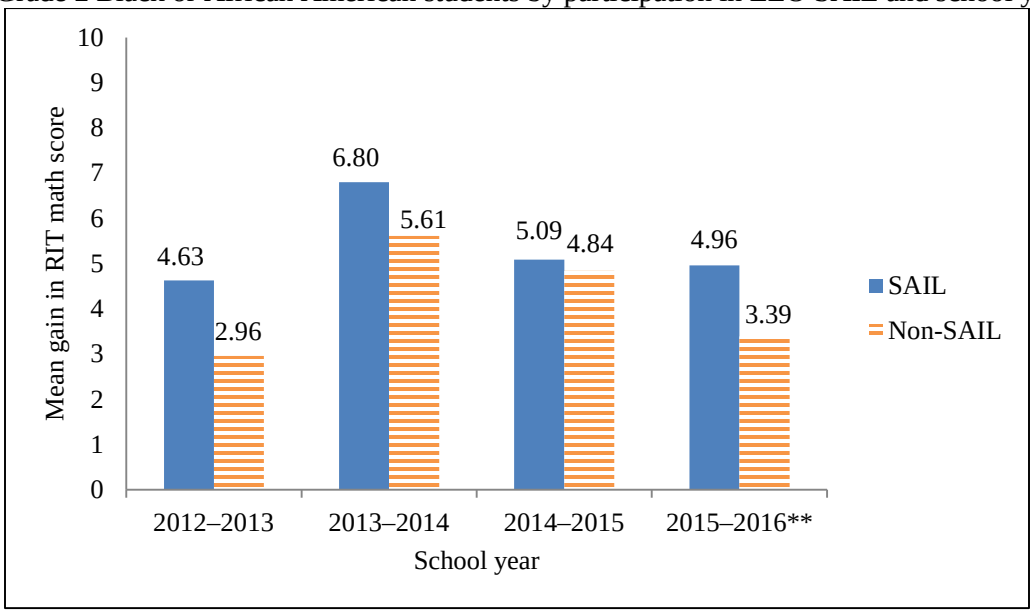
*Figure F1*
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 2 Asian students by participation in ELO SAIL and school year




*Note.* See Table F1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure F2*

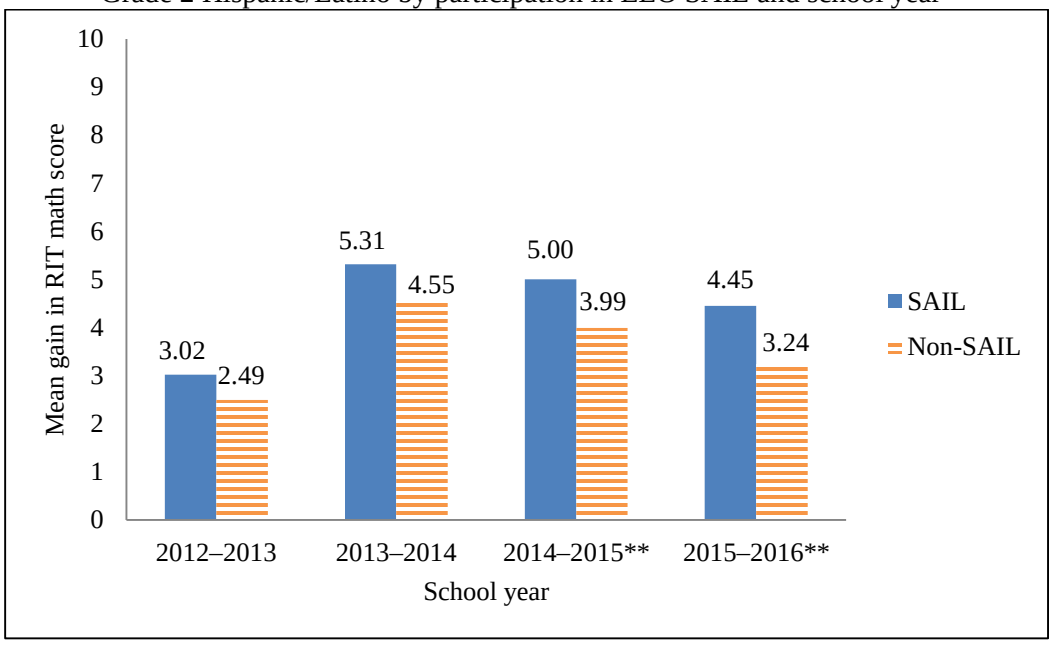
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 2 Black or African American students by participation in ELO SAIL and school year




*Note.* See Table F1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure F3*

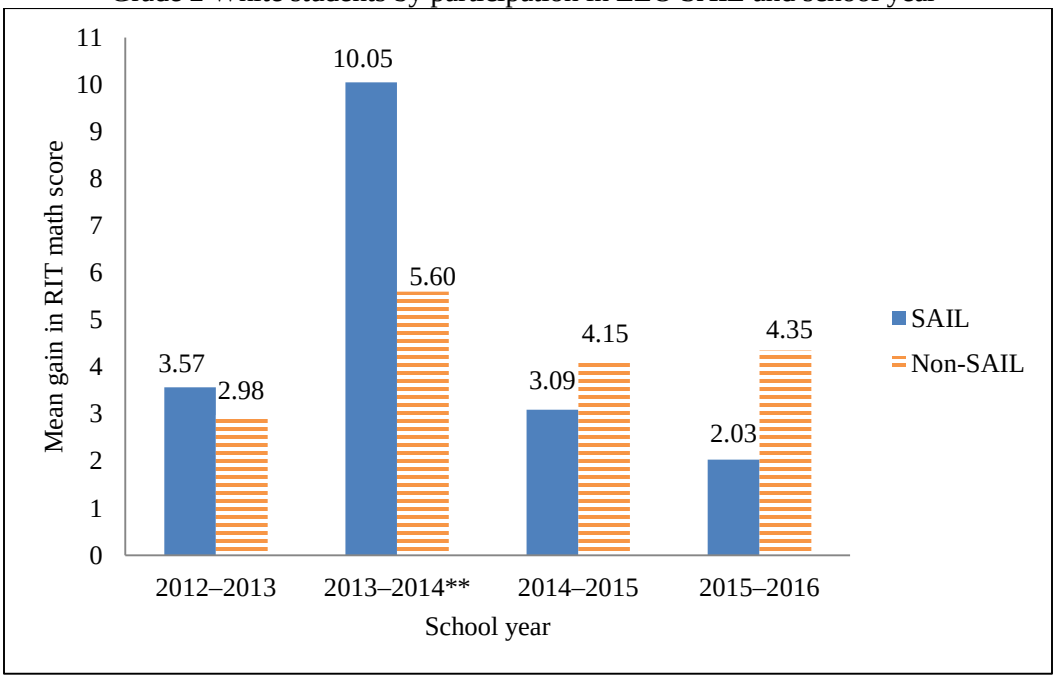
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 2 Hispanic/Latino by participation in ELO SAIL and school year




*Note.* See Table F1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure F4*

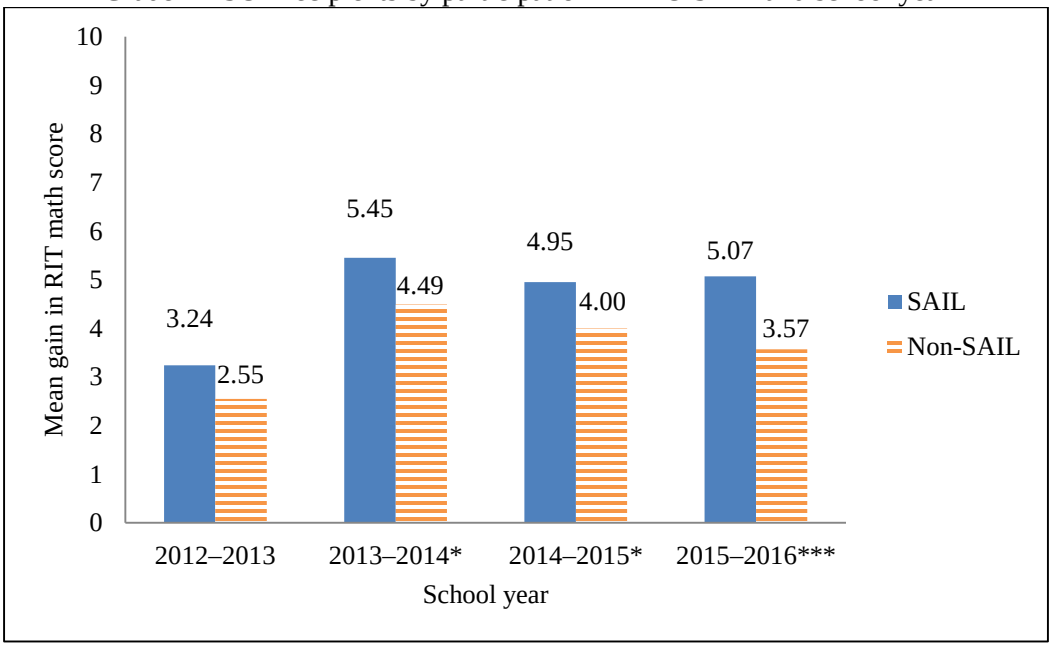
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 2 White students by participation in ELO SAIL and school year




*Note.* See Table F1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure F5*

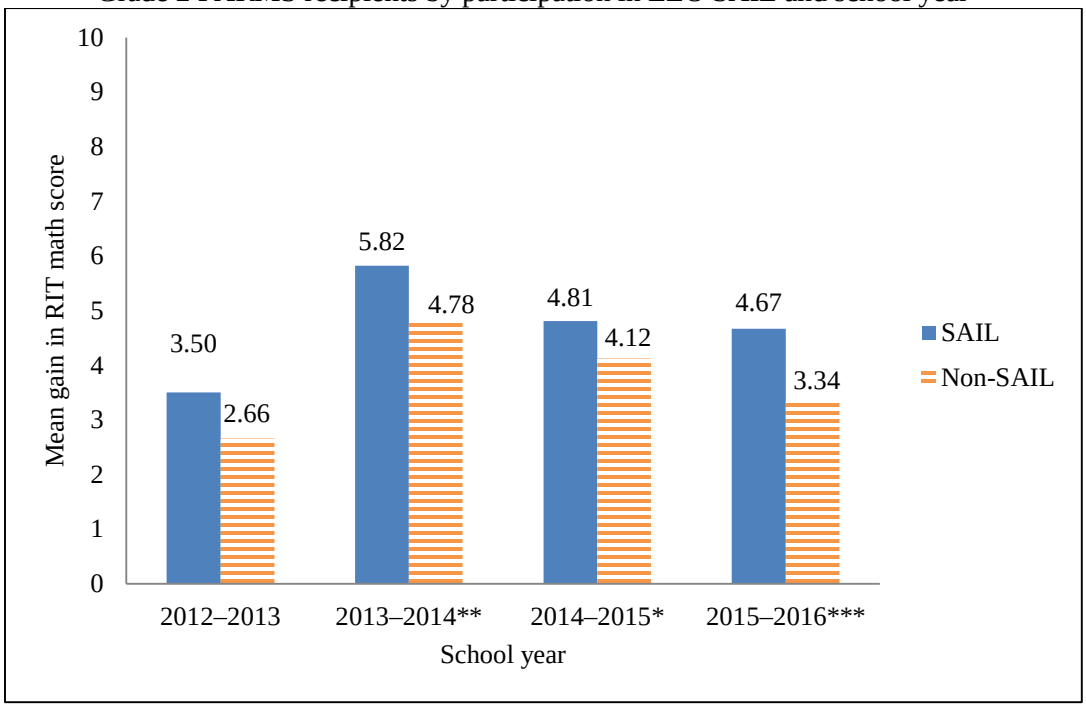
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 2 ESOL recipients by participation in ELO SAIL and school year




*Note.* See Table F1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure F6*

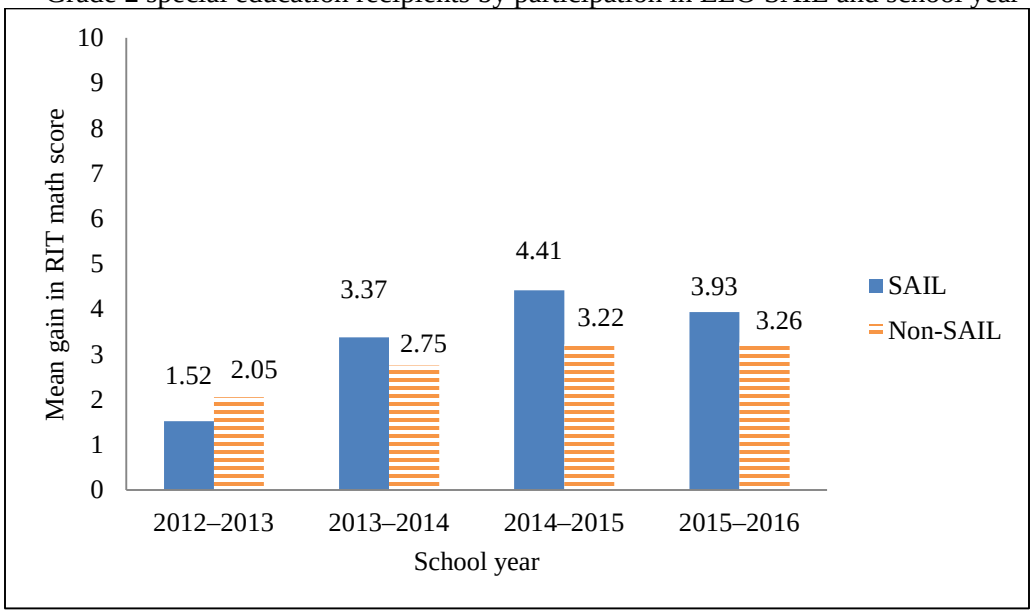
Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 2 FARMS recipients by participation in ELO SAIL and school year




*Note.* See Table F1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure F7*

Mean gain in MAP-P RIT mathematics score from prior spring to fall for Grade 2 special education recipients by participation in ELO SAIL and school year




*Note.* See Table F1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

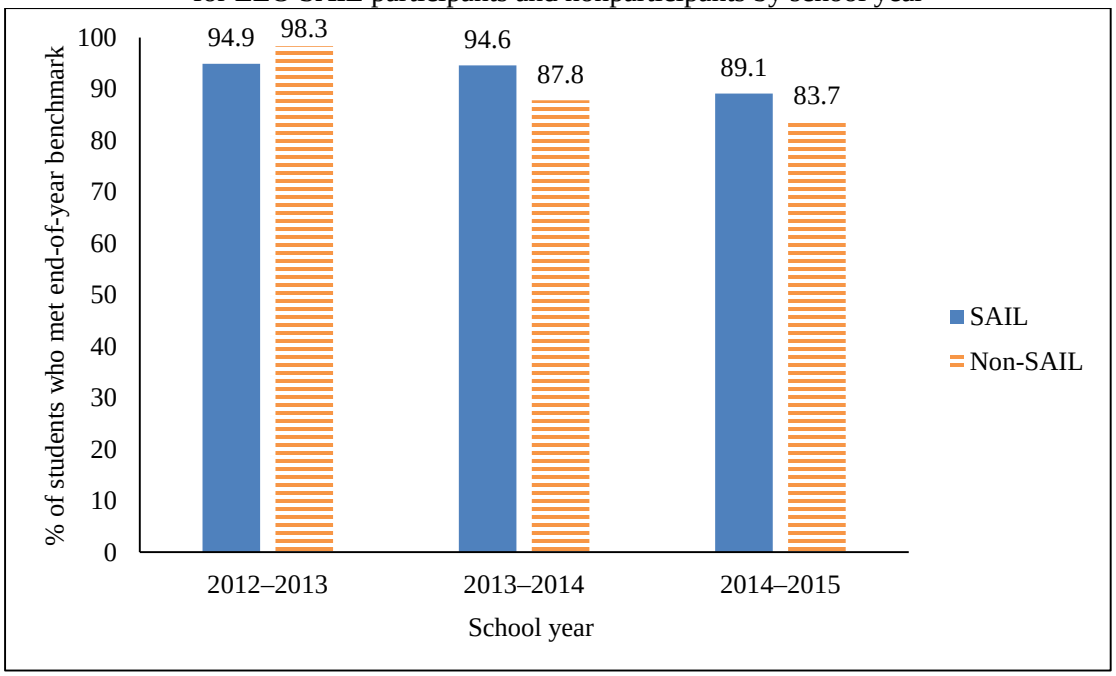
# Appendix G
# Findings for Question 3 on End-of-Year Performance: Reading for Subgroups of Kindergarten Students

