Superintendent's Summer Learning Academy: Year 2 Program Evaluation – Student Outcomes

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Key Findings

During the summer of 2018, the Superintendent's Summer Learning Academy (SSLA) expanded its programming to serve more students across more grade levels. Data from rising Kindergarten students, elementary-school students, and middle-school students were analyzed to determine program impact on student academic outcomes.

- 8,743 students from rising Kindergarten students to rising twelfth-grade students participated in Year 2 of SSLA
- Analyses by Curriculum Associates found K-8 SSLA participants showed about 13.5 weeks' growth in Reading and just under 9 weeks' growth in mathematics during SSLA, although they express these findings should be interpreted with caution due to concerns about measurement error
- There were virtually no statistically significant differences in academic progress as measured by NWEA MAP or in academic achievement as measured by TNReady between SSLA participants and their comparison cohorts for either reading or mathematics
- Recommendations include evaluating different aspects of program impact in future evaluations of the SSLA (such as students' classroom engagement or family and teacher perceptions of the program)

Introduction

During June and July 2018, Shelby County Schools (SCS) held its second Superintendent's Summer Learning Academy for students who were currently enrolled or planning to enroll in SCS schools the next fall. Compared to the first year, the program was expanded to offer SSLA opportunities to all rising Kindergarten through rising twelfth-grade students. Students in grades K-8 participated in literacy, math, and STEM instruction throughout the five-week academy. They also had opportunities to participate in art and music activities and attend weekly field trips. The program for high-school students was a four-week, theme-based program in which students participated in theme-related activities and instruction. Themes included STEM, music and dance, and health sciences, among others. In addition, high-school students attended ACT test prep, literacy, and math review sessions.

Student progress was tracked using i-Ready to capture pretest and posttest scores in reading and mathematics at the beginning and end of the SSLA program. According to data analyses conducted by Curriculum Associates,[1] students in grades K-8 made gains in both subjects. As a group, K-8 students showed growth equivalent to 46% of a whole year during SSLA in reading. A full year is considered to be 30 weeks in i-Ready, so students showed approximately 13.5 weeks' growth during SSLA. Likewise, as a group, K-8 students also showed growth in mathematics, averaging 29% of a full year, or just under 9 weeks' growth during SSLA.

Given that SSLA was a five-week program for students in grades K-8, this is notable growth. However, as noted by Curriculum Associates staff, they do not recommend Diagnostic assessments (the assessments used for pretest and posttest scores) be taken by students closer together than 12

[1] Curriculum Associates. (2018). *i-Ready Data: Superintendent's Summer Learning Academy*. Data analyses prepared for Shelby County Schools.

weeks apart since the outcomes are likely to be confounded by measurement error.[2] Therefore, despite the promising Curriculum Associates analyses, the findings must be interpreted with caution since Curriculum Associates staff express reservations about the reliability of the student data.

This report seeks to evaluate Year 2 of the SSLA using additional measures of student outcomes to gauge academic success. Student growth will be analyzed using NWEA MAP data and academic achievement will be analyzed using student TNReady scores. Further, analyses in this report will examine SSLA participant data compared to student data of matched peer cohorts. The student scores from these two assessments were gathered according to the assessment protocols for these two measures. Therefore, the data are considered to be reliable measures of student progress and student achievement. By analyzing SSLA participant scores compared to those from a matched peer cohort, the impact of covariates and other extraneous variables is mitigated.

Program Participation

The SSLA was again held at multiple sites across the District, including elementary schools, middle schools, and high schools. In addition to the curriculum and activities described above, extended day opportunities were available for elementary-school and middle-school participants, and free meals and snacks were provided for all students. There were 8,743 students enrolled in SSLA across all grades. However, analyses in this evaluation were limited to students who 1) had an attendance rate of 85% or greater for SSLA; 2) were enrolled in SCS during the 2017-18 school year; and 3) were enrolled in SCS during the 2018-19 school year. Additionally, student assessment data were necessary for participants to be included in the analyses. After considering these criteria, 396 rising Kindergarten students, 3,678 elementary students (i.e., rising first-grade through rising sixth-grade students), and 432 middle school students (i.e., rising seventh-grade through rising ninth-grade students) were included in the program evaluation.[3]

This program evaluation is divided into three separate sets of analyses to examine the program impact for the three separate grade bands. For each the elementary school grade band and the middle school grade band, the SSLA participants were paired with a matched cohort of non-participating students to analyze program impact. Analyses of the rising Kindergarten students compared SCS pre-K students who participated in SSLA to SCS pre-K students who did not participate. More information on the participants and their comparison groups is presented in each section below.

