

Summer Programs 2022: Districtwide Participation and Effects of Participation on K–8 Academic Performance

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Shared Accountability

Applied Research and Evaluation





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Summer Programs 2022



Executive Summary

Student Participation and Academic Performance

Evaluation Scope

The purpose of the evaluation was to: 1) determine 2022 summer programming participation rates and identify characteristics of participants for Local School Programs (LSP), Extended Learning Opportunities—Summer Adventures in Learning (ELO SAIL), and the Central High School Summer Program (CHSSP), 2) examine how LSP and ELO SAIL participants' literacy and mathematics outcomes changed from the beginning to the end of summer programs, 3) compare fall 2022 student outcomes between LSP and ELO SAIL participants and matched comparison students, and 4) capture Grades 4 and 5 ELO SAIL participant perceptions of the program.

Methods

This study relied on: 1) descriptive statistics to provide information on summer program participation rates and participant characteristics; 2) change scores from pre- to post-tests in literacy and mathematics to assess the immediate effects of summer programming; and 3) and quasi-experimental matching approaches to ascertain the effects of summer program participation on fall literacy and mathematics performance, while accounting for various factors such as baseline student performance and individual characteristics.

Results: Participation & Attendance

In 2022, approximately 24% of K–12 students participated in summer programs. The participants were spread across elementary schools (26%), middle schools (16%), and high schools (26%). Over half (57%) of the total number of participants participated in LSPs. ELO SAIL and CHSSP participants constituted less than 25% of program participants. **Among the 6,778 students recommended for the summer program, 34% attended.** Participation rates varied widely by grade, from 15% for Grade 8 and Grade 12 students to 54% for kindergarten students. **Overall, the attendance rate was 85%.**

Immediate Results

During the summer, LSP and ELO SAIL participants achieved a significant increase in average post-test scores in literacy and mathematics compared to their pre-test scores across all grade levels and student groups, except for Grade 8 students in the LSP program. Specifically, the average post-test scores for any student group exceeded the pre-test scores of at least two-thirds of the students. These improvements were statistically significant and reached a threshold of practical significance ($d \geq 0.2$), indicating their educational relevance and usefulness in guiding instructional decisions.

An end-of-summer survey measuring program satisfaction for **Grades 4 and 5 ELO SAIL participants**, respondents **reported an overall enjoyment of ELO SAIL** but expressed the need for more fun while learning and in between instruction. The majority of the respondents particularly **expressed great satisfaction with their learning experiences in mathematics.**

Summer Programs 2022

Student Participation and Academic Performance



Executive Summary

Distal Results: Local School Program Literacy

The beginning of year 2022–2023 Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Grades 1 and 2) or Fall 2022 Measures of Academic Progress in Reading (MAP-R; Grade 3) performance of **Local School Program participants either matched or lagged behind that of the comparison students. For students in Grades 4 and 5 as well as Grades 6–8, participation did not have a significant overall effect on fall 2022 MAP-R performance.** Disaggregated results, however, revealed that, on average, White participants in Grades 4 and 5 scored significantly lower on MAP-R than did matched comparison students; the magnitude of the effect was equivalent to a 4.51 percentile-point decrease in reading performance for an average (50th percentile) student. **For Grades 6–8, participation did not have significant effects on students' fall 2022 reading achievement.**

Distal Results: Local School Program Mathematics

Overall, in mathematics, Local School Program participation had a very small positive effect on Grades K–5 students' fall 2022 Measures of Academic Progress in Mathematics (MAP-M) performance. Disaggregated results revealed negligible positive effects on mathematics performance among Grade 1, Asian, and Hispanic/Latino students, and students receiving Free and Reduced-price Meals System (FARMS) or English Language Development (ELD) services. The effects were equivalent to a 0.82 to 1.74 percentile-point increase in mathematics performance for an average student. **For Grades 6–8, program participation did not have significant effects on students' fall mathematics achievement.**

Distal Results: ELO SAIL Literacy

The percentages of Grades 1–3 ELO SAIL participants who met grade-level benchmarks on the beginning of the year 2022–2023 DIBELS or achieved the 50th percentile on Fall 2022 MAP-R were similar (Grade 2) or higher (Grades 1 and 3) than the percentages of comparison students who met reading benchmarks. However, the differences observed were not large enough to indicate practical significance. **No significant effects on fall MAP-R performance were observed for students in Grades 4 and 5.**

Distal Results: ELO SAIL Mathematics

Overall, in mathematics, ELO SAIL participation also had a very small positive effect on Grades K–5 students' MAP-M performance. Disaggregated results revealed very small positive effects for students in Grades 2, 3, and 5, and for Black or African American, Hispanic/Latino students, and students receiving FARMS, ELD, or special education services. The effect sizes were equivalent to a 1.55 to 3.33 percentile-point increase in mathematics performance for an average student.

Conclusion

The evaluation found that participating in ELO SAIL and LSP had immediate positive impacts on participants' literacy and mathematics skills. However, there were no practically significant effects on the fall 2022 DIBELS and MAP performance of participants when compared to non-participant peers. In order to further assess the effectiveness of any program sufficiently, it is crucial to determine if a program was implemented as intended and assess the management and organization of the sites. Additionally, there is a need to improve on the methods of collecting and storing attendance and participation data.



Evaluation Scope

Background

Summer learning programs are commonly used strategies to prevent summer learning loss (Pyne et al., 2021). Participation in summer programs can increase students' reading achievement (e.g., Johnston, Riley, Ryan, & Kelly-Vance, 2015) and growth in mathematics achievement (e.g., Kerschen, Cooper, Shelton, & Scott, 2018).

To optimize the implementation of the summer 2022 programs, which aimed to address the academic setbacks caused by the COVID-19 pandemic, the district took several measures. These measures included narrowing the program's focus, prioritizing students with the greatest academic needs, and limiting virtual options exclusively to virtual academy students, online tutoring, and high school courses. This approach aligns with Pillar 1 of the Montgomery County Public Schools Strategic Plan for FY 2022–2025, which emphasizes academic excellence. The summer program is a vital component of MCPS's strategic objective to accelerate learning and improve academic achievement for all students. Furthermore, it supports the district's strategy of closely monitoring and evaluating various data points to ensure students are making appropriate progress in literacy and mathematics.

Purpose of Evaluation



The evaluation focused on K–12 participant characteristics and participation rates for LSP, ELO SAIL, and the CHSSP, but narrowed the focus to Grades 1–8 participants of ELO SAIL and LSP for assessing student academic outcomes.



The purpose of the evaluation was to 1) determine 2022 summer programming participation rates and identify participant characteristics, 2) examine immediate outcomes by assessing how academic performance changed from beginning to end of summer programs, 3) examine distal outcomes by comparing fall 2022 academic performance among program participants and matched comparison students who did not attend, and 4) capture participant perceptions of the summer program.

Research Questions



To what extent did students enroll in and attend the 2022 summer programs and what were the characteristics of students who participated?



What was the effect of the 2022 MCPS summer program for Grades K–8 students' performance on the summer 2022 literacy and mathematics pre- and post-tests and their fall 2022 literacy and mathematics achievement, and to what extent do effects vary when results are disaggregated by grade, race/ethnicity, and service receipt?



How satisfied were Grades 4 and 5 ELO SAIL participants with the program and what were their summer program experiences?



Program Description

Overview

The evaluation included ELO SAIL, LSP, and CHSSP. The target population for ELO SAIL is rising K–5 students enrolled in Title I schools for the the 2022–2023 school year. The program was a five-week in-person program held at 35 Title I schools for 4.5 hours each day. The target population for LSPs is MCPS students not enrolled in Title I elementary schools. The program was a four-week, half-day, in-person program at the participants' local school. CHSSP targeted Grades 9–12 students and provided a blended format with synchronous and asynchronous opportunities over two summer sessions. The district provided summer programming to students at no cost, and participation was voluntary. The district also provided transportation and meals. The 2022 Extended School Year (ESY) summer program was not included in the evaluation.

Program Goals



The overarching goal of the 2022 summer programs was to mitigate learning disruption by offering continual engagement in academic instruction, specials, and electives.

Program Components



Extended Learning Opportunities—Summer Adventures in Learning (ELO SAIL): Students engaged in hands-on, exciting and enriching literacy, or science, technology, engineering, or mathematics (STEM) instruction, as well as social emotional learning activities.



Local School Summer Program (LSP): The curriculum was designed to support students who needed additional or repeated instruction of previous grade-level work or who were below grade-level in reading or mathematics.



The 2022 Central High School Summer Program (CHSSP): Students could take a course for grade replacement, grade improvement, or original credit. Available courses included core courses and courses in Career Technology Education, Health Education, World Language, and Fine Arts.



The evaluation employed a quasi-experimental, pre-post, matched comparison group design and a cross-sectional survey design. To match participants from Grades K through 8 to non-participating students, this evaluation used prior achievement, grade level, gender, race/ethnicity, and service receipt—i.e., FARMS, ELD, and special education—as matching variables.

Baseline Measures and Matching Variables

Data & Measures

- Baseline Measures:
 - Prior year achievement in reading and mathematics as measured by:
 - Spring 2022 Measures of Academic Progress in Mathematics (MAP-M; Grades K–8) and Reading (MAP-R; Grades 3–8)
 - Rasch Unit (RIT) scale score (100-350)
 - Spring 2022 MAP—Reading Fluency (MAP-RF; Grades K–2)
 - Performance level (Exceeds, Meets, Approaches, and Below)
- Matching Variables:
 - Prior year achievement in reading and mathematics (see above)
 - Grade level
 - Gender
 - Race/ethnicity
 - Special services receipt (i.e., FARMS, ELD, special education)

Outcome Measures

Data & Measures

- Immediate
 - Mathematics and reading pre- and post-assessments
 - At the start and end of the summer program, program staff administered grade-level assessments on a 100-percent grading scale to students in Grades 2–8.
 - Online Survey
 - Responses to an online survey about ELO SAIL program satisfaction based on a four-point Likert scale ranging from disagree a lot (1) to agree a lot (4).
- Distal
 - Mathematics: Fall 2022 MAP-M (Grades K–8)
 - Reading:
 - Beginning of Year (BOY) 2022-2023 DIBELS, Grades K–2
 - Percentage of students who met or exceeded the beginning of year benchmark.
 - Fall 2022 MAP-R (Grades 3–8)
 - Grade 3: percentage of students meeting the 50th percentile benchmark
 - Grades 4–8: RIT scale score (100-350)



Methods (Continued)



Sample

- Research Question 1: All Grades K–12 summer program participants
- Research Question 2:
 - Immediate
 - Analysis of pre- and post-test performance: Grades 2–8 participants with pre- and post-test data from valid reading or mathematics assessments
 - Distal
 - Analysis of standardized testing performance: Grades 1–8 participants and matched comparison students with appropriate MAP and DIBELS data
- Research Question 3:
 - Immediate: Survey participants were Grades 4 and 5 ELO SAIL participants



Analysis

- Research Question 1: The percentage of current students who attended summer school, characteristics of summer program participants, and attendance patterns were summarized using descriptive statistics.
- Research Question 2: Analyses were conducted separately for ELO SAIL and Local School Programs.
 - Immediate
 - Paired samples t-tests and associated effect sizes were used to measure student growth from pre- to post-test on the summer 2022 reading and mathematics assessments.



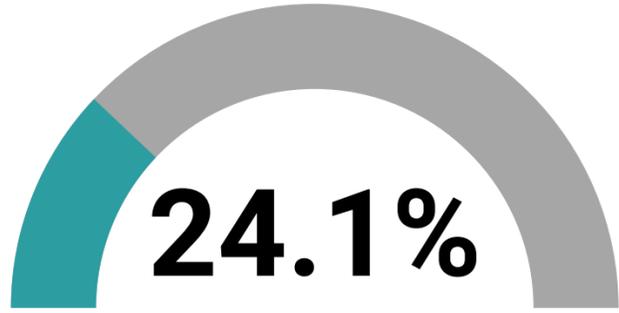
Analysis cont'd.

- Distal
 - A Chi-square test of independence was conducted to compare the proportion of Grade 1 and 2 students who performed at or above the beginning of year DIBELS benchmark and Grade 3 students meeting the 50th Percentile benchmark on Fall 2022 MAP-R.
 - An analysis of covariance (ANCOVA) tested the adjusted mean differences in MAP-R and MAP-M RIT scores between summer participants and the matched comparison group, accounting for prior year same subject student performance.
 - For the paired samples t-test and the ANCOVA, Cohen's *d* or Hedges *g* were used as the effect size measures. For the Chi-square test, the Cox index, an effect size measure comparable to the Hedges' *g* effect size, was computed. The thresholds for interpreting Cohens or Hedges' *g* are: 0.2 indicates a small effect, 0.5 indicates a medium effect, and 0.8 indicates a large effect.
 - To ease interpretation of the ANCOVA results, all effects are also reported as the expected percentile-point change for an average (50th percentile) comparison student who participates in summer programming.
- Research Question 3:
 - Immediate: Descriptive statistics were used to analyze survey data. The open-ended responses were coded and sorted by theme.

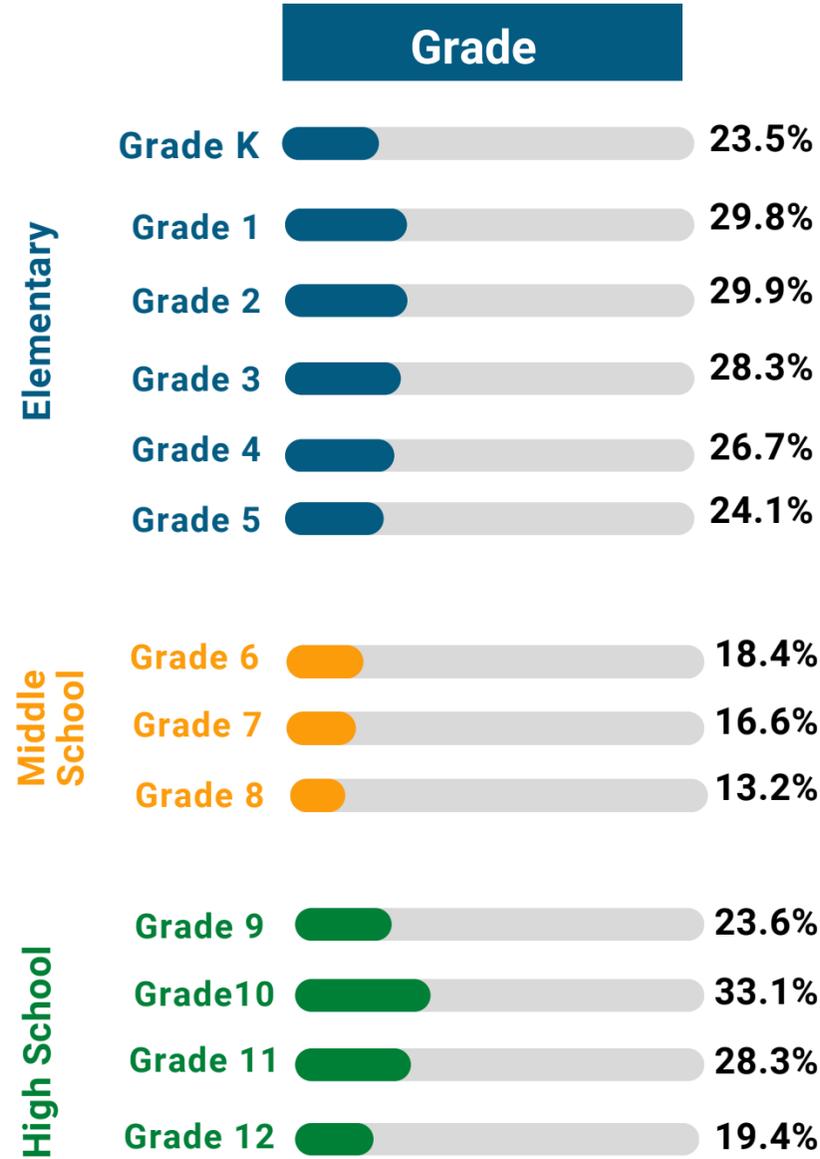
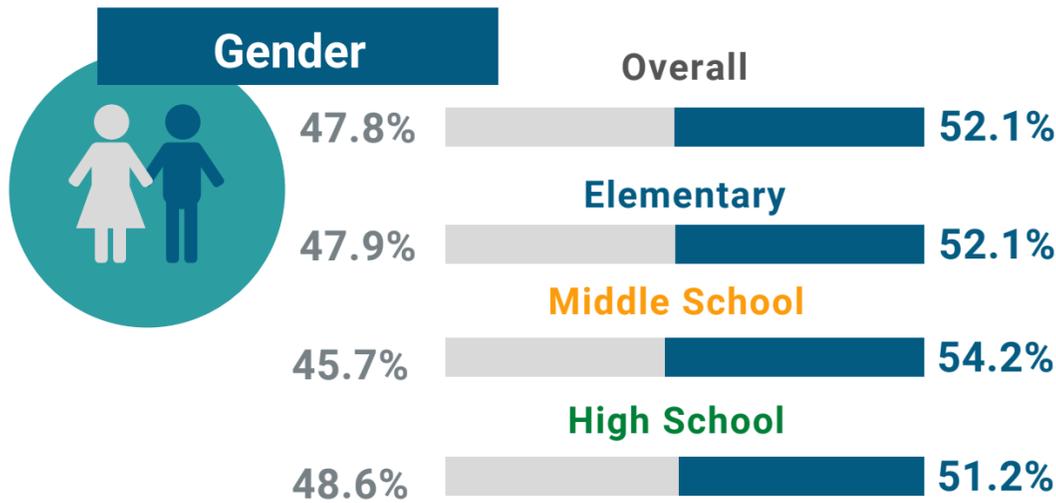
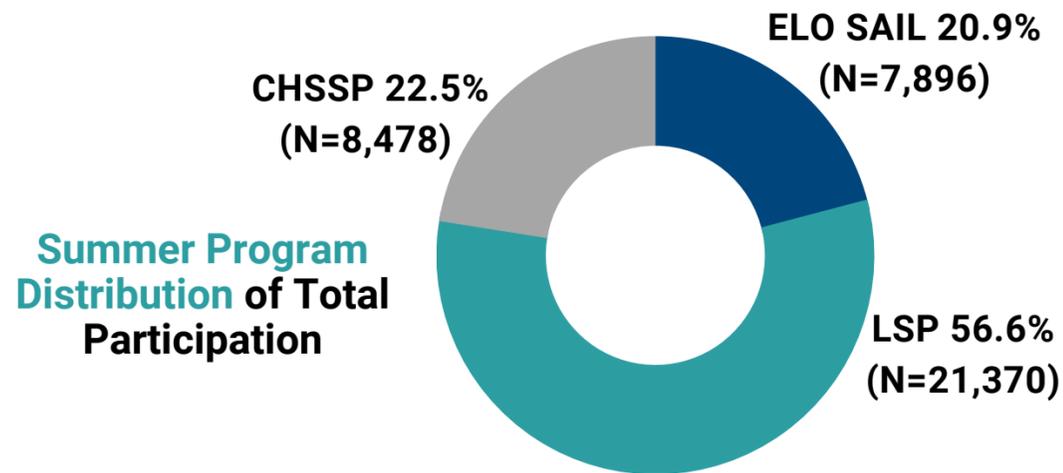


Results: Participation

Percent of MCPS Students who Participated in 2022 Summer Programs (Overall and by Grade Level and Gender)