Table G1
Number of Kindergarten Students With End-of-Year AP-PR Reading Data by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | |
|---|---|---|---|---|---|---|
| Kindergarten | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 976 | 1,713 | 1,112 | 1,860 | 1,349 | 1,478 |
| Race/ethnicity | | | | | | |
| Asian | 59 | 117 | 74 | 139 | 64 | 86 |
| Black or African American | 198 | 428 | 253 | 487 | 325 | 358 |
| Hispanic/Latino | 666 | 954 | 717 | 965 | 897 | 835 |
| White | 34 | 164 | 43 | 187 | 39 | 150 |
| Receipt of services during school year | | | | | | |
| ESOL | 615 | 879 | 700 | 908 | 845 | 740 |
| FARMS | 813 | 1,227 | 917 | 1,315 | 1,124 | 1,041 |
| Special education | 92 | 136 | 79 | 170 | 122 | 121 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

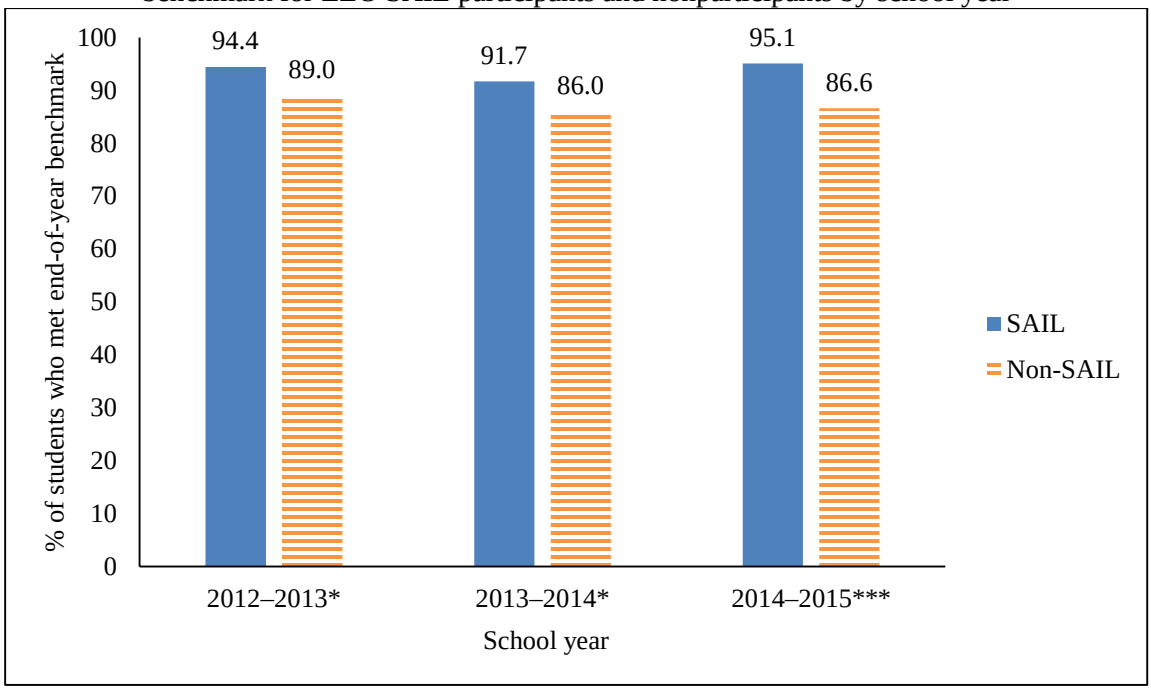
*Figure G1*
Percentage of Asian kindergarten students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year




*Note*. See Table G1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure G2*

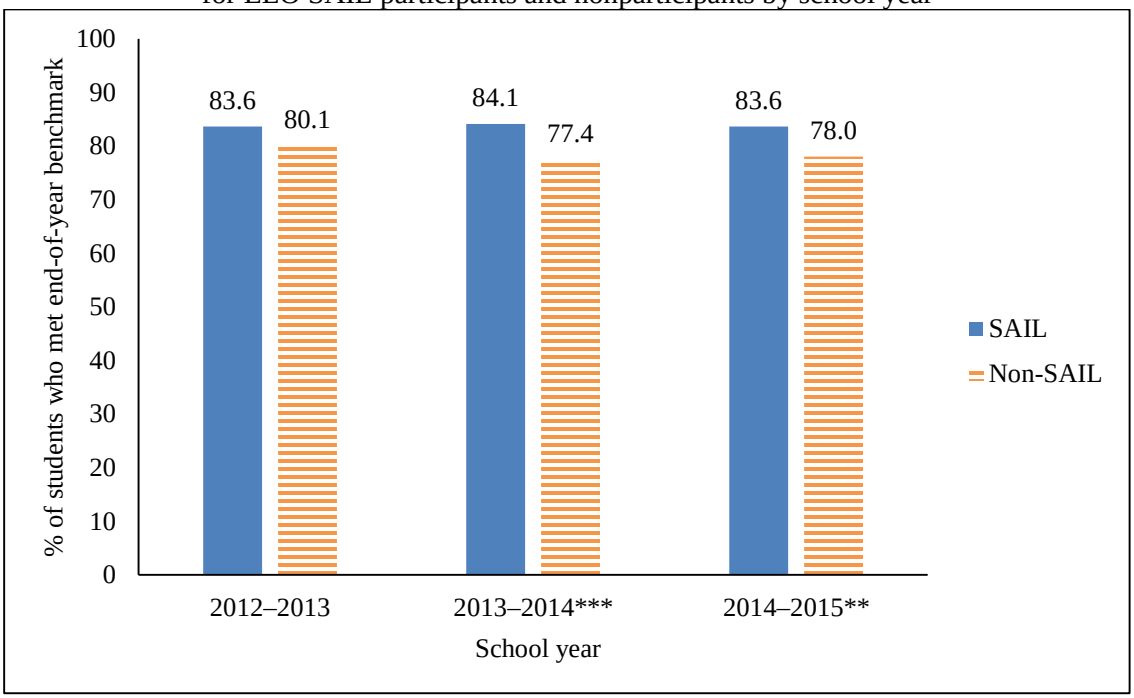
Percentage of Black or African American kindergarten students who met the end-of-year AP-PR reading benchmark for ELO SAIL participants and nonparticipants by school year




*Note.* See Table G1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

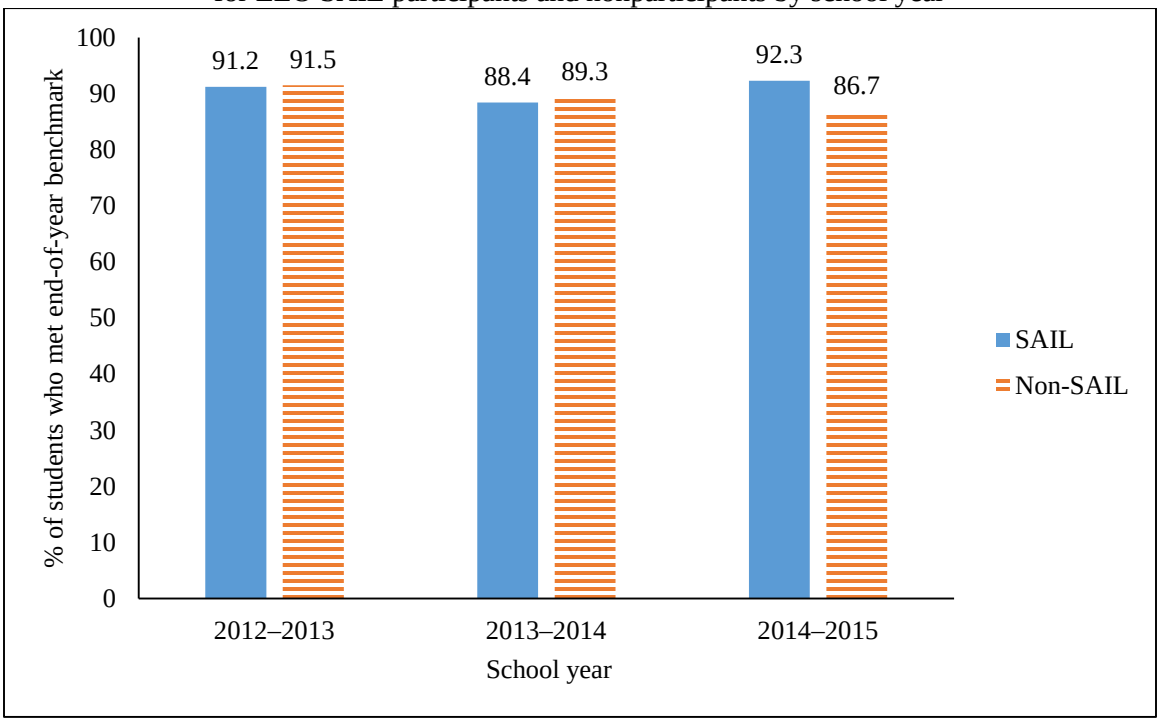
*Figure G3*

Percentage of Hispanic/Latino kindergarten students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year



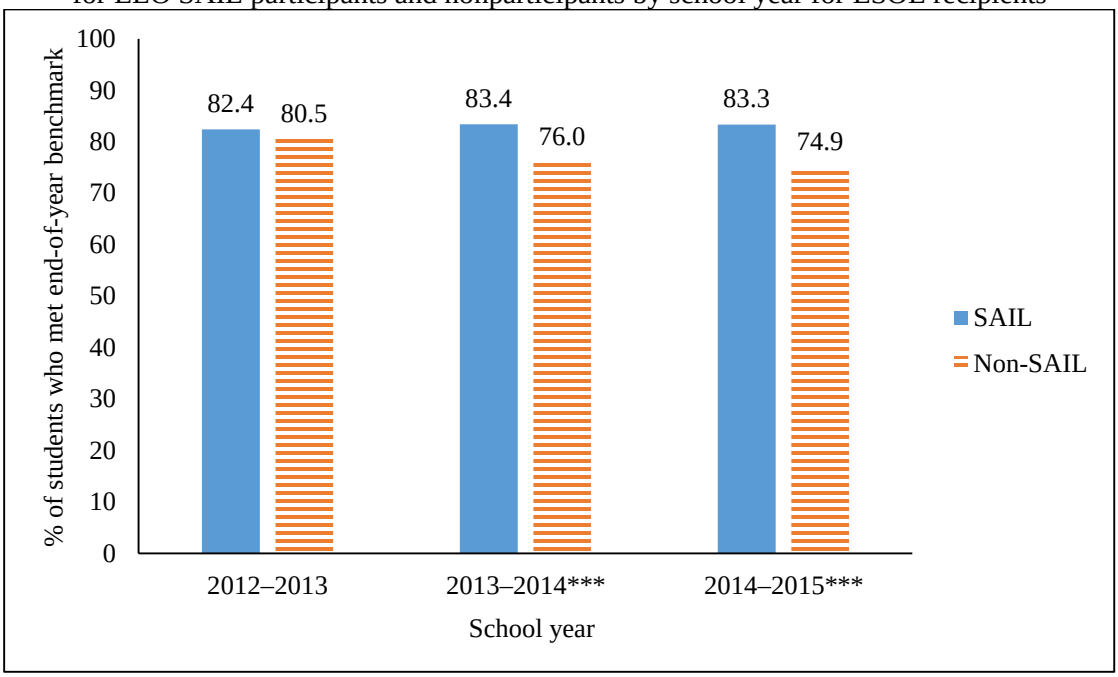

*Note.* See Table G1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure G4*
Percentage of White kindergarten students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year




*Note.* See Table G1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

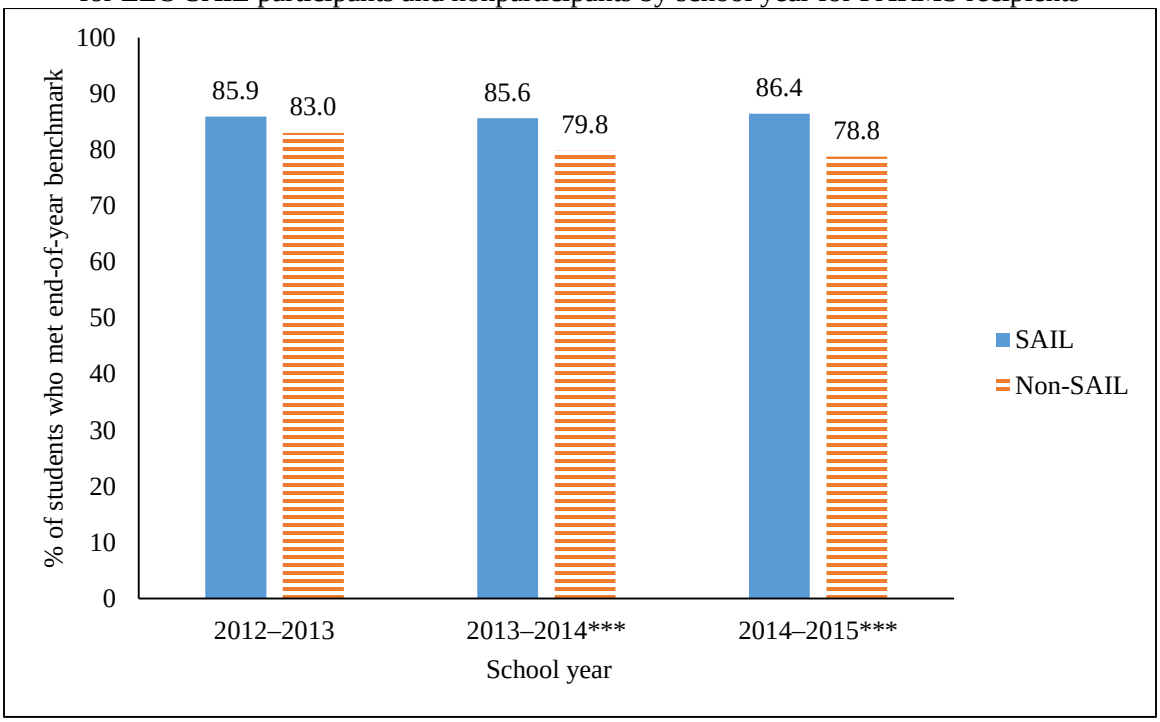
*Figure G5*
Percentage of kindergarten students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year for ESOL recipients




*Note.* See Table G1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure G6*

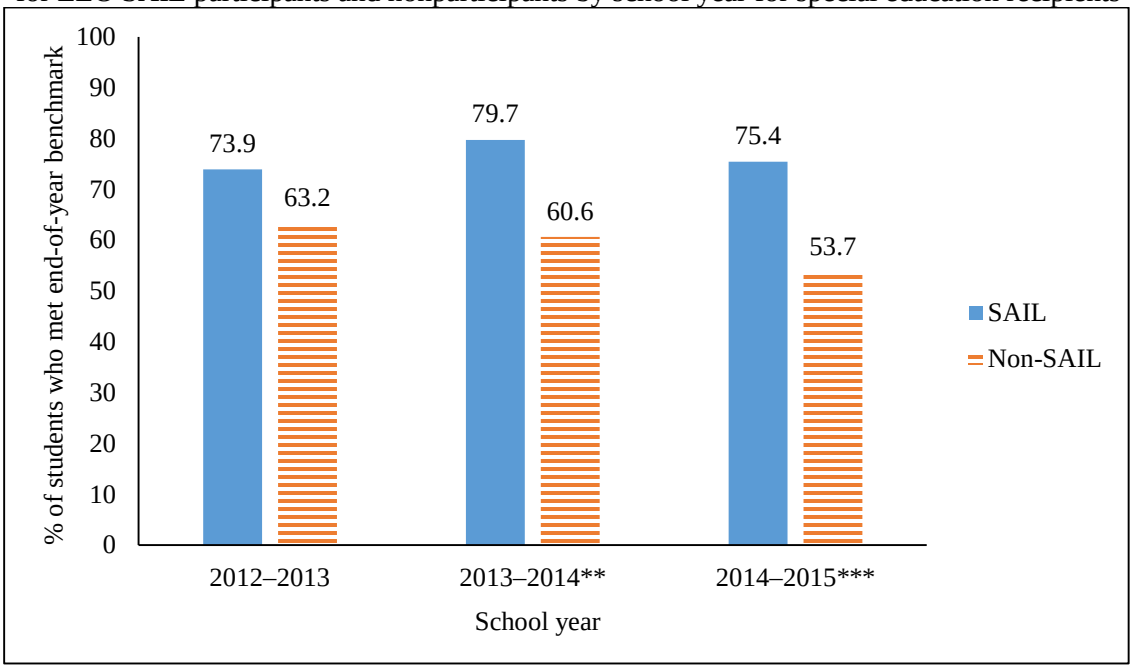
Percentage of kindergarten students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year for FARMS recipients