SSLA Analyses: Elementary School

Description of SSLA Participants and Comparison Cohort

Propensity score analysis was used to select a matched cohort of rising first-grade through rising sixth-grade non-participating students. To be included in the matching pool, non-participating students had to have attended SCS both during 2017-18 and 2018-19. In addition, students needed to have test scores for the data being analyzed in the evaluation. The purpose of propensity score

[2] Ricci, M. (December 11, 2019). Email communication.

[3] Very few high-school students participated in SSLA. Only 218 students enrolled, and only 113 met all the criteria required to be included in analyses. The high-school program was different enough from the elementary-school and middle-school programs that it would require its own separate analyses to be evaluated appropriately. It was determined that with 113 students, there were not enough participants to do meaningful analyses of the high-school data. Therefore, high-school students were not included in this evaluation.

analysis is to create a matched comparison cohort that is as similar to the SSLA participants as possible on factors that could influence the outcome variables. Creating a matched sample using this method removes the need to control for covariates during the analyses.

The factors that were used for matching the groups included the following student demographic variables: student grade level, gender, race, socio-economic status (economically disadvantaged vs. not), presence of a disability, and English learner status. In addition, the groups were matched on attendance rate and mobility rate (transferring schools) for the 2017-18 school year and the spring 2018 Lexile score, NWEA MAP Reading score and NWEA MAP Mathematics score. These demographic and non-demographic variables have all been linked to academic performance.

The data for the SSLA participants and the comparison cohort are presented in the table below. The middle column displays the data for the SSLA participants and the right column contains data for the non-participating comparison cohort. As can be seen, the percentages and means are very similar for both groups for all factors. Given the virtual equivalence of the SSLA participant group and the comparison cohort on the covariates, the selected matched sample was deemed to be valid as a comparison cohort for the analyses examining the impact of participating in the elementary school SSLA.

Spring 2018 Elementary School Student Demographic, Attendance, and Academic Information		
	SSLA Participants (N = 3,680)	**Comparison Cohort** (N = 3,663)
Male	48.1%	48.1%
Female	51.9%	51.9%
African-American	85.3%	85.3%
Hispanic	8.7%	8.7%
White	2.9%	2.9%
More than one race	2.5%	2.5%
ED*	77.0%	77.2%
Non-ED	23.0%	22.8%
SWD*	8.6%	8.7%
Non-SWD	91.4%	91.3%
EL*	5.4%	5.4%
Non-EL	94.6%	94.6%
Rising Grade Level		
1	18.3%	18.4%
2	17.9%	17.8%
3	19.2%	19.2%
4	18.7%	18.6%
5	16.2%	16.3%
6	9.7%	9.7%

2017-18 Attendance Rate	96.9%	96.9%
Mobility Classification 2017-18		
Stable	92.9%	92.8%
Mobile	3.4%	3.4%
Highly Mobile	3.7%	3.8%
Mean MAP Reading Scale Score	184.84	184.77
Mean MAP Math Scale Score	188.20	188.13
Mean Lexile Score	328.17	326.84

*ED –Economically Disadvantaged; SWD – Students with Disabilities; EL – English Learners

Analyzing SSLA Program Impact

Analyses conducted to examine the impact of SSLA participation during the second year of the program were similar to those used to examine the first year. Academic progress was assessed by analyzing the NWEA MAP formative assessment scale scores for students in fall and winter. Academic growth was measured by comparing the students' growth from spring 2018 to fall 2018 and from spring 2018 to winter 2018, again using NWEA MAP scores. Finally, academic achievement was analyzed by comparing the TNReady scores of the SSLA participants and the comparison cohort. The two different measures together can provide a more complete picture of the impact of attending SSLA on student outcomes. Where each measure has limitations, the features of the other can fill in the gaps. For example, NWEA MAP is an untimed, computer-adaptive assessment allowing students to use the time needed to complete the assessment. This approach gives students the opportunity to think and process their responses more fully as they move through the assessment. By contrast, TNReady is a timed assessment requiring students to answer a specified number of questions in a limited amount of time. This kind of assessment taps into different aspects of students' processing and knowledge. By examining scores from both assessments, it is possible to analyze the many different ways SSLA participation might have on student outcomes.

Analyses of Academic Progress

Two sets of t-tests were conducted comparing NWEA MAP reading and mathematics scores of the SSLA participants to their non-participating peers. The first set analyzed the NWEA MAP scores from the fall assessment window to determine whether there was any immediate impact of participating in the SSLA and the skills measured by NWEA MAP. The SSLA program ended in mid-July and the fall assessment window began in late August and continued through mid-September. Students would have had a six-week to eight-week break from the end of SSLA until the fall assessment window. Analyses revealed that there were no statistically significant[4] differences between the NWEA MAP scores of the SSLA participants and the comparison cohort for either reading ($t_{(7,341)} = -.52$; $p = .60$) or mathematics ($t_{(7,341)} = .34$; $p = .74$).

