

Pre-K 4 SA Evaluation Report

Year 6

Authors

Lauren Decker-Woodrow, Ph.D.
Emily Diaz, Ph.D.
Gay Lamey

Nancy Hartman, Ph.D.
Eishi Adachi, Ph.D.
Don Barfield



December 31, 2019

Report Submitted to:
Early Childhood Education Municipal
Development Corporation

Prepared by:
Westat
An Employee-Owned Research Corporation®
1600 Research Boulevard
Rockville, Maryland 20850-3129
(301) 251-1500

This publication was prepared by Westat under a Professional Services Agreement for the Program Assessment for Pre-K 4 SA program with the San Antonio Early Childhood Education Municipal Development Corporation, a Texas Municipal Development (City of San Antonio). The content of the publication does not necessarily reflect the views or policies of the San Antonio Early Childhood Education Municipal Development Corporation, nor does mention of trade names, commercial products, or organizations imply endorsement by the City of San Antonio.

Table of Contents

<u>Chapter</u>	<u>Page</u>
Executive Summary.....	vii
Introduction	1
Research Questions.....	2
Evaluation Sample and Methods.....	3
Pre-K 4 SA Year 6 Sample	3
Parent/Guardian Survey Sample	4
Early Elementary Outcomes Sample	5
Methods	6
Evaluation Results	7
Child Attendance in Pre-K 4 SA	7
Attendance Rates Over Time	8
Pre-K 4 SA Teacher-Child Interaction Quality	9
Interaction Quality by Center	12
Interaction Quality by Percentage of English Language Learners	14
Interaction Quality Over Time.....	16
Parent/Guardian Survey Results	17
Parent/Guardian Participation in Pre-K 4 SA	17
Parent/Guardian Satisfaction with Pre-K 4 SA.....	18
Parent/Guardian Reported Change in Confidence	21
Parent/Guardian Reported Change in Behavior	23
Parent/Guardian Kindergarten Selection and Perceptions of Readiness	25
Extended Day Results	26
Kindergarten Readiness – GOLD Results	28
Differences in Readiness Outcomes by Center.....	30
Differences in Readiness Outcome Growth by Child Characteristics and Classroom Quality.....	32
Early Elementary Outcomes	34
Early Elementary Attendance (K–2)	34

Early Reading Results (K–2)	34
Kindergarten Readiness Results (kindergarten only).....	35
Summary and Discussion.....	36
Limitations	37
References.....	1
Appendix References	3

Contents (continued)

<u>Appendixes</u>	<u>Page</u>
Appendix A Evaluation Methods	1
Appendix B Additional CLASS Results	1
Appendix C Additional Survey Results	1
Appendix D Additional Teaching Strategies GOLD Results.....	1

<u>Tables</u>		
Table 1.	Children who attended Pre-K 4 SA, by district	3
Table 2.	Children who attended Pre-K 4 SA for free, by eligibility criteria	4
Table 3.	Expected grade-level progression, by cohort	5
Table 4.	Matched group sample sizes, by outcome and cohort.....	6
Table 5.	Pre-K 4 SA attendance over time (%)	9
Table 6.	Average Year 6 Pre-K 4 SA CLASS scores	10
Table 7.	Year 6 significant CLASS domain score differences, by center.....	13
Table 8.	Year 6 significant CLASS domain score differences, by whether classrooms included ELLs	15
Table 9.	Year 6 significant GOLD domain growth scores from fall to spring, by center.....	31

Table A-1. Descriptions of CLASS dimensions	2
Table B-1. Average Year 6 CLASS scores by center	1
Table C-1. Survey responses for empowering parents/guardians	1
Table C-2. Survey responses for compassion and responsiveness	1
Table C-3. Survey responses for cultural diversity	2
Table D-1. Year 6 significant GOLD growth results for total sample based on child characteristics and classroom quality.....	1
Figure D-1. Interaction between attendance and classroom emotional support for cognitive domain	2

Contents (continued)

<u>Figures</u>	<u>Page</u>
Figure 1. Average classroom quality scores for Pre-K 4 SA Year 6	10
Figure 2. Pre-K 4 SA and Head Start average classroom quality scores	11
Figure 2. Average CLASS domain scores, by program year	16
Figure 3. How often parent/guardian participated in Pre-K 4 SA meetings or activities.....	17
Figure 4. Parent/guardian agreement on empowerment, by survey item.....	19
Figure 5. Parent/guardian agreement on compassion and responsiveness, by item.....	20
Figure 6. Parent/guardian agreement on cultural diversity, by item.....	21
Figure 7. Parent/guardian confidence in supporting children’s basic needs.....	22
Figure 8. Parent/guardian confidence in supporting children’s academic needs.....	22
Figure 9. Parent/guardian participation in life skill activities with children	23
Figure 10. Parent/guardian participation in academic activities with children	24

Figure 11. Parent/guardian participation in relationship-building activities
with children..... 24

Figure 12. Parent/guardian perceptions of kindergarten readiness 26

Figure 13. Growth in GOLD outcomes over the pre-K year 30

Executive Summary

Pre-K 4 SA served more than 2,000 children during its sixth year of implementation. The Year 6 evaluation of Pre-K 4 SA sought to address research questions regarding attendance, classroom quality, parent reports on the results of Pre-K 4 SA participation, kindergarten readiness during the pre-K year, and longer term results for children through the early elementary school years.

Pre-K 4 SA served slightly more boys (50.7%) than girls (49.3%) during Year 6. The majority of Pre-K 4 SA children were Hispanic (74.4%), with the remaining children identified as Black (9.9%), White (8.6%), and other ethnicities (7.1%). More than 75 percent of children attended Pre-K 4 SA for free, 7.8 percent did so on scholarship, and 16.4 percent were tuition-paying children. Of those children who attended Pre-K 4 SA for free, 86.7 percent did so based on income eligibility.

The average attendance rate for Pre-K 4 SA children was 91.5 percent, which increased slightly to 92.6 percent when children who withdrew were excluded. Attendance rates have been stable over the first 6 years of implementation.

The Early Childhood Education Municipal Development Corporation contracted with Westat, a large, employee-owned global research firm, to conduct an independent evaluation of the Pre-K 4 SA program. Westat conducted classroom observations using the Classroom Assessment Scoring System (CLASS) to assess the quality of teacher-child interactions in Pre-K 4 SA classrooms. Overall, teachers were observed to display high levels of Emotional Support and Classroom Organization. Instructional Support was, on average, in the middle of the midrange. Significant between-center differences were found for Classroom Organization and appear to be driven by differences in the dimensions of Productivity and Instructional Learning Formats. In classrooms with linguistically diverse children, Emotional Support and Classroom Organization scores were even higher.

At the end of the 2018–19 school year, parents/guardians of Pre-K 4 SA children completed a survey about their participation in Pre-K 4 SA, perceptions of Pre-K 4 SA, changes in parent/guardian confidence and behaviors, and plans for their child’s kindergarten year. On average, parents/guardians reported engaging in activities with Pre-K 4 SA once every few months. Additionally, parent/guardian reports on their perceptions of Pre-K 4 SA indicated that the program

(1) empowers parents/guardians to support the early learning of their children, (2) is compassionate and responsive to children and families, and (3) is appreciative and respectful of cultural diversity. Parents/guardians also reported growth in their confidence to support their children’s basic and academic needs, including growth in parent/guardian confidence to support their child’s transition to kindergarten and growth in their confidence to serve as an advocate for the child’s education in general. When parents/guardians were asked if they had changed their behavior after participating in Pre-K 4 SA, they indicated they currently spent more time engaging in life skill, academic, and relationship-building activities with their children.