*Note.* See Table G1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure G7*

Percentage of kindergarten students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year for special education recipients




*Note.* See Table G1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

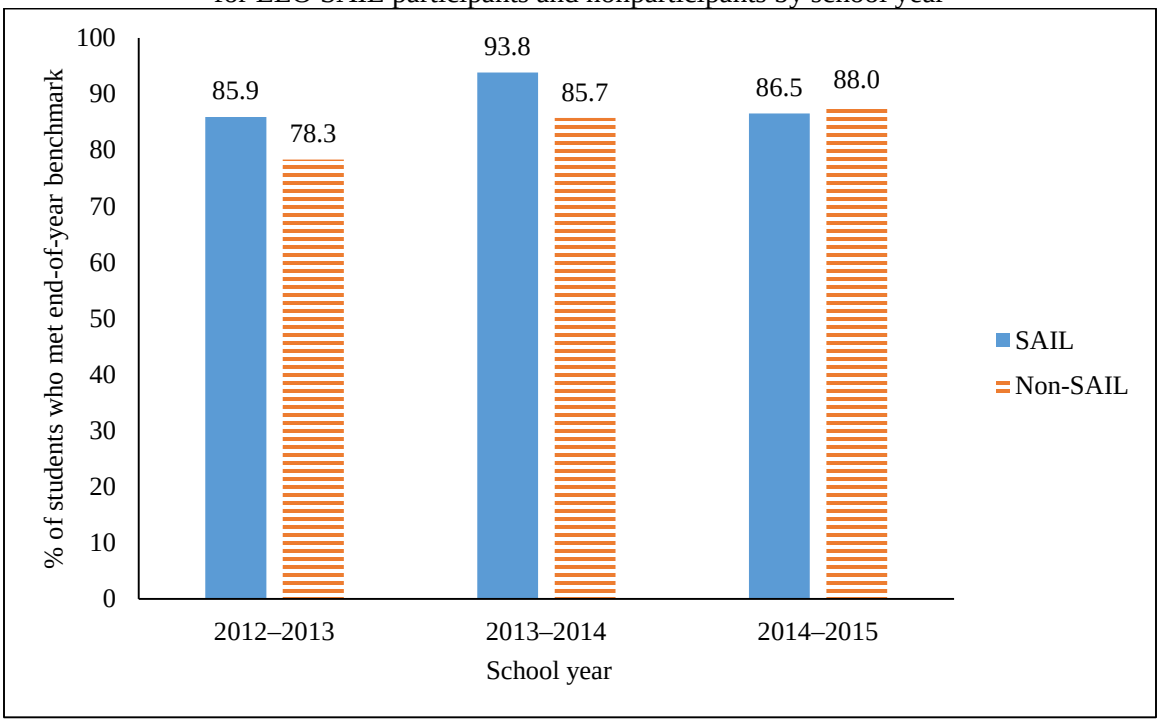
# Appendix H
# Findings for Question 3 on End-of-Year Performance: Reading for Subgroups of Grade 1 Students

Table H1
Number of Grade 1 Students With End-of-Year AP-PR Reading Data by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | |
|---|---|---|---|---|---|---|
| Grade 1 | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 900 | 1,685 | 1,138 | 1,827 | 1,231 | 1,540 |
| Race/ethnicity | | | | | | |
| Asian | 64 | 120 | 64 | 140 | 89 | 100 |
| Black or African American | 201 | 411 | 258 | 486 | 317 | 406 |
| Hispanic/Latino | 589 | 934 | 759 | 994 | 752 | 824 |
| White | 31 | 164 | 38 | 152 | 42 | 155 |
| Receipt of services during school year | | | | | | |
| ESOL | 560 | 785 | 688 | 835 | 719 | 691 |
| FARMS | 760 | 1,243 | 938 | 1,309 | 1,001 | 1,116 |
| Special education | 92 | 149 | 112 | 153 | 123 | 113 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

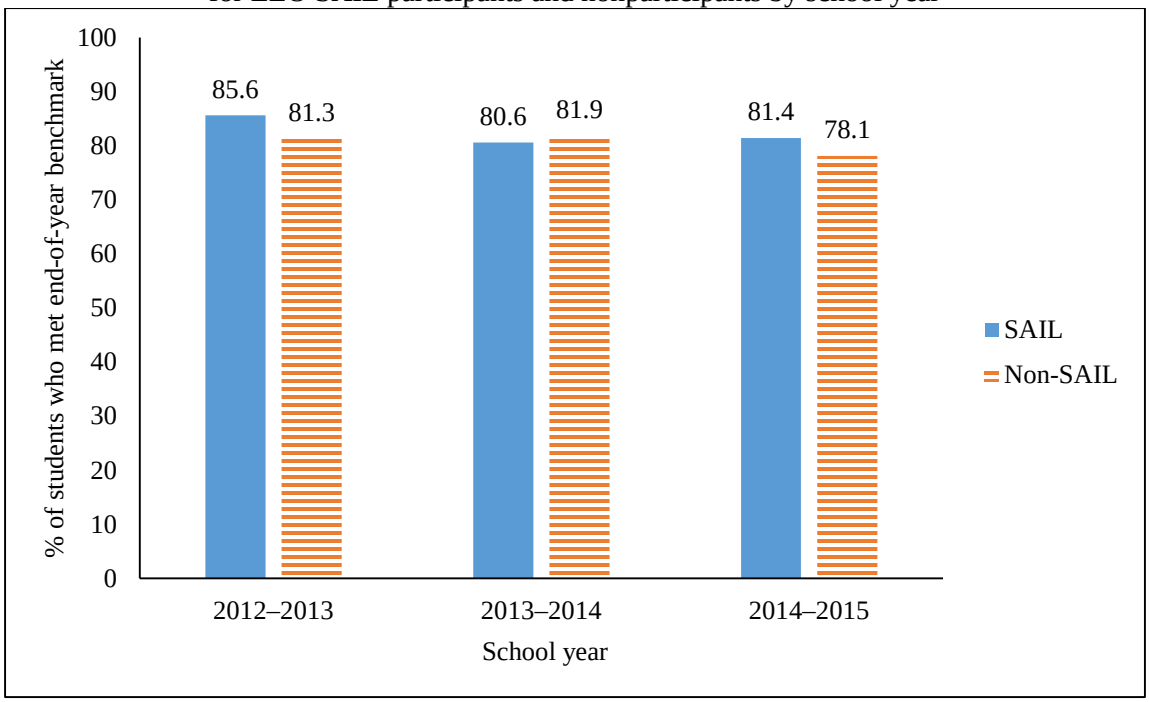
*Figure H1*
Percentage of Asian Grade 1 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year




*Note.* See Table H1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure H2*

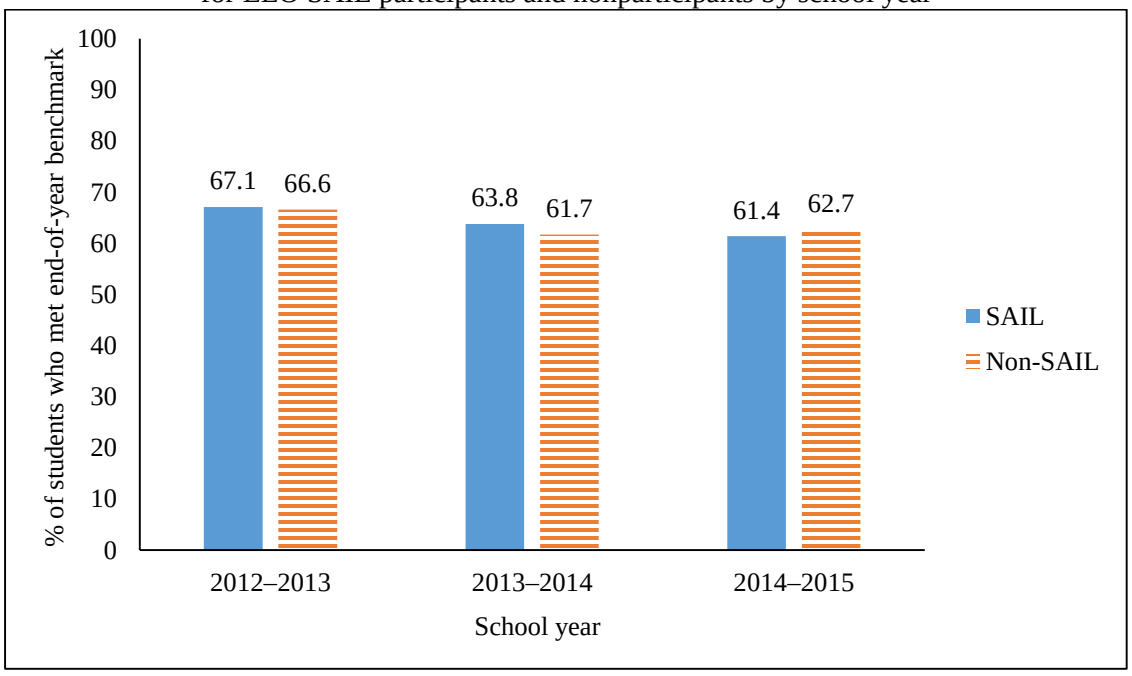
Percentage of Black or African American Grade 1 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year




*Note.* See Table H1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

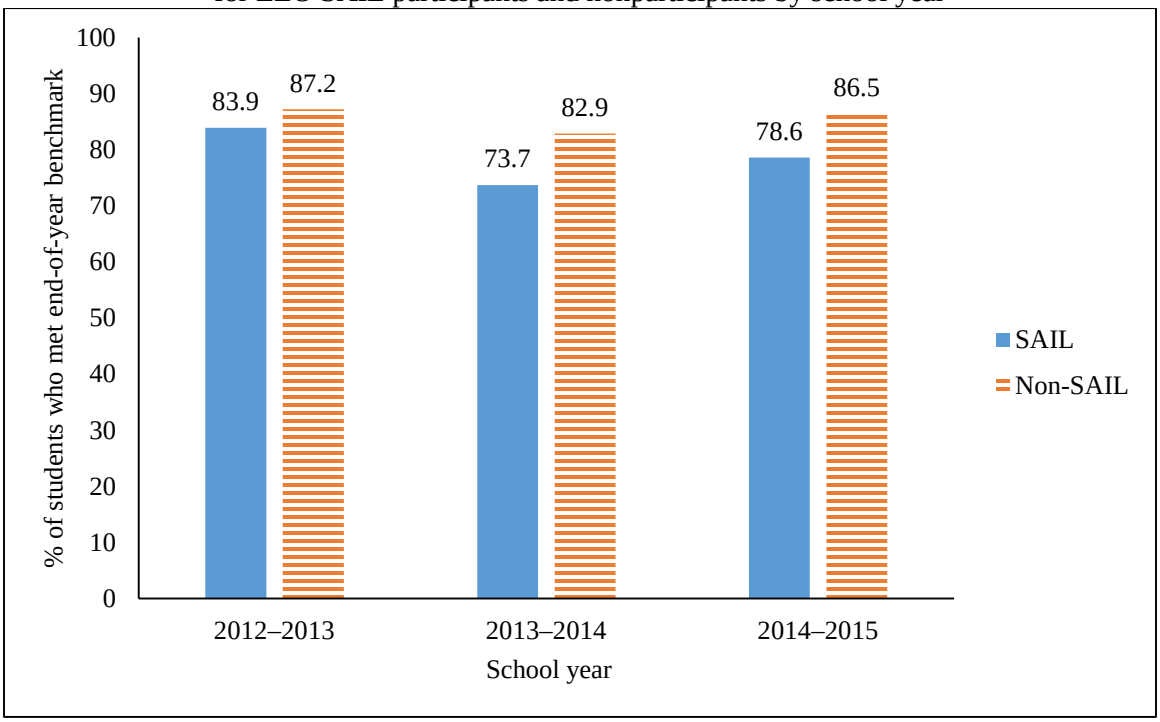
*Figure H3*

Percentage of Hispanic/Latino Grade 1 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year



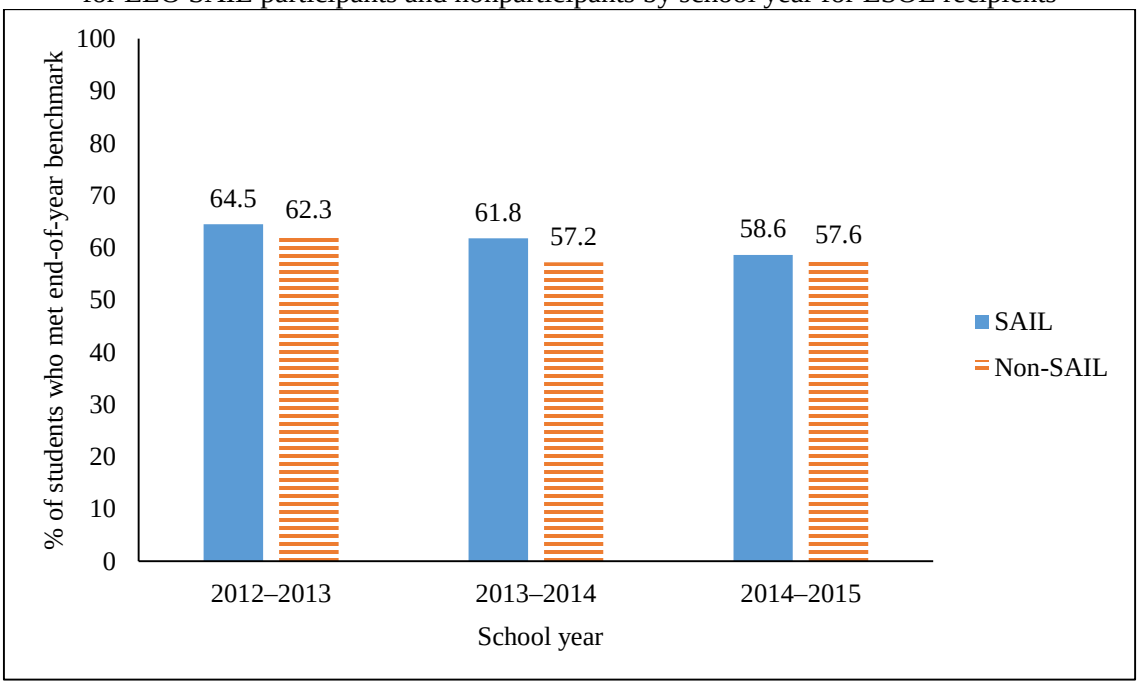

*Note.* See Table H1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure H4*
Percentage of White Grade 1 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year




*Note.* See Table H1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

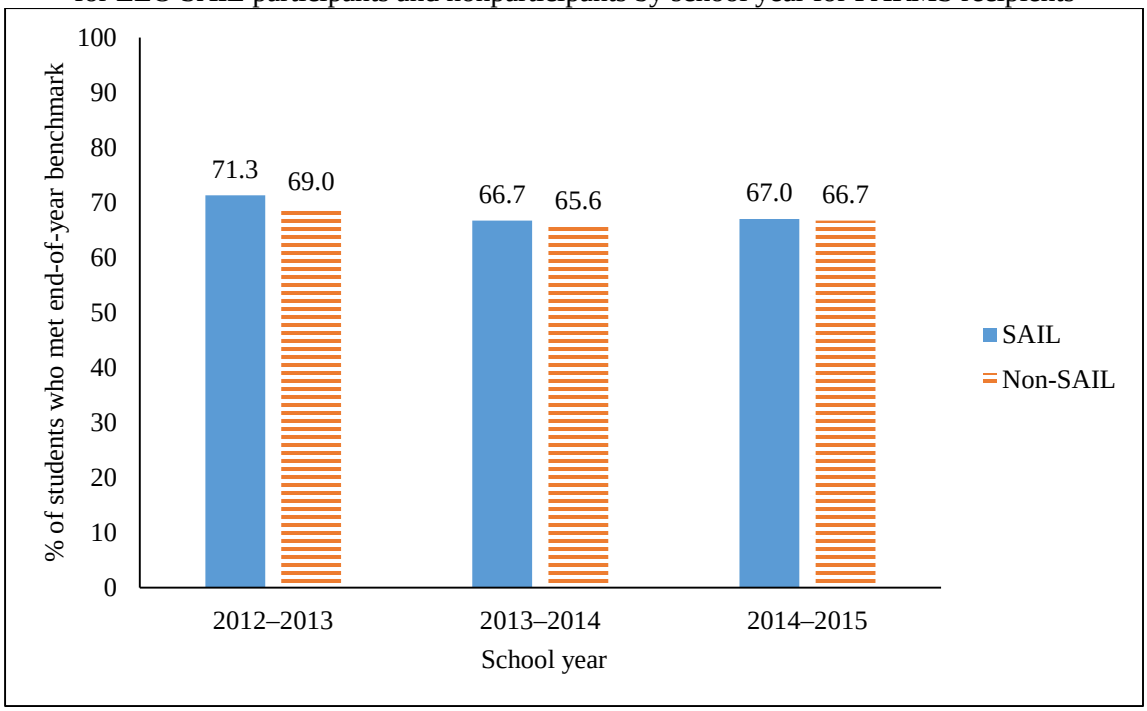
*Figure H5*
Percentage of Grade 1 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year for ESOL recipients