37,820 of 156,679 students participated in 2022 summer programs



Findings

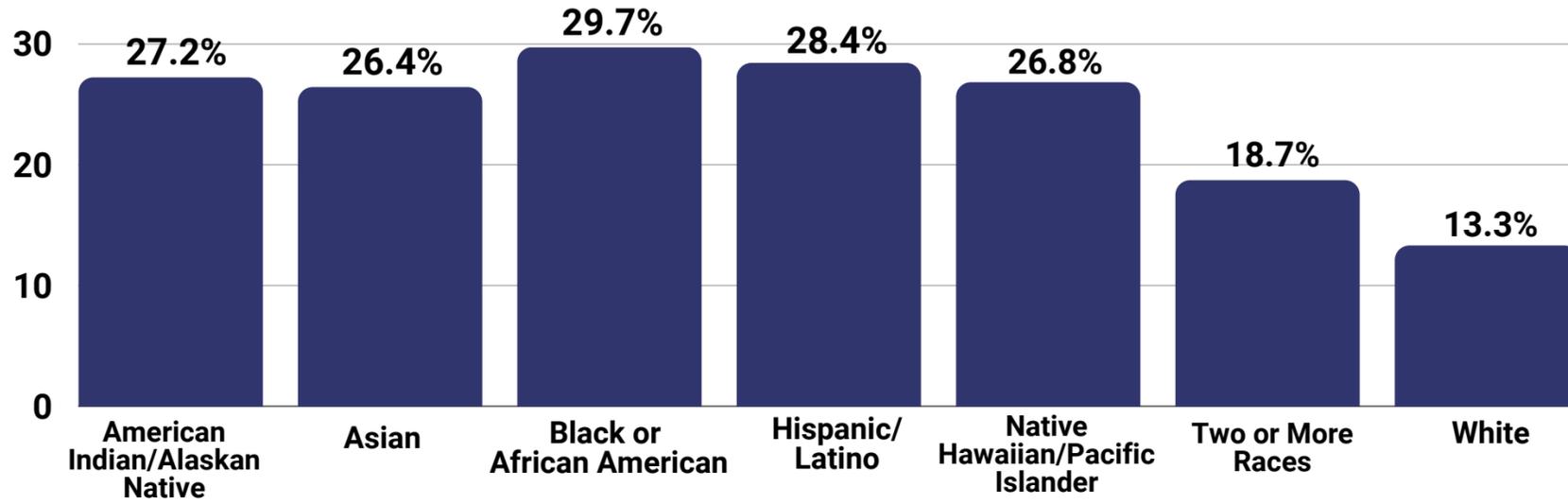
- Overall, in 2022, 37,820 K–12 students participated in MCPS summer programs, representing 24% of 156,679 students active as July 12, 2022. Over half (57%) of the total number of participants participated in LSPs.
- At the grade level, participation rates were the lowest for middle school students, ranging from 13.2% for Grade 8 students to 18.4% for Grade 6 students. Higher rates were observed at the elementary and high school levels, ranging from 23.5% for students in kindergarten to 33.1% for Grade 10 students. Across school levels, slightly over half of the participants were male (51.2% to 54.2%).
- Note: Total enrollment is the number of students enrolled as of July 12, 2022 with an added 552 summer participants who enrolled after the as-of date.
 - Program enrollment is based on the number of students who attended 2022 summer programs for at least one day and does not include students who participated in the ESY summer program.
 - Program distribution has 5,428 Grades 9–12 students classified as LSP participants and excludes 76 participants without clear indicators of program participation.



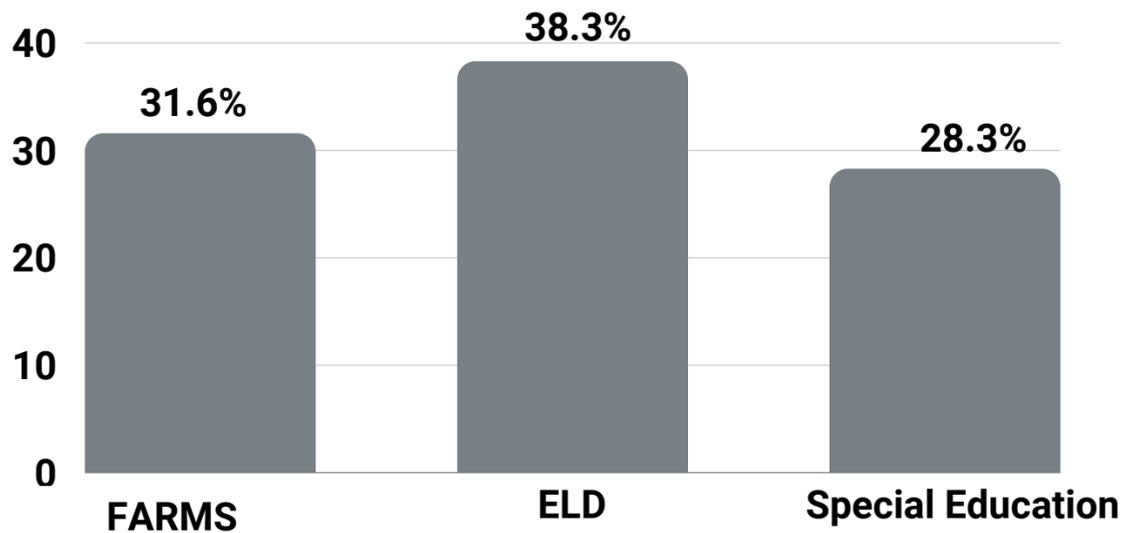
Results: Participation

Percent of MCPS Students who Participated in 2022 Summer Programs by Race/Ethnicity, Service, and Special Populations

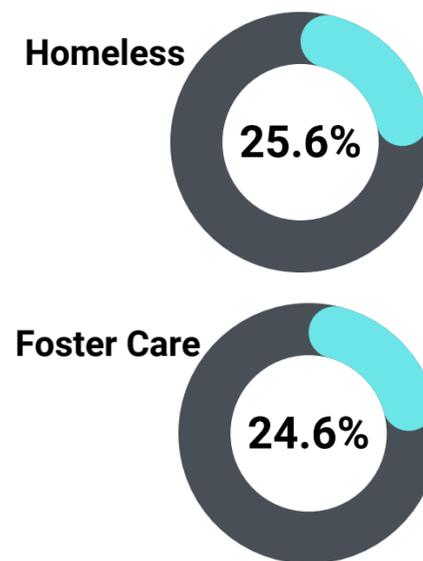
Race/Ethnicity



Services



Other Special Populations



Note: FARMS=Free and Reduced-price Meals System; ELD=English Language Development.



Findings

- With the exception of White students (13.3%) and students of two or more races (18.7%), over one quarter (26.4% to 29.7%) of students from the other racial/ethnic groups participated in 2022 summer programs.
- Close to one third of all 2022 summer program participants received FARMS (31.6%) or special education (28.3%) services. Over one third of participants received ELD services (38.3%).
- One quarter of 259 homeless students (25.6%) and one quarter of 114 foster children (24.6%) participated in summer programs. No current students were identified as migrants in MCPS official student records.



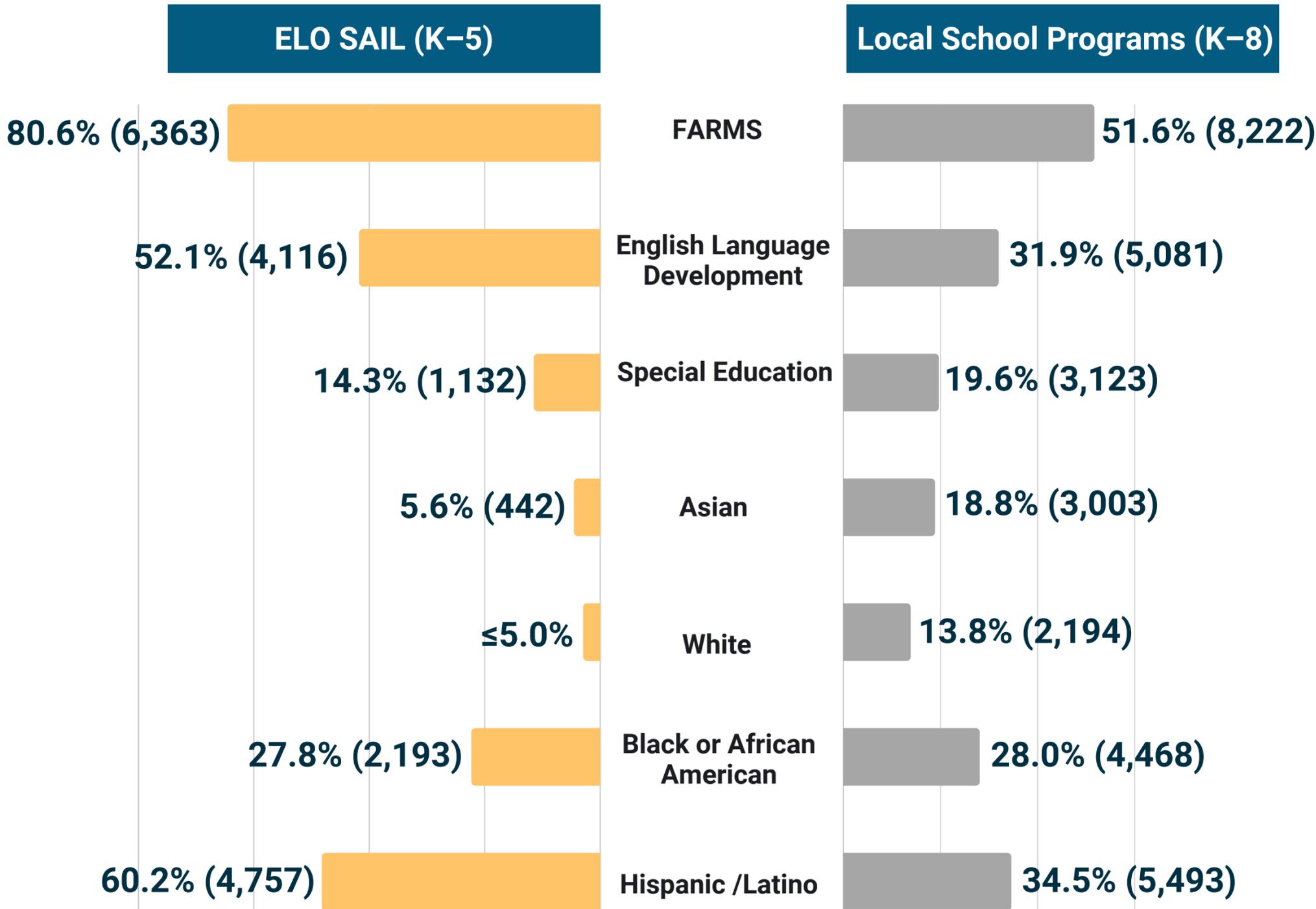
Results: Participation

Demographics of 2022 Summer Program Grades K-8 Participants by Program Type



Findings

- Of the 7,896 ELO SAIL participants, 81% received FARMS services, 52% received ELD services, and 14% received special education services. In regards to racial/ethnic groups, over half of ELO SAIL participants were identified as Hispanic/Latino (60%).
- Of the 15,942 LSP participants in Grades K-8, 52% received FARMS services, 32% received ELD services, and 20% received special education services. In terms of racial/ethnic groups, the largest percentage of LSP participants were identified as Hispanic/Latino (35%).

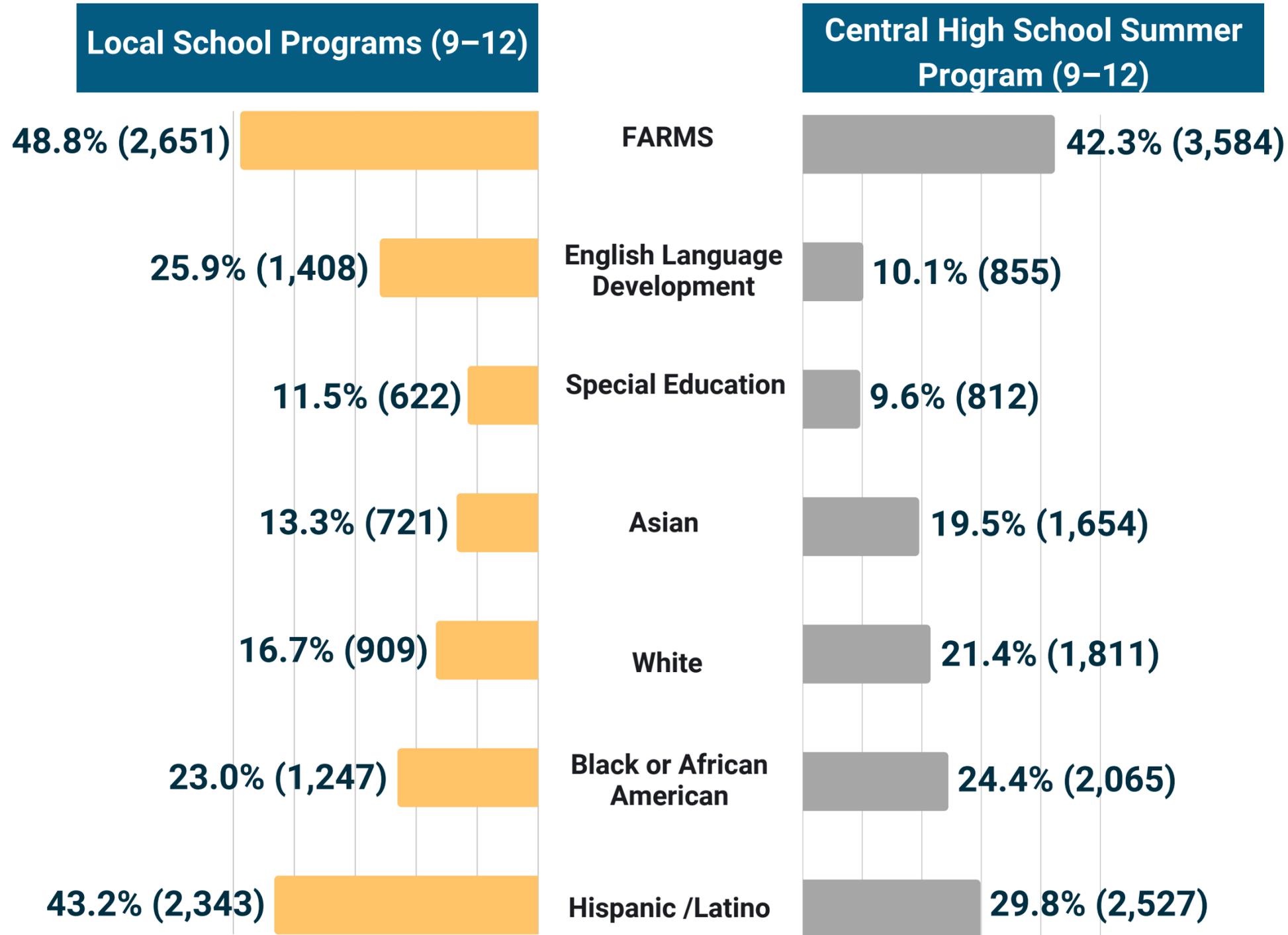


Note: The percentages of American Indian or Alaska Native participants, Native Hawaiian or Other Pacific Islander participants, and participants with two or more races are ≤5.0 for both programs.



Results: Participation

Demographics of 2022 Summer Program Grades 9–12 Participants by Program Type



Note: The percentages of American Indian or Alaska Native participants, Native Hawaiian or Other Pacific Islander participants, and participants with two or more races are ≤5.0 for both programs.



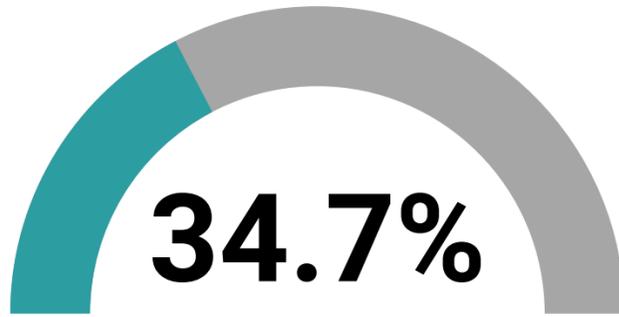
Findings

- Of the 5,428 LSP participants in Grades 9–12, 49% received FARMS services, 26% received ELD services, and 12% received special education services. The largest percentage of the high school LSP participants were identified as Hispanic/Latino (43%).
- Of the 8,478 CHSSP participants, 42% received FARMS services, 10% received ELD services, and 10% received special education services. Hispanic/Latino participants (30%) were the largest representation of the racial/ethnic groups, followed by Black or African American (24%).

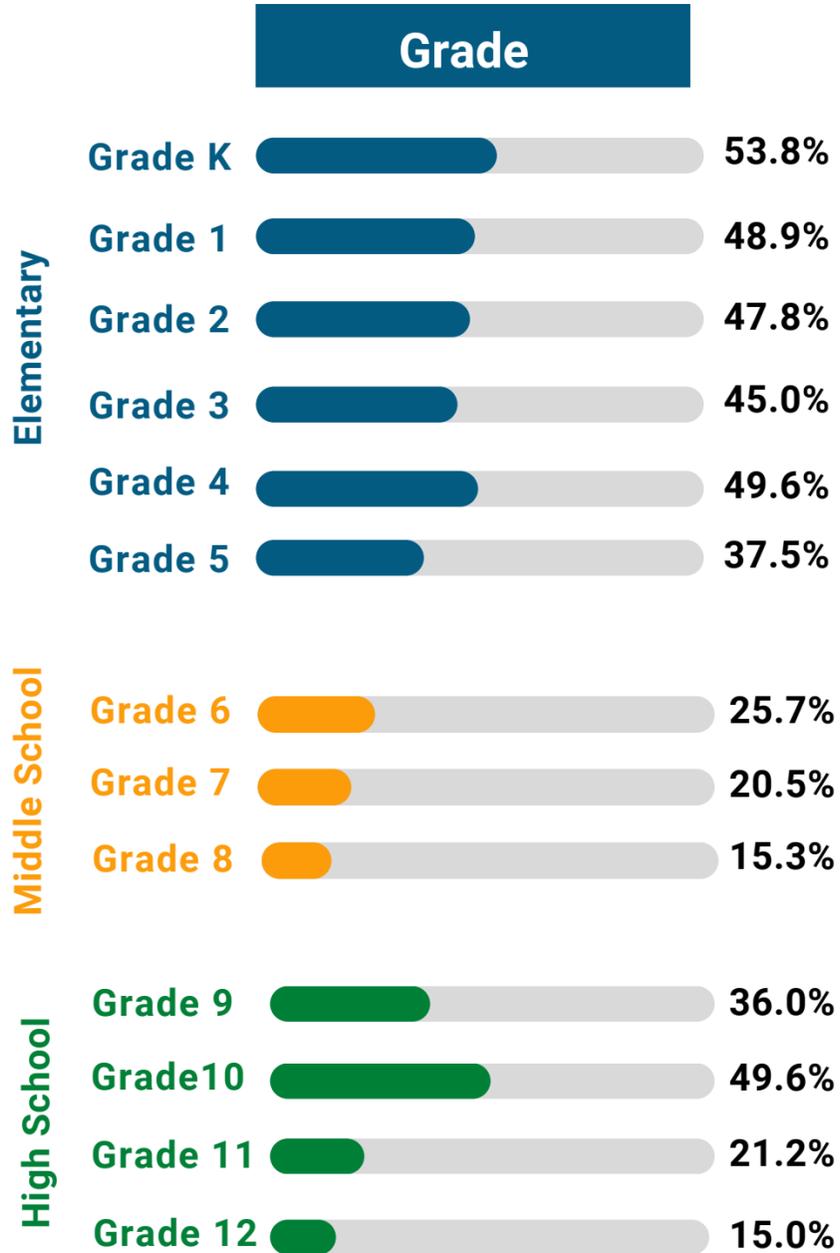
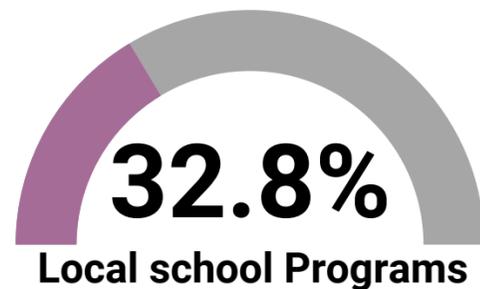
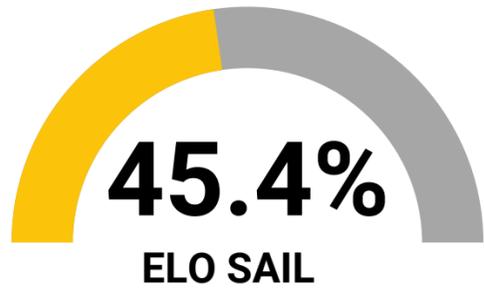


Results: Participation

Percent of Students Recommended who Participated in 2022 Summer Programs (Overall and by Program Type and Grade Level)



Of the 6,778 Grades K–12 students who were recommended for summer programs, 2,355 (34.7%) attended.