The second set of t-tests analyzed student NWEA MAP data from the winter assessment window. These analyses were conducted to determine whether participation in SSLA may have served as an academic "booster" that enhanced the instruction and learning that occurred during the first

[4] The criterion for statistical significance in this evaluation is .05. A *p*-value greater than this number indicates the finding was not statistically significant.

semester of the school year. Again, analyses revealed there were no statistically significant differences between the scores of the SSLA participants and the comparison cohort for either reading ($t_{(7,156)} = -.40$; $p = .69$) or mathematics ($t_{(7,158)} = -.03$; $p = .98$).

Analyses of Academic Growth

The second set of analyses used NWEA MAP scores to assess student growth in reading and mathematics over three different time periods: spring to fall, spring to winter, and fall to winter. Spring to fall comparisons captured the immediate impact of attending the SSLA on changes in reading and mathematics scores. Fall to winter comparisons analyzed whether SSLA participation boosted classroom instruction over the first semester. Finally, fall to winter comparisons examined whether SSLA participants were better able than non-participants to learn skills taught in reading and mathematics during the first semester of school. Chi-square analyses were conducted to determine whether there were differences between the SSLA participants and the comparison cohort in the percentage of students whose scores increased, remained the same, or decreased over the two time periods.

It should be noted that factors other than SSLA participation can also influence students' academic growth. Yet controlling for covariates such as the summer activities students engaged in other than SSLA, student attendance rate during fall semester, or instructional quality are beyond the scope of the analyses in this evaluation. The assumption can be made, however, that these covariates would affect both the SSLA participants and the comparison cohort and not disproportionately impact one group of students over the other.

Comparisons for the different time periods are presented in the tables below. The first table presents spring to fall data. As can be seen the percentage of students whose scores increased, did not change, and decreased are very similar for both the SSLA participants and the comparison cohort in both reading and mathematics.

Elementary Student NWEA MAP Score Change from Spring 2018 to Fall 2018		
	SSLA Participants	**Comparison Cohort**
Reading		
Increase	45.7%	47.2%
No Change	4.6%	4.4%
Decrease	49.7%	48.3%
Mathematics		
Increase	46.7%	45.8%
No Change	5.0%	5.3%
Decrease	48.3%	48.8%

The next table presents changes in scores from fall to winter. More students' scores increased over this time period compared to the data presented in the previous table; however, again there were virtually no differences between the SSLA participant group and the non-participating comparison cohort.

Elementary Student NWEA MAP Score Change from Spring 2018 to Winter 2018		
	SSLA Participants	Comparison Cohort
Reading		
Increase	65.7%	67.2%
No Change	3.4%	3.7%
Decrease	30.9%	29.1%
Mathematics		
Increase	71.4%	70.7%
No Change	3.1%	3.6%
Decrease	25.5%	25.7%

The data in the final table show score changes from fall to winter. These data represent changes that occur due to classroom instruction during the first semester of the school year. The majority of students scores increased in both reading and mathematics. Again, the percentages for the SSLA participants and the comparison cohort were very similar.

Elementary Student NWEA MAP Score Change from Fall 2018 to Winter 2018		
	SSLA Participants	Comparison Cohort
Reading		
Increase	72.5%	72.9%
No Change	4.2%	3.8%
Decrease	23.3%	23.3%
Mathematics		
Increase	78.9%	79.7%
No Change	4.7%	4.2%
Decrease	16.4%	16.0%

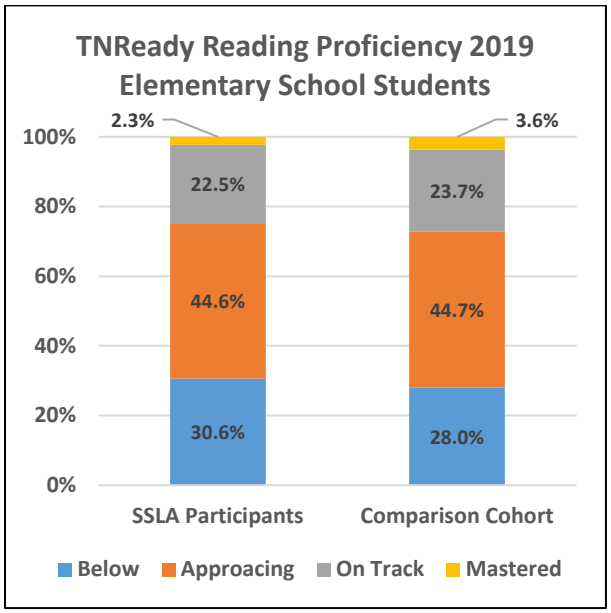
Chi-square analyses were used to determine whether any of the slight differences in percentage points between the SSLA participants and their non-participating peers in the above tables reached the level of statistical significance. Results revealed that none did. The table below presents the chi-square values and *p*-values for each statistical test. All *p*-values are greater than .05.