*Note.* See Table H1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure H6*

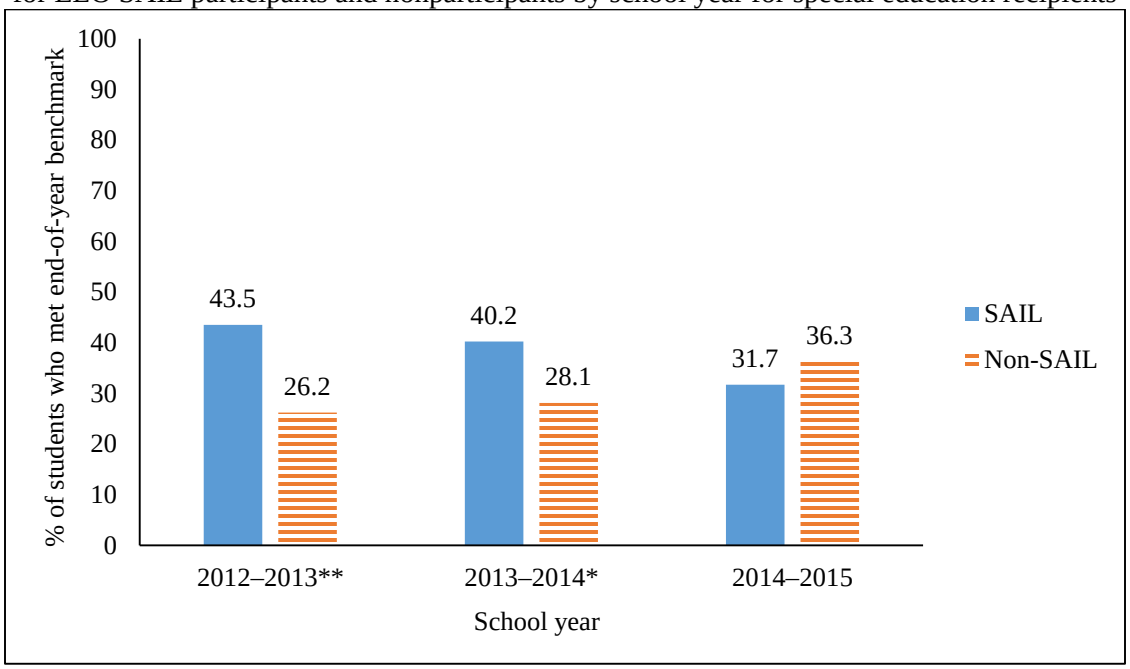
Percentage of Grade 1 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year for FARMS recipients




*Note.* See Table H1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure H7*

Percentage of Grade 1 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year for special education recipients




*Note.* See Table H1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

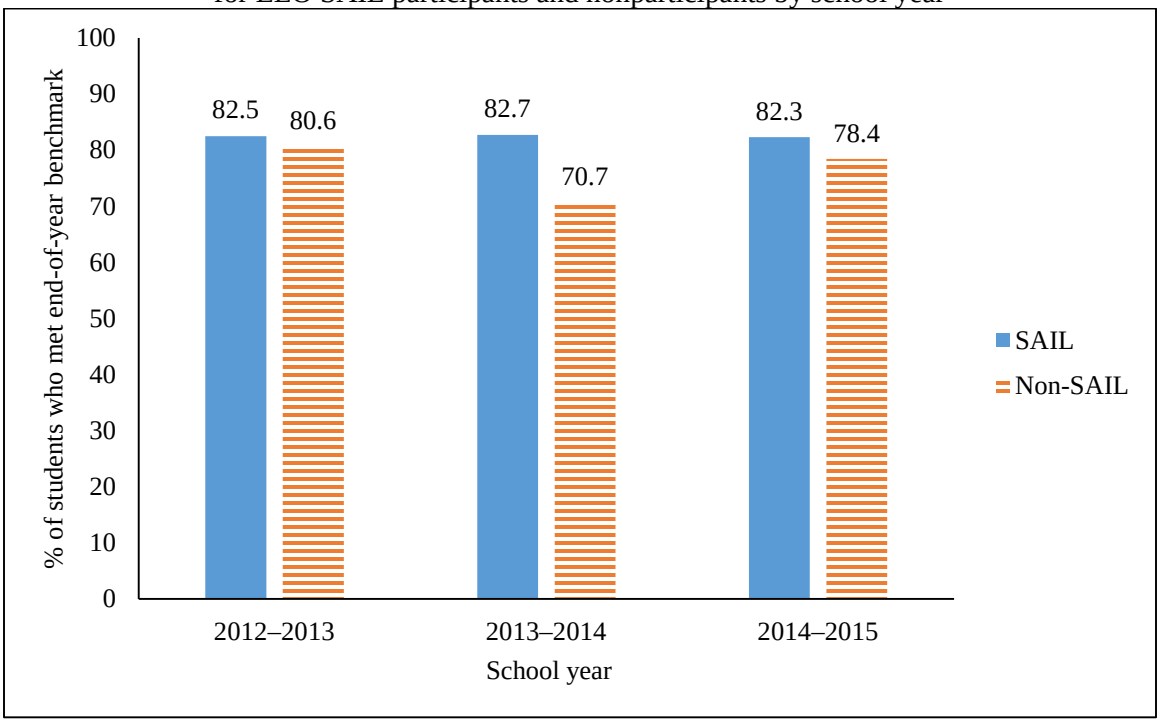
# Appendix I
# Findings for Question 3 on End-of-Year Performance: Reading for Subgroups of Grade 2 Students

Table I1
Number of Grade 2 Students With End-of-Year AP-PR Reading Data by School Year, Participation in ELO SAIL, and Selected Subgroups

| Grade 2 | 2012–2013 | | 2013–2014 | | 2014–2015 | |
|---|---|---|---|---|---|---|
| | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 755 | 1,504 | 1,022 | 1,821 | 1,142 | 1,626 |
| Race/ethnicity | | | | | | |
| Asian | 63 | 134 | 75 | 133 | 62 | 111 |
| Black or African American | 172 | 368 | 238 | 475 | 282 | 394 |
| Hispanic/Latino | 492 | 816 | 672 | 969 | 761 | 919 |
| White | 17 | 140 | 24 | 178 | 24 | 143 |
| Receipt of services during school year | | | | | | |
| ESOL | 475 | 715 | 618 | 793 | 655 | 721 |
| FARMS | 639 | 1,065 | 870 | 1,315 | 960 | 1,164 |
| Special education | 74 | 132 | 125 | 176 | 136 | 135 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

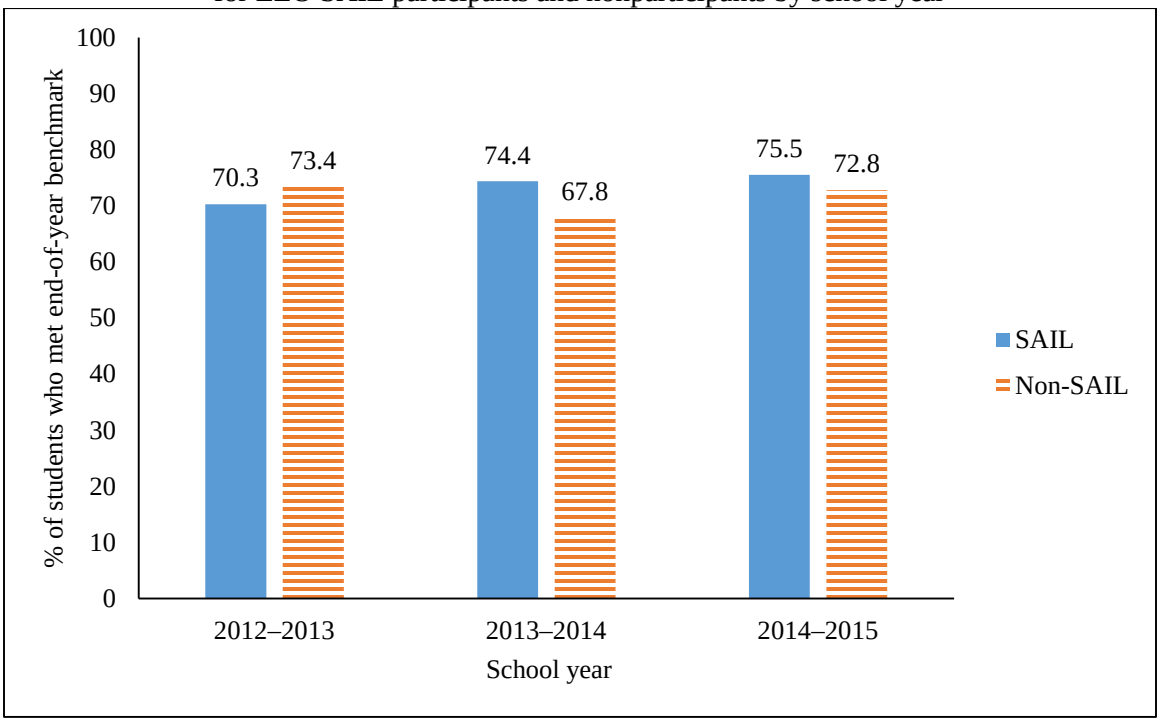
*Figure I1*
Percentage of Asian Grade 2 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year




*Note*. See Table I1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure I2*

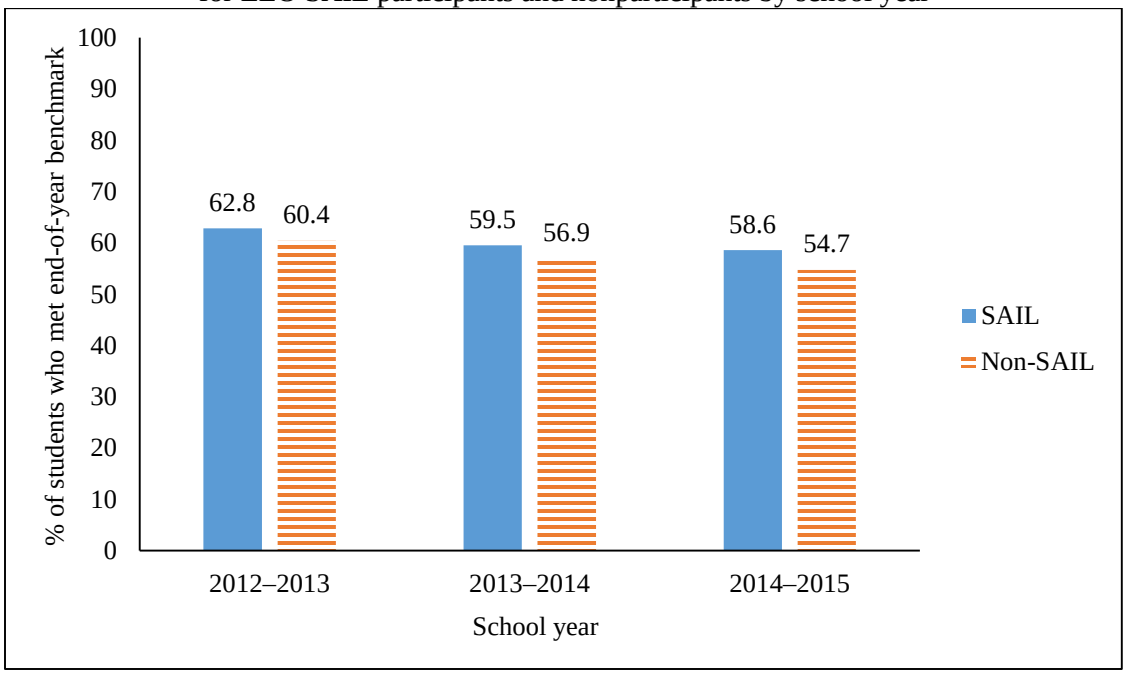
Percentage of Black or African American Grade 2 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year




*Note.* See Table I1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

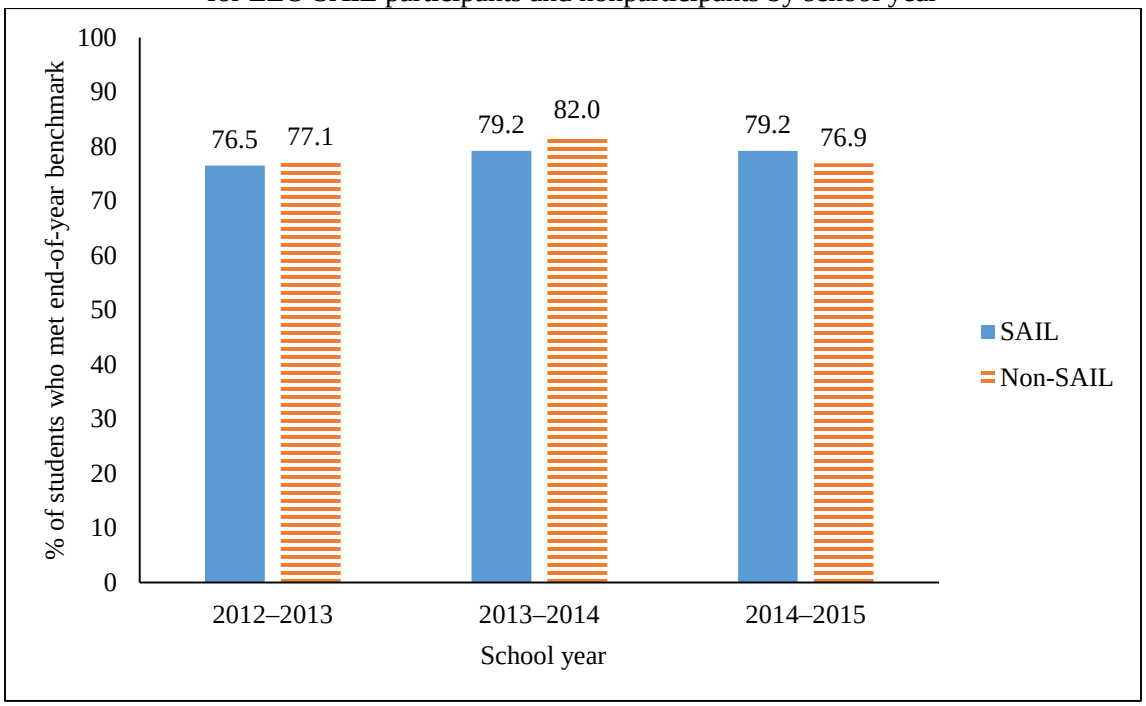
*Figure I3*

Percentage of Hispanic/Latino Grade 2 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year



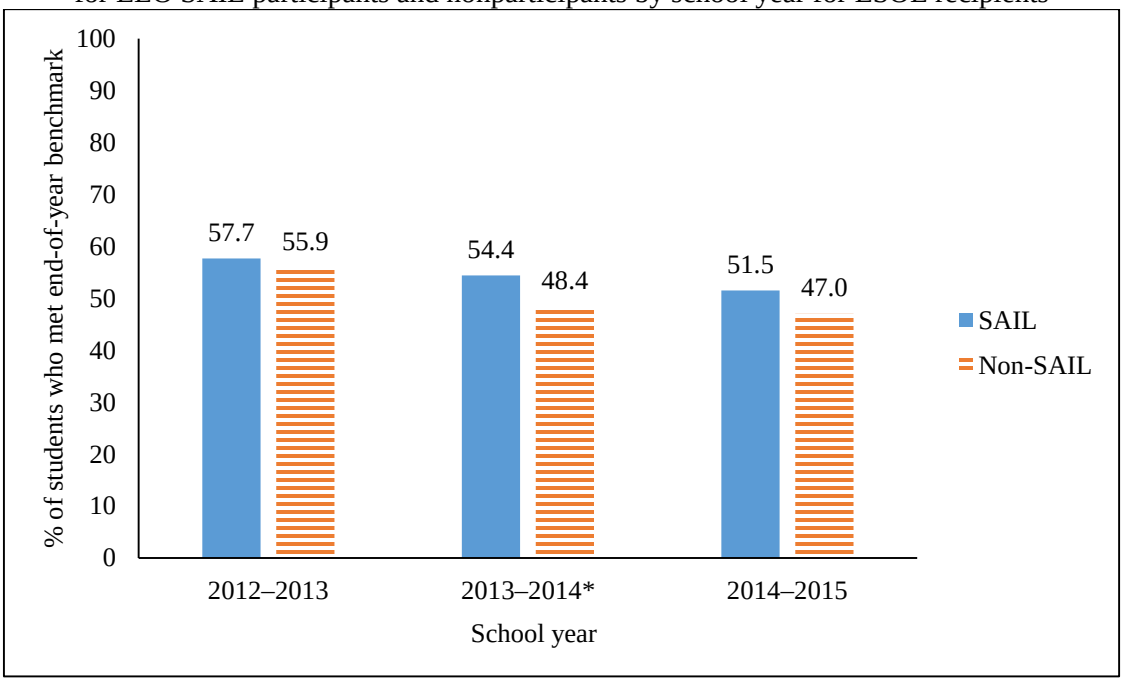

*Note.* See Table I1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure I4*
Percentage of White Grade 2 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year