Parents/guardians also reported on their educational attainment, employment, and earnings, in addition to whether they took advantage of the Pre-K 4 SA extended day program for their children. Survey results indicated families who used extended day services worked significantly more hours and earned significantly more income for their families (more than \$10,000 in annual household earnings) compared to those who did not use the extended day program.

Kindergarten readiness outcomes for Pre-K 4 SA children (measured using Teaching Strategies’ GOLD assessment) were compared from fall to spring for six outcomes: cognitive, literacy, mathematics, oral language, physical, and social-emotional. The results showed significant growth for Pre-K 4 SA children on all six outcomes. Significant differences in outcomes were seen based on center attended, child characteristics, Pre-K 4 SA attendance, and classroom quality.

Taken together, results from the Year 6 evaluation suggest both children and families are benefiting from participation in Pre-K 4 SA centers in both academic and non-academic ways. Specifically, the Year 6 evaluation results indicate Pre-K 4 SA is providing high-quality instructional environments for more than 2,000 predominantly low-income children from across San Antonio and that it is supporting these children by increasing the number who (1) are coming to school with greater frequency, (2) come to school “ready to learn,” and (3) are more kindergarten ready according to district kindergarten entry assessments.

Limitations of the evaluation include the lack of a control group for comparison to a more similar group of children, as well as reliance on teacher-reported measures of child outcomes. Additionally, evaluation of longitudinal outcomes was restricted to data available statewide.

Introduction

Discussions on the importance of early childhood education continue to dominate policy and funding arenas at the local, state, and national levels. While some evidence suggests the importance of investing in such experiences (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010; Reynolds, Temple, White, Ou, & Robertson, 2011; Rolnick & Grunewald, 2003), other evidence suggests initial results are not sustained (Hill, Gormley, & Adelstein, 2015). Some point to the key factor of high-quality early childhood experiences as a potential differentiator in effects. Coupled with the importance of high-quality experiences is the fact that children who need such early experiences are often those who do not receive them. Previous research indicated that minority children, children from low-income backgrounds, and children who are English language and dual-language learners are more often exposed to lower quality instruction and learning environments (Bassok & Galdo, 2016; Chien et al., 2010; Valentino, 2018). As the discussion continues across the country, it also continues here in San Antonio.

Over the past 6 years, San Antonio has opted to fund the Pre-K 4 SA program through a voter-approved 1/8 cent increase in local sales tax rates, which began in 2013. Pre-K 4 SA serves many children who are at risk for falling behind their peers and for lacking in kindergarten readiness, with the goal of increasing early childhood education quality and school readiness across the City of San Antonio. In addition to serving children in four centers across the city, Pre-K 4 SA provides professional development across San Antonio, as well as grants to local districts, parochial schools, and child care centers.

The Early Childhood Education Municipal Development Corporation contracted with Westat, a large, employee-owned global research firm, to conduct an independent evaluation of the Pre-K 4 SA program. The purpose of the current report is to present Year 6 evaluation findings for the program. Investigations included (1) information on child attendance and classroom quality; (2) parent reports of perceptions, attitudes/beliefs, and engagement after participating in Pre-K 4 SA; (3) parent reports of educational attainment, employment, and earnings as well as use of Pre-K 4 SA extended day services; (4) outcome analysis results from the Teaching Strategies GOLD assessment, which is the primary outcome of interest at the end of the pre-K year; and (5) long-term results for former Pre-K 4 SA children in the early elementary grades.

Research Questions

The Year 6 (2018–19) evaluation of Pre-K 4 SA addressed the following six main research questions:

1. What were the reported levels of child attendance during the pre-K year?
 - A. Are attendance rates stable over implementation years?
2. What was the overall observed teacher-child interaction quality in Pre-K 4 SA classrooms in Year 6?
 - A. Did the Year 6 interaction quality vary by center? By percentage of English language learner (ELL) children in the classroom?
 - B. Has improvement been observed in interaction quality from the previous year of implementation (Year 5)? Since inception (Year 1)?
3. What are parent/guardian perceptions of Pre-K 4 SA as well as reported confidence and behavior changes since participating in Pre-K 4 SA?
 - A. Where do parents/guardians report their children will be attending kindergarten?
 - B. What were the reported reasons for choosing the identified kindergarten?
 - C. Do parents/guardians have concerns about their child’s academic, behavioral, and/or social readiness for kindergarten?
4. Are there differences in educational attainment, employment, or earnings for families who take advantage of Pre-K 4 SA extended day services for children?
5. Do Pre-K 4 SA children demonstrate significant growth on GOLD outcomes over the pre-K year?
 - A. Do gains in GOLD outcomes vary significantly by center, amount/level of teacher-child interaction quality, child demographics, or attendance?
6. Are there longer term outcomes for children who previously attended Pre-K 4 SA?
 - A. Are former Pre-K 4 SA children significantly more likely to attend school in the early elementary grades (K–2) compared to peers who did not attend pre-K?
 - B. Are former Pre-K 4 SA children significantly less likely to qualify for additional reading support in the early elementary grades (K–2) compared to peers who did not attend pre-K?
 - C. Are former Pre-K 4 SA children significantly more “literacy ready” for kindergarten compared to peers who did not attend pre-K, as measured by district-administered literacy kindergarten entry assessments (KEAs)?

Evaluation Sample and Methods

This section provides demographic characteristics for each analysis sample: (1) children served during the 2018–19 school year (Year 6), (2) Pre-K 4 SA Year 6 parents/guardians who completed a survey at the end of the 2018–19 school year, and (3) children from the first three cohorts of Pre-K 4 SA (for the early elementary longitudinal analyses). Also presented is a brief discussion of methods used across research questions.

Pre-K 4 SA Year 6 Sample

Data were provided for 2,071 children in Year 6. Pre-K 4 SA served slightly more boys (50.7%) than girls (49.3%). Of those more than 2,000 children, the majority represented three districts: Northside Independent School District (ISD), San Antonio ISD, and North East ISD.¹ In addition, 16.4 percent of children paid tuition, and 7.8 percent received scholarships (all other children attended at no cost). Table 1 includes the percentage of children per represented school district.

Table 1. Children who attended Pre-K 4 SA, by district

District name	Number of children	Percentage of total children
Northside	605	29.2
San Antonio	308	14.9
North East	255	12.3
Edgewood	102	4.9
New Frontiers	82	4.0
East Central	76	3.7
Southwest	66	3.2
Harlandale	57	2.7
Southside	19	0.9
Tuition	340	16.4
Scholarship	161	7.8
Total	2,071	100.0

Note: Children counted by district attend the program at no cost.

The average age of attending children on the first day of school (August 27, 2018) was 4.49 years.² The majority of Pre-K 4 SA children were Hispanic (74.4%), with the remaining children reported as Black (9.9%), White (8.6%), and other ethnicities (7.1%). Out of all children enrolled (tuition,

¹ These same three districts were also the majority representation in Years 1–5 (2013–14 to 2017–18).

² This average includes all children in the sample regardless of start date.

scholarship, and free attending), 73.7 percent were considered economically disadvantaged. Of the children who attended for free, this number rose to 86.7 percent. It is important to note an additional 99 percent (n=159) of the 161 scholarship children also met income eligibility criteria (noted as economic disadvantage); however, they were not in an attendance zone of a partner school district. Table 2 includes the percentage of children, by eligibility, who attended Pre-K 4 SA at no cost.