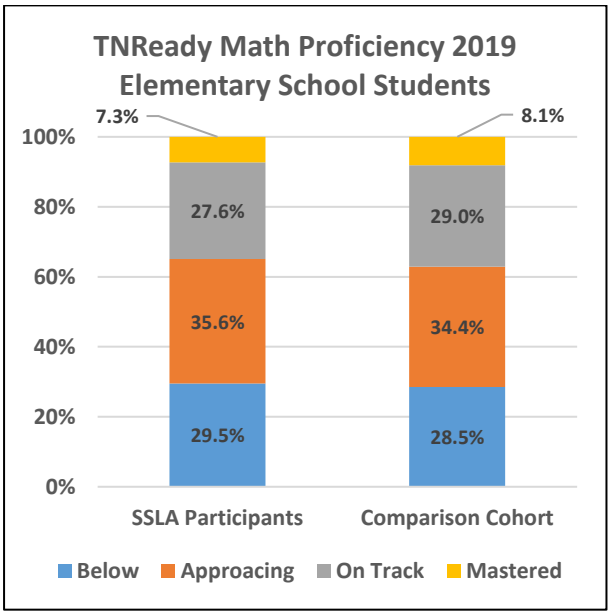
Elementary Student Academic Growth: Tests of Statistical Significance			
Time Frame	Chi Square	Degrees of Freedom	*p*-value
Spring 2018 to Fall 2018			
Reading	1.65	2	.44
Mathematics	.84	2	.84
Spring 2018 to Winter 2018			
Reading	2.73	2	.26
Mathematics	1.71	2	.43
Fall 2018 to Winter 2018			
Reading	.59	2	.75
Mathematics	1.23	2	.54

Analyses of Academic Achievement

Students' academic achievement was examined by analyzing TNReady scores from spring 2019, which was administered a year after students attended the Superintendent's Summer Learning Academy. For elementary school students, this analysis was limited to students who were in grades 3-5 in the 2017-18 school year. Students younger than this do not participate in TNReady testing. There were reading test data for 1,606 students in the SSLA cohort and 1,590 students in the comparison cohort, and mathematics test data for 1,606 SSLA participants and 1,592 non-participating peers.

The graphs below show the for proficiency categories for TNReady Reading and TNReady Mathematics. The percentage of students in each category was virtually identical for the SSLA participants and the comparison cohort in both subjects. Chi-square analyses revealed that the slight differences in percentages between the SSLA participants and the comparison cohort were not statistically significant for either subject (reading: $X^2_{(3)} = 6.81$; p = .08; mathematics: $X^2_{(3)} = 1.70$; p = .64).





A second analysis of student achievement data compared the mean scale scores for SSLA students and their non-participating peers in reading and mathematics. Analyses revealed there were no statistically significant differences for either reading ($t_{(3,195)} = 1.69$; $p = .09$) or mathematics ($t_{(3,196)} = 1.51$; $p = .13$).

SSLA Analyses: Middle School

Description of SSLA Participants and Comparison Cohort

Four hundred thirty-two (432) middle school students attended SSLA and met the criteria to be included in the analyses of program impact. That is, they had attended SSLA at least 85% of the time, were enrolled in the District for both the 2017-18 and the 2018-19 school years, and had test score data for the analyses performed for this evaluation. The same process of propensity score analysis was used to select the comparison cohort for the middle school SSLA participants. The

resulting comparison cohort had 432 members. Students in the matched sample selection pool also were enrolled in SCS schools for both the 2017-18 and 2018-19 school years, and had test scores used in the analyses.

The same demographic factors, non-academic variables (attendance rate and mobility), and academic variables (NWEA MAP reading and mathematics scores, Lexile score) were used to select the middle school comparison cohort as were used in the propensity score analysis for elementary school students. The table below contains the data for the SSLA participants and the selected matched sample on the covariates used in the propensity score analysis. Given the two groups are virtually identical, the selected matched sample was deemed to be a valid comparison cohort for the SSLA participants.