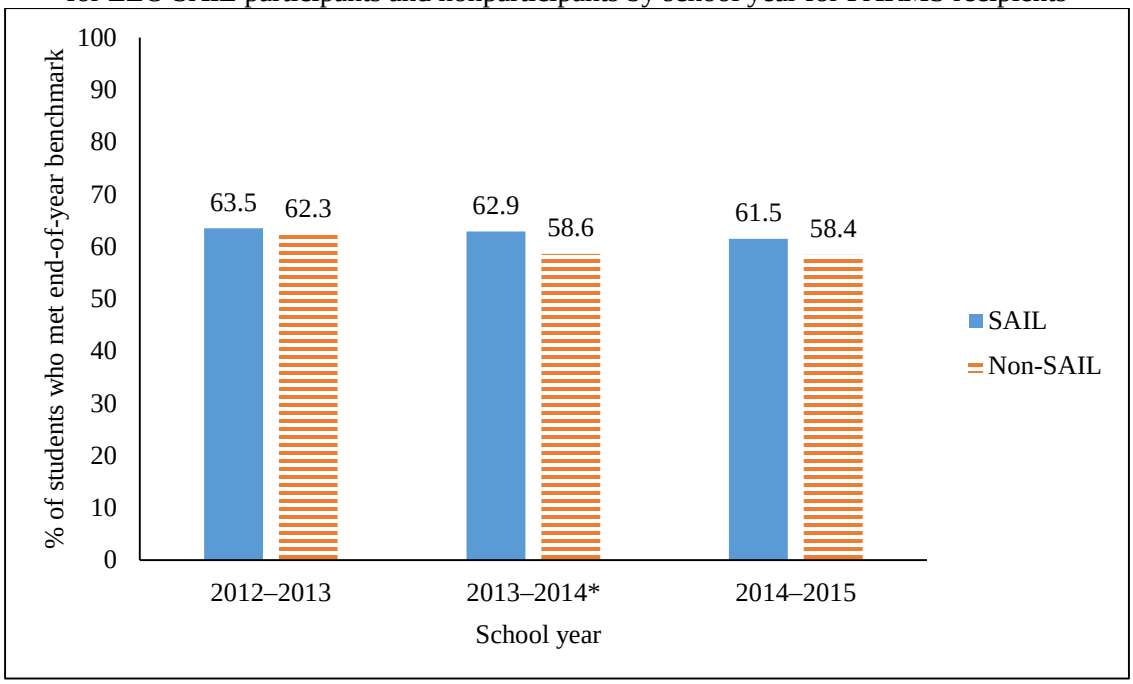

*Note.* See Table I1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure I5*
Percentage of Grade 2 students who met the AP-PR end-of-year benchmark for ELO SAIL participants and nonparticipants by school year for ESOL recipients



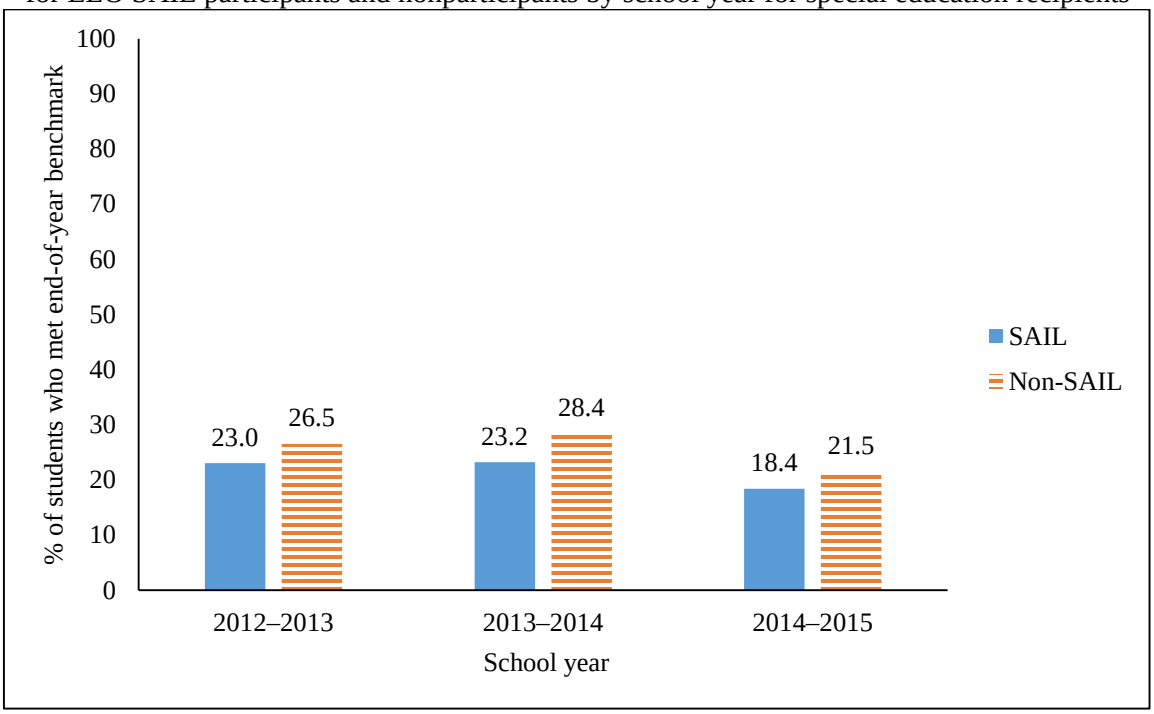

*Note.* See Table I1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure I6*
Percentage of Grade 2 students who met the AP-PR end-of-year benchmark
for ELO SAIL participants and nonparticipants by school year for FARMS recipients




*Note.* See Table I1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure I7*
Percentage of Grade 2 students who met the AP-PR end-of-year benchmark
for ELO SAIL participants and nonparticipants by school year for special education recipients




*Note.* See Table I1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

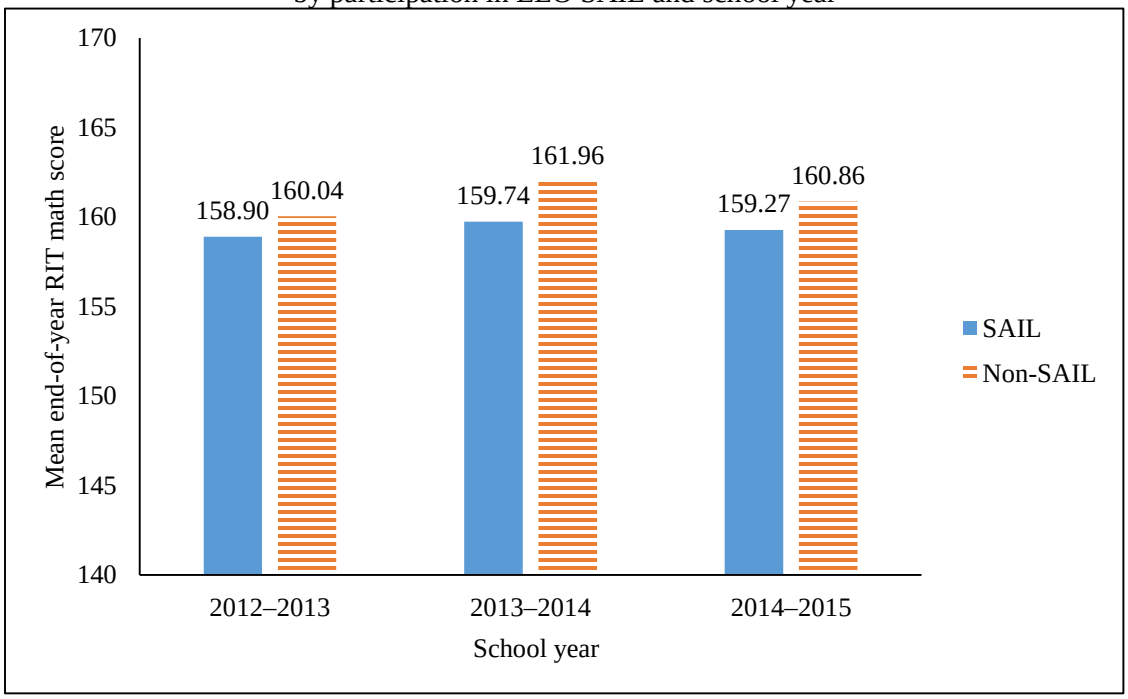
# Appendix J
# Findings for Question 3 on End-of-Year Performance: Mathematics for Subgroups of Kindergarten Students

Table J1
Number of Kindergarten Students With End-of-Year MAP-P RIT Score in Mathematics by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | |
|---|---|---|---|---|---|---|
| Kindergarten | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 958 | 1,675 | 1,098 | 1,835 | 1,338 | 1,445 |
| Race/ethnicity | | | | | | |
| Asian | 59 | 118 | 72 | 137 | 62 | 81 |
| Black or African American | 196 | 414 | 250 | 471 | 325 | 347 |
| Hispanic/Latino | 650 | 932 | 708 | 962 | 888 | 827 |
| White | 34 | 161 | 43 | 185 | 39 | 144 |
| Receipt of services during school year | | | | | | |
| ESOL | 671 | 965 | 773 | 1,011 | 942 | 820 |
| FARMS | 796 | 1,197 | 905 | 1,303 | 1,115 | 1,023 |
| Special education | 99 | 149 | 87 | 173 | 123 | 105 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

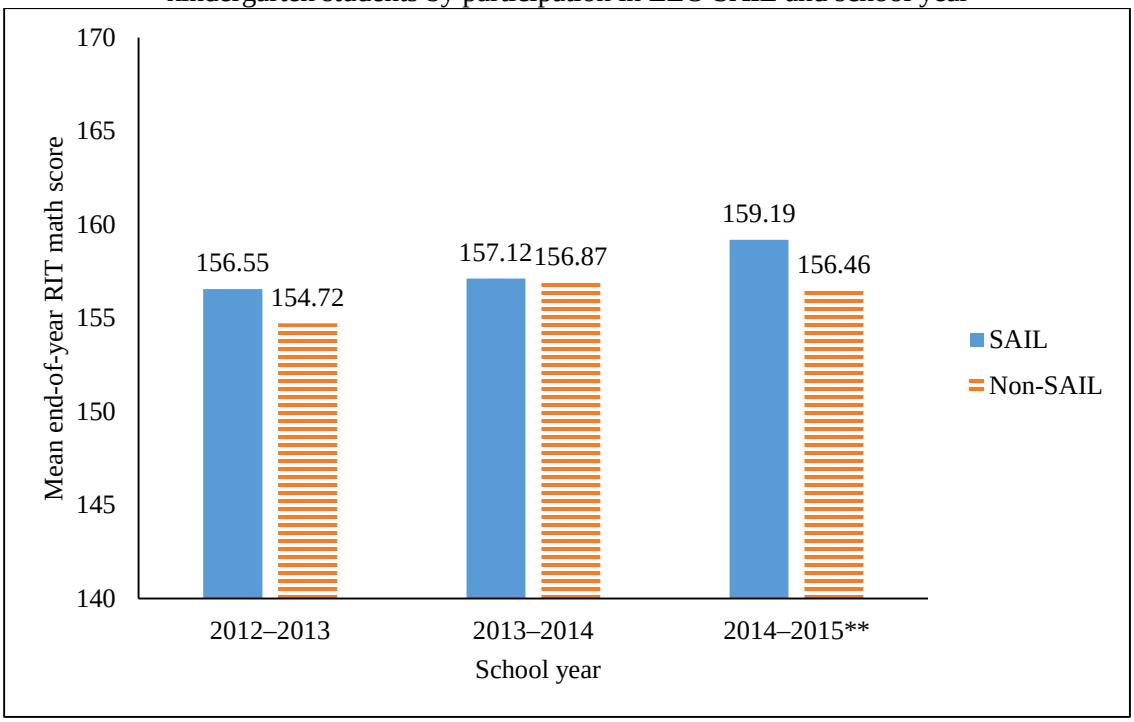
*Figure J1*
Mean end-of-year MAP-P RIT scores in mathematics for Asian kindergarten students by participation in ELO SAIL and school year




*Note*. See Table J1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure J2*

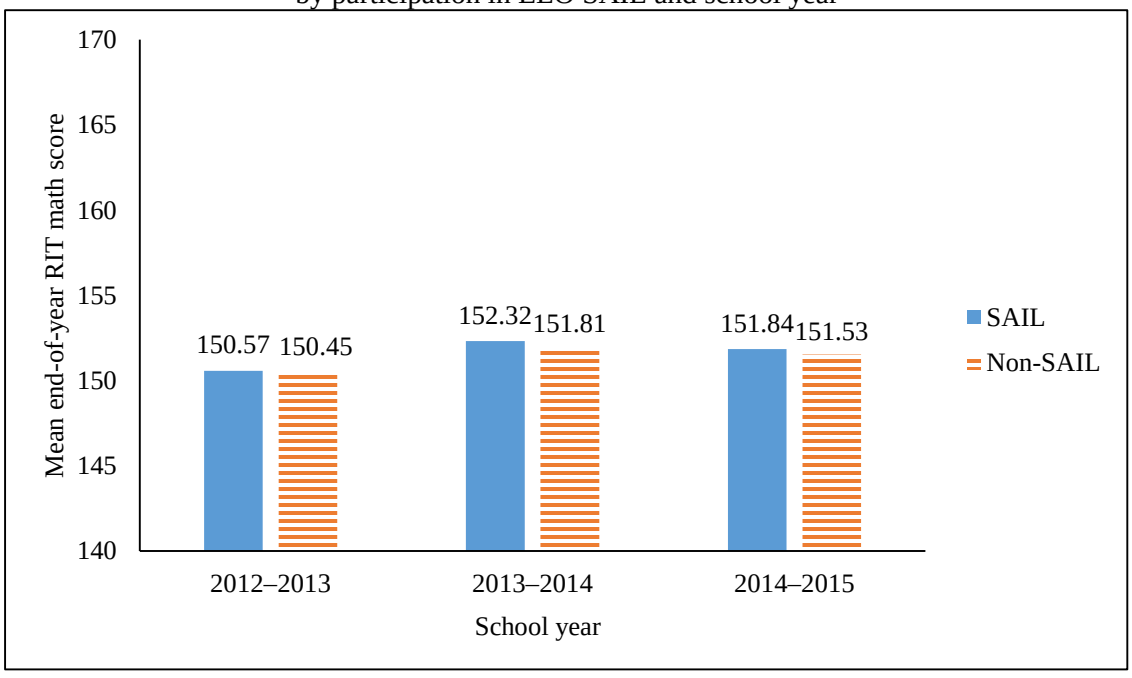
Mean end-of-year MAP-P RIT scores in mathematics for Black or African American kindergarten students by participation in ELO SAIL and school year