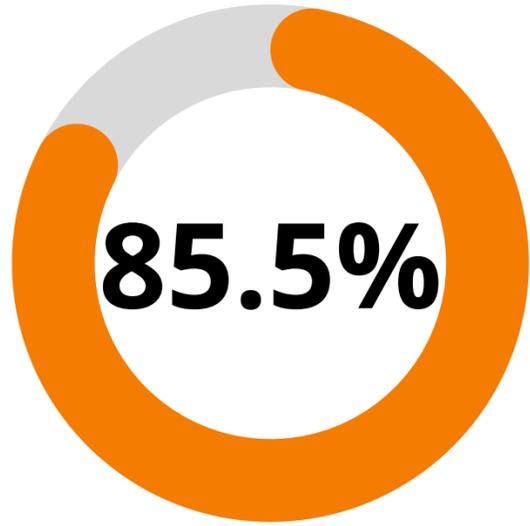
Findings

- A third of the 6,778 students (34.7%) who were recommended for summer programs participated.
- The percentage of recommended students who participated varied by grade level; nearly half of Grades 1, 4, and 10 students recommended for summer programs participated.
- Nearly half of the students recommended for summer programs in Title I schools attended ELO SAIL (45.4%). A third of elementary-level recommended students from schools/LSPs outside of Title I attended (32.8%).
- *Note:* Recommended students are students identified for summer programming by Shared Accountability based on 2021–2022 course performance in mathematics and literacy (e.g., reading, writing, or English courses), participation in a reading or mathematics intervention, attendance, and specifically for high school students, being on-track for graduation in mathematics and English.



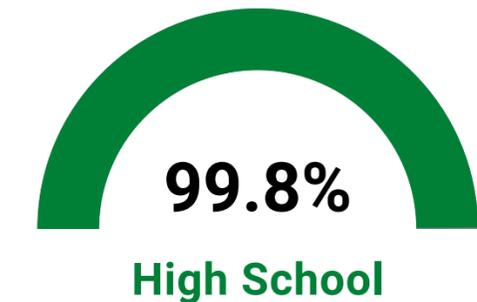
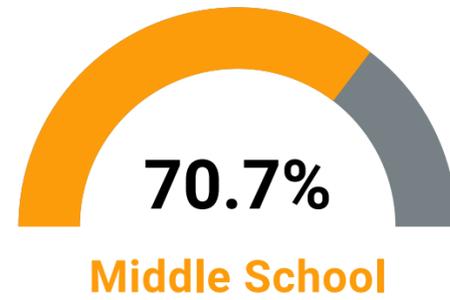
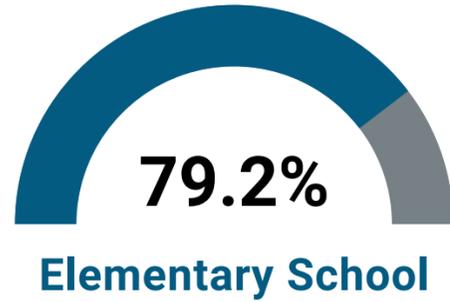
Results: Participation

Summer Program Participants' Average Attendance Rates Overall and by Program Type, School Level, and Grade Level

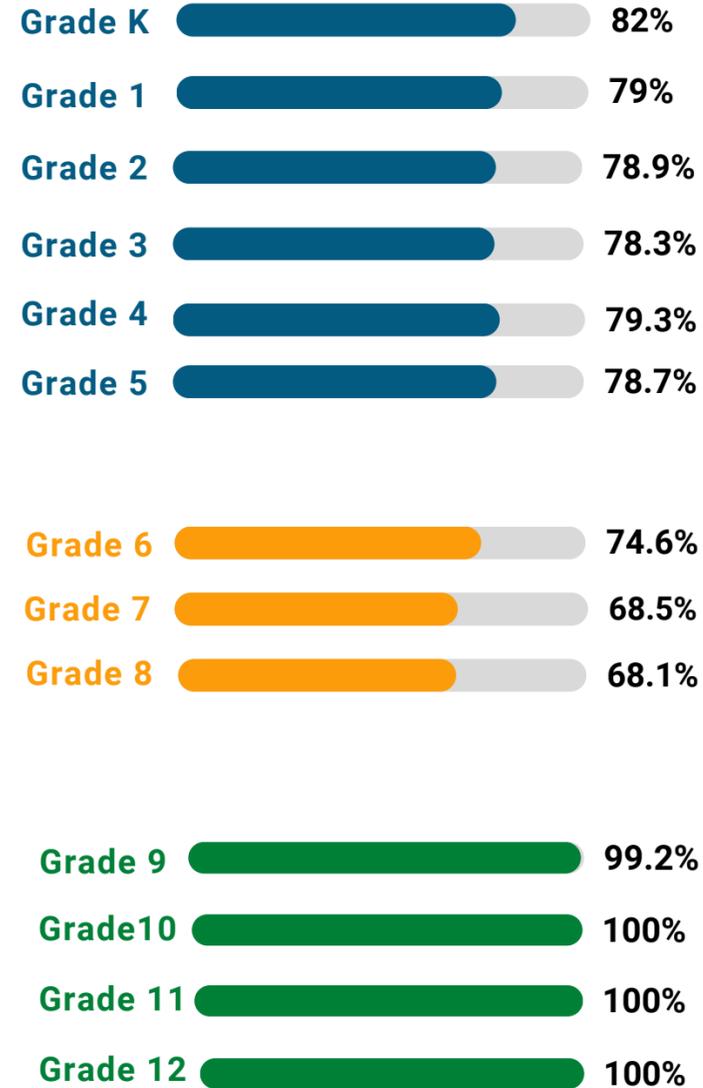


Average attendance rate for all summer program participants

School Level



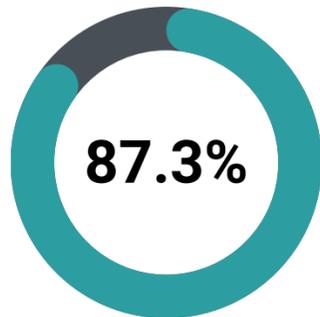
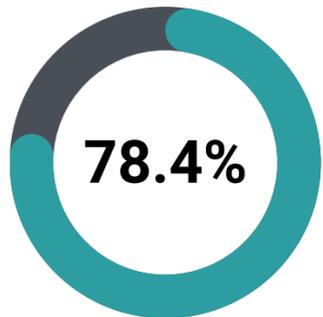
Grade Level



Program Type

ELO SAIL

Local School Programs



Findings

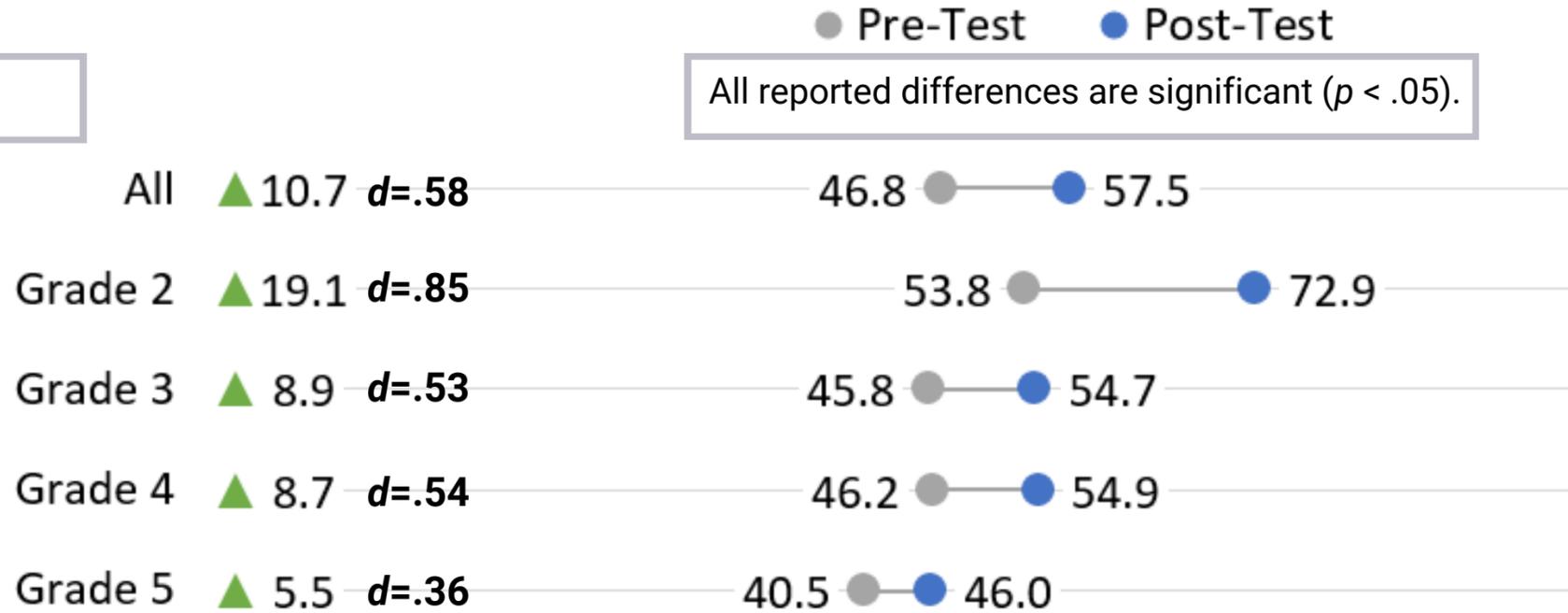
- Overall, the average reported attendance rate for 2022 summer programs was 85.5%. By school level, the average attendance rate was 79.2% for elementary, 70.7% for middle, and 99.8% for high school students.
- Reported attendance rates varied by grade level, ranging from 68% for Grade 8 to 100% for Grades 10, 11, and 12 students.
- On average, the attendance rate for elementary school students attending ELO SAIL, which was 5 weeks long was 78.4%; the attendance rate for elementary school students attending four weeks of LSP, was 87.3%.



Results: LSP

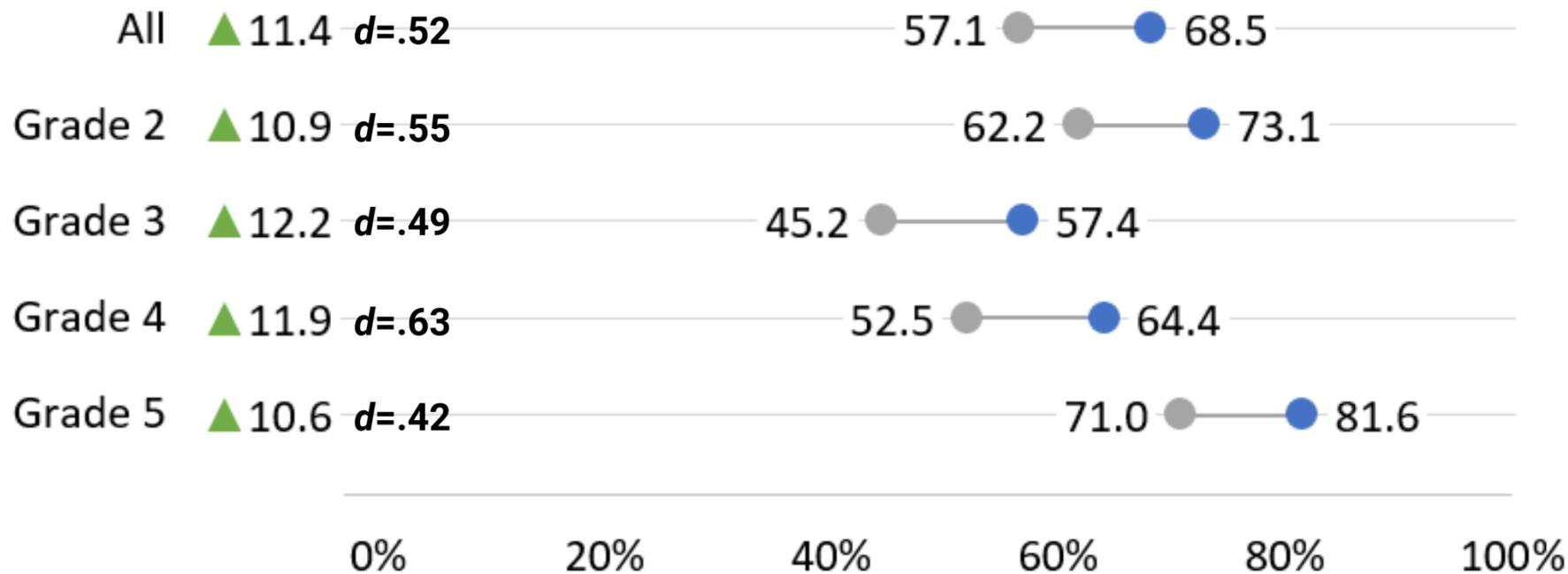
Local School Program Grades 2–5 Literacy and Mathematics: Mean Differences in Pre-Post Test Results Overall and by Grade Level

Literacy



All reported differences are significant ($p < .05$).

Mathematics



Note: d = Cohen's d (measure of effect size).



Findings

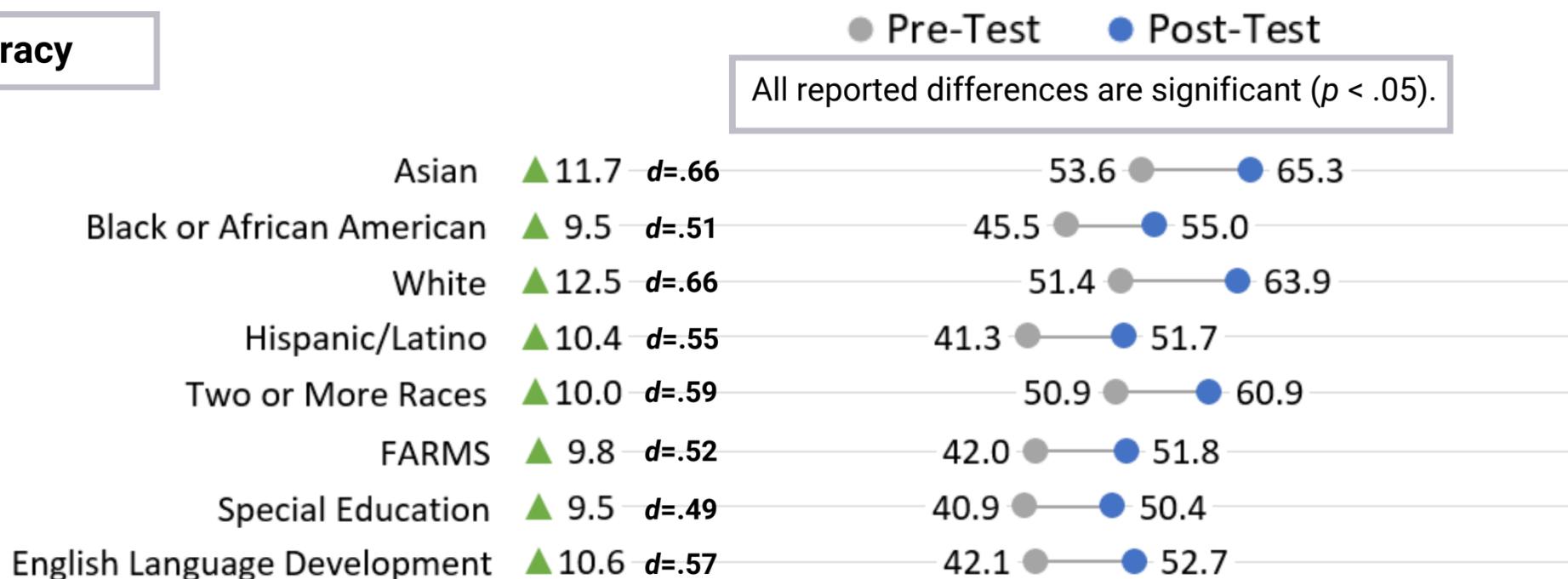
- By the end of the summer, average post-test literacy scores for LSP participants in Grades 2–5 were significantly higher than pre-test scores. The overall difference between pre-test and post-test scores was 10.7 percentage points ($d=.58$). The grade-level differences ranged from 5.5 percentage points for Grade 5 students ($d=.36$) to 19.1 percentage points for Grade 2 students ($d=.85$).
- Mathematics post-test mean scores for LSP participants in Grades 2–5 also increased significantly from pre-test administration. The overall difference between pre-test and post-test scores was 11.4 percentage points ($d=.52$). Growth in post-test scores ranged from 10.6 percentage points for Grade 5 students ($d=.42$) to 12.2 percentage points for Grade 3 students ($d=.49$).
- Effect sizes tell us the strength of the effect of LSP on mathematics and literacy performance. The effect sizes, which ranged from $d=.36$ to $d=.85$, indicated substantive, practically meaningful improvements in post-test literacy or mathematics scores compared to pre-test scores. Effect sizes of 0.2, 0.5, or 0.8 indicate that after attending LSP, the average score on the post-test was higher than what 58%, 66%, or 79% of scores students attained on the pre-test, respectively (Lipsey et al., 2012).