Table 2. Children who attended Pre-K 4 SA for free, by eligibility criteria

Eligibility criteria	Number of children	Percentage (%) of total eligible children
Economic disadvantage	1,361	86.7
English language learner	198	12.6
Foster care/Conservatorship	45	2.9
Homeless	10	0.6
Military	123	7.8
Eligible total	1,737	–

Note: The eligible total is not a sum because children could qualify in more than one category. The percentage of children who attended Pre-K 4 SA for free was 76 percent (n=1,570). Children were removed from eligibility criteria counts in this table if they were identified as scholarship or tuition children.

Parent/Guardian Survey Sample

More than 500 (n=517) Pre-K 4 SA children’s parents and/or guardians completed at least one item of the 32-item survey. The majority of respondents were mothers (88%).³ Survey respondents had a range of educational attainment, with 41 percent indicating they had at least a bachelor’s degree. Survey respondents largely reported speaking English as the primary language at home (82%), with 38 percent of those speaking at least one other language in the home.

Of the 426 respondents who completed the extended day item, 203 (49%) indicated their children received extended day services. Between respondents who did and did not use extended day services, no differences were found for primary language spoken in the home, respondent relationship to child, or education level of respondent.⁴

³ Descriptive data on survey respondents are reflective of the total number of valid responses to the respective item; not all survey respondents answered all items.

⁴ The language comparison was between English and any language other than English, because a majority of the sample indicated they spoke English in the home. The relationship to child was a comparison between mother and non-mother, because a majority of respondents indicated they were the mother of the Pre-K 4 SA child. The comparison between respondent’s education level was between less than a postsecondary degree and at least one postsecondary degree, because more than 40 percent of the respondents indicated they had a postsecondary degree of some kind.

Early Elementary Outcomes Sample

During the 2016–17 school year, the first three cohorts of former Pre-K 4 SA children attended either kindergarten, first grade, or second grade. Table 3 represents cohorts of children by expected grade level and academic year.

Table 3. Expected grade-level progression, by cohort

Academic year	Cohort 1	Cohort 2	Cohort 3
2013–14	Pre-K 4 SA	—	—
2014–15	Kindergarten	Pre-K 4 SA	—
2015–16	First grade	Kindergarten	Pre-K 4 SA
2016–17	Second grade	First grade	Kindergarten

Data for all 2016–17 kindergarten, first grade, and second grade students were provided by the Texas Education Agency (TEA) across all school districts where at least one former Pre-K 4 SA child was enrolled. TEA provided data for 106,525 kindergarten students, 318,325 first grade students, and 342,273 second grade students.

A demographically matched comparison group was formed, per cohort, of former Pre-K 4 SA children and similar children who were not recorded as having had a pre-K experience.⁵ For Cohort 3 (kindergarten) students, the matching process had to occur within district as well as within KEA availability. This means matched groups had to be formed for each of the six KEA samples available for analysis in the current study. Propensity score matching was conducted to create demographically comparable groups of students.⁶ Numbers of students in each matched comparison group are presented in Table 4.

⁵ This means according to files from TEA, the child did not attend Pre-K 4 SA or a district pre-K program. It is possible, however, that potential comparison children had a private pre-K or other early childhood experience.

⁶ Demographic characteristics were evaluated once matching was complete; all standardized mean differences were found to be within acceptable thresholds (below 0.25), according to the What Works Clearinghouse (WWC, 2014). Additionally, all demographic covariates were included in the analysis models as a conservative approach.

Table 4. Matched group sample sizes, by outcome and cohort

Cohort by outcome	Sample size after matching	
	No identified pre-K	Pre-K 4 SA
Cohort 1: Second grade		
Attendance	2,404	850
Early Reading Readiness	2,246	797
Cohort 2: First grade		
Attendance	2,908	1,048
Early Reading Readiness	2,698	967
Cohort 3: Kindergarten		
Attendance	1,439	1,439
Early Reading Readiness	1,187	1,330
Kindergarten entry assessments		
DIBELS	133	133
ISIP English	382	382
ISIP Español	74	74
MAP Foundation Skills	210	210
Tejas Lee	67	27
TPRI	465	465

DIBELS = Dynamic Indicators of Basic Early Literacy Skills Next, ISIP = Istation’s Early Reading Assessment (both English and Spanish), MAP = Measures of Academic Progress, Tejas Lee = El Inventario de Lectura en Español de Tejas, TPRI = Texas Primary Reading Inventory.

Methods

The first two research questions were addressed by analyzing existing Pre-K 4 SA databases and results from classroom observations. To address the descriptive question about attendance, data collected by Pre-K 4 SA were submitted to Westat and descriptively analyzed. To address the descriptive and inferential questions pertaining to classroom quality, Westat collected and analyzed data from the Classroom Assessment Scoring System (CLASS) (Pianta, La Paro, & Hamre, 2008). CLASS is an observational system that assesses classroom practices in preschool by measuring the interactions between children and adults. Observations in the Year 6 evaluation consisted of five 20-minute cycles, followed by 10-minute coding periods.

To address the third and fourth research questions concerning parent/guardian survey responses, Westat descriptively analyzed data collected from an electronic survey at the end of the 2018–19 school year. When more than one survey had been started by the same individual, the most complete survey was maintained for inclusion in analyses. Specifically for the extended day results, inferential tests of differences were conducted to assess whether there were significant differences in outcomes of interest between the two groups.

The fifth research question was addressed through inferential tests of differences, which were conducted for Pre-K 4 SA children in the fall and spring, on the Teaching Strategies GOLD assessment outcomes. GOLD is a teacher-reported measure that collects information on children's progress on 36 objectives, three times throughout the year, across six main categories: cognitive, literacy, oral language, mathematics, physical, and social-emotional. In addition, inferential tests were conducted by center, child demographics, child's attendance in Pre-K 4 SA, and observed teacher-child interaction quality, to determine if these factors were related to greater gains in GOLD outcomes for children.

To address the sixth research question, lists of former Pre-K 4 SA children were provided to TEA, from which TEA identified the district location of those children. In districts where a former Pre-K 4 SA child was identified, TEA also provided data for all children within the same grade level. All children not identified as former Pre-K 4 SA children served as the potential comparison pool of students for the matched comparison samples. All data were provided to Westat in a de-identified manner. From the potential comparison pool of students, demographically matched students were selected, for each cohort of former Pre-K 4 SA children, to form the respective matched comparison groups of similar children who were not recorded as having had Pre-K 4 SA or a district pre-K experience. The series of questions related to the sixth research question were addressed through a combination of inferential tests of differences, which were conducted between the Pre-K 4 SA children and each comparison group separately (after matching techniques were employed). (Refer to Appendix A for more detailed information on the process for forming comparison samples and the analyses conducted.)

Evaluation Results

Child Attendance in Pre-K 4 SA

Children began attending Pre-K 4 SA at different times. The majority of children (93.3%) began at the start of the academic year (August 27, 2018). The last date a child began attending Pre-K 4 SA

was May 16, 2019.⁷ Because of these varied dates, some children had the opportunity to attend more days than other children. In fact, the range of possible membership days was 1–177, with an average of 164 days. Average percentage attendance across all children was 91.5 percent. When considering children who attended Pre-K 4 SA through the year (i.e., did not withdraw), the average number of membership days rose to 174 and the attendance percentage increased to 92.6 percent.