*Note.* See Table J1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

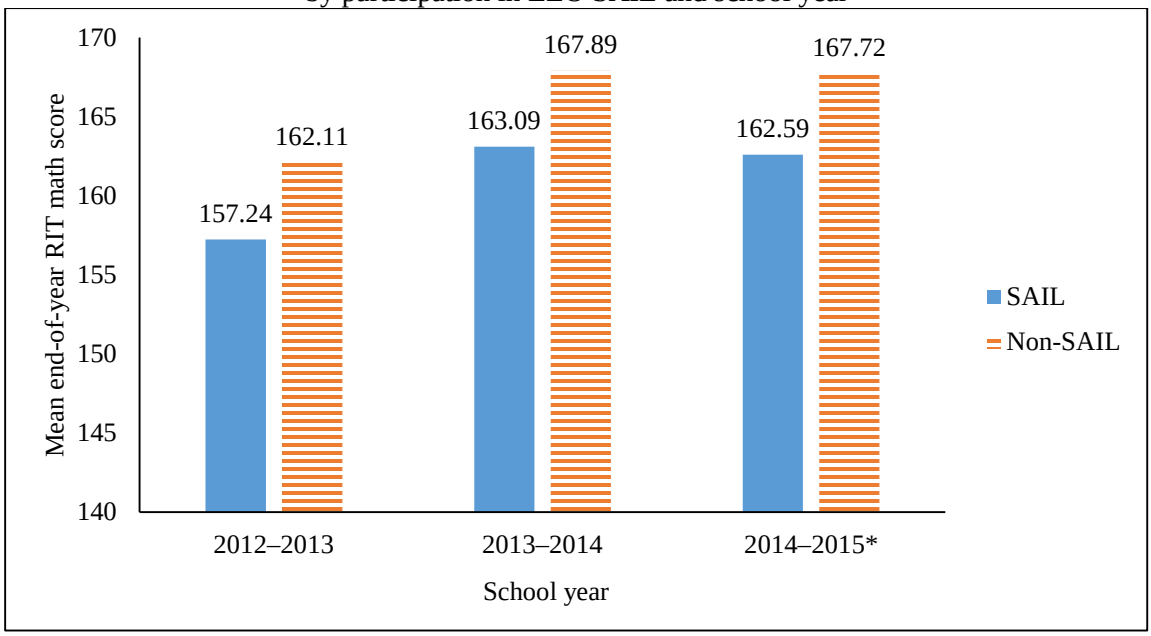
*Figure J3*

Mean end-of-year MAP-P RIT scores in mathematics for Hispanic/Latino kindergarten students by participation in ELO SAIL and school year



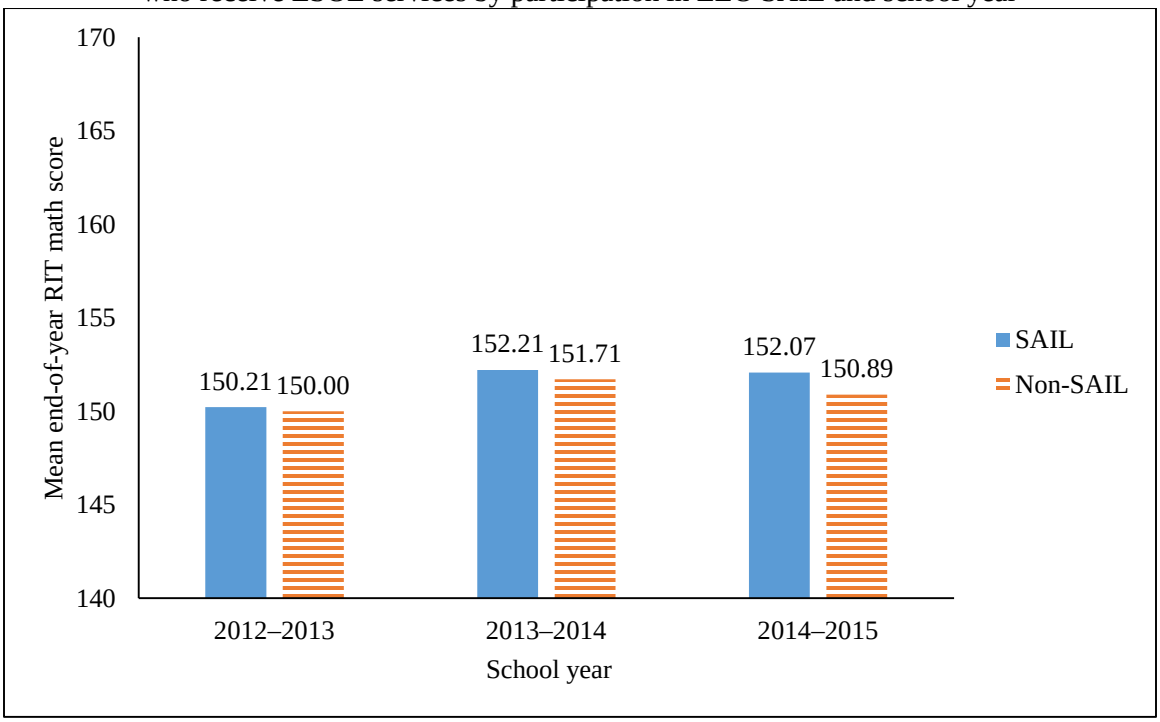

*Note.* See Table J1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure J4*
Mean end-of-year MAP-P RIT scores in mathematics for White kindergarten students by participation in ELO SAIL and school year



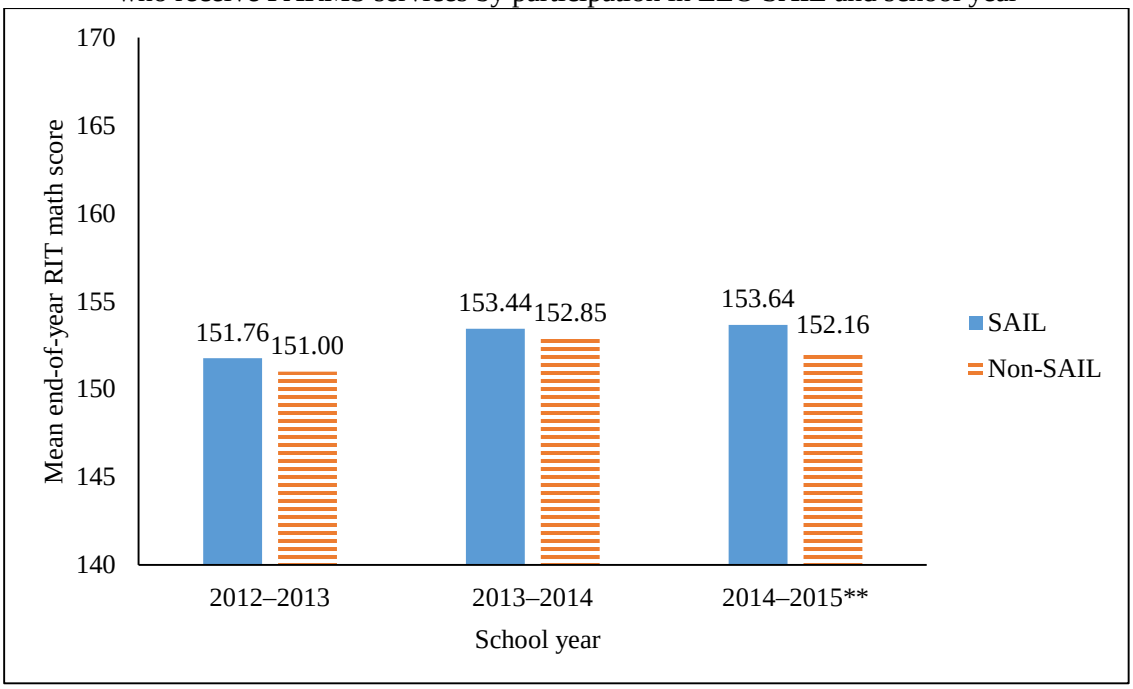

*Note.* See Table J1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure J5*
Mean end-of-year MAP-P RIT scores in mathematics for kindergarten students who receive ESOL services by participation in ELO SAIL and school year



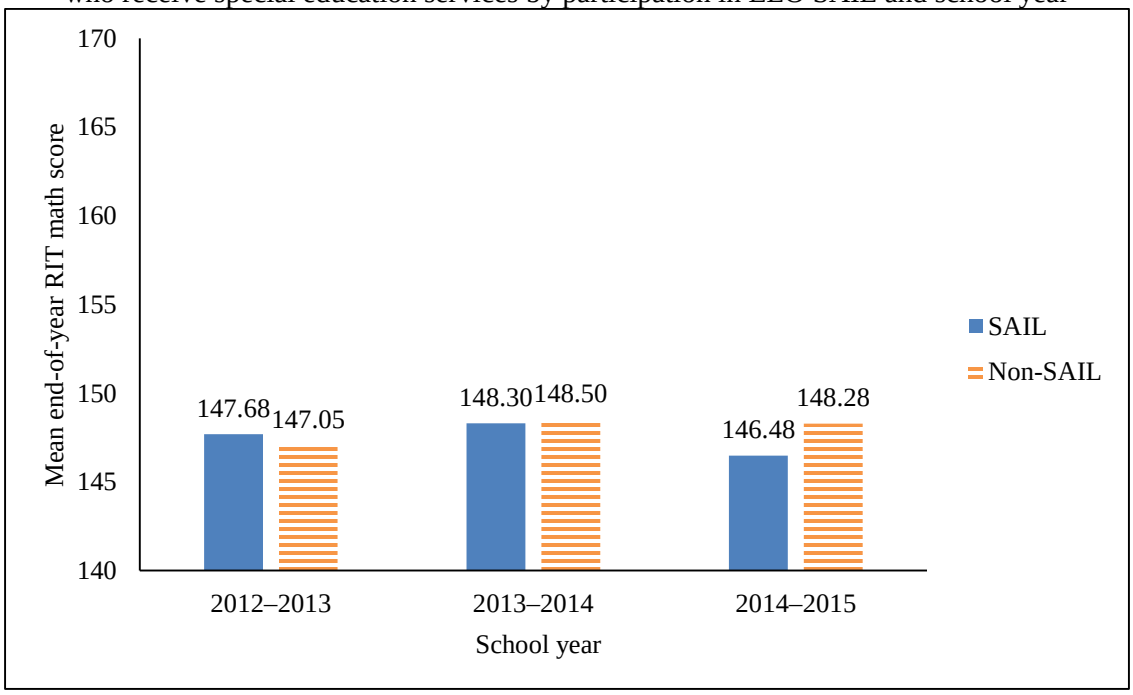

*Note.* See Table J1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure J6*
Mean end-of-year MAP-P RIT scores in mathematics for kindergarten students who receive FARMS services by participation in ELO SAIL and school year




*Note.* See Table J1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure J7*
Mean end-of-year MAP-P RIT scores in mathematics for kindergarten students who receive special education services by participation in ELO SAIL and school year




*Note.* See Table J1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

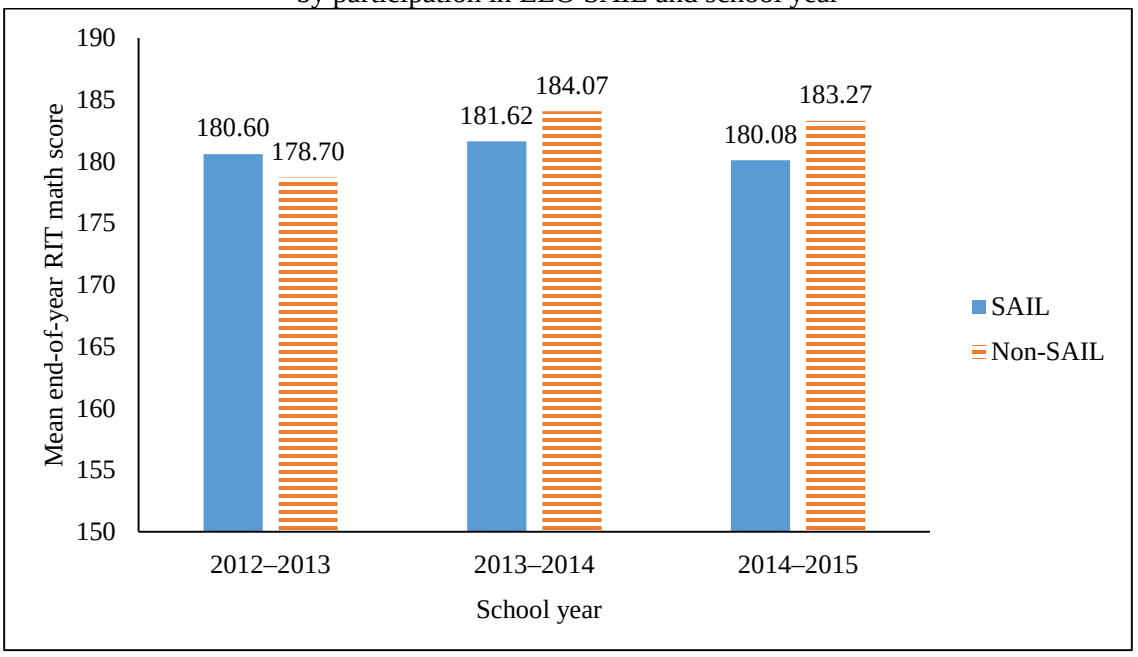
# Appendix K
# Findings for Question 3 on End-of-Year Performance: Mathematics for Subgroups of Grade 1 Students

Table K1
Number of Grade 1 Students With End-of-Year MAP-P RIT Score in Mathematics by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | |
|---|---|---|---|---|---|---|
| Grade 1 | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 886 | 1,651 | 1,127 | 1,800 | 1,229 | 1,530 |
| Race/ethnicity | | | | | | |
| Asian | 62 | 119 | 63 | 138 | 88 | 100 |
| Black or African American | 196 | 399 | 255 | 477 | 317 | 402 |
| Hispanic/Latino | 583 | 918 | 752 | 980 | 751 | 819 |
| White | 30 | 160 | 38 | 150 | 41 | 156 |
| Receipt of services during school year | | | | | | |
| ESOL | 659 | 934 | 809 | 1,008 | 849 | 841 |
| FARMS | 749 | 1,225 | 929 | 1,292 | 1,001 | 1,108 |
| Special education | 102 | 136 | 127 | 166 | 126 | 107 |

*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

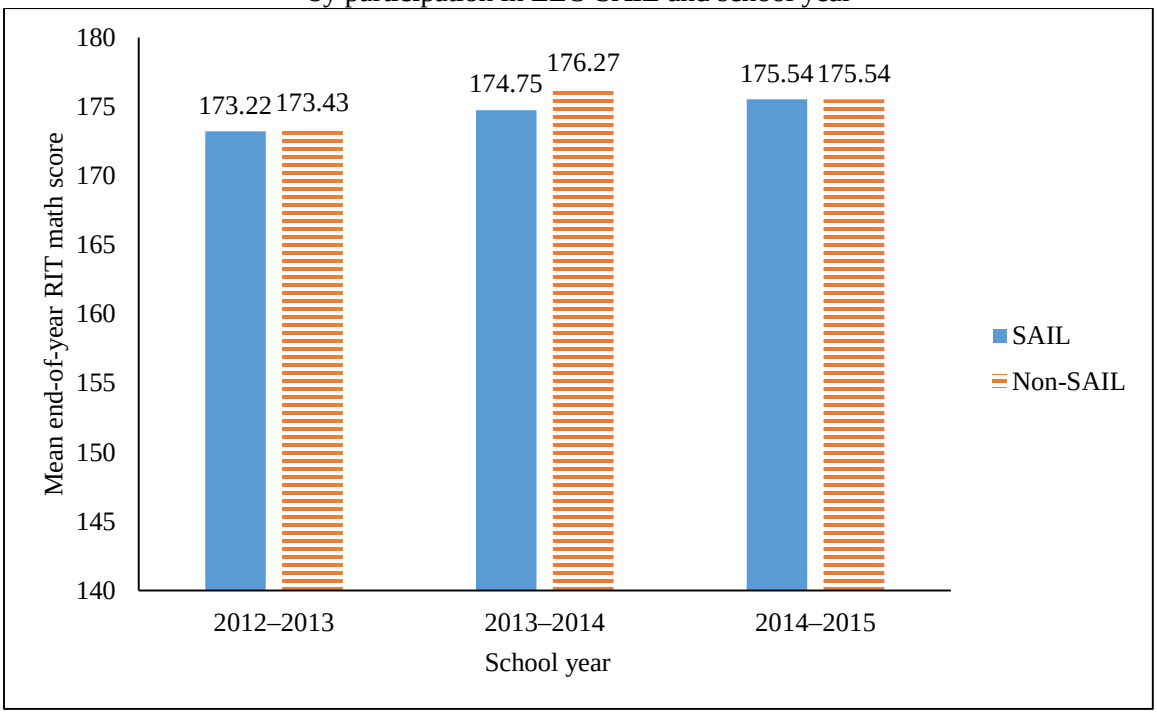
*Figure K1*
Mean end-of-year MAP-P RIT scores in mathematics for Asian Grade 1 students by participation in ELO SAIL and school year