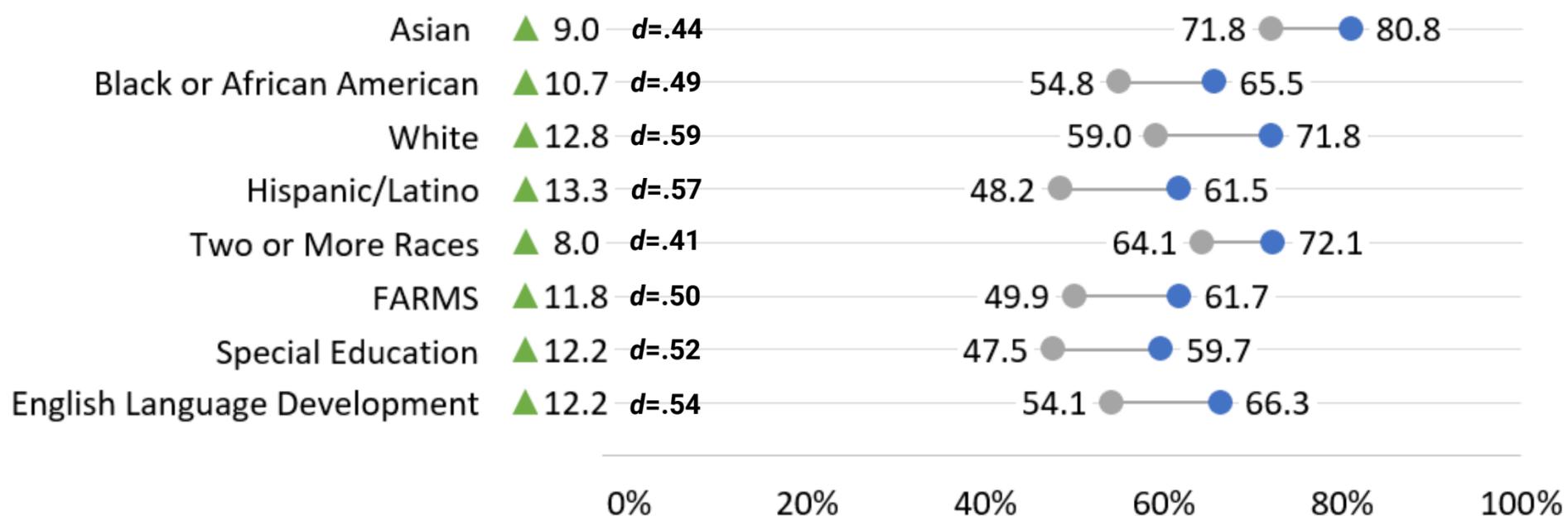
Results: LSP

Local School Program Grades 2–5 Literacy and Mathematics: Mean Differences in Pre-Post Test Results by Race/Ethnicity and Service Group

Literacy



Mathematics



Note: American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander student groups did not have sufficient numbers to detect statistical significance at the group level ($N > 30$). d = Cohen's d (measure of effect size).



Findings

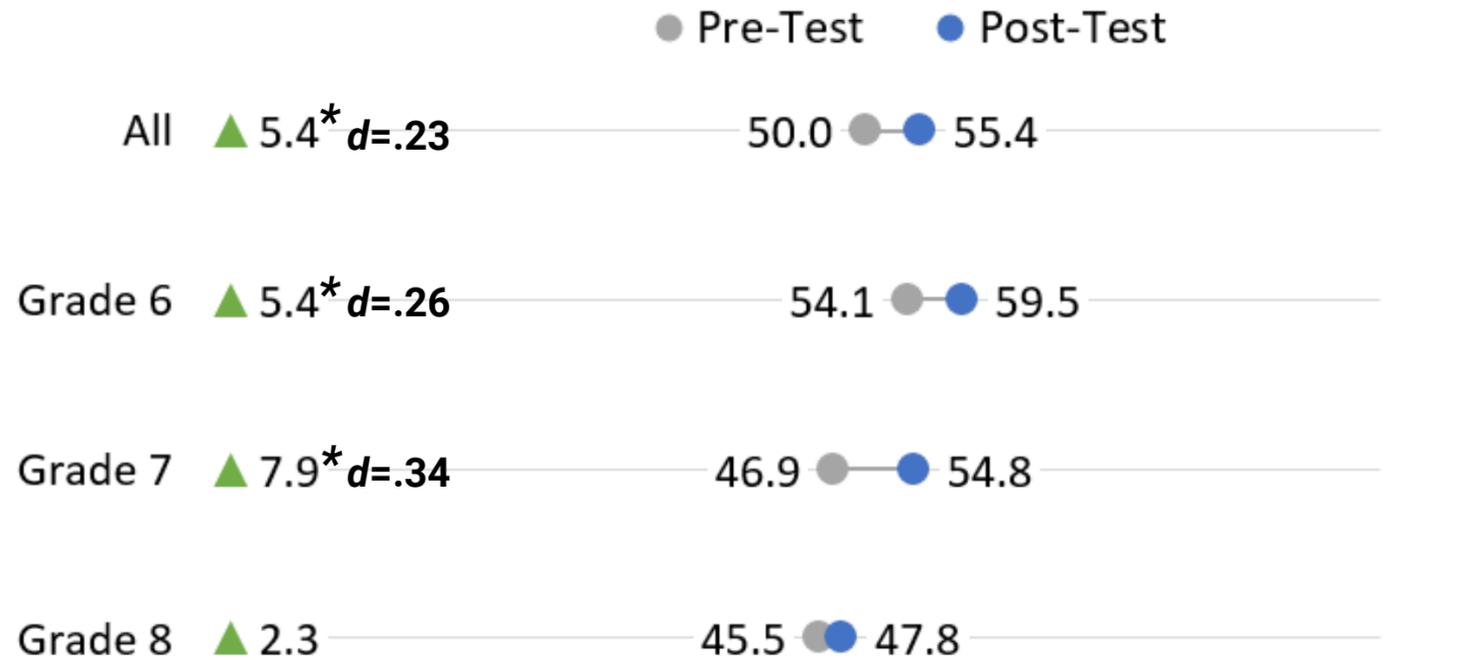
- Among the racial/ethnic student subgroups in Grades 2–5, White students demonstrated the largest literacy mean score increase from pre-test to post-test (12.5 percentage points; $d = .66$), whereas Black or African American students had the smallest gains (9.5 percentage points; $d = .51$).
- In mathematics, Hispanic/Latino students had the largest gains in mean scores from pre-test to post-test (13.3 percentage points; $d = .57$), with students with two or more races demonstrating the smallest increase (8.0 percentage points; $d = .41$).
- Students in receipt of ELD services had the largest increase in literacy mean scores at the end of the summer program (10.6 percentage points; $d = .57$), and in mathematics, shared the highest percentage-point change with students receiving special education services (12.2 percentage points; $d = .54$).
- The effect sizes of the significant results (ranging from $d = .41$ to $d = .66$) indicated substantive improvements in post-test literacy or mathematics skills compared to pre-test scores. Effect sizes of 0.2, 0.5, or 0.8 indicate that after attending LSP, the average score on the post-test was higher than what 58%, 66%, or 79% of the same students attained on the pre-test, respectively (University of Connecticut, 2023).



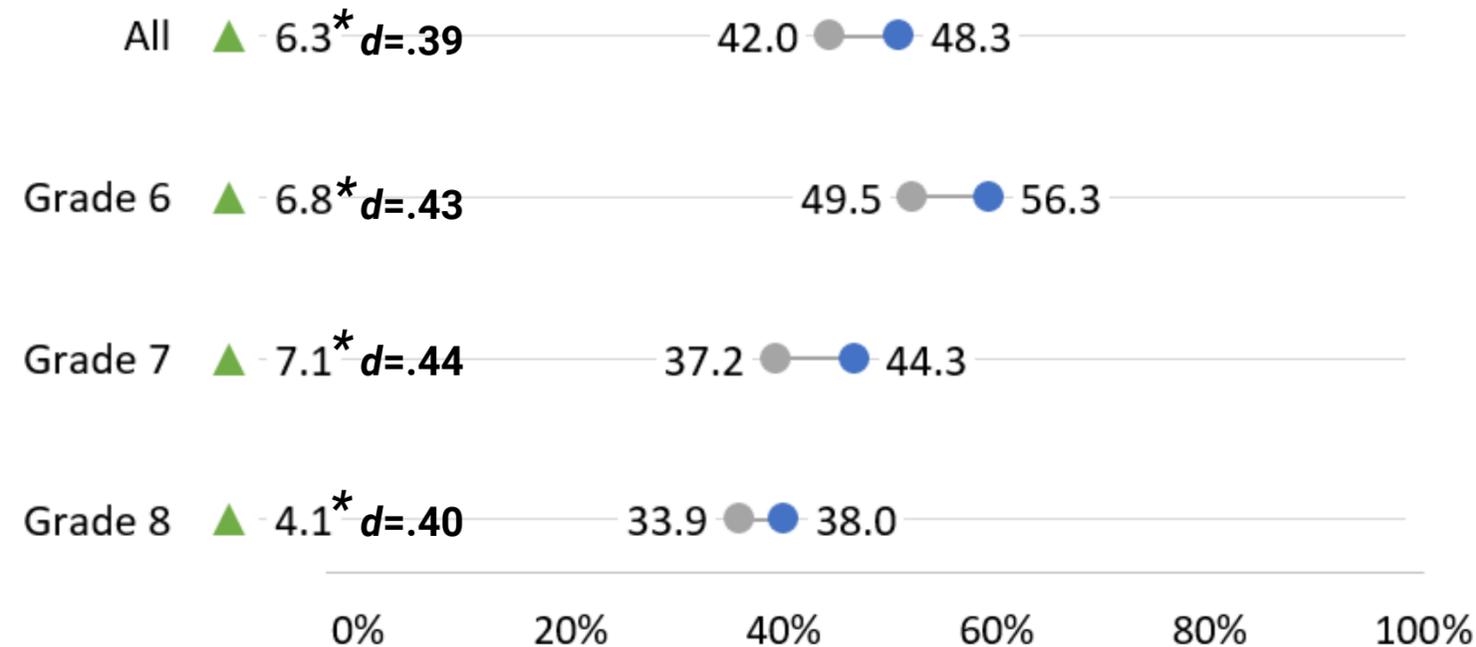
Results: LSP

Local School Program Grades 6–8 Literacy and Mathematics: Mean Differences in Pre-Post Test Results Overall and by Grade Level

Literacy



Mathematics



Note: *= Statistically significant difference at the $p < .05$ level. d = Cohen's d (measure of effect size).



Findings

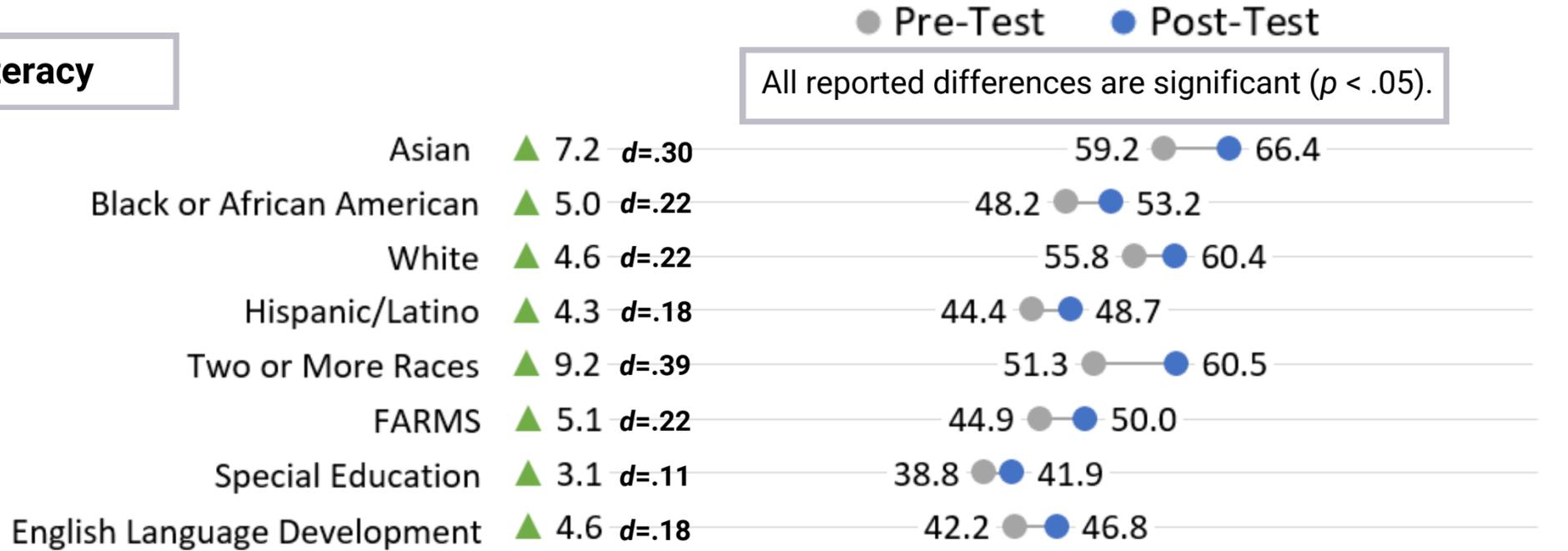
- Overall, the average post-test literacy and mathematics scores for LSP participants in Grades 6–8 were significantly higher than pre-test scores, with percentage-point increases of 5.4 ($d=.23$) and 6.3 ($d=.39$), respectively.
- Grade 7 LSP participants demonstrated the largest score increases for both literacy and mathematics compared to Grades 6 and 8 students, with an increase of 7.9 percentage points in literacy ($d=.34$) and a mathematics increase of 7.1 percentage points ($d=.44$).
- Grade 8 students experienced the smallest gains in post-test scores for both literacy (2.3 percentage points) and mathematics (4.1 percentage points; $d=.40$). The small gain in literacy did not reach statistical significance.
- The effect sizes, which ranged from $d=.23$ to $d=.44$, indicated substantive improvements in post-test literacy or mathematics performance compared to pre-test scores. For a given group, effect sizes of 0.2, 0.5, or 0.8 indicate that the average score on the post-test is higher than 58%, 66%, and 79% of their pre-test scores, respectively (University of Connecticut, 2023).



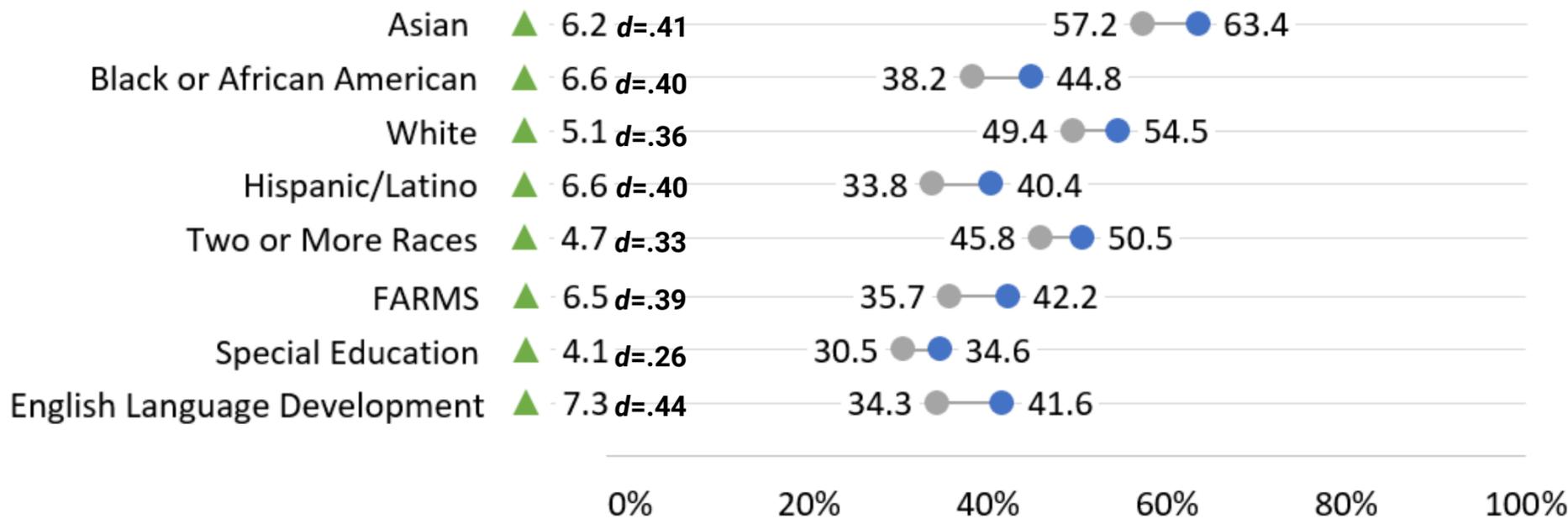
Results: LSP

Local School Program Grades 6–8 Literacy and Mathematics: Mean Differences in Pre-Post Test Results by Race/Ethnicity and Service

Literacy



Mathematics



Note: American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander student groups did not have sufficient numbers to detect statistical significance at the group level ($N > 30$). d = Cohen's d (measure of effect size).



Findings

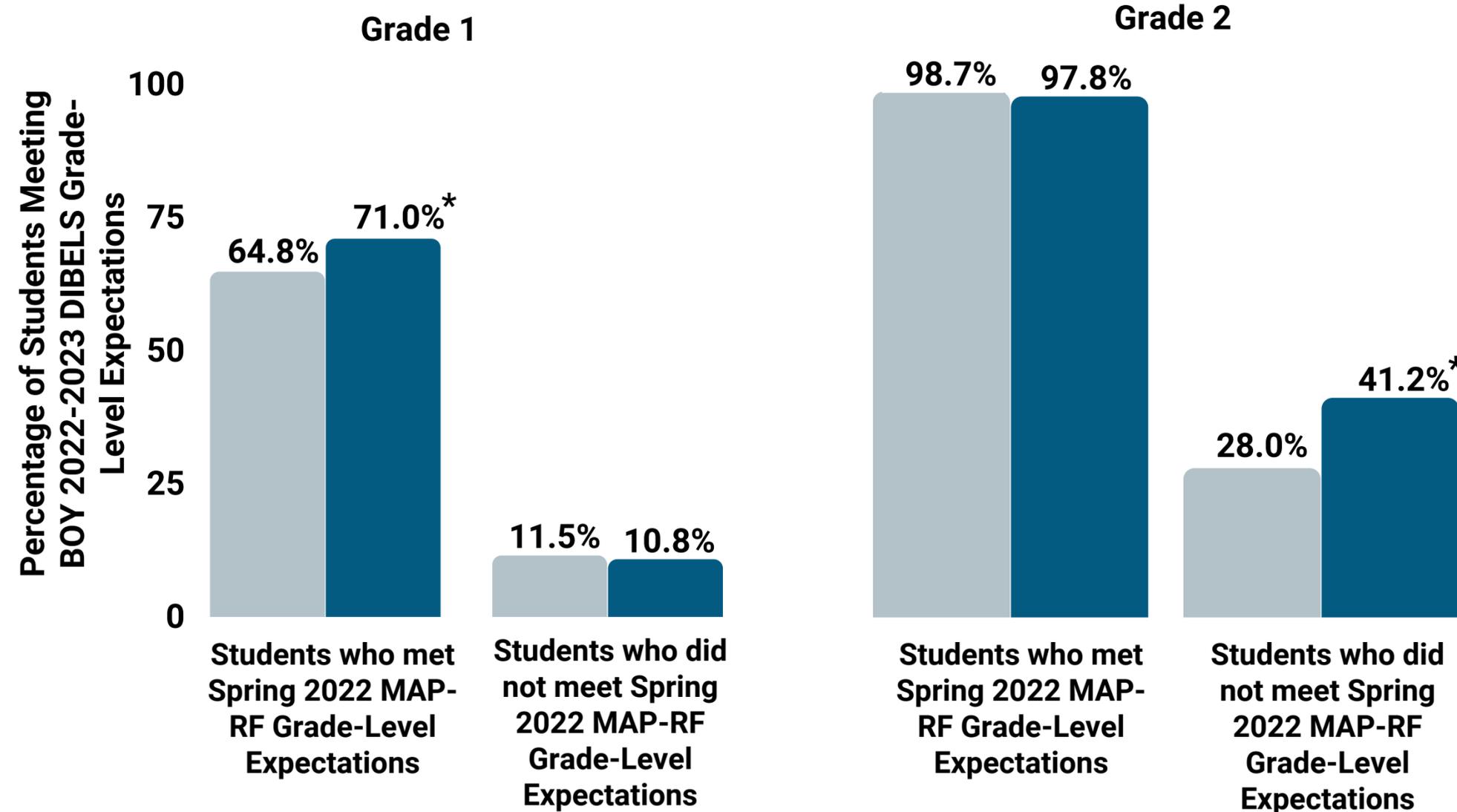
- Among the Grades 6–8 racial/ethnic groups, students with two or more races demonstrated the largest literacy mean score increase from pre-test to post-test (9.2 percentage points; $d = .39$), whereas Hispanic/Latino students, on average, had the smallest gains (4.3 percentage points; $d = .18$).
- In mathematics, Hispanic/Latino and Black or African American students had the largest gains in mean scores from pre-test to post-test (6.6 percentage points for both; $d = .40$); in contrast to the literacy results, students of two or more races demonstrated the smallest average gain among the racial/ethnic groups (4.7 percentage points; $d = .33$).
- Among students receiving services, students in receipt of FARMS services had the largest mean increase in literacy scores (5.1 percentage points; $d = .22$), whereas students receiving ELD services had the largest mathematics pre-test to post-test score increase (7.3 percentage points; $d = .44$).
- The effect sizes of the significant results that ranged from $d = .22$ to $d = .44$ indicated substantive improvements in post-test literacy or mathematics skills compared to pre-test scores. Effect sizes of 0.2, 0.5, or 0.8 indicate that at the end of LSP, the average score on the post-test was higher than what 58%, 66%, or 79% of the same students attained on the pre-test, respectively (University of Connecticut, 2023).