Over the course of the year, 244 children (10.8%) withdrew from Pre-K 4 SA. The earliest withdrawal occurred on August 28, 2018, and the latest on June 6, 2019. Nearly 35 percent (34.8%; $n=85$) of the withdrawals occurred before the end of December. We found no significant differences between children who did and did not withdraw in terms of gender ($t(1, 2,069) = -0.04$, $p = .97$). Children identified as economically disadvantaged were more likely (12.6%) to withdraw from Pre-K 4 SA than non-disadvantaged children (9.4%; $F(1, 1,083.5) = 4.74$, $p = .03$). We also found one difference with respect to eligibility to attend Pre-K 4 SA for free, on scholarship, or by paying tuition ($F(2, 352.4) = 3.55$, $p = .03$).⁸ Children identified as attending on scholarship were more likely (18.6%) to withdraw from Pre-K 4 SA than children attending on tuition (9.4%). We found a final difference with respect to race/ethnicity ($F(3, 323.8) = 5.31$, $p = .001$).⁹ Although three post-hoc comparisons were initially significant, only one remained significant after adjustment for multiple comparisons.¹⁰ African American children were significantly more likely to withdraw (17.2%) compared to Hispanic children (9.9%). No other attendance type or race/ethnicity comparisons were significant.

Attendance Rates Over Time

Attendance rates have remained relatively stable over the first 6 years of Pre-K 4 SA implementation. On average, rates have consistently remained between 91 and 94 percent. Table 5 displays attendance for all children who attended the program as well as for the subgroup of children who did not withdraw from the program.

⁷ Although some children did not begin attendance at Pre-K 4 SA until late spring, more than 97 percent of all children were in attendance by the end of the 2018 calendar year.

⁸ Results from Levene's test of homogeneity of variances showed equal variances could not be assumed; therefore, a Welch's analysis of variance (ANOVA) was conducted.

⁹ Results from Levene's test of homogeneity of variances showed equal variances could not be assumed; therefore, a Welch's ANOVA was conducted.

¹⁰ The Tukey-Kramer adjustment for multiple comparisons was employed due to the unbalanced nature of sample sizes.

Table 5. Pre-K 4 SA attendance over time (%)

Enrollment status	Year 1 2013–14	Year 2 2014–15	Year 3 2015–16	Year 4 2016–17	Year 5 2017–18	Year 6 2018–19
All enrolled children	92.3	91.3	92.5	92.4	91.0	91.5
Children who did not withdraw	93.7	92.5	93.6	93.6	92.4	92.6

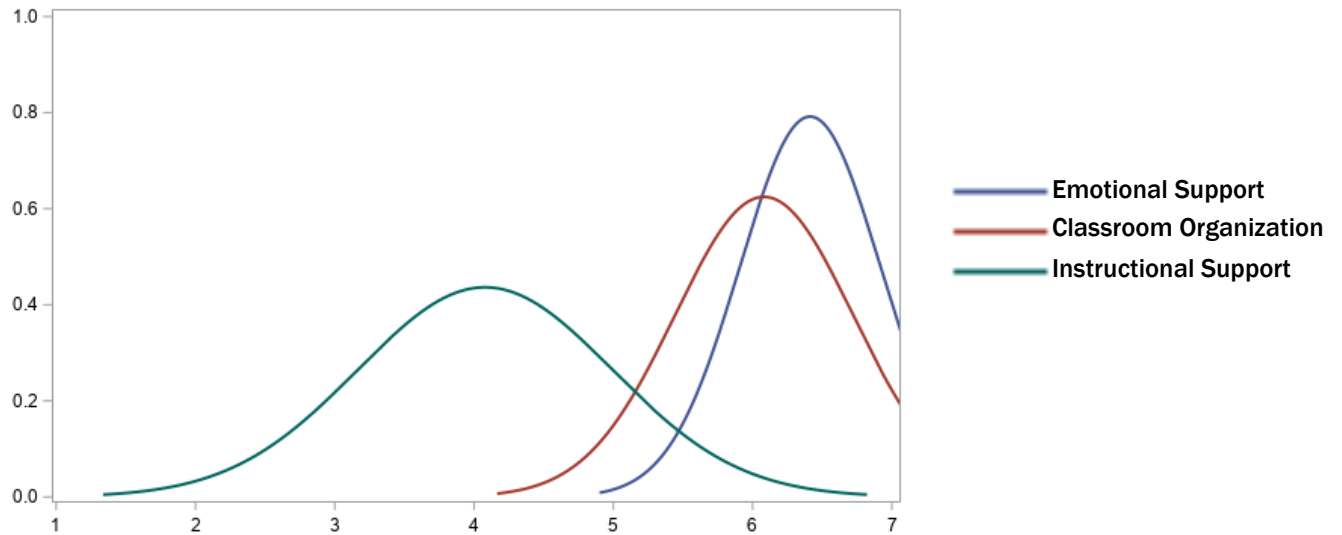
Pre-K 4 SA Teacher-Child Interaction Quality

Using the CLASS, nearly 100 percent of Pre-K 4 SA classrooms (n=97) were observed during Year 6.¹¹ The classrooms were distributed across the four Pre-K 4 SA centers (23–25 classrooms per center).

Scores for the Emotional Support domain ranged from 4.50 to 7.00 (on a 1–7 scale) across all five observation cycles, with most scores in the high range of Emotional Support (average score of 6.41), suggesting observed teacher-child interactions were most often rated as high quality. Similarly, with an overall score in the high range, Classroom Organization domain scores ranged from 4.07 to 7.00, which suggests classrooms showed effective interactions with regard to Classroom Organization (average score of 6.08). Finally, Instructional Support domain scores ranged from 2.53 to 5.80, with an average score at the middle of the middle range (4.08), which suggests in some observed interactions teachers provided support that extended children’s thinking or asked questions that encouraged children to analyze and reason. Each of the Year 6 CLASS domain scores is represented visually in Figure 1.

¹¹ Valid CLASS data are available on 97 of the 100 classrooms in Year 6. Two teachers were on leave and not able to be observed. Additionally, one observation was found to be invalid and was, therefore, not included in these analyses.

Figure 1. Average classroom quality scores for Pre-K 4 SA Year 6



Looking further into the average Emotional Support domain scores, approximately 14 percent of classrooms (n=14) were observed in the middle range, while 85 percent of classrooms observed provided high levels of Emotional Support (n=83). Forty-two percent of classrooms (n=41) were observed providing middle-range Classroom Organization quality, while the remaining 58 percent (n=56) provided high levels of Classroom Organization. Finally, 14 percent of the classrooms (n=14) were observed providing low levels of Instructional Support, while 85 percent (n=83) provided middle levels of Instructional Support. Table 6 provides average scores by each of the 10 dimensions and 3 domains.