*Note*. See Table K1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure K2*

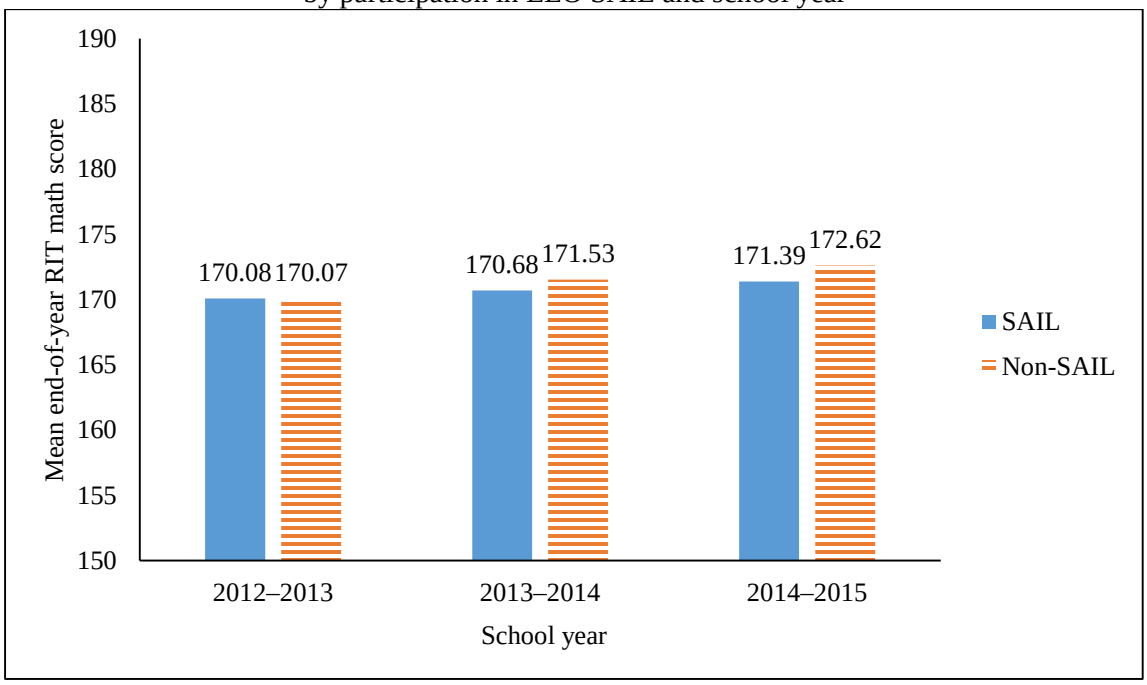
Mean end-of-year MAP-P RIT scores in mathematics for Black or African American Grade 1 students by participation in ELO SAIL and school year




*Note.* See Table K1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

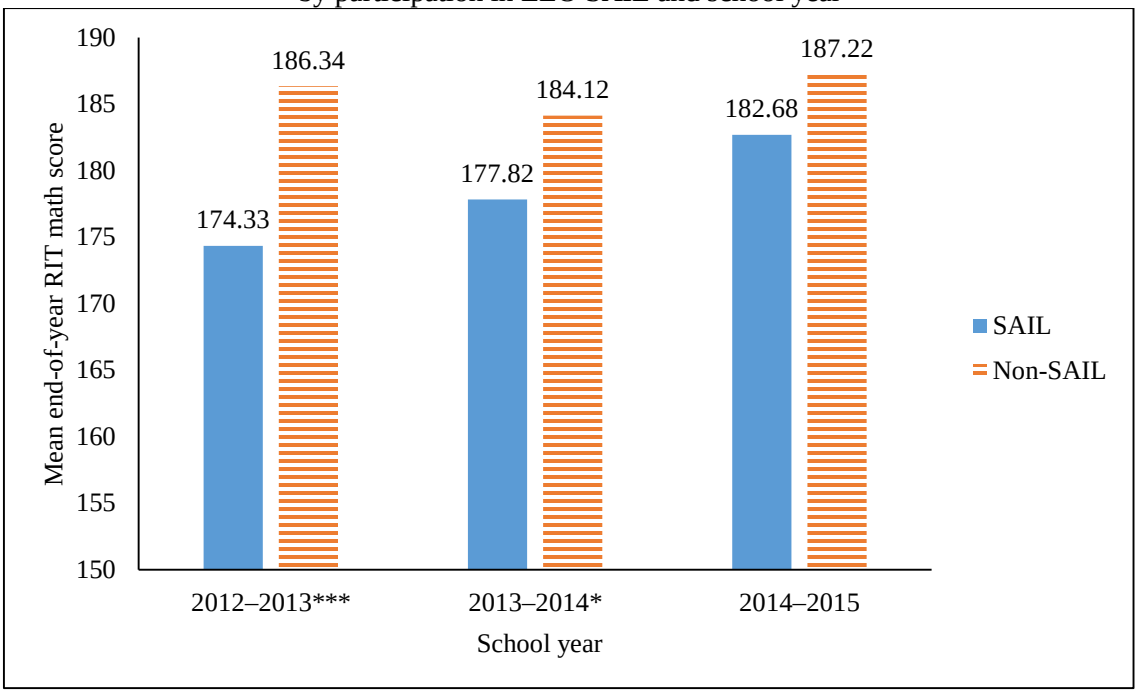
*Figure K3*

Mean end-of-year MAP-P RIT scores in mathematics for Hispanic/Latino Grade 1 students by participation in ELO SAIL and school year



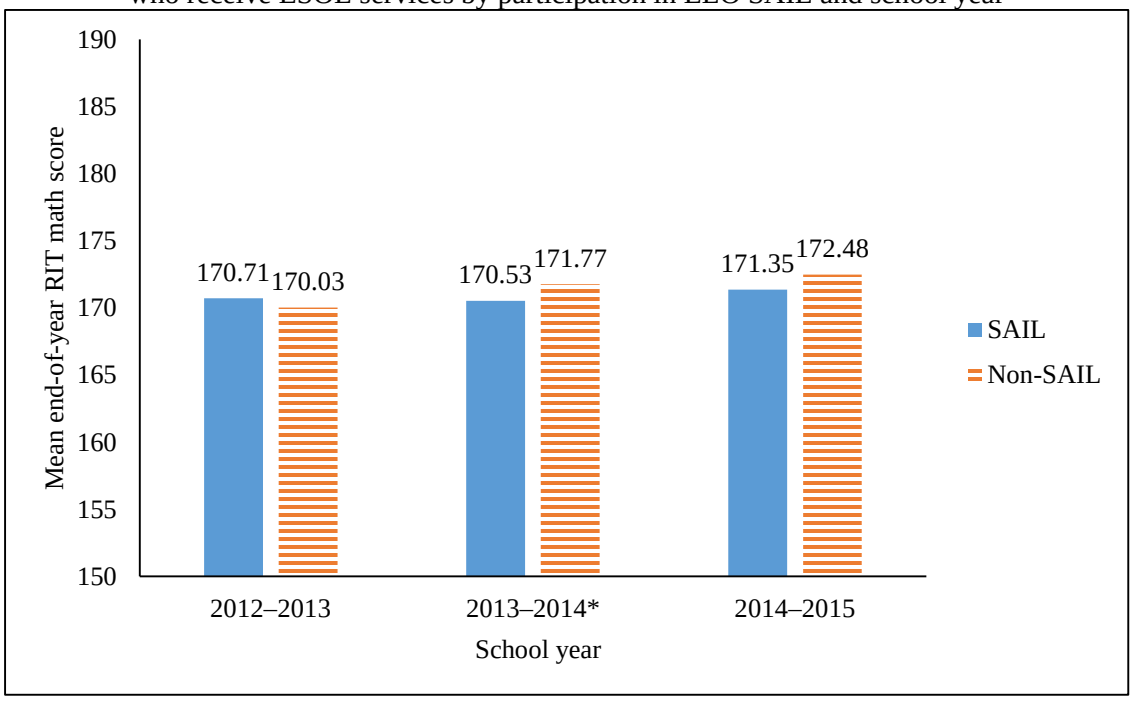

*Note.* See Table K1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure K4*
Mean end-of-year MAP-P RIT scores in mathematics for White Grade 1 students by participation in ELO SAIL and school year




*Note.* See Table K1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

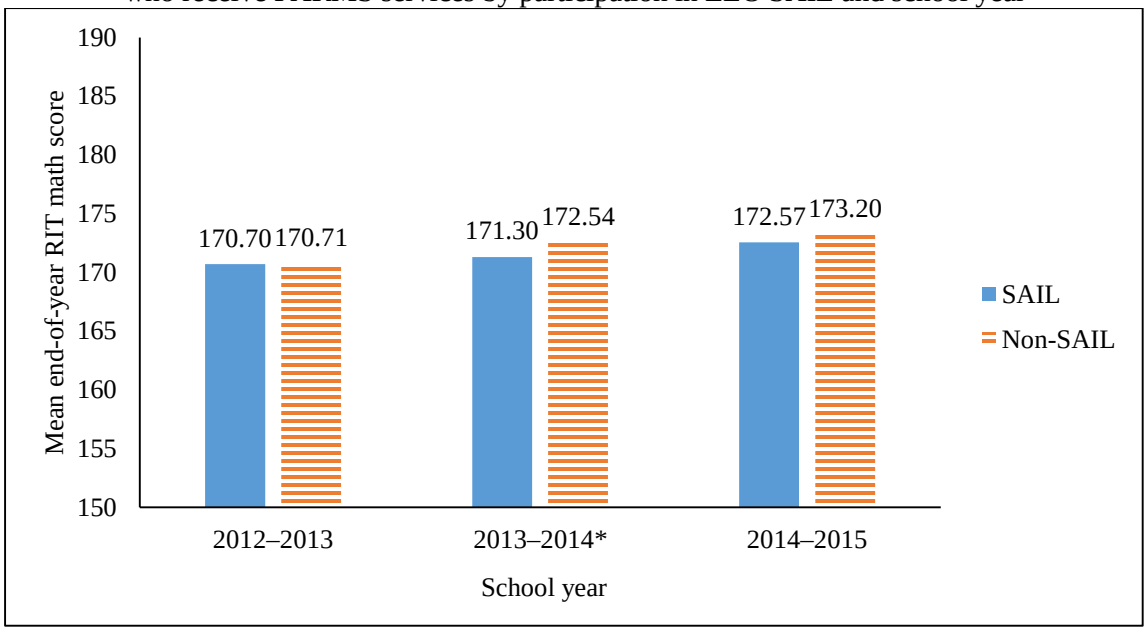
*Figure K5*
Mean end-of-year MAP-P RIT scores in mathematics for Grade 1 students who receive ESOL services by participation in ELO SAIL and school year




*Note.* See Table K1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure K6*

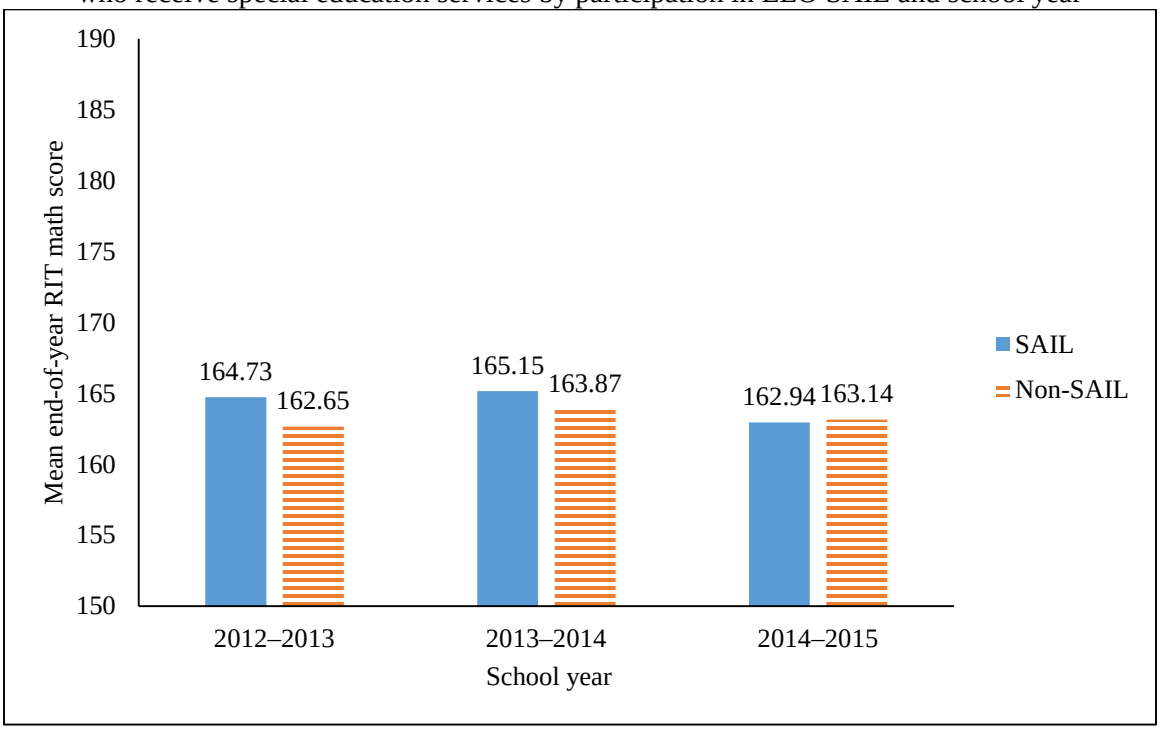
Mean end-of-year MAP-P RIT scores in mathematics for Grade 1 students who receive FARMS services by participation in ELO SAIL and school year




*Note.* See Table K1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure K7*

Mean end-of-year MAP-P RIT scores in mathematics for Grade 1 students who receive special education services by participation in ELO SAIL and school year




*Note.* See Table K1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

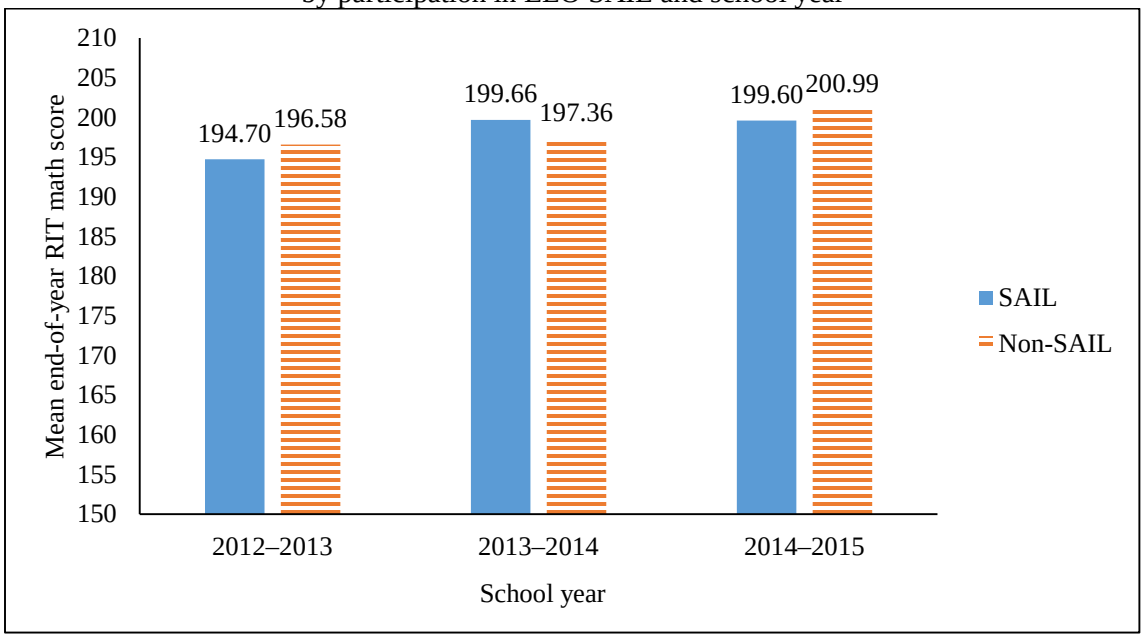
# Appendix L
# Findings for Question 3 on End-of-Year Performance: Mathematics for Subgroups of Grade 2 Students

Table L1
Number of Grade 2 Students With End-of-Year MAP-P RIT Score in Mathematics by School Year, Participation in ELO SAIL, and Selected Subgroups

| | 2012–2013 | | 2013–2014 | | 2014–2015 | |
|---|---|---|---|---|---|---|
| Grade 2 | SAIL | Non | SAIL | Non | SAIL | Non |
| Total | 747 | 1,472 | 1,019 | 1,791 | 1,140 | 1,611 |
| Race/ethnicity | | | | | | |
| Asian | 63 | 132 | 74 | 134 | 62 | 111 |
| Black or African American | 171 | 356 | 238 | 462 | 282 | 386 |
| Hispanic/Latino | 486 | 803 | 670 | 957 | 759 | 913 |
| White | 16 | 137 | 24 | 173 | 24 | 142 |
| Receipt of services during school year | | | | | | |
| ESOL | 547 | 824 | 749 | 1,007 | 760 | 874 |
| FARMS | 631 | 1,045 | 870 | 1,295 | 959 | 1,156 |
| Special education | 83 | 132 | 140 | 174 | 151 | 131 |