Results: LSP

Percentages of Grades 1 and 2 Participants and Matched Comparison Students Meeting BOY 2022-2023 DIBELS Grade-Level Expectations

● LSP Participants ● Comparison Group



Percentage-point Difference

▼ 6.2%

▼ 13.2%

Note: * = Statistically significant difference at the $p < .05$ level. The Cox index was used as the effect size measure and is symbolized as g to indicate its comparability with Hedges' g (see What Works Clearinghouse, 2022).



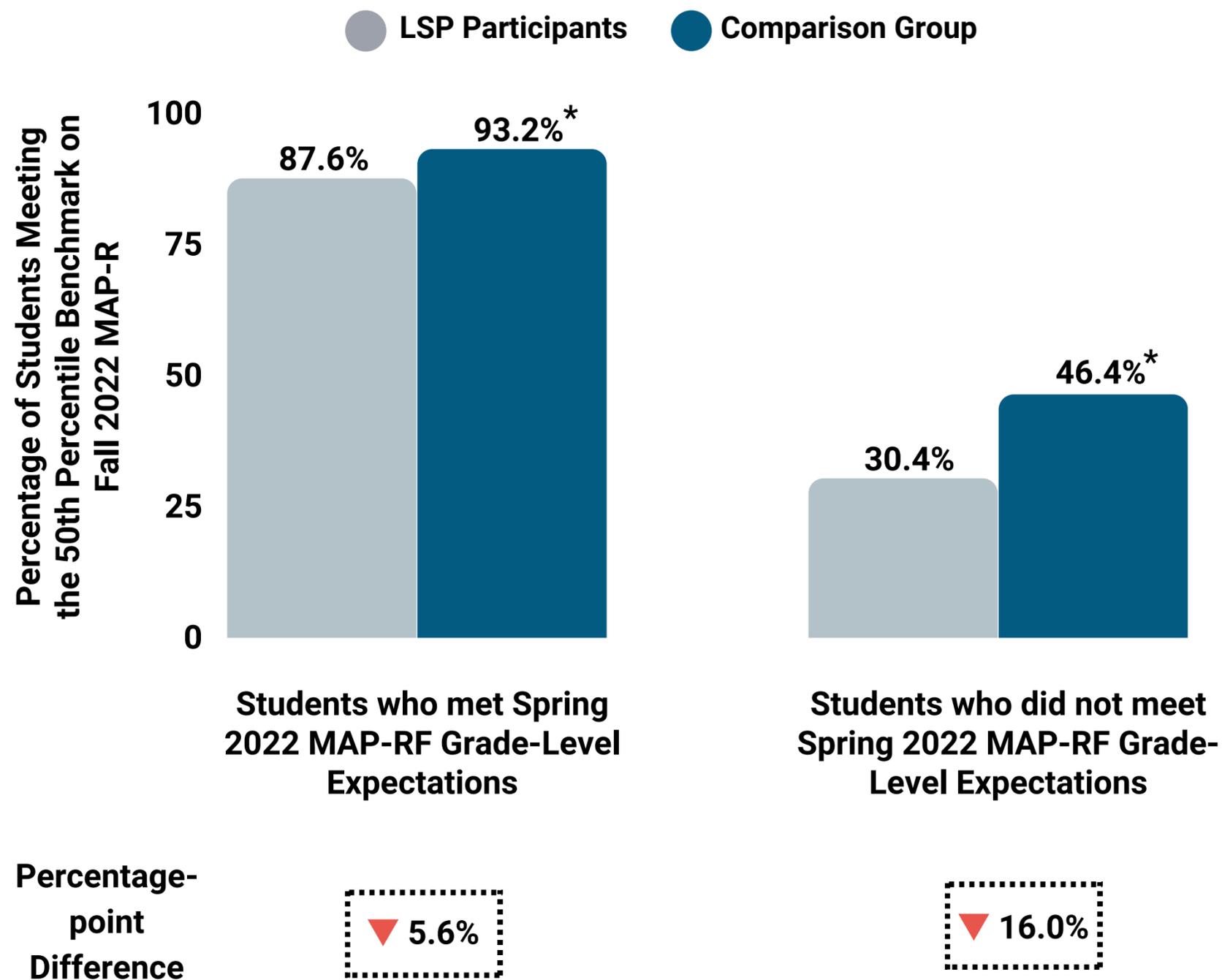
Findings

- A significantly lower percentage of Grade 1 Local School Program participants who met grade-level expectations for Spring 2022 MAP-RF attained expected BOY DIBELS performance levels than did the matched comparison students (65% vs. 71%; $g = -.13$).
- Among Grade 1 students who did not meet the spring kindergarten reading benchmark, both participants and matched comparison students achieved the Grade 1 BOY DIBELS benchmark at similar rates (12% and 11%).
- Over 90% of Grade 2 participants and matched comparison students who met reading expectations for Spring 2022 MAP-RF attained the BOY DIBELS benchmark.
- A significantly higher percentage of Grade 2 matched comparison students (41%) attained the BOY DIBELS benchmark than the percentage of LSP participants (28%; $g = -.04$).
- The magnitudes of the significant effects were between ± 0.2 , which indicated that the differences in performance between LSP participants and comparison students were not practically meaningful for educational purposes.



Results: LSP

Percentages of Grade 3 Participants and Matched Comparison Students Meeting the 50th Percentile Benchmark on Fall 2022 MAP-R



Note: * = Statistically significant difference at the $p < .05$ level. The Cox index was used as the effect size measure and is symbolized as g to indicate its comparability with Hedges' g (see What Works Clearinghouse, 2022).



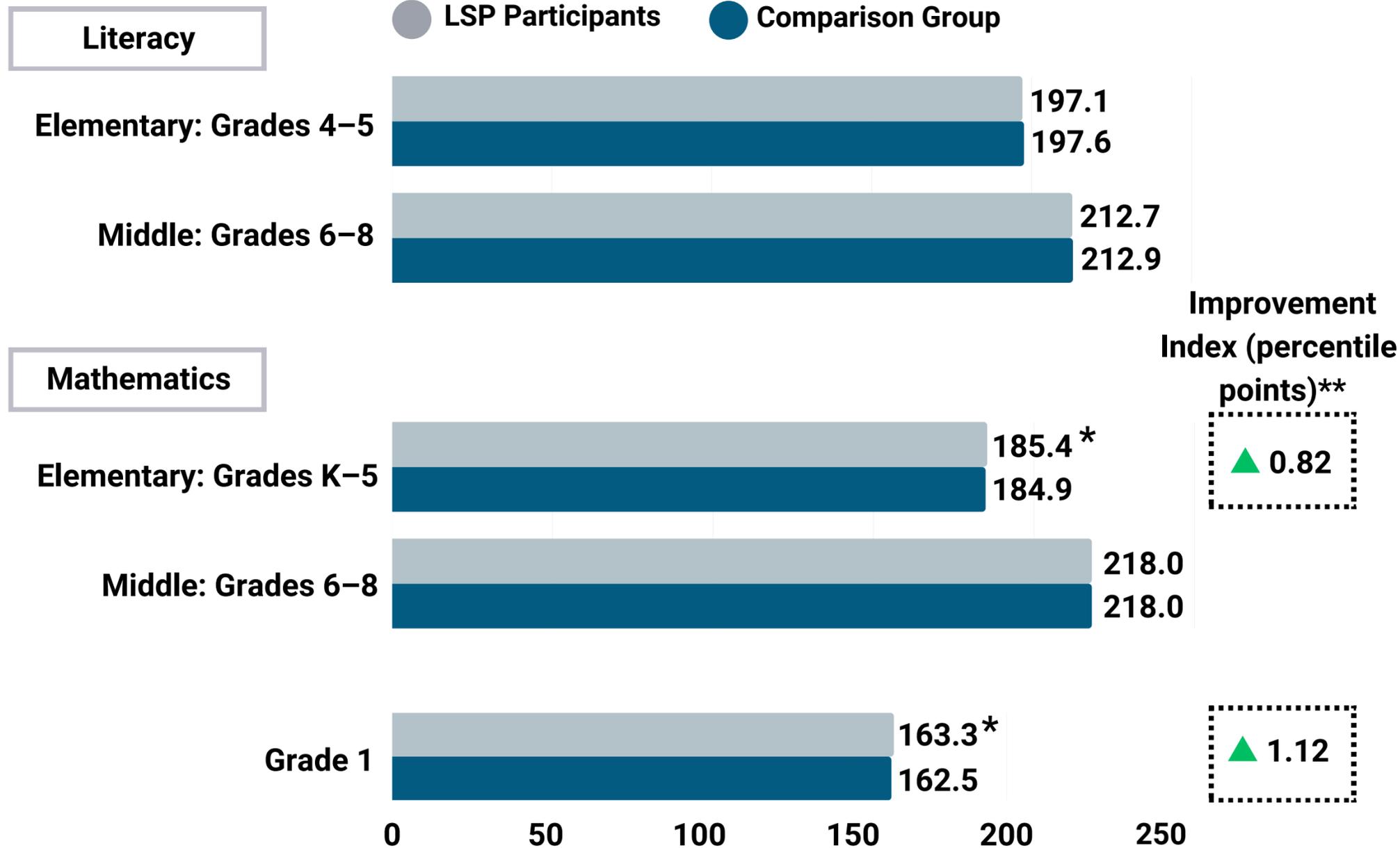
Findings

- Among Grade 3 LSP participants and matched comparison students who met Spring 2022 MAP-RF grade-level expectations in the previous year as Grade 2 students, a significantly greater percentage of comparison group students (93%) met or exceeded the 50th percentile on Fall 2022 MAP-R, compared to program participants (88%). The difference was a 5.6 percentage-point difference ($g = -.40$).
- For the Grade 3 students who did not meet Grade 2 reading expectations in spring 2022, 30% of LSP participants met or exceeded the 50th percentile on Fall MAP-R compared with the 46% of the matched comparison students who met or exceeded the benchmark. The difference was a 16 percentage-point difference ($g = -.42$).
- The effect sizes were less than -0.2 , which indicated that the size of the differences in performance between LSP participants and comparison students is practically meaningful to warrant attention in a classroom setting.



Results: LSP

Local School Program: Adjusted Mean Differences in Fall 2022 MAP-R and MAP-M RIT Scores Overall and by Grade Level



Note: Adjusted means are RIT score means corrected to account for differences in participants' and the matched comparison group's prior achievement on the Spring 2022 MAP-R and MAP-M assessment. Disaggregated results are reported only for groups with statistically significant differences. * = Statistically significant difference at the $p < .05$ level. g = Hedges' g (measure of effect size). **The improvement indices are based on the Cohen's U index formula provided in the What Works Clearinghouse Procedures and Standards Handbook (see What Works Clearinghouse, 2022).



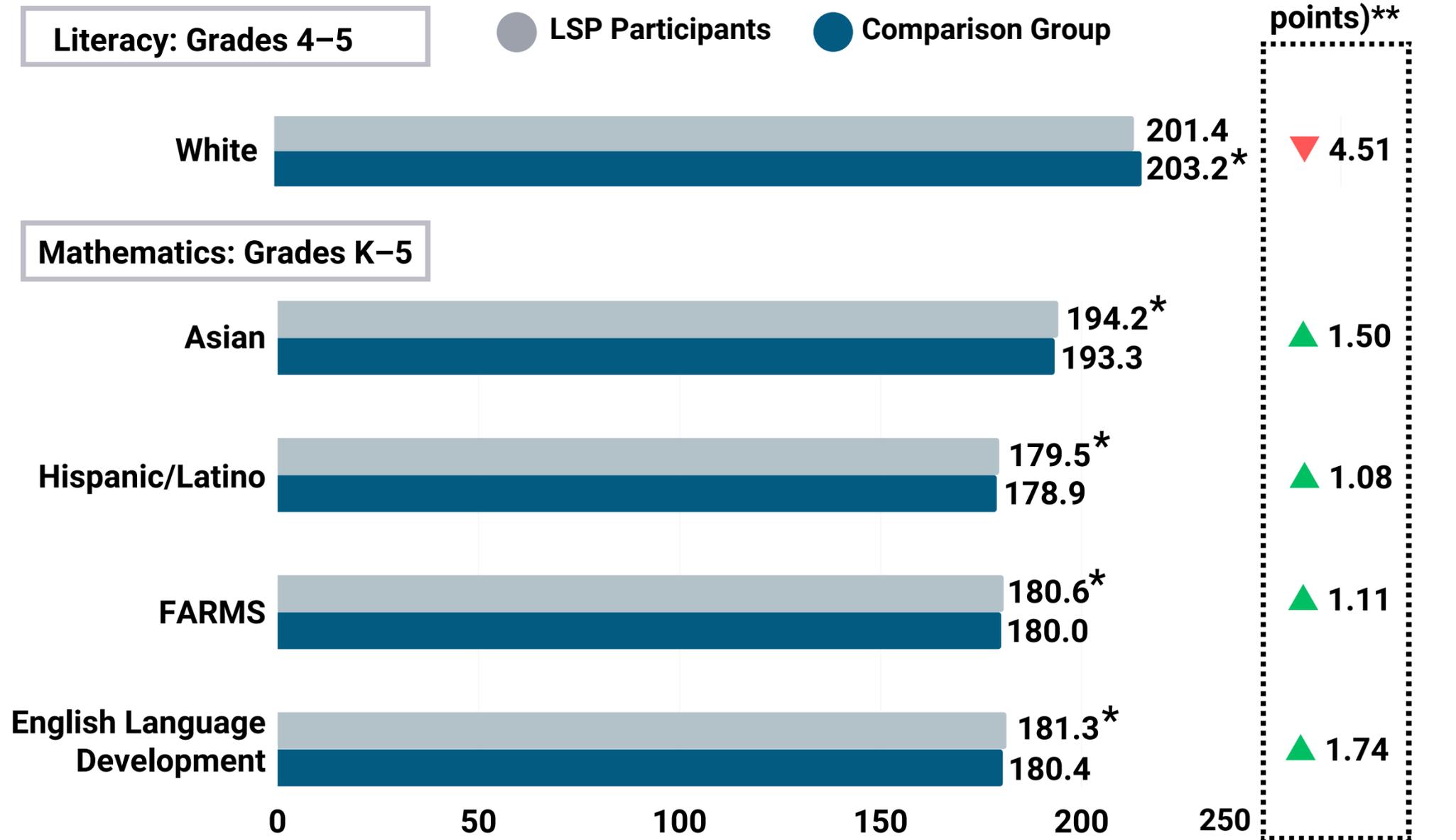
Findings

- In literacy, while accounting for Spring 2022 MAP-R performance among elementary and middle school students, there were no statistically significant Fall 2022 MAP-R mean RIT score differences overall or by grade level between LSP participants and the matched comparison group.
- Overall, the adjusted mean score difference in Fall 2022 MAP-M RIT scores among Grades K–5 participants and comparison students was statistically significant. By grade level, a significant difference in MAP performance was only observed for Grade 1 students, with participants outperforming comparison students. The reported improvement indices are the average expected changes in the percentile rank for an average (50th percentile) student who participates in summer programming; the results indicated that the magnitudes of the significant effects were equivalent to a 0.82 (Grades K–5) and a 1.12 (Grade 1) percentile-point increase in mathematics performance for an average student ($g=.02$ and $g=.03$, respectively).
- For middle school students, program participation did not have an overall or by grade-level effect on Fall 2022 MAP-M performance.



Results: LSP

Local School Program: Adjusted Mean Differences in Fall 2022 MAP-R and MAP-M RIT Scores by Race/Ethnicity and Service



Findings

- For elementary-level student groups, the fall MAP-R scores showed that the performance of White students who attended LSP was lower compared to the non-participant comparison group. Specifically, White participants exhibited a lower adjusted mean MAP-R RIT score when compared to the matched comparison group. The reported improvement index indicates that the magnitude of the program effect on White students' MAP-R performance was equivalent to a 4.51 percentile-point decrease in reading performance for an average student ($g=-.11$).
- LSP participation had positive effects on Fall 2022 MAP-M performance at the student-group level. Grades K-5 Asian and Hispanic/Latino participants and participants receiving FARMS or ELD services had higher adjusted mean MAP-M RIT scores than did the matched comparison students. The reported improvement indices indicate that the effect sizes were equivalent to a 1.08 to 1.74 percentile-point increase in mathematics performance for an average student ($g=.04$, $g=.03$, $g=.03$, $g=.04$). The largest effect was observed for students receiving ELD services (1.74 percentile-point increase; $g=.04$).

Note: Adjusted means are RIT score means corrected to account for differences in participants' and the matched comparison group's prior achievement on the Spring 2022 MAP-R and MAP-M assessment. Disaggregated results are reported for groups with statistically significant differences. American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander student groups did not have sufficient numbers to detect statistical significance at the group level ($N>30$). * = Statistically significant difference at the $p < .05$ level. g = Hedges' g (measure of effect size). **The improvement indices are based on the Cohen's U index formula provided in the What Works Clearinghouse Procedures and Standards Handbook (see What Works Clearinghouse, 2022).



Local School Program

Immediate Academic Outcomes:

- Participating in the LSP yielded a significant positive immediate effect on the literacy and mathematics skills of students in Grades 2–7. An assessment of students' pre-test and post-test scores clearly indicated substantial improvements in their academic skills. Furthermore, the resultant effect sizes obtained from statistically significant t-test results exceeded 0.2, indicating practical significance within the educational context.