Table 6. Average Year 6 Pre-K 4 SA CLASS scores

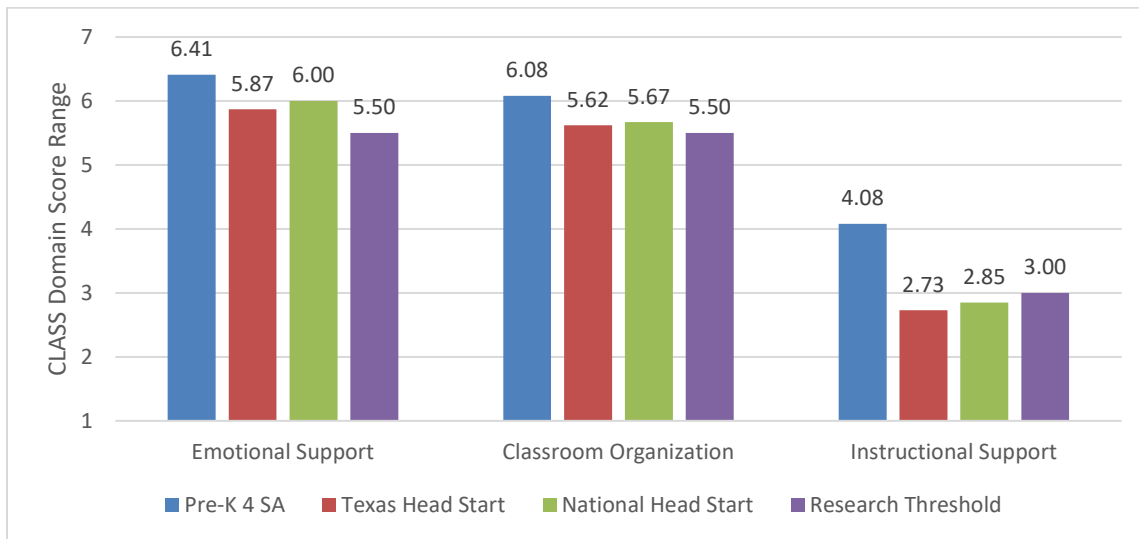
CLASS outcome	Average	Total range observed	Standard deviation (SD)
Emotional Support domain	6.41	4.50–7.00	0.50
Positive climate	6.40	4.07–7.00	0.59
Negative climate ^a	6.93	6.00–7.00	0.19
Teacher sensitivity	6.11	4.20–7.00	0.70
Regard for student perspectives	6.22	3.60–7.00	0.80
Classroom Organization domain	6.08	4.07–7.00	0.64
Behavior management	6.22	3.20–7.00	0.76
Productivity	6.31	4.80–7.00	0.57
Instructional learning formats	5.72	4.00–7.00	0.77
Instructional Support domain	4.08	2.53–5.80	0.91
Concept development	3.81	2.20–5.60	0.94
Quality of feedback	3.94	1.80–6.20	1.06

CLASS outcome	Average	Total range observed	Standard deviation (SD)
Language modeling	4.49	2.80–6.20	0.93

^a Negative Climate is initially scored with lower values representing no or low negative climate. These scores are then reverse-coded to reflect the same direction (higher values are positive) as the other dimensions.

Past research using the CLASS has often noted the low scores commonly seen in the Instructional Support domain (La Paro, Pianta, & Shuhman, 2004; Locasale-Crouch et al., 2007; Mashburn et al., 2008). To place Pre-K 4 SA CLASS scores in context, the National Institute for Early Education Research (NIEER) recently found average scores across Texas and the United States to be lower than those found in the current study (Barnett & Friedman-Krauss, 2016). Additionally, Barnett and Friedman-Krauss compared state and national findings by research thresholds; in Figure 2, Pre-K 4 SA scores are visually depicted with Texas and national Head Start average scores, as well as stated research thresholds. Previous research has found that children in classrooms with Emotional Support scores over 5 also have higher teacher ratings of social competence and lower ratings of behavior problems, while children from classrooms with Instructional Quality ratings of 3.25 or above score higher on measures of reading, mathematics, and expressive language (Burchinal, Vandergrift, Pianta, & Mashburn, 2010).¹²

Figure 2. Pre-K 4 SA and Head Start average classroom quality scores



Note: This visual representation is for descriptive purposes only; no statistical tests have been conducted to compare Pre-K 4 SA and Head Start classrooms for this evaluation.

¹²When the study data were collected, the CLASS was broken into two rather than three domains—Emotional Support and Instructional Quality. The findings of Burchinal et al. (2010) should not be directly compared to those presented here because the dimensions within each domain are not consistent.

Source: Barnett, W. S., & Friedman-Krauss, A. (2016). *State(s) of Head Start*. New Brunswick, NJ: National Institute for Early Education Research. Retrieved from http://nieer.org/wp-content/uploads/2016/12/HS_Digest_States_of_Head_Start.pdf.

Interaction Quality by Center

The three CLASS domains were analyzed to determine if there were significant differences in classroom teacher-child interactions across Pre-K 4 SA centers. One statistically significant comparison result was found for the Classroom Organization domain (see Table 7), in favor of the North center compared to both the East and West centers. No significant difference was found between the North and South centers.

Looking further into the center differences in Classroom Organization, it appears two of the three dimensions were driving the significant difference (see Table 7). The finding for productivity was significant in favor of the North center compared to the East center. The finding for the instructional learning formats dimension was significant in favor of the North center compared to all other centers.

No other significant differences were found by center, which indicates classroom experiences of similar quality were offered across Pre-K 4 SA centers for all possible remaining center comparisons. (For the full CLASS results by center, see Appendix B, Table B-1.)

Table 7. Year 6 significant CLASS domain score differences, by center

CLASS domain/ dimension	East	Group mean by center			F statistic	df	p-Value	Significant center differences	Effect size (CI)
		North	South	West					
Classroom Organization	5.89	6.46	6.02	5.99	4.05	93	.009	East lower than North	0.91 (0.73–1.08)
								West lower than North	0.82 (0.66–0.98)
Productivity	6.15	6.62	6.27	6.20	3.37	93	.022	East lower than North	0.88 (0.73–1.03)
Instructional Learning Formats	5.59	6.24	5.48	5.60	5.42	93	.002	East lower than North	0.90 (0.70–1.10)
								South lower than North	1.12 (0.93–1.31)
								West lower than North	0.89 (0.68–1.09)

Note: Effect sizes are Hedges' *g*. df = degrees of freedom; CI = confidence interval.

Interaction Quality by Percentage of English Language Learners

Considering existing evidence suggesting minority children, children from low-income backgrounds, and children who are English language and dual-language learners are more often exposed to lower quality instruction and learning environments, differences in quality were examined for classrooms with (n=26) and without (n=71) children identified as ELLs. Two significant results were found. Contrary to some existing research, we found significant results for Emotional Support and Classroom Organization in favor of classrooms with ELL children. More specifically, classrooms with ELL children were found to have significantly higher scores for Emotional Support and Classroom Organization (see Table 8). The fact that no significant difference was found for Instructional Support suggests that all students were exposed to similar levels of quality in areas of higher order thinking.

Looking further into the differences in Emotional Support, it appears three of the four dimensions were driving the significant difference (see Table 8). Positive Climate, Teacher Sensitivity, and Regard for Student Perspectives were all significantly higher in classrooms with ELL students. No significant difference was found for Negative Climate. With respect to the differences in Classroom Organization, it appears all three dimensions were driving the significant difference (see Table 8).

It is important to note that, across all classrooms, the averages for Emotional Support and Classroom Organization were at or within the high range; classrooms with ELL children scored even higher.