Spring 2018 Middle School Student Demographic, Attendance, and Academic Information		
	SSLA Participants (N = 432)	**Comparison Cohort** (N = 432)
Male	48.4%	48.5%
Female	51.6%	51.5%
African-American	91.4%	91.4%
Hispanic	2.5%	2.5%
White	1.9%	1.9%
More than one race	3.2%	3.2%
ED*	68.3%	68.4%
Non-ED	31.7%	31.6%
SWD*	12.5%	12.5%
Non-SWD	87.5%	87.5%
EL*	0.7%	0.7%
Non-EL	99.3%	99.3%
Rising Grade Level		
7	58.3%	58.3%
8	36.3%	36.3%
9	5.3%	5.3%
2017-18 Attendance Rate	97.7%	97.7%
Mobility Classification 2017-18		
Stable	93.5%	93.5%
Mobile	3.7%	3.7%
Highly Mobile	2.8%	2.8%
Mean MAP Reading Scale Score	211.61	211.55
Mean MAP Math Scale Score	216.44	216.41

Mean Lexile Score	810.04	808.92

*ED –Economically Disadvantaged; SWD – Students with Disabilities; EL – English Learners

Analyzing SSLA Program Impact

The same sets of analyses that were used to analyze the impact of SSLA participation for elementary-school students were used at the middle-school level. Analyses of academic progress compared the NWEA MAP scores in reading and mathematics of the SSLA participants to the scores of the non-participating matched cohort in fall and winter. Analyses of academic growth compared changes in NWEA MAP scores for the two groups over time. TN Ready scores were analyzed to gauge academic achievement of the two groups at the end of the school year.

Analyses of Academic Progress

The first set of t-tests conducted examined the fall NWEA MAP scores for the SSLA participants and the non-participating comparison cohort. Analyses revealed there were no statistically significant differences between the scores of SSLA participants and their non-participation peers for either reading ($t_{(862)} = -.19$; $p = .85$) or mathematics ($t_{(862)} = .32$; $p = .75$).

The analyses of the winter NWEA MAP assessment also did not reveal statistically significant differences in the scores of SSLA participants and the comparison cohort in either subject (reading: $t_{(807)} = .48$; $p = .63$; mathematics: $t_{(797)} = -021$; $p = .98$). Thus, as with the elementary-school students, there was no immediate or mid-year benefits apparent for middle-school SSLA participants as measured by the NWEA MAP formative assessment.

Analyses of Academic Growth

The analyses of academic growth examined NWEA MAP changes in students' scores in reading and mathematics over three time periods: spring to fall, spring to winter, and fall to winter. Again, as with the elementary school students, the assumption is made that any covariates not analyzed would have impacted both the SSLA participant group and the matched comparison cohort. The spring to fall growth data, presented in the table below, revealed similar growth patterns for SSLA participants and the comparison cohort in reading. In mathematics, a slightly higher rate of SSLA students showed increases in their scores compared to the non-participating peer cohort (54.9% compared to 51.5%, respectively), although this difference was not statistically significant. (Chi-square tests of significance are presented below.)

Middle Student NWEA MAP Score Change from Spring 2018 to Fall 2018		
	SSLA Participants	Comparison Cohort
Reading		
Increase	51.4%	50.0%
No Change	5.1%	4.9%
Decrease	43.5%	45.1%
Mathematics		
Increase	54.9%	51.5%
No Change	4.4%	5.8%
Decrease	40.7%	42.7%

The second table presents changes in scores from spring to winter. The growth patterns for SSLA participants and the comparison cohort both show a higher percentage of students increasing their

reading and mathematics scores compared to the data from spring to fall presented in the previous table. However, there were only minimal differences between SSLA participants and the non-participating peer cohort for both subjects.

Middle Student NWEA MAP Score Change from Spring 2018 to Winter 2018		
	SSLA Participants	Comparison Cohort
Reading		
Increase	58.5%	56.3%
No Change	4.9%	4.4%
Decrease	36.5%	39.3%
Mathematics		
Increase	66.8%	65.2%
No Change	3.3%	4.7%
Decrease	29.9%	30.1%

The final table presents changes in scores from fall to winter, representing changes due to classroom instruction during the first semester of the school year. In reading, there is a notable difference in the percentage of students whose scores increased and decreased between the SSLA participants and the comparison cohort. More SSLA participants had reading scores increase and fewer had reading scores decrease compared to their non-participating peers, although this difference was not statistically significant. (Chi-square tests of significance are presented below.) For mathematics, the percentages of students in each category were quite similar for both groups.

Middle Student NWEA MAP Score Change from Fall 2018 to Winter 2018		
	SSLA Participants	Comparison Cohort
Reading		
Increase	61.0%	54.3%
No Change	5.2%	6.2%
Decrease	33.8%	39.5%
Mathematics		
Increase	61.4%	63.5%
No Change	4.8%	5.2%
Decrease	33.8%	31.4%

The table below contains the details for the chi-square analyses associated with the data presented above. As the *p*-values indicate, none of the differences between the SSLA participants and the non-participating comparison cohort reached the level of statistical significance.