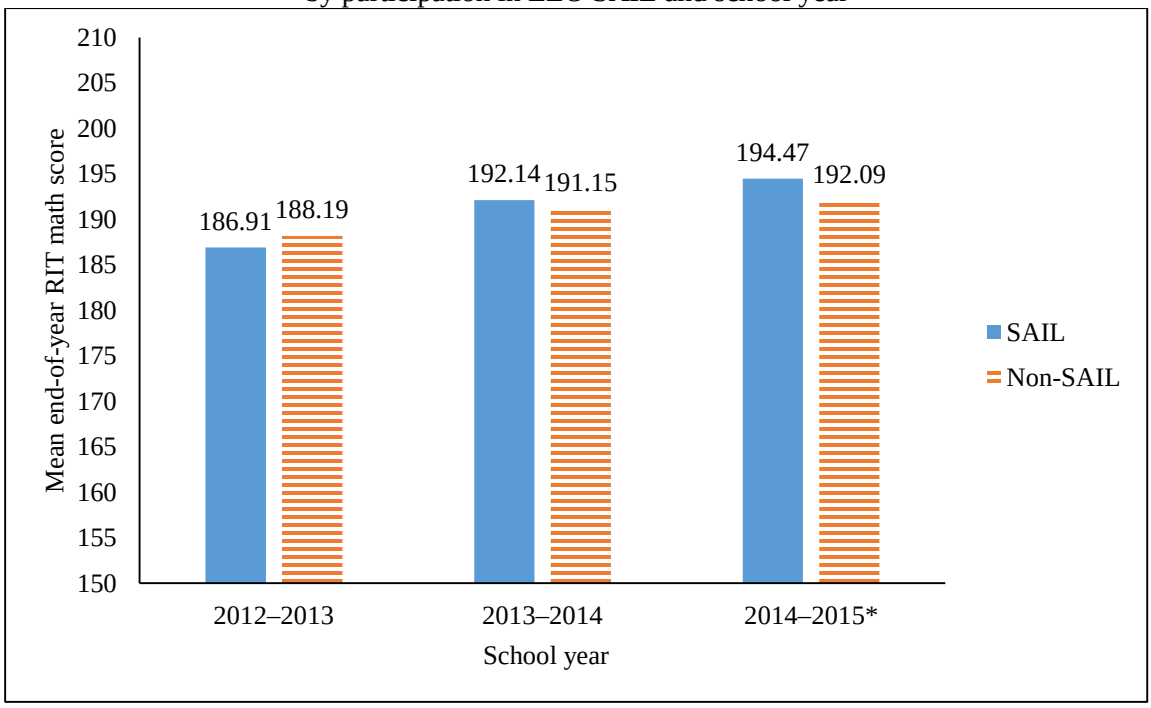
*Note*. SAIL = participants in ELO SAIL. Non = nonparticipants in ELO SAIL. American Indian, Pacific Islander, and Two or More Races subgroups excluded due to small sample size.

*Figure L1*
Mean end-of-year MAP-P RIT scores in mathematics for Asian Grade 2 students by participation in ELO SAIL and school year



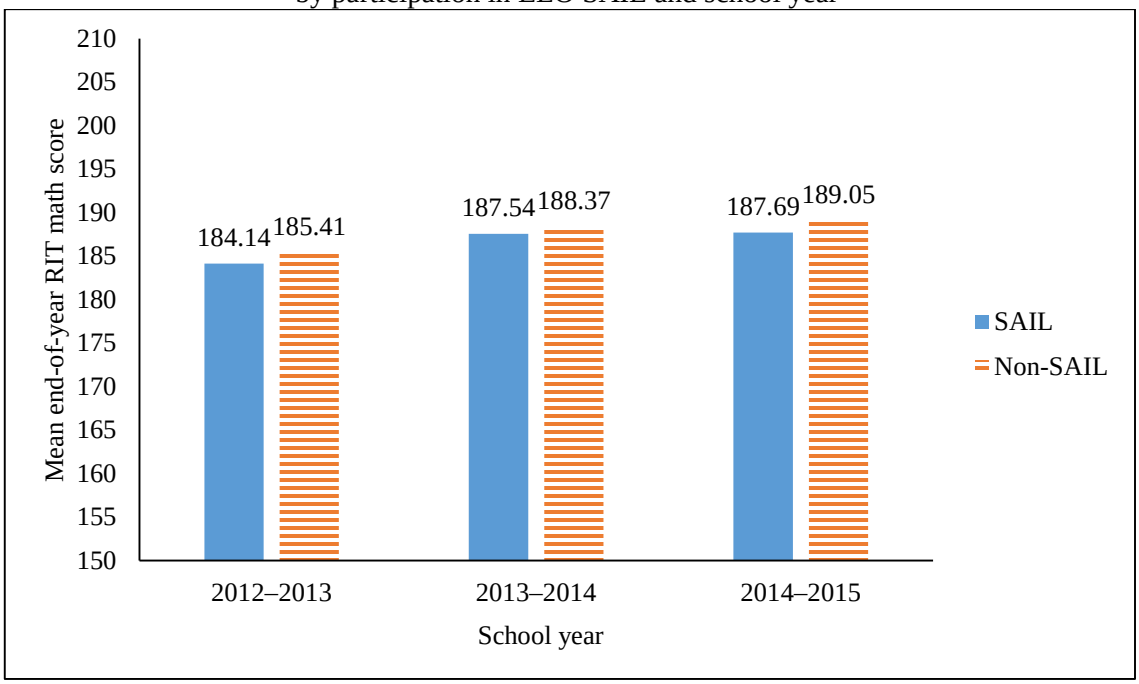

*Note*. See Table L1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure L2*
Mean end-of-year MAP-P RIT scores in mathematics for Black or African American Grade 2 students by participation in ELO SAIL and school year



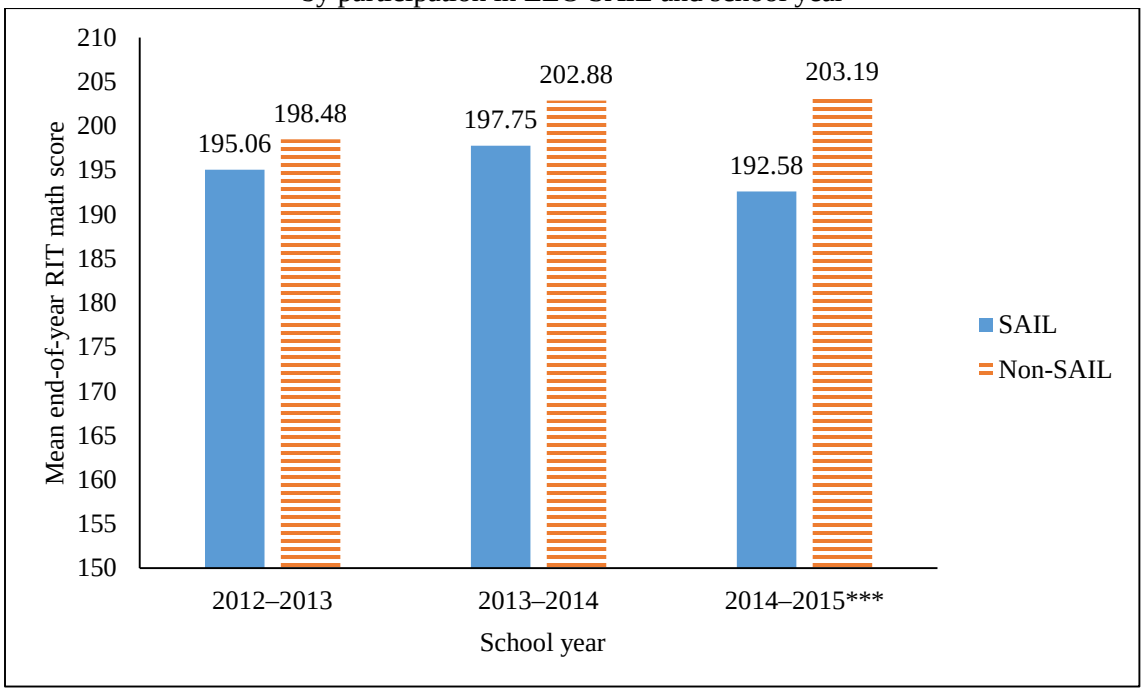

*Note.* See Table L1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure L3*
Mean end-of-year MAP-P RIT scores in mathematics for Hispanic/Latino Grade 2 students by participation in ELO SAIL and school year



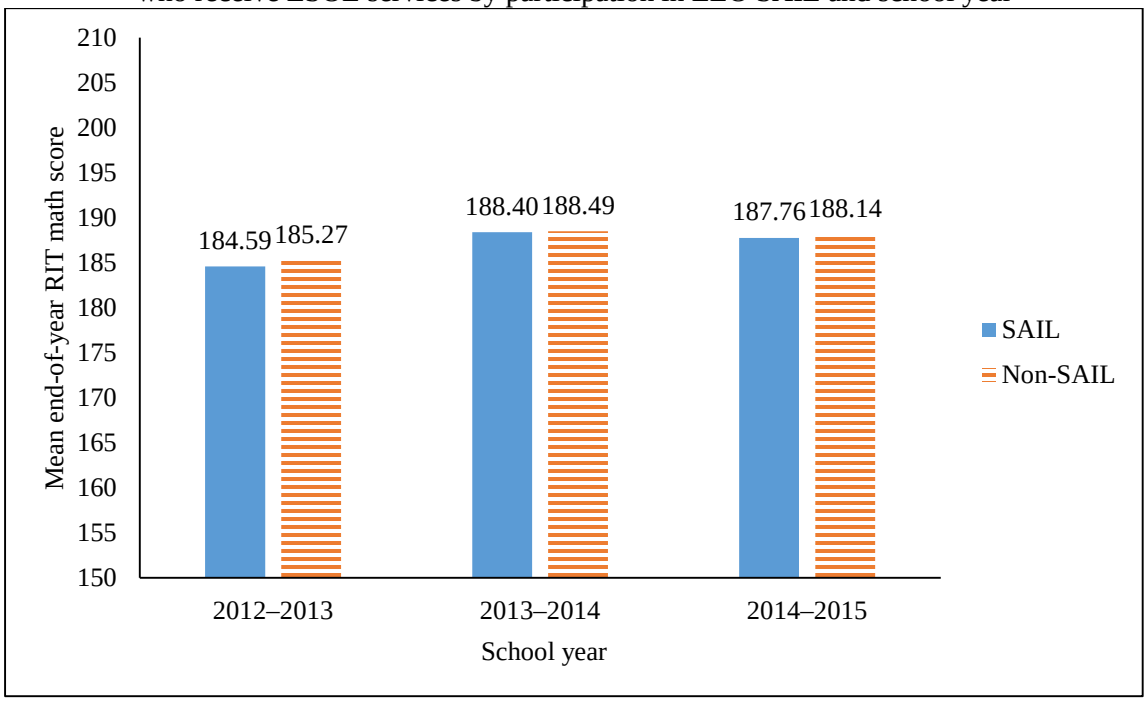

*Note.* See Table L1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure L4*
Mean end-of-year MAP-P RIT scores in mathematics for White Grade 2 students by participation in ELO SAIL and school year




*Note.* See Table L1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

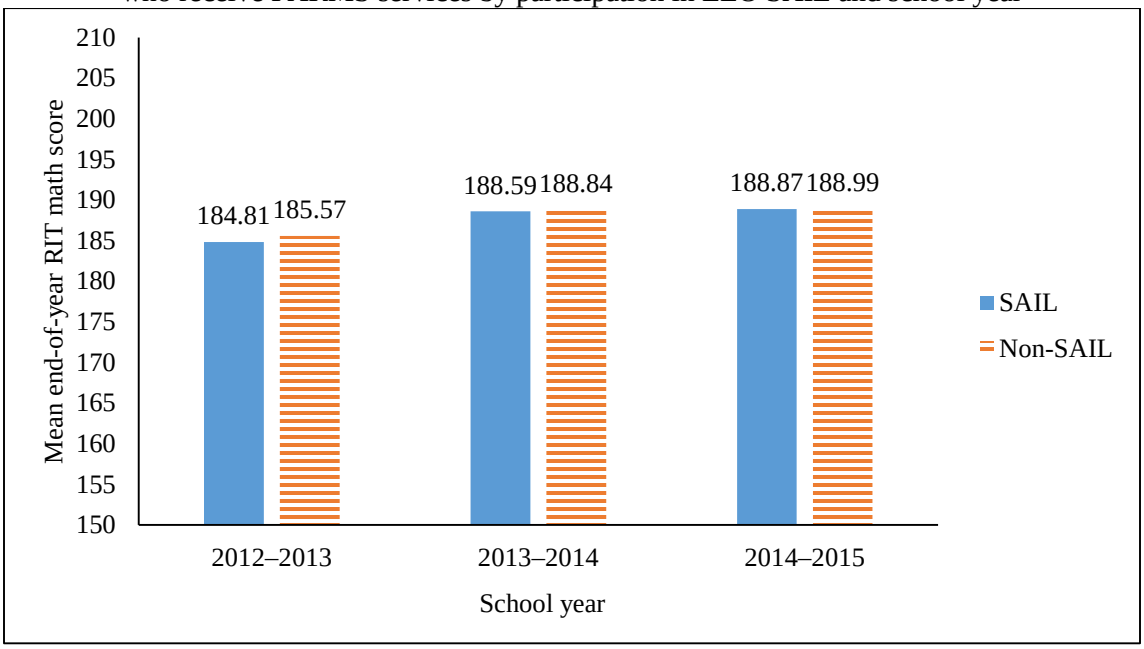
*Figure L5*
Mean end-of-year MAP-P RIT scores in mathematics for Grade 2 students who receive ESOL services by participation in ELO SAIL and school year




*Note.* See Table L1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure L6*

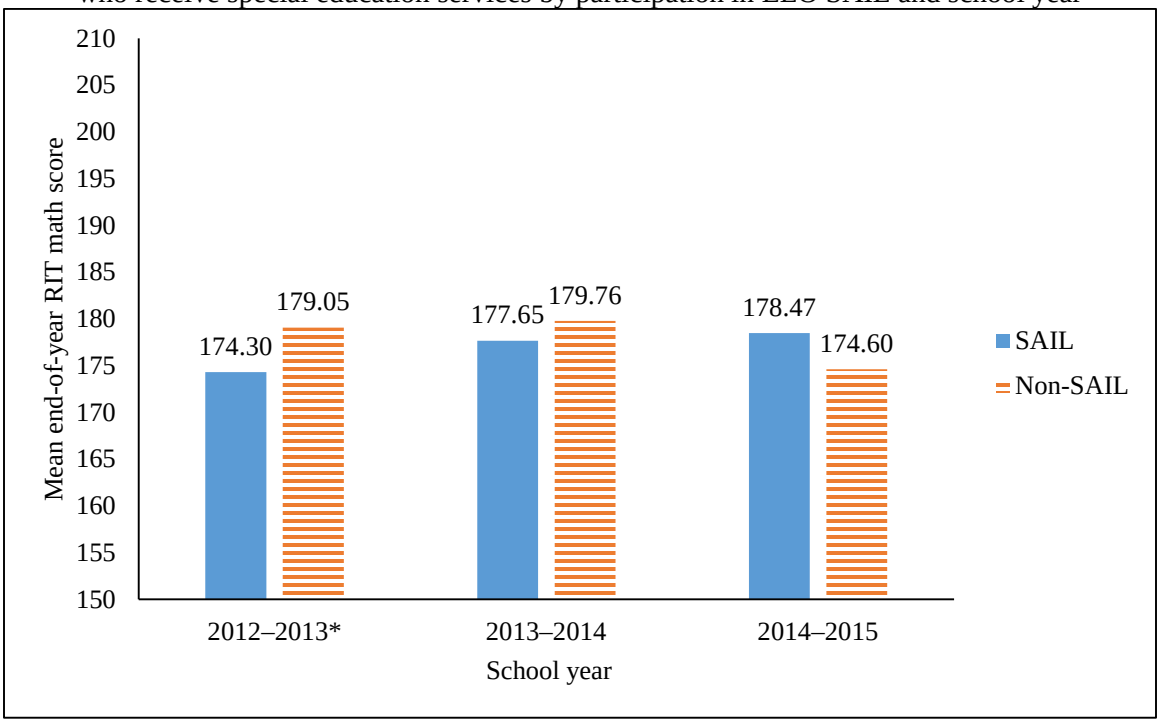
Mean end-of-year MAP-P RIT scores in mathematics for Grade 2 students who receive FARMS services by participation in ELO SAIL and school year




*Note.* See Table L1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001

*Figure L7*

Mean end-of-year MAP-P RIT scores in mathematics for Grade 2 students who receive special education services by participation in ELO SAIL and school year




*Note.* See Table L1 for number of students in each group.
*$p$<.05, **$p$<.01, ***$p$<.001