Table 8. Year 6 significant CLASS domain score differences, by whether classrooms included ELLs

CLASS domain/ dimension	Classrooms with ELL children	Classrooms without ELL children	F statistic	df	p-value	Effect size (CI)
Emotional Support	6.69	6.31	11.60	95	0.001	0.77 (0.68-0.87)
Positive Climate	6.65	6.30	6.76	95	0.011	0.59 (0.48-0.71)
Teacher Sensitivity ^a	6.55	5.94	24.48	69.64	0.000	0.92 (0.80-1.05)
Regard for Student Perspectives	6.57	6.09	7.22	95	0.008	0.61 (0.46-0.77)
Classroom Organization	6.50	5.93	17.60	95	0.000	0.95 (0.84-1.07)
Behavior Management	6.55	6.10	7.17	95	0.009	0.60 (0.46-0.75)
Productivity ^a	6.67	6.17	23.11	63.40	0.000	0.93 (0.83-1.04)
Instructional Learning Formats	6.27	5.52	21.98	95	0.000	1.07 (0.93-1.21)

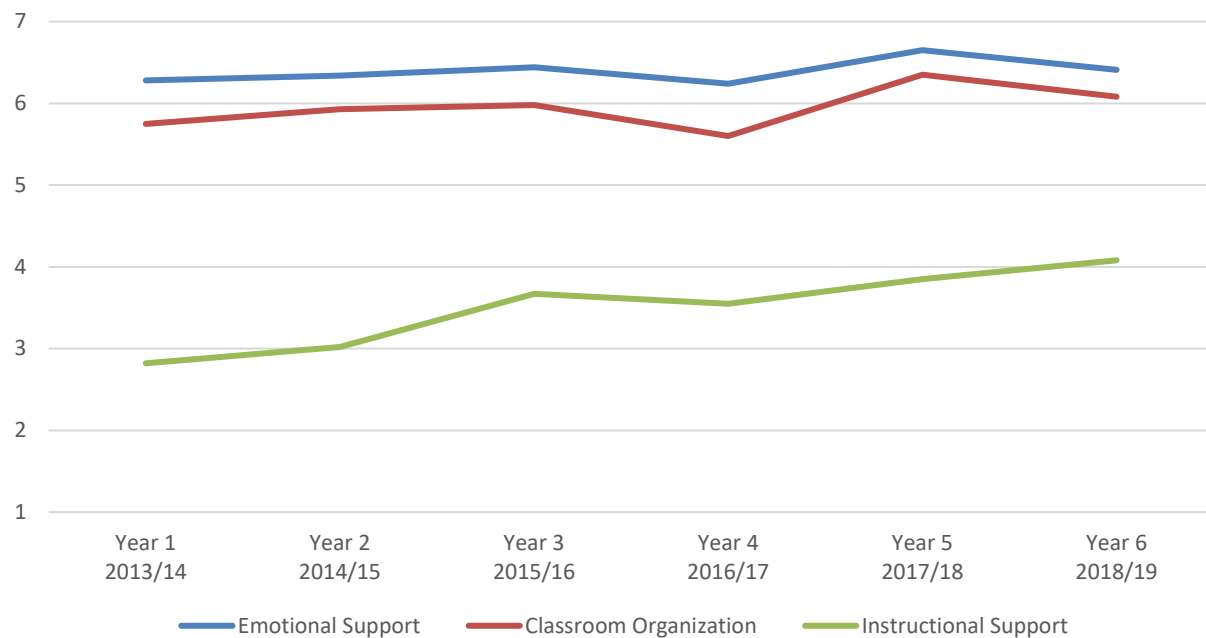
Note: Effect sizes are Hedges' g. df = degrees of freedom; CI = confidence interval.

^a Results from Levene's test of homogeneity of variances showed equal variances could not be assumed; therefore, a Welch's analysis of variance (ANOVA) was conducted.

Interaction Quality Over Time

Figure 2 depicts the change in average interaction quality for the program over time. As in Year 5, Emotional Support and Classroom Organization scores are, overall, in the high-quality range (6 or above), and Instructional Support has continued to rise to the middle of the midrange of quality (between 3 and 5 on the 7-point scale).

Figure 2. Average CLASS domain scores, by program year



Compared to Year 5, Emotional Support ($t = -3.647, p < .001$) and Classroom Organization ($t = -3.034, p = .003$) scores were significantly below the previous year, while Instructional Support scores, overall, were not significantly different between the 2 years ($t = 1.484, p = .140$). Compared to the first year of Pre-K 4 SA, Year 6 scores in Classroom Organization ($t = 2.735, p = .007$) and Instructional Support ($t = 7.22, p < .001$) were still significantly higher; however, although Emotional Support scores were higher, they were not statistically different from Year 1 ($t = 1.749, p = .084$).

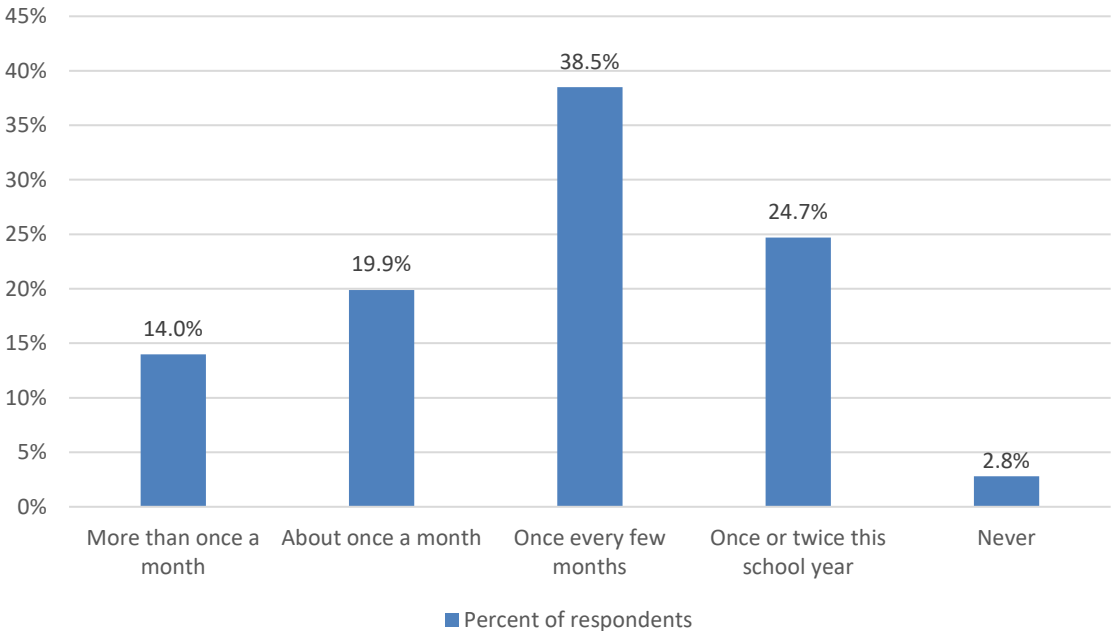
Parent/Guardian Survey Results

At the end of the 2018–19 school year, Pre-K 4 SA parents/guardians were asked to complete an online survey about themselves, their families, and their perceptions about Pre-K 4 SA. They were asked to report on the frequency with which they participated in Pre-K 4 SA, their satisfaction with their Pre-K 4 SA experience, changes in their confidence and behaviors related to supporting their young children, and the upcoming kindergarten year.

Parent/Guardian Participation in Pre-K 4 SA

On average, parents/guardians reported that they (or another adult in the household) had engaged in meetings or participated in activities with Pre-K 4 SA once every few months over the past year.¹³ Most respondents indicated they participated several times across the year and nearly 32 percent indicated they participated at least once a month or more throughout the school year. A breakdown of all responses is shown in Figure 3.