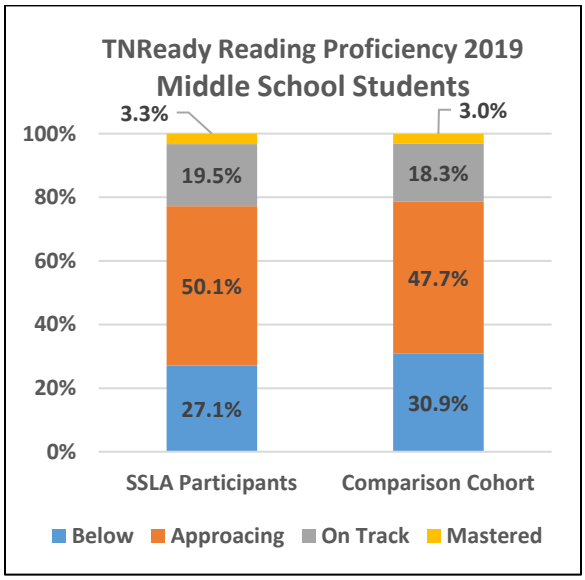
Middle Student Academic Growth: Tests of Statistical Significance			
Time Frame	Chi Square	Degrees of Freedom	*p*-value
Spring 2018 to Fall 2018			
Reading	.23	2	.89
Mathematics	1.49	2	.48
Spring 2018 to Winter 2018			
Reading	.67	2	.71
Mathematics	1.04	2	.59

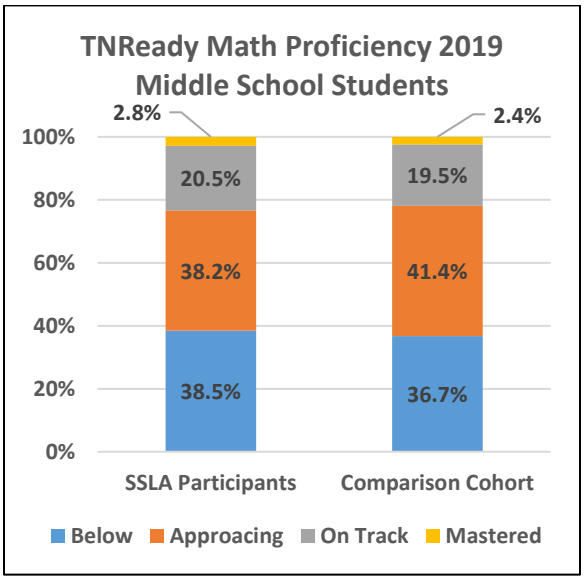
Fall 2018 to Winter 2018			
Reading	3.69	2	.16
Mathematics	.54	2	.76

Analyses of Academic Achievement

TNReady test scores from spring 2019 were used to analyze whether there were differences on academic achievement between the middle school SSLA participants and the comparison cohort. In reading, scores were available for 399 SSLA participants and 398 students in the comparison cohort. In mathematics, there were scores for 390 SSLA participants and 379 non-participating peers.

The graphs below show the for proficiency categories for TNReady Reading and TNReady Mathematics. The percentage of students in each category was virtually identical for the SSLA participants and the comparison cohort in both subjects. Chi-square analyses revealed that the slight differences in percentages between the SSLA participants and the comparison cohort were not statistically significant for either subject (reading: $X^2_{(3)} = 1.44$; p = .70; mathematics: $X^2_{(3)} = .90$; p = .82).





A second analysis of student achievement data compared the mean scale scores for SSLA students and their non-participating peers in reading and mathematics. Analyses revealed there were no statistically significant differences for either reading ($t_{(794)} = -.51$; $p = .61$) or mathematics ($t_{(768)} = -.17$; $p = .86$).

SSLA Analyses: Rising Kindergarten

Description of SSLA Participants and Comparison Cohort

The final section of this program evaluation presents analyses for the rising Kindergarten students. Students whose data are analyzed in this section were enrolled in the SCS pre-K program during the 2017-18 school year and entered SCS Kindergarten in fall of 2018. Since many of the factors that affect kindergarten readiness are not measured while students are in pre-K, it is not possible to create a matched cohort for comparison that is similar to the comparison cohorts used in the

elementary-school and middle-school analyses due to lack of relevant data. For example, since English Learner services are not provided to pre-K students in Tennessee, there are no formal data on whether or not students enrolled in SCS pre-K are English Learners. However, a student's EL status does impact kindergarten readiness. Given this challenge, analyses for rising Kindergartners compared SCS students who attended pre-K and SSLA to SCS students who attended pre-K only as it was determined this was the best way to control for some of the experiences students had prior to Kindergarten entry that can affect kindergarten readiness.