Distal Academic Outcomes (Fall 2022):

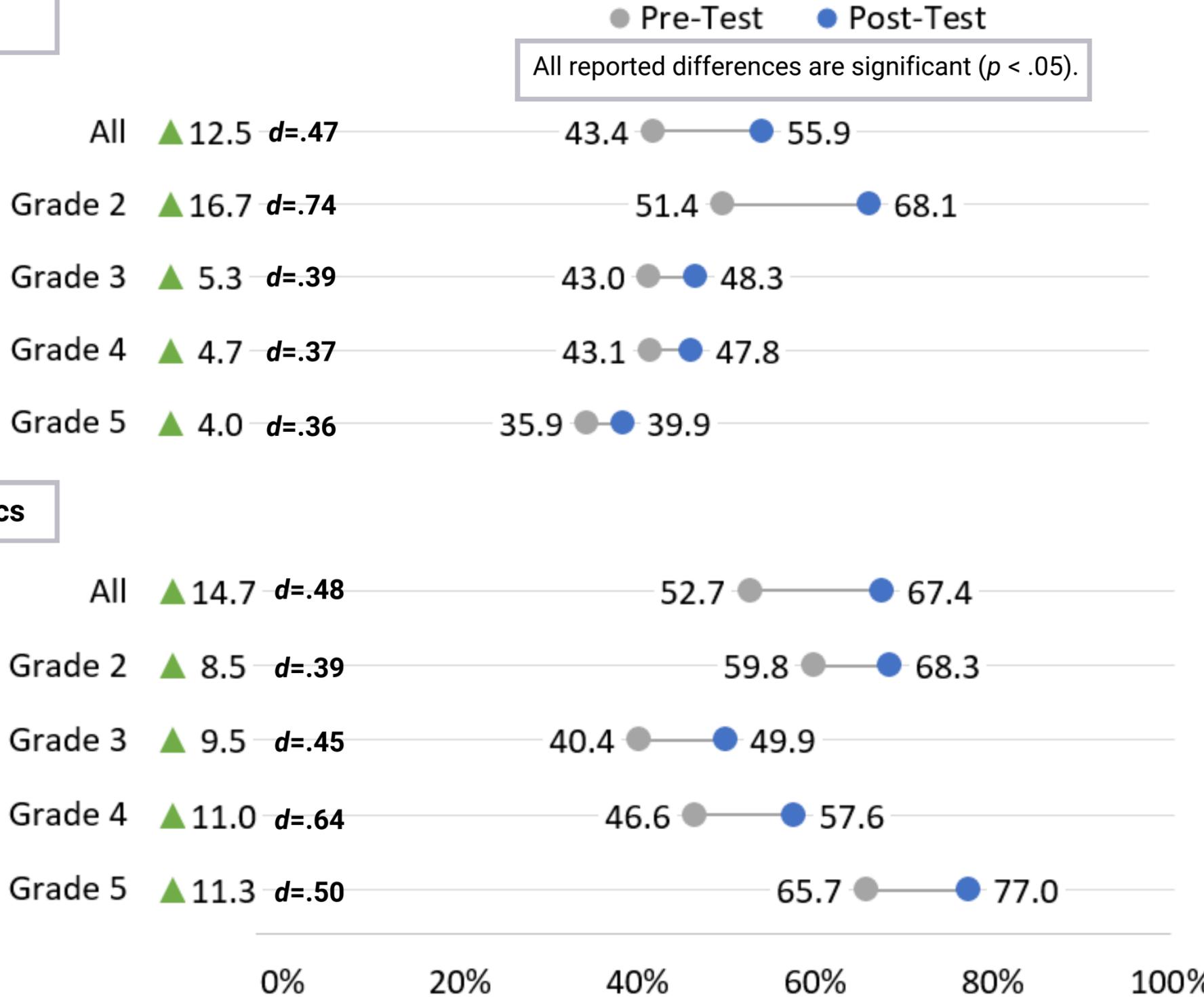
- Literacy: The percentages of Grade 1 and Grade 3 participants in the LSP program who achieved grade-level expectations on BOY 2022–2023 DIBELS or Fall 2022 MAP-R were lower ($g=-.40$) compared to matched comparison students who met grade-level expectations in Spring 2022 MAP-R. For Grade 2 and Grade 3 students who did not meet the reading expectations for Spring 2022, a lower percentage of LSP participants met grade-level expectations in fall, relative to comparison students. However, it is important to note that the effects observed were only practically significant for Grade 3 students ($g<-.2$).
- Literacy: Overall, for Grades 4–8, students performed on par with non-participants in Fall 2022 MAP-R performance.
- Literacy: The Fall 2022 MAP-R performance of White Grades 4 and 5 students who attended LSP was lower performance compared to the matched comparison students. The magnitude of the effect on White students' reading performance was equivalent to a 4.51 percentile-point decrease in performance for an average student ($g=-.11$).
- Mathematics: LSP participants (Grades K–5 and Grade 1) showed higher scores on Fall 2022 MAP-M compared to non-participants, but the difference was not practically significant. No statistically significant effect on MAP-M performance was found for middle school students, both overall and within student groups.
- Mathematics: For Grades K–5 student groups, LSP program participants outperformed comparison group peers on Fall 2022 MAP-M performance for Asian and Hispanic/Latino participants and those receiving FARMS or ELD services, but the size of the difference in performance was not practically significant for an educational context ($g<.2$).
- Mathematics: The effect sizes of the statistically significant mathematics results were not practically significant ($g<.2$; ranging from .02 to .04) and were equivalent to an average student's 0.82 to 1.74 percentile-point increase in mathematics performance.



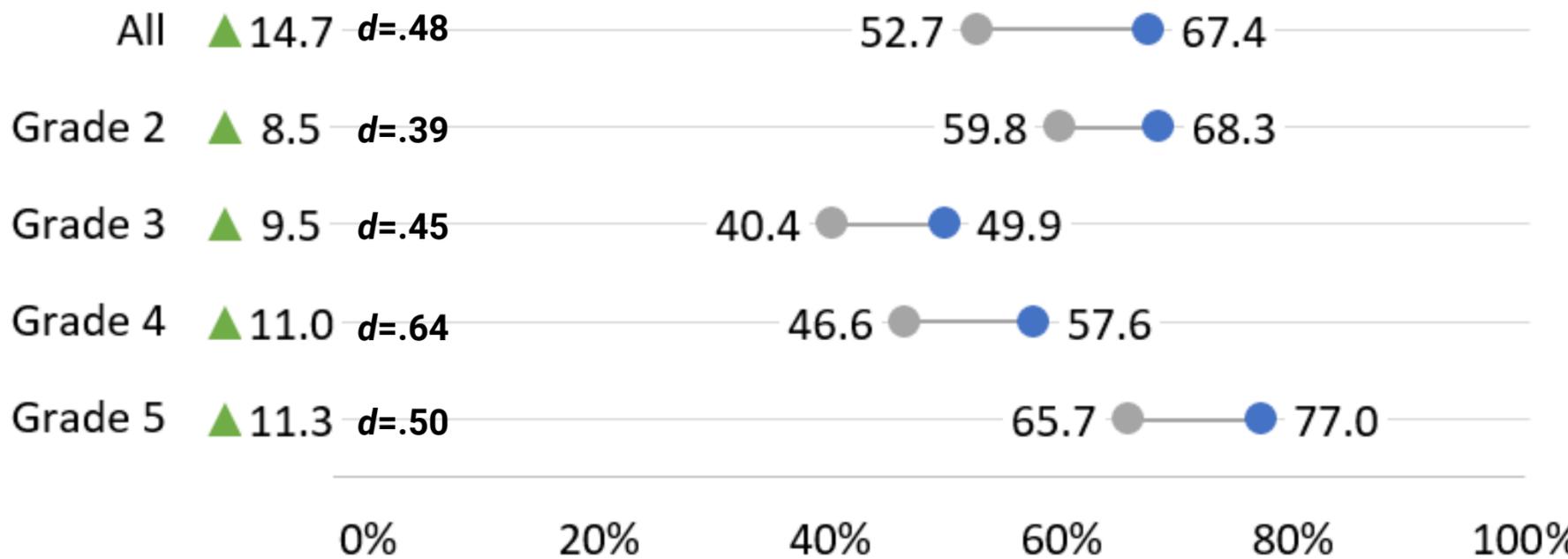
Results: ELO SAIL

ELO SAIL Literacy: Mean Differences in Pre-Post Test Results Overall and by Grade

Literacy



Mathematics



Note: d = Cohen's d (measure of effect size).



Findings

- By the end of the summer, average post-test literacy scores for ELO SAIL participants in Grades 2–5 were significantly higher than pre-test scores. The overall difference between pre-test and post-test scores was 12.5 percentage points ($d=.47$). The grade-level differences ranged from 4.0 percentage points for Grade 5 students ($d=.36$) to 16.7 percentage points for Grade 2 students ($d=.74$).
- Mathematics post-test mean scores for ELO SAIL participants in Grades 2–5 also increased significantly from pre-test administration. The overall difference between pre-test and post-test scores was 14.7 percentage points ($d=.48$). Grade-level growth in post-test scores ranged from 8.5 percentage points for Grade 2 students ($d=.39$) to 11.3 percentage points for Grade 5 students ($d=.50$).
- The effect sizes of the significant results ranged from $d=.36$ to $d=.74$, which indicated practically significant improvements in post-test literacy or mathematics skills compared to pre-test scores. For a given group, effect sizes of 0.2, 0.5, or 0.8 indicate that the average score on the post-test is higher than 58%, 66%, and 79% of their pre-test scores, respectively (University of Connecticut, 2023).

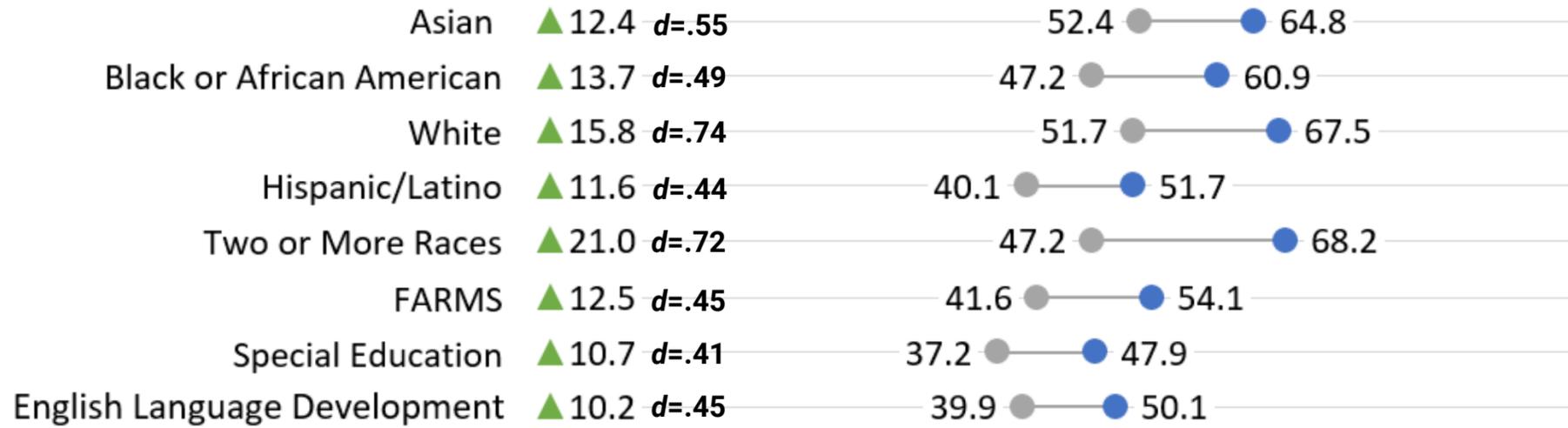


Results: ELO SAIL

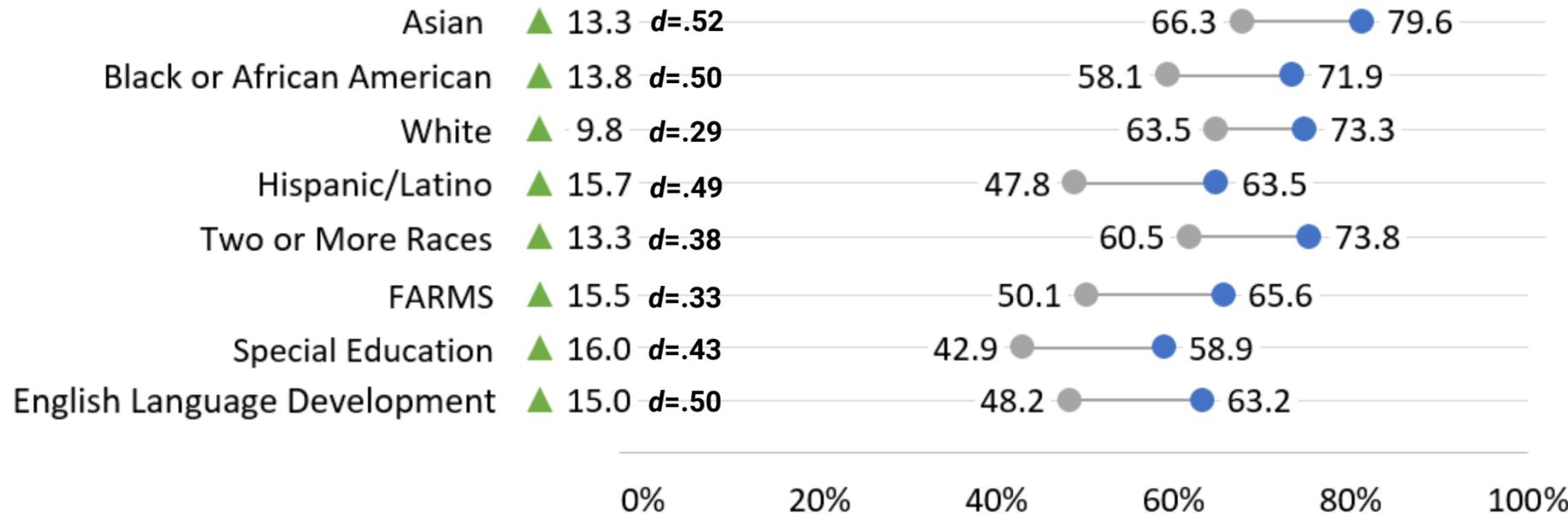
ELO SAIL Literacy: Mean Differences in Pre-Post Test Results by Race/Ethnicity and Service

Literacy

● Pre-Test ● Post-Test
All reported differences are significant ($p < .05$).



Mathematics



Note: d = Cohen's d (measure of effect size).



Findings

- Among the racial/ethnic groups in Grades 2–5, students with two or more races demonstrated the largest literacy mean score increase from pre-test to post-test (21.0 percentage points; $d=.72$), whereas Hispanic/Latino students had the smallest gain (11.6 percentage points; $d=.44$).
- In mathematics, Hispanic/Latino students had the largest mean-score gain from pre-test to post-test (15.7 percentage points; $d=.49$). White students demonstrated the smallest increase (9.8 percentage points; $d=.29$).
- Among students receiving services, students receiving FARMS services had the largest increase in literacy mean scores at the end of the summer program (12.5 percentage points; $d=.45$). For mathematics, students receiving special education services (16.0 percentage points; $d=.43$) experienced a greater increase than the other groups.
- The magnitude of the effects ranged from $d=.29$ to $d=.74$, indicating meaningfully significant improvements in post-test literacy or mathematics skills compared to pre-test scores. Effect sizes of 0.2, 0.5, or 0.8 indicate that the average score on the post-test is higher than 58%, 66%, and 79% of their pre-test scores, respectively (University of Connecticut, 2023).



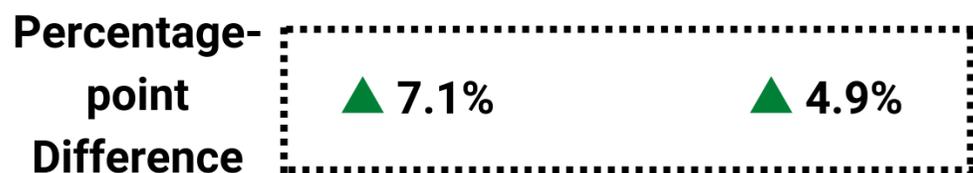
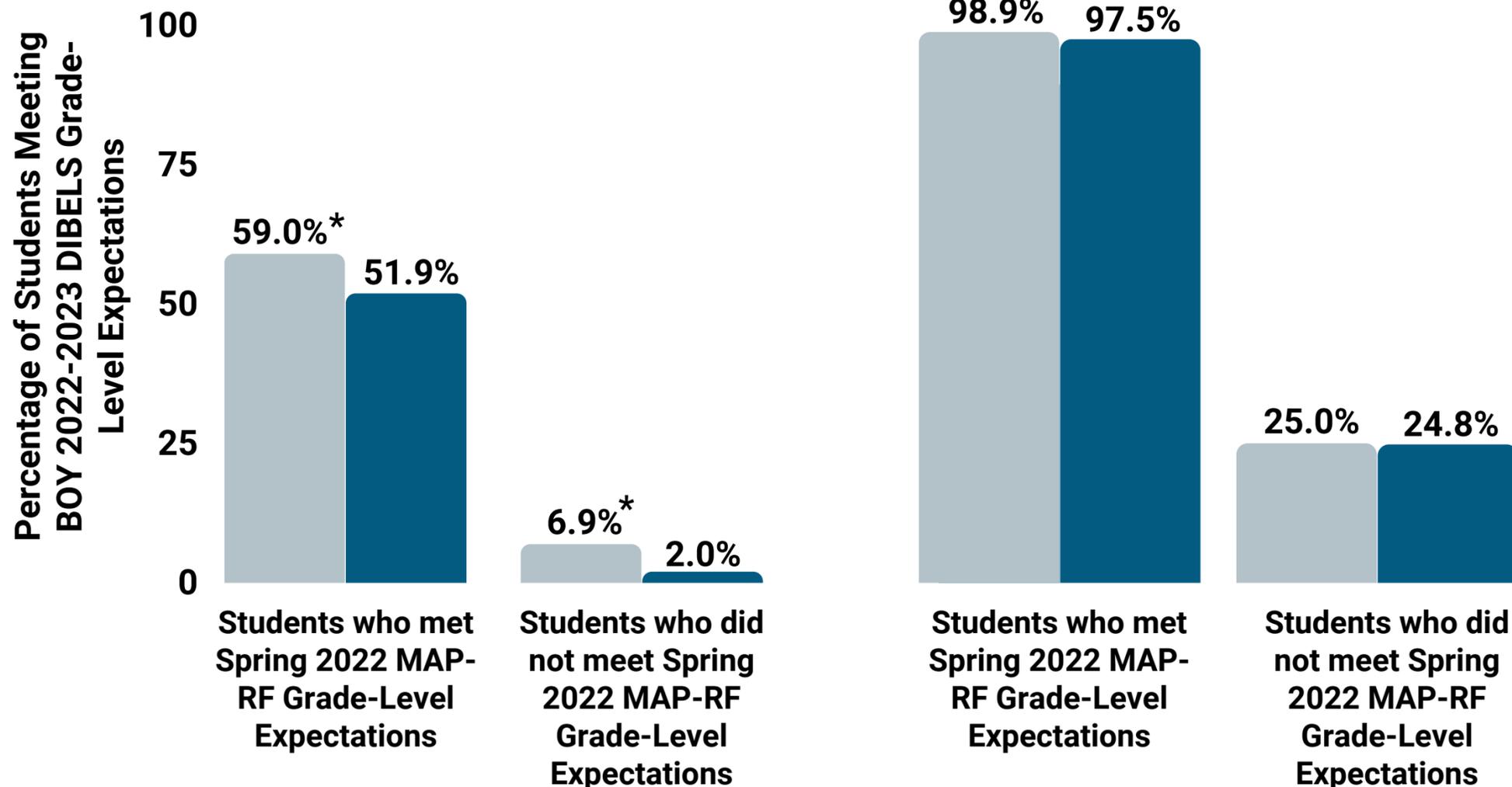
Results: ELO SAIL

Percentages of Grades 1 and 2 Participants and Matched Comparison Students Meeting BOY 2022-2023 DIBELS Grade-Level Expectations

● ELO SAIL Participants ● Comparison Group

Grade 1

Grade 2



Note: * = Statistically significant difference at the $p < .05$ level. The Cox index was used as the effect size measure and is symbolized as g to indicate its comparability with Hedges' g (see What Works Clearinghouse, 2022).