Figure 3. How often parent/guardian participated in Pre-K 4 SA meetings or activities



Note: Valid responses to this item, n=462.

¹³ On a scale of 0–4 (ranging from never to more than once a month), the average was 2.18, or once every few months.

Parent/Guardian Satisfaction with Pre-K 4 SA

Parents/guardians were asked to report on their experience with Pre-K 4 SA teachers, staff, and centers. Across the satisfaction items, three broad categories were addressed: empowerment to support early learning, responsiveness of Pre-K 4 SA, and satisfaction with consideration of cultural diversity.

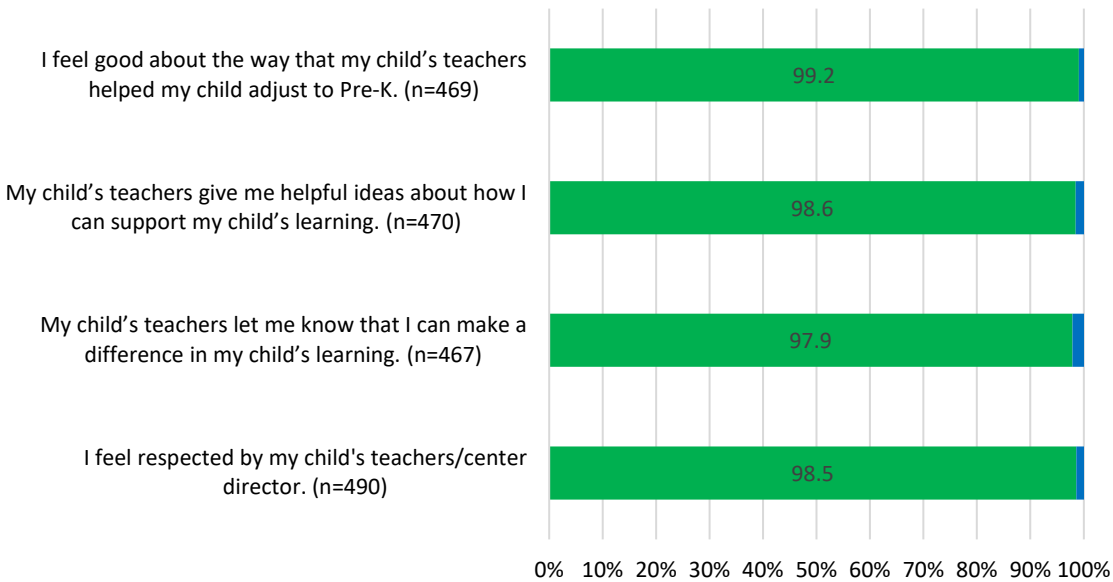
Empowering parents/guardians to support early learning

Parents/guardians indicated positive communication experiences with Pre-K 4 SA teachers and center directors. For example, more than 99 percent of respondents indicated they were pleased with the support their child had received in adjusting to Pre-K 4 SA. Additionally, nearly 98 percent indicated Pre-K 4 SA teachers provided helpful ideas about how parents/guardians could support early learning for their child (see Figure 4).¹⁴ A sample comment offered by a survey respondent illustrates this finding:

“It has been such an amazing experience, not only for [child’s name] but for myself as well. This program is so amazing, not with only what they are teaching the kids, in the classroom and outside but what they teach us as parents.”

¹⁴ A breakdown of responses to all items in this category is displayed in Appendix C, Table C-1.

Figure 4. Parent/guardian agreement on empowerment, by survey item



Note: Percentages of agreement were taken from three response options: a little, somewhat, and a lot.

Compassionate and responsive to children and families

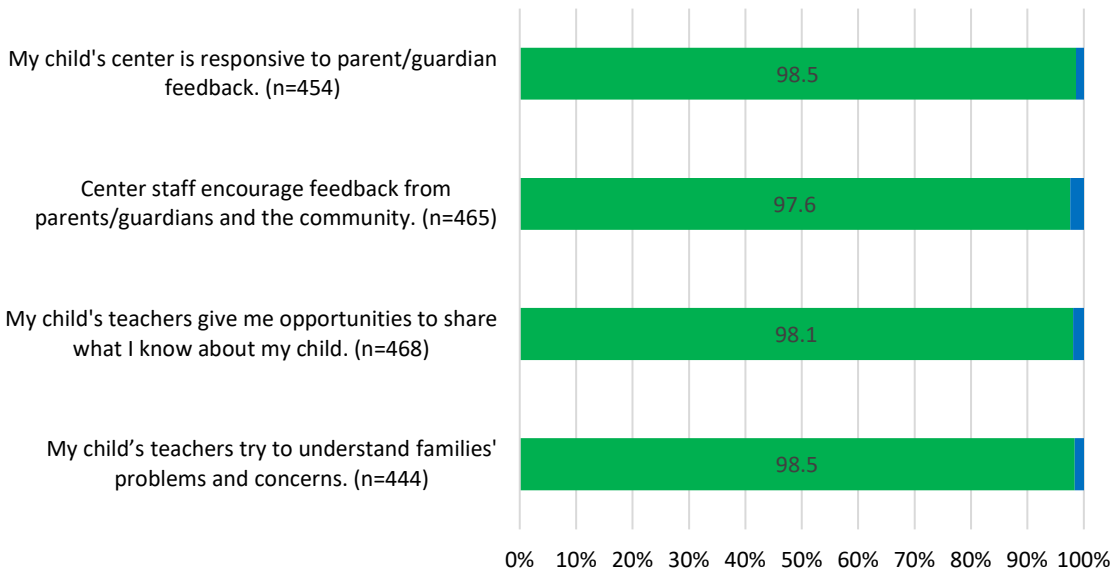
Parents/guardians indicated they felt compassion and responsiveness from Pre-K 4 SA. For example, 98.5 percent of respondents indicated Pre-K 4 SA teachers tried to understand the families' problems and concerns a lot of the time. An example comment offered by a survey respondent illustrates this finding:

"My kids didn't need academic preparation as much as socialization, and they have blossomed--they are more intellectually curious, have made good friends, and my little girl has lost her painful shyness."

Additionally, more than 98 percent indicated Pre-K 4 SA centers were responsive to feedback (see Figure 5¹⁵).

¹⁵ A breakdown of responses to all four items in this category is displayed in Appendix C, Table C-2.

Figure 5. Parent/guardian agreement on compassion and responsiveness, by item



Note: Percentages of agreement are taken from three response options: a little, somewhat, and a lot.