Students who were in the SCS pre-K program and attended the SSLA rising Kindergarten program at least 85% of the time were compared to students who were enrolled in the SCS pre-K program but did not participate in the SSLA rising Kindergarten program.[5] This comparison cohort is different than the matched comparison cohorts identified for the elementary-school and middle-school students in the analyses above. For rising Kindergarteners, the only distinction between the SSLA participants and the comparison group was participating in the summer academy, and the only similarity was that students in both groups had participated in SCS pre-K as four-year-olds.

Analyzing SSLA Program Impact

To examine the impact of participating in SSLA, students' scores on the NWEA MAP formative assessment from three different time periods in Kindergarten were analyzed using a series of univariate ANCOVA analyses. Analyses of the fall 2018 assessment scores provided a look at the immediate impact of program participation. Analyses of winter 2018 and spring 2019 scores provided information on the longer-term impact of participating in the SSLA coupled with instruction throughout the Kindergarten year. Students' pre-K *Istation Reading* scores from spring 2018 served as the covariate in all analyses in an attempt to control for differences in individual skill levels across the two groups that might influence outcomes. (Although there is no pre-K math score to serve as a direct covariate for the NWEA MAP mathematics analyses, the development of reading and mathematics skills in early education is highly correlated making *Istation Reading* scores an appropriate covariate for analyses of NWEA MAP mathematics scores.)

The table below shows the results of the series of univariate ANCOVA analyses. No statistically significant differences were revealed between the scores for the SSLA participants and the scores for the other rising Kindergarteners except for NWEA MAP reading in spring 2019. For this assessment, SSLA participants outperformed the comparison group by almost 2 RIT score (scale score) points (SSLA participants mean score = 160.0; comparison group mean score = 158.2). Since the pre-K *Istation Reading* score from the previous spring served as a covariate for this analysis, this finding is promising. It appears that although there are no immediate academic benefits for having participated in SSLA the summer before entering Kindergarten, SSLA participation plus the instruction of the Kindergarten year gives students a boost in the reading formative assessment at the end of the year. As always, however, with large differences in sample sizes, the findings must be interpreted with caution.

[5] Two hundred seven (207) students who were enrolled in the rising Kindergarten SSLA program but did not attend at least 85% of the time were removed from all analyses.

Analysis of Covariance Results for Rising Kindergarten Students					
NWEA MAP Assessment	N for SSLA Participants	N for Comparison Cohort	F-value	Degrees of Freedom	*p*-value
Reading Fall 2018	367	2,418	.93	1	.34
Math Fall 2018	370	2,401	.40	1	.53
Reading Winter 2018	379	2,442	1.28	1	.26
Math Winter 2018	378	2,440	1.12	1	.28
Reading Spring 2019	373	2,424	5.32	1	.02*
Math Spring 2019	374	2,412	2.46	1	.12

*Denotes statistically significant difference at the .05 level

Conclusion & Recommendations

In its second year, the Superintendent's Summer Learning Academy expanded its programming to give more students in more grades opportunities to engage in summer learning activities, and almost 9,000 students participated. Students engaged in supervised learning activities in reading, mathematics, and supplemental classes, and participated in field trips to support the classroom learning. Families and students were also supported with extended day opportunities and free meals and snacks for students. The enrollment numbers and the services provided clearly make the SSLA a popular program among the families of SCS. Its visibility in the community has also served as a recruiting mechanism over the years drawing students to SCS schools from outside the District. The discussion below includes several recommendations for ways to further examine the impact of participating in SSLA.

Recommendation 1 – Analysis of Subgroup Data

Although there were virtually no differences between the SSLA participant groups and the comparison groups for the academic measures assessed in this program evaluation (NWEA MAP and TNReady scores), it could be that various subgroups of students were impacted differently. There were not enough SSLA participants from various subgroups (e.g., English learners, students with disabilities, mobile students) to conduct subgroup analyses on these traditional subgroups. However, the NWEA MAP data available do categorize students according to their projected performance on a standardized achievement test. Analyses revealed that more students who were categorized as performing Below Standards[6] on NWEA MAP in spring 2018 demonstrated increases for growth from spring to fall compared to SSLA participants as a whole. In Reading, 48.6% of elementary-school students categorized as Below Standards increased on NWEA MAP from spring to fall compared to 45.7% of the elementary-school SSLA participants overall. In Mathematics, 57.2% of elementary-school students categorized as Below Standards increased from spring to fall compared to 46.8% of the elementary-school SSLA participants overall. Perhaps the SSLA model is more effective with struggling students and the District should especially target these students when recruiting SSLA participants.

[6] In 2017-18, MAP projected students' placement on a standardized achievement test not aligned to Tennessee state testing. Students who were projected to be Below Standards had test scores at approximately the 43rd percentile or below.