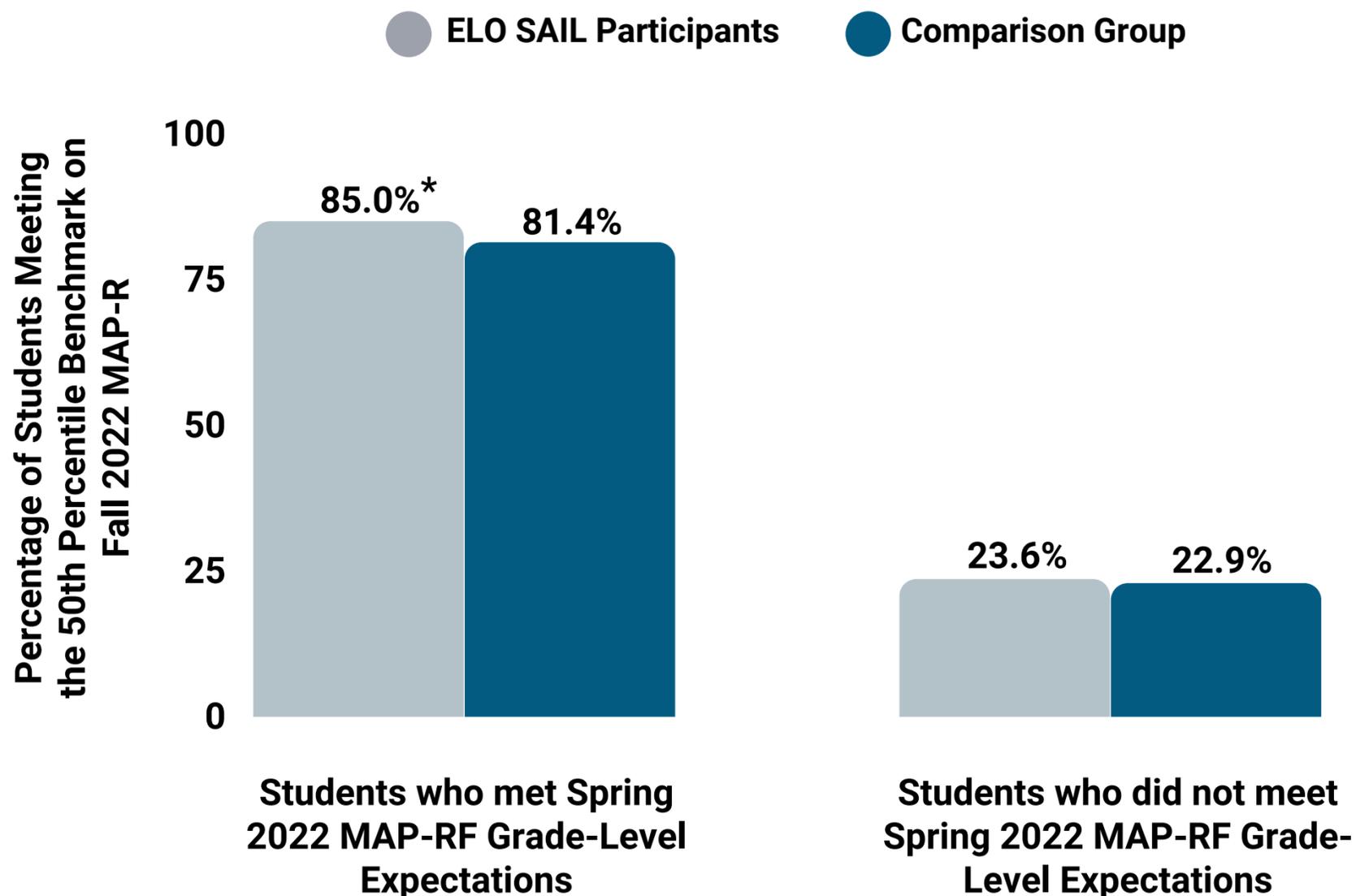
Findings

- A slightly higher percentage of Grade 1 ELO SAIL participants who achieved grade-level expectations for Spring 2022 MAP-RF also reached the expected BOY 2022–2023 DIBELS performance levels compared to the percentage of the comparison group that met the same benchmark (59% vs. 52%), with a difference of 7.1 percentage points ($g=.17$).
- Of the Grade 1 students who did not meet end-of-year expectations for Spring 2022 MAP-RF, only 2% of ELO SAIL participants achieved the BOY DIBELS benchmark compared with 6.9% of the matched comparison students. The difference was a 4.9 percentage-point difference ($g=.53$). The magnitude of the difference in the performance of ELO SAIL participants and their comparison peers was large enough to be practically meaningful for educational purposes.
- Similar percentages of Grade 2 ELO SAIL participants and matched comparison students who either met or did not meet reading expectations in spring 2022 met the BOY DIBELS benchmark in fall 2022.

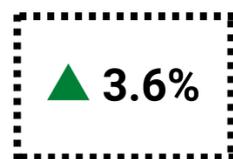


Results: ELO SAIL

Percentages of Grade 3 Participants and Matched Comparison Students Meeting the 50th Percentile Benchmark on Fall 2022 MAP-R



Percentage-point Difference



Note: * = Statistically significant difference at the $p < .05$ level. The Cox index was used as the effect size measure and is symbolized as g to indicate its comparability with Hedges' g (see What Works Clearinghouse, 2022).



Findings

- Among Grade 3 ELO SAIL participants who met grade-level expectations for Spring 2022 MAP-RF, 85% met or exceeded the 50th Percentile on Fall 2022 MAP-R, which is significantly higher than the 81% of matched comparison students who met reading expectations in the fall ($g=.15$).
- For Grade 3 students who did not meet the Grade 2 reading expectations in spring 2022, similar percentages of ELO SAIL participants and matched comparison students met or exceeded the 50th Percentile on Fall 2022 MAP-R at the same rate (24% and 23%, respectively).
- The magnitude of the difference between the performance of ELO SAIL participants and their comparison peers was less than 0.2, which indicated that the difference in performance between the two groups was not practically meaningful for educational purposes.



Results: ELO SAIL

ELO SAIL: Adjusted Mean Differences in Fall 2022 MAP-R and MAP-M RIT Scores Overall and by Grade Level

● ELO SAIL Participants ● Comparison Group

Literacy

All: Grades 4–5
ELO SAIL Participants: 192.3
Comparison Group: 192.3

Mathematics

All
ELO SAIL Participants: 180.9*
Comparison Group: 180.0

Grade 2
ELO SAIL Participants: 172.5*
Comparison Group: 171.4

Grade 3
ELO SAIL Participants: 182.8*
Comparison Group: 182.1

Grade 5
ELO SAIL Participants: 199.7*
Comparison Group: 198.5

Improvement Index (percentile points)**

▲ 1.62

▲ 2.87

▲ 2.11

▲ 2.83

Note: Adjusted means are RIT score means corrected to account for differences in participants' and non-participants' prior achievement on the Spring 2022 MAP-R and MAP-M assessment. Disaggregated results are reported only for groups with statistically significant differences. * = Statistically significant difference at the $p < .05$ level. g = Hedges' g (measure of effect size). **The improvement indices are based on the Cohen's U index formula provided in the What Works Clearinghouse Procedures and Standards Handbook (see What Works Clearinghouse, 2022).



Findings

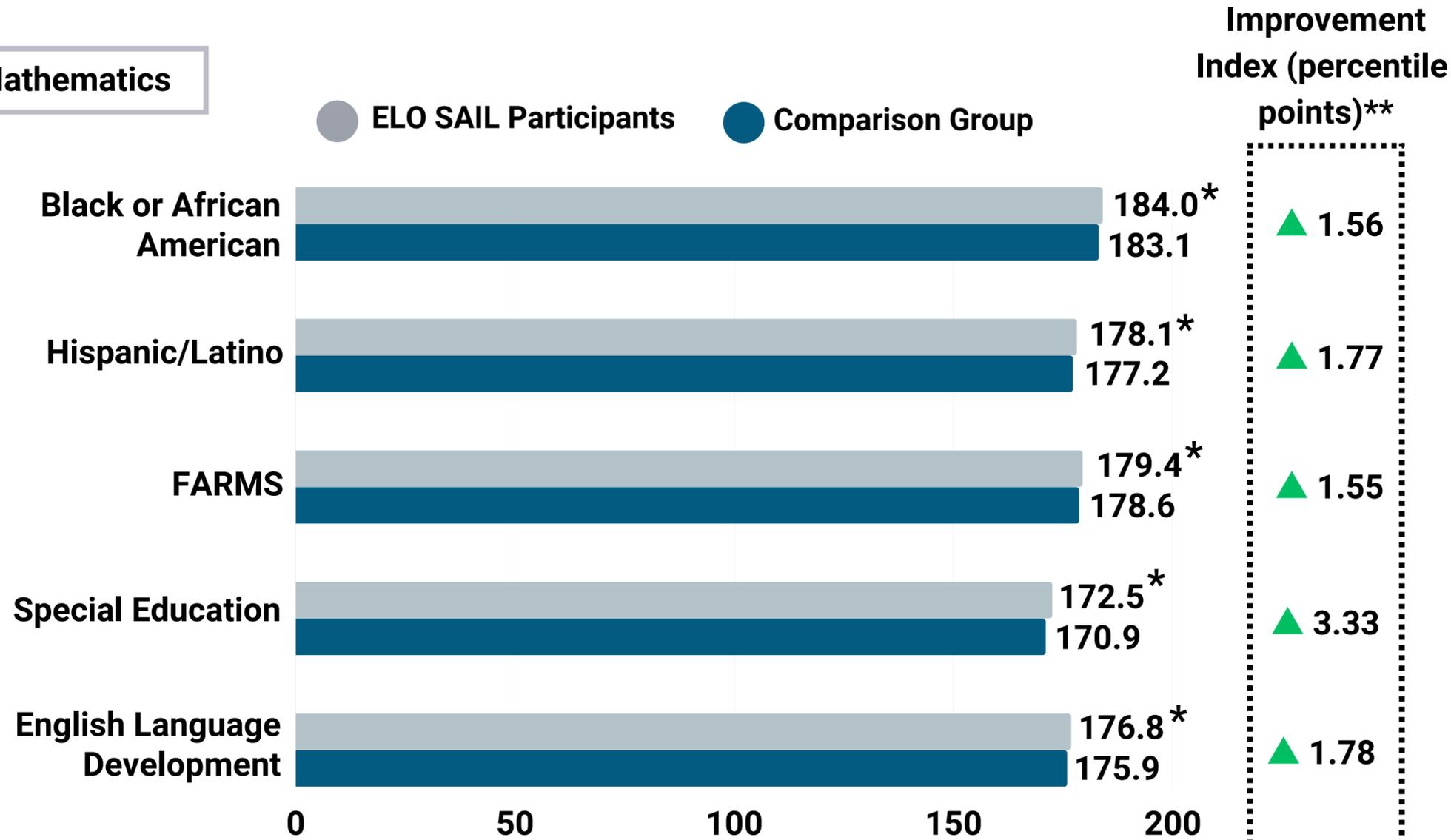
- In literacy, while accounting for Spring 2022 MAP-R performance, there were no statistically significant Fall 2022 MAP-R mean RIT score differences overall or by grade level between Grades 4 and 5 ELO SAIL participants and the matched comparison group.
- ELO SAIL participation had a positive overall and grade-level effect on Fall 2022 MAP-M performance. Participants in Grades 2, 3, and 5 had significantly higher mean RIT scores than the matched comparison students.
- The reported improvement indices indicate that the magnitudes of the program effects on MAP-M performance were equivalent to a 1.62 to 2.87 percentile-point increase in mathematics performance for an average (50th percentile) student ($g=.04$, $g=.07$, $g=.05$, and $g=.07$).



Results: ELO SAIL

ELO SAIL: Adjusted Mean Differences in Fall 2022 MAP-R and MAP-M RIT Scores by Race/Ethnicity and Service

Mathematics



Note: Adjusted means are RIT score means corrected to account for differences in participants' and non-participants' prior achievement on the Spring 2022 MAP-R and MAP-M assessment. Disaggregated results are reported for groups with statistically significant differences. American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander student groups did not have sufficient numbers to detect statistical significance at the group level (N>30). * = Statistically significant difference at the $p < .05$ level. g = Hedges' g (measure of effect size). **The improvement indices are based on the Cohen's U index formula provided in the What Works Clearinghouse Procedures and Standards Handbook (see What Works Clearinghouse, 2022).



Findings

- ELO SAIL participation had positive effects on the Fall 2022 MAP-M performance of Black or African American participants, Hispanic/Latino participants, and all participants receiving services. Students from these groups had higher adjusted mean RIT scores on MAP-M than did matched comparison students.
- The reported improvement indices indicate that the magnitudes of the program effects on MAP-M performance were equivalent to a 1.56 to 3.33 percentile-point increase in mathematics performance for an average student ($g=.04$ to $g=.08$). The largest effect was on the MAP-M performance of students receiving special education services (3.33 percentile-point increase; $g=.08$).

ELO SAIL Online Survey Results

Target population: Grades
4 and 5 ELO SAIL
participants

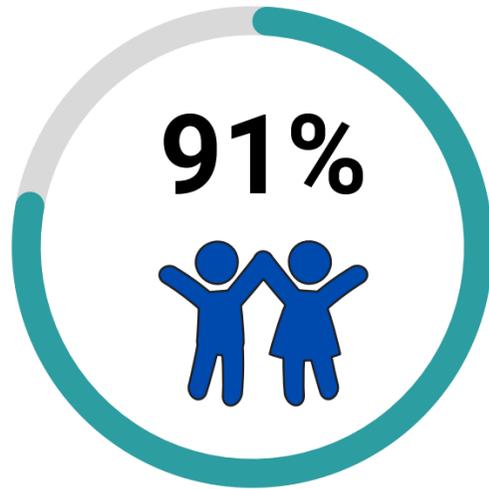




Results: ELO SAIL

ELO SAIL Grades 4 and 5: Survey Scale Items Key Findings (N=129)

Overall Enjoyment



The percentage of respondents by grade who strongly agreed or agreed that they **enjoyed the summer program at their school.**

Overall Enjoyment of Learning



The percentage of respondents who strongly agreed or agreed they **enjoyed learning from their summer program teachers.**

Daily Excitement of Program



The percentage of respondents who strongly agreed or agreed they were **excited to attend the summer program each day.**



Percentage of respondents who strongly agreed or agreed that their **learning improved because of the summer program.**



Percentage of respondents who strongly agreed or agreed they **worked very hard during the summer program.**



Findings

The online survey was intended for Grades 4 and 5 ELO SAIL participants. The survey response rate was 5% of the 2,566 targeted participants.

Over 90% of survey respondents agreed that they enjoyed ELO SAIL and the teachers. However, less than three-quarters of the respondents were excited to attend the program every day.

Despite low daily excitement, over 90% of the respondents believed that they worked hard during the program and that their learning improved as a result of participating.

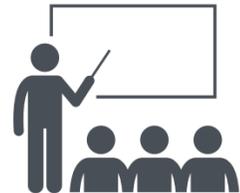


Results: ELO SAIL

ELO SAIL Grades 4 and 5: Survey Scale Items Key Findings (N=129)



The reading lessons during the summer program were interesting.



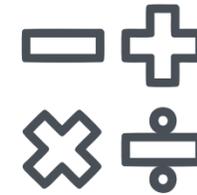
My summer program teachers made reading easier for me.



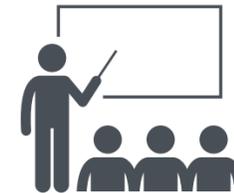
I did my best in reading during the summer program.



Percentage of respondents who agreed with the survey item



The mathematics lessons during the summer program were interesting.



My summer program teachers made it easier for me to understand mathematics.



I did my best in mathematics during the summer program.



Percentage of respondents who agreed with the survey item



Findings

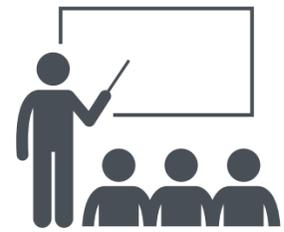
Over 80% of survey respondents agreed that the reading lessons were interesting and the teachers made reading easier for them. Almost all students (92%) believed they did their best in reading during ELO SAIL.

Similar to reading, over 80% of survey respondents agreed that the mathematics lessons were interesting. A higher percentage of students, however, agreed that the teachers made mathematics easier to understand compared to reading. Almost all students (94%) believed they did their best in mathematics during ELO SAIL.



Results: ELO SAIL

ELO SAIL Grades 4 and 5: Survey Scale Items Key Findings (N=129)



My summer program teachers were respectful towards me.



My peers were respectful towards me during the summer program.



Percentage of respondents who agreed with the survey item



Findings

- A higher percentage of respondents (94%) believed that their teachers were respectful towards them compared to the percentage of students (88%) who believed their peers were respectful towards them during the program.



Results: EOL SAIL

ELO SAIL Grades 4 and 5: Survey Open-Ended Key Findings (N=122)

Key Themes and Illustrative Responses: In what ways, if any, did the summer program help you?

<p>[1] Next grade-level preparation</p>	<ul style="list-style-type: none"> • <i>[The summer program] helped me get a head start in 4th grade.</i> • <i>The summer program helped me learn more about my multiplication facts. I now know my 8's and other harder multiplication facts such as 60x4 or 70x8! I also learned about phonemes and digraphs. At first, I didn't know about phonemes and digraphs, but since I came to the summer program, I got to learn about it, which means I am advanced...[the summer program] helped my brain get smarter.</i>
<p>[2] Re-learning previous grade-level content</p>	<ul style="list-style-type: none"> • <i>[The summer program] helped me understand simple stuff that I have forgotten, such as graphemes, digraphs, tape diagrams, and more about volcanoes.</i> • <i>[The summer program] helped me with reading, math, and [social studies] because math was hard for me in 3rd grade and now a lot more easier.</i> • <i>[The summer program] helped me understand long division because at first when I learned it one of my teachers made it kinda hard to understand.</i>
<p>[3] Learning strategies and development</p>	<ul style="list-style-type: none"> • <i>It helped me get better at learning.</i> • <i>Yes [the summer program] did help me because it sounded easier when you sound it out or say what the words mean.</i> • <i>My teacher showed me new ways with reading and math.</i>



Findings

Respondents felt ELO SAIL helped them by preparing them for their next grade level. This preparation was in the form of learning next grade-level concepts and learning what to expect in the next grade.

Not only did the program help students prepare for the next level, it helped some re-learn or receive refreshers of previous grade-level content. Respondents also highlighted the help received pertaining to learning and ways of learning.



Results: ELO SAIL

ELO SAIL Grades 4 and 5: Survey Open-Ended Key Findings (N=121)

Key Themes and Illustrative Responses: What did you like the most about the summer program?