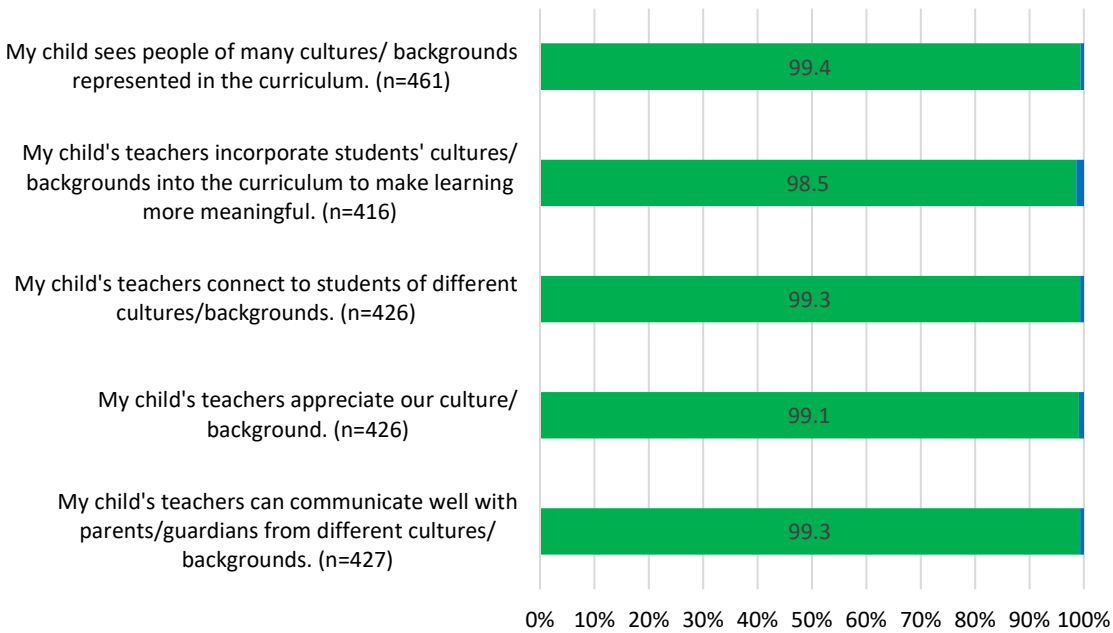
Appreciative and respectful of cultural diversity

Parents/guardians indicated they believed Pre-K 4 SA is appreciative and respectful of cultural diversity. For example, more than 99 percent of respondents indicated Pre-K 4 SA teachers appreciated family culture and background. Additionally, more than 99 percent indicated Pre-K 4 SA teachers communicate well with different cultures and backgrounds (see Figure 6¹⁶). An example comment offered by a survey respondent illustrates this finding:

“Prek 4 SA has reiterated to my daughter that her voice matters and her opinions and feelings matter as well. Her self confidence has grown and so has her thirst for knowing things. Keep up the incredible work!”

¹⁶ A breakdown of responses to all four items in this category is displayed in Appendix C, Table C-3.

Figure 6. Parent/guardian agreement on cultural diversity, by item



Note: Percentages of agreement are taken from three response options: a little, somewhat, and a lot.

Parent/Guardian Reported Change in Confidence

As part of the survey, parents/guardians were asked to indicate how confident they felt in their ability to support their children’s basic needs as well as academic needs, compared to the beginning of the year (before Pre-K 4 SA). In each category, the majority of respondents reported being “much more confident” in all areas. For example, 84 percent of respondents indicated they are more or much more confident in their ability to provide emotional support to their children, and 89 percent said they are more or much more confident in advocating for their child’s education. See Figures 7 and 8 for more detail.

Figure 7. Parent/guardian confidence in supporting children’s basic needs

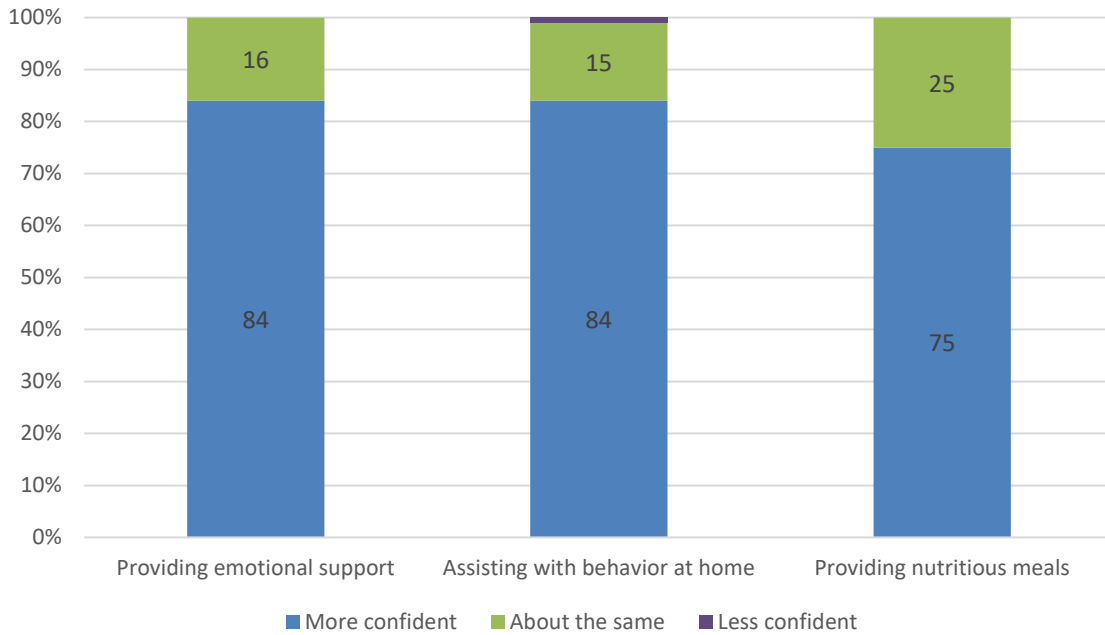
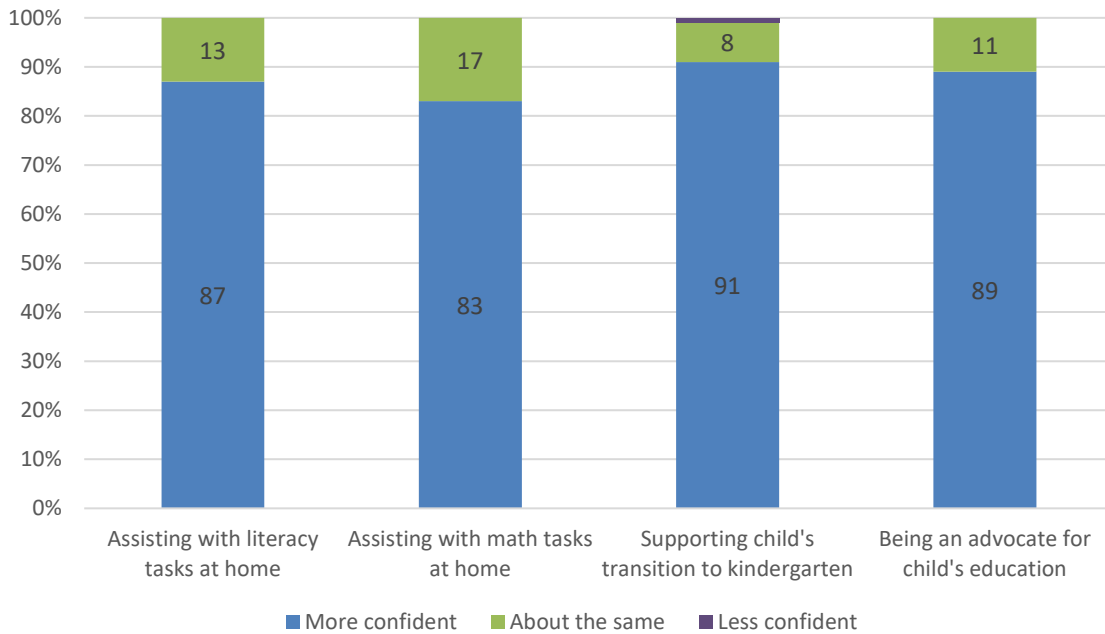