SSLA staff confirm that the academic focus of SSLA is on the E/LA and Math standards that were taught during the previous school year. For example, students who had completed grade 3 just prior to the attending SSLA would work on grade 3 standards again during the summer. This practice provides remediation for students who struggled with the standards during the school year, which could result in measured academic growth for those students. However, students who had already mastered the standards would likely not demonstrate growth since SSLA participation would be a review for them, rather than incorporating new learning.

Recommendation 2 – Analysis of Instructional Quality

A second possibility is to examine how teacher quality in the year following SSLA participation may link to students maintaining gains made during SSLA. This thinking is in line with findings recently reported in a study on Tennessee's Voluntary Pre-K program. Original research[7] showed that students who participated in the state of Tennessee's pre-K program made academic gains, but these gains faded by the time the students reached third grade. A recent follow-up study,[8] however, showed that pre-K students who subsequently had high-quality teachers in Kindergarten and beyond maintained the gains they acquired through pre-K participation. Parallel to this follow-up study, an analysis of teacher quality may reveal that academic impacts of SSLA are maintained in classrooms of high quality teachers. An analysis along these lines would also be a way to look at some of the covariates that were not included in the analyses reported on academic growth.

Recommendation 3 – Analysis of Non-Academic Outcomes

Third, it may be that participating in the program impacted students and families in non-academic ways, or ways not measured by NWEA MAP and TNReady scores. Future program evaluations should focus on different outcome measures to determine whether program participation impacts other areas. For example, teachers could be surveyed to determine whether they notice differences in class engagement, class assignments, or class tests between SSLA participants and non-participating students. Participating families and students might also be surveyed to identify what they see as the benefits to participating in SSLA, and whether they think those benefits will carry over into subsequent school years. Feedback from the SSLA staff indicates that they are already thinking about non-academic evaluation measures to document the program's impact.

Additionally, the economic impact of SSLA could be analyzed. Certainly the participating families benefit through reduced summer child care costs and grocery bills. Teachers, school-based administrators, and school-based program support staff benefit by receiving additional income during SSLA. Finally, the District benefits to the extent that students from outside the District participate in SSLA during the summer and then enroll in an SCS school for the subsequent school year. An economic impact study might be in conjunction with community partners who routinely evaluate economic impact, such as CREP at the University of Memphis.

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[7] *A Randomized Control Trial of a Statewide Voluntary Prekindergarten Program on Children's Skills and Behaviors through Third Grade* (2015). Research Report. Nashville, TN: Vanderbilt University, Peabody Research Institute. Accessed from https://peabody.vanderbilt.edu/research/pri/VPKthrough3rd_final_withcover.pdf

[8] *Teachers, Schools, and Pre-K Effect Persistence: An Examination of the Sustaining Environment Hypothesis* (2019). EdWorkingPaper: 19-85. Retrieved from Annenberg Institute at Brown University: http://www.edworkingpapers.com/sites/default/files/ai19-85.pdf

Recommendation 4 – Connect SSLA to the Larger Community

A final recommendation would be to extend the SSLA program into the larger Memphis and Shelby County community. With planning, SSLA staff could easily create a list of resources and a protocol so that every SSLA teacher can connect their students and families to additional summer learning opportunities[9] in the community. Research has shown the young children who participate in two early literacy programs simultaneously outperform both those who do not participate in any program and those who participate in just one early literacy program on reading measures in Kindergarten.[10, 11] With students participating in both SSLA *and* additional summer learning opportunities, academic performance may be enhanced. An example of one possible program is the Memphis Public Libraries summer reading program,[12] which is self-paced and designed for readers of all ages. Readers keep reading logs to track the number of books or number of minutes they have read. To keep readers engaged in the process, they earn points throughout the program that can be exchanged for prizes. Other summer learning opportunities should be researched as well to determine whether they might be good supplements to attending the Superintendent's Summer Learning Academy.

[9] Although students in SSLA are too old to participate in Books from Birth, staff should be aware of the program so they can help families enroll younger siblings of SSLA participants who are eligible to receive one free book per week from birth to age 5. Enrollment information and guidelines can be accessed at (https://www.porterleath.org/books-from-birth).

[10] *Parents as Teachers: Results of the Innovative Approached to Literacy Project* (2015). Center for Early Education Evaluaion at HighScope: https://static1.squarespace.com/static/56be46a6b6aa60dbb45e41a5/t/57eea4abc534a575207ad7ed/1475257516482/PAT_ResearchReport_IAL_2015.pdf

[11] *The Parents as Teachers Program: Its Impact on School Readiness and Later School Achievement* (2007). Parents as Teachers National Center: https://static1.squarespace.com/static/56be46a6b6aa60dbb45e41a5/t/57f279696b8f5b23c53fd672/1475508587656/Executive20Summary_of_K_Readiness.pdf

[12] Information about the Memphis Public Libraries summer reading program can be accessed at http://www.memphislibrary.org/explorememphis/