<p>[1] Learning at ELO SAIL</p>	<ul style="list-style-type: none"> •I also loved doing the math here. It was very interesting. • That I could see my friends and it was easy for me to do my math.
<p>[2] Fun activities (instructional and recreational)</p>	<ul style="list-style-type: none"> • What I liked the most in summer school is that I made volcanoes with my classmates. I think that means teamwork. • What I liked most about the summer program is that I made a lot of projects about volcanoes. I made the timeline, diagram, mantra, haiku poem, free verse poem, and many other stuff. I also liked doing the research and sharing what I learned with my group. • Something I liked most about the summer program was the rewards, such as recess and popsicles.
<p>[3] Relational Rewards</p>	<ul style="list-style-type: none"> • What I liked the most about the summer program was that I got to see my friends again and my teachers were very kind to me and helpful. • The thing I like the most was meeting my new teacher. • Everyone was kind to me.



Findings

For 35% of the respondents, specific subjects taught during ELO SAIL were listed as what they liked most about the program. The most popular subject was math, with descriptions like being interesting or easy to do as the reason.

Students also liked the fun activities, which included recreational activities and engaging or interactive learning. Students also listed social or relational components of the program, such as positive interactions with their peers and teachers.



Results: ELO SAIL

ELO SAIL Grades 4 and 5: Survey Open-Ended Key Findings (N=120)

Key Themes and Illustrative Responses: What do you think could be done to make the summer program better?

<p>[1] More recreational opportunities</p>	<ul style="list-style-type: none"> • <i>One thing I think they could do to make the summer program better, is supplies. I think this because when we have indoor recess, we only have two options. I think they should give us more things to do by giving us more supplies like toys, coloring etc.</i> • <i>A fun thing between math and reading on Friday.</i> • <i>Something I think would make the summer school program better would be the activities. I think they should have more activities for us.</i>
<p>[2] More instructional Engagement</p>	<ul style="list-style-type: none"> • <i>While learning maybe add a little more fun learning games and stuff like that.</i> • <i>Like have the teacher read us a fun book.</i> • <i>They could make a little more fun and interactive.</i>

Key Themes and Illustrative Responses: What did you dislike about the summer program?

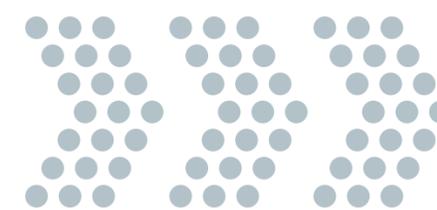
<p>[1] Learning Environment</p>	<ul style="list-style-type: none"> • <i>People being mean and hitting me.</i> • <i>Maybe when people are being rude to each other or when your teacher doesn't understand your way of learning.</i> • <i>The people that are distracting for you to pay attention.</i>
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Findings

The key themes for students' opinions of what could be done to make ELO SAIL better are more recreational opportunities and more instructional engagement. The theme of "fun" was consistent throughout the responses. The students desire fun while learning and fun in between learning.

The program components students disliked were not additive and overlapped with their opinions on how to make the program better. The added information worth noting are comments pertaining to the learning environment. Although low in occurrence, students mentioned acts of bullying, disrespect, and learning impediments as things they disliked about ELO SAIL at their schools.



ELO SAIL

Immediate Academic Outcomes:

- Participation in ELO SAIL had positive effects on students' literacy and mathematics skills at the end of the summer. Post-test scores showed measurable improvements relative to pretest scores. Across all situations assessed, the observed gains from statistically significant t-test results were practically significant for educational purposes ($d > .2$).

Distal Academic Outcomes (Fall 2022):

- Literacy: Among Grades 1 and 3 ELO SAIL students who met Spring 2022 MAP-RF grade-level expectations, a significantly larger percentage met grade-level expectations on BOY 2022-2023 DIBELS or Fall 2022 MAP-R than did matched comparison students. Grade 1 ELO SAIL students who did not meet Spring 2022 MAP-RF grade-level expectations showed significantly higher rates of meeting the BOY 2022-2023 DIBELS benchmark than matched comparison students. Similar percentages of Grade 2 participants and matched comparison students met the BOY DIBELS benchmark.
- Literacy: No significant difference in fall 2022 literacy achievement (MAP-R RIT scores) was observed between ELO SAIL participants and matched comparison students.
- Mathematics: ELO SAIL participants outperformed matched comparison students on Fall 2022 MAP-M. This was observed across the overall sample and for students in Grades 2, 3, and 5. However, the differences were not practically significant ($d < .2$).
- Mathematics: ELO SAIL participants had higher fall MAP-M RIT scores than comparison peers, but the effect size was not practically meaningful for an educational setting ($d < .2$). Similar effects were observed in Fall 2022 MAP-M performance for Black/African American, Hispanic/Latino, and all participants receiving services; these groups had higher adjusted mean RIT scores on MAP-M compared to matched comparison students.
- Mathematics: The magnitude of the significant effects on MAP-M performance ranged from 0.04 to 0.08 and were equivalent to a 1.55 to 3.33 percentile-point increase in mathematics performance for an average student.

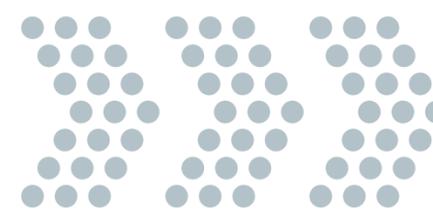
Survey Results:

- Grades 4 and 5 ELO SAIL survey respondents reported an overall enjoyment of ELO SAIL. Results of the student survey indicated that respondents enjoyed their program in general and enjoyed learning from their teachers in particular.
- Although the students enjoyed the summer program, they expressed the need for more fun while learning and in between instruction. The majority of respondents reported an overall memorable learning experience and expressed great interest and satisfaction with their learning experiences in mathematics.



Conclusions

Overall Limitations



Overall Analysis

In light of the quasi-experimental nature of this study, caution should be exercised when interpreting its results. Although a matching technique was conducted to create a comparison group equivalent to participants in terms of prior performance and demographics, whether matched comparison group participated in other academic summer programs is unknown.

Participation and Attendance Data Accuracy

Attendance rates for 2022 summer programming could not be determined with certainty. Attendance was calculated by subtracting the number of student absences from the total days of the program. This was done assuming that all students without absence records had a participation rate of 100%. Therefore, participation rates for 2022 summer programming were not precisely determined as the record of student absences did not explicitly report daily attendance data.

Performance Data Availability

The analysis of immediate gains in literacy and mathematics performance could be conducted only for some, not all program participants. Participants who did not have both pre- and post-test assessment scores were excluded from the analysis. As a result, the analytical sample for Grades 1 to 5 English Language Arts was reduced to approximately 42% or half of the participating student sample, while for analytical sample for mathematics it was reduced to 52%. On the other hand, over 80% of the middle school students, had usable pre-post scores for the analysis.

Additionally, to examine the effects of summer programming on fall MAP performance, the analysis only included students with scores from the spring 2022 and fall 2022 MAP assessments. While necessary to ensure the fidelity of the study design, this restriction may have excluded students who benefited from summer programming but did not have sufficient MAP data.



Recommendations



1 Ensure the Theory of Change and expected outcomes are clearly defined and articulated for every summer.

Given the brevity of summer programs and how needs being addressed may change each year, it is crucial to continually communicate explicit program goals and projected outcomes to stakeholders, outlining the envisioned accomplishments and long-term academic and non-academic impacts of a 4-week program. Research demonstrates that an effective summer learning program accelerates learning and promotes positive youth development. This is achieved through strong leadership, meticulous planning, comprehensive staff training, strategic partnerships, ongoing evaluation, and a commitment to long-term sustainability (McEachin, Agustine, & McCombs, 2018; Schwartz, McCombs, Augustine, 2018).

2 Strengthen district-level recruitment strategies for summer programming.

The district can also improve summer programming recruitment and adopt a centralized recruitment process. Only 35% of students recommended by the district for summer programming participated in 2022 summer programs. Overall, in comparison to other grade levels, there were lower participation rates of middle school students, particularly Grade 8 students. The district can implement successful recruitment and marketing strategies identified in research, such as (Rosenberg, 2018):

- Engage directly with students as the "customers" and get them excited to attend summer programs;
- Be consistent and assertive in recruitment efforts;
- Create engaging messaging that communicates the value of summer programming; and
- Create a written recruitment plan with specific steps for implementation.

3 Improve the specificity of program participation, attendance, and summer academic performance records.

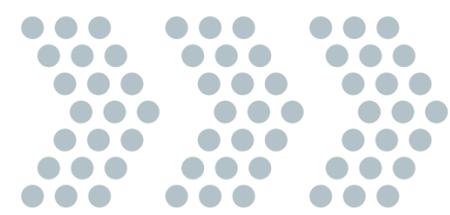
To ensure that Synergy explicitly captures overall summer program participation and student-level attendance: 1) check if there is need to modify the registration form to ensure that it explicitly captures the specific field for recording the summer program attended by each student, 2) implement a system of maintaining detailed attendance records on a daily basis for each student, capturing the number of days (full or fractional) attended, and 3) train staff on the new procedure to ensure accurate representation of attendance information.

An additional recommendation is to implement a system that retains only the most valid pre-post program assessment scores within the *Performance Matters* data management system. Provide staff with guidelines for aligning students' pre- and post-tests with their instructional and grade levels. Also, include instructions on managing multiple assessments in the system.



Recommended Next Steps

Questions to Consider for Future Evaluations



1 Broaden the conceptualization of summer program outcomes.

Beyond academic measures, what additional indicators can we use to evaluate the benefits of summer programming?

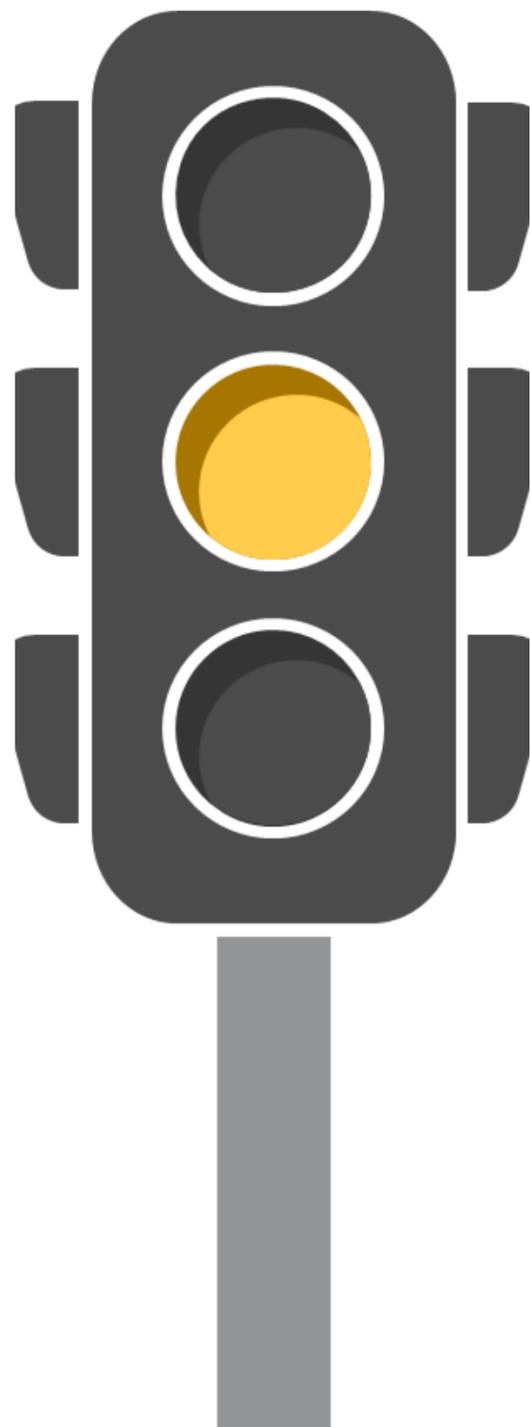
In addition to the observable changes in pre-post assessment scores and fall standardized test scores (MAP and DIBELS), participation in summer programming can benefit students in ways that may not be immediately evident through these measures. Participating in summer programming allows students to develop important life skills that are not captured in standardized assessments. These skills include teamwork, problem-solving, critical thinking, communication, leadership, and self-confidence, which are valuable for their overall growth and success (Maina & Wang, 2022). Even for programs that are primarily achievement-focused, “collateral outcomes”, or outcomes without direct alignment to program goals may still occur (Vinas-Forcade et al., 2019). For instance, research has shown that summer enrichment programs have greater effects on middle school students' socio-emotional development, including factors such as achievement motivation and career aspirations (Kim, 2016). In order to enhance the understanding of program effects on later achievement, future evaluations should consider expanding the scope of assessment to include changes in students' attitudes toward literacy and mathematics over the course of the summer. This broader approach would provide valuable insights into the potential benefits for students and enable a more comprehensive evaluation of program outcomes.



2 Assess extent to which the summer program was delivered as planned.

What was the fidelity of implementation and how is it related to outcomes in literacy and mathematics?

Implementation fidelity refers to more than just delivering the summer program as intended; it also encompasses the degree to which students receive and actively engage with the different program components (McCombs et al., 2014; Zvoch, 2012). Therefore, it is recommended that future evaluations gather more information to thoroughly investigate program delivery and receipt by including, for example, classroom observations, staff surveys, and collecting additional data on program implementation and student engagement. These additional data points may help explicate observed program outcomes and reliably interpret evaluation results.

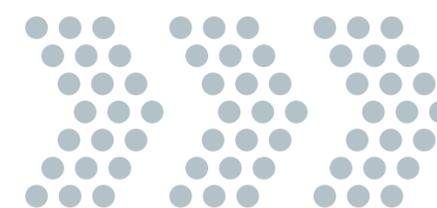


MAINTAIN CURRENT IMPLEMENTATION FOR ONE YEAR

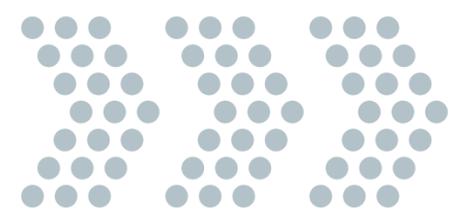
Based on the results of this evaluation, the district should maintain current implementation of ELO SAIL and the Local School Summer Program (LSP) for one additional year. The one additional year of implementation is intended to provide an opportunity for the programs to demonstrate greater progress towards their goals and objectives. The evaluation found that participating in ELO SAIL and LSP had immediate positive effects on participants' literacy and mathematics skills, as assessed by pre- and post-summer assessments, but very small longer-term effects on fall 2022 standardized assessment performance. A larger impact on achievement outcomes in the fall of the following school year is a desired outcome of summer learning and was not observed in this evaluation. The improvement of student achievement in literacy and mathematics is a target of the academic excellence priority area of the district's strategic plan and these improvements were not substantially evident.



References



- Augustine, C.H., McCombs, J.S., Pane, J.F., Schwartz, H.L., Schweig, J., McEachin, A., & Siler-Evans, K. (2016) Learning from summer: Effects of voluntary summer learning programs on low-income urban youth. Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/research_reports/RR366-1.html.
- Fleming, J. (2021, October 21). 12 common questions parents ask about MAP Growth. Teach. Learn. Grow. The Education Blog. <https://www.nwea.org/blog/2021/12-common-questions-parents-ask-map-growth-assessment/>.
- Gugerty, M. K., Karlan, D. (n.d.). Ten reasons not to measure impact-and what to do instead (SSIR). Stanford Social Innovation Review: Informing and Inspiring Leaders of Social Change. Retrieved November 29, 2022, from https://ssir.org/articles/entry/ten_reasons_not_to_measure_impact_and_what_to_do_instead
- Johnston, J., Riley, J., Ryan, C., & Kelly-Vance, L. (2015). Evaluation of a summer reading program to reduce summer setback. *Reading & Writing Quarterly*, 31(4), 334-350. <https://doi.org/10.1080/10573569.2013.857978>
- Kerschen, K., Cooper, S., Shelton, R., & Scott, L. (2018). The impact of a summer mathematics academy on rising kindergartners' understanding of early number concepts. *Journal of Research in Childhood Education*, 32(4), 419-434. <https://doi.org/10.1080/02568543.2018.1497738>.
- Kim, M. (2016). A meta-analysis of the effects of enrichment programs on gifted students. *The Gifted Child Quarterly*, 60(2), 102-116. <https://doi.org/10.1177/0016986216630607>
- Kraft, M. A. (2018, December). Interpreting effect sizes of education interventions (Ed Working Paper 19-10). Annenberg Institute at Brown University. <https://files.eric.ed.gov/fulltext/ED602384.pdf>.
- Maina & Wang (2022). Examining the impact of Montgomery County Public School 2021 summer program. <https://ww2.montgomeryschoolsmd.org/departments/sharedaccountability/reports/detail.aspx?id=1537>.
- McCombs, J. S., Augustine, C. H., Unlu, F., Ziol-Guest, K. M., Naftel, S., Gomez, C. J., Marsh, T., Akinniranye, G., & Todd, I. (2019). Investing in successful summer programs. *RAND Corporation*. https://www.rand.org/pubs/research_reports/RR2836.html.
- McEachin, A., Augustine, C. H., & McCombs, J. (2017, November 30). Effective summer programming: What educators and policymakers should know. *American Educator*. Retrieved November 29, 2022, from <https://eric.ed.gov/?id=EJ1173313>



- Lipsey, M. W., Puzio, K., Yun, C., Hebert, M. A., Steinka-Fry, K., Cole, M. W., Roberts, M., Anthony, K. S., & Busick, M. D. (2012). Translating the statistical representation of the effects of education interventions into more readily interpretable forms (NCSEER 2013-3000). Washington, DC: *National Center for Special Education Research*.
- Pyne, J., Messner, E., & Dee, T. S. (2021). The dynamic effects of a summer learning program on behavioral engagement in school. *Education Finance and Policy*, 1-51. https://doi.org/10.1162/edfp_a_00368
- Rosenberg, J. (2018). Summer Learning Recruitment Guide. The Wallace Foundation. <https://www.wallacefoundation.org/knowledge-center/Documents/Summer-Learning-Recruitment-Guide.pdf>.
- Reed, D. K., & Aloe, A. M. (2020). Interpreting the effectiveness of a summer reading program: The eye of the beholder. *Evaluation and Program Planning*, 83, 101852. <https://doi.org/10.1016/j.evalprogplan.2020.101852>
- Thum, Y. M., & Kuhfeld, M. (2020). NWEA 2020 MAP Growth Achievement Status and Growth Norms for Students and Schools. NWEA Research Report. Portland, OR: NWEA <https://teach.mapnwea.org/impl/normsResearchStudy.pdf>
- University of Connecticut (n.d). Effect sizes. <https://media.pluto.psy.uconn.edu/stats/es.htm>.
- Vinas-Forcade, J., Mels, C., Valcke, M., & Derluyn, I. (2019). Beyond academics: Dropout prevention summer school programs in the transition to secondary education. *International Journal of Educational Development*, 70, 102087. <https://doi.org/10.1016/j.ijedudev.2019.102087>
- What Works Clearinghouse (2022). What Works Clearinghouse procedures and standards handbook, version 5.0. U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance (NCEE). Retrieved from https://ies.ed.gov/ncee/wwc/Docs/referenceresources/Final_WWC-HandbookVer5_0-0-508.pdf
- Zvoch, K. (2012). How Does Fidelity of Implementation Matter? Using Multilevel Models to Detect Relationships Between Participant Outcomes and the Delivery and Receipt of Treatment. *American Journal of Evaluation*, 33(4), 547–565. <https://doi.org/10.1177/1098214012452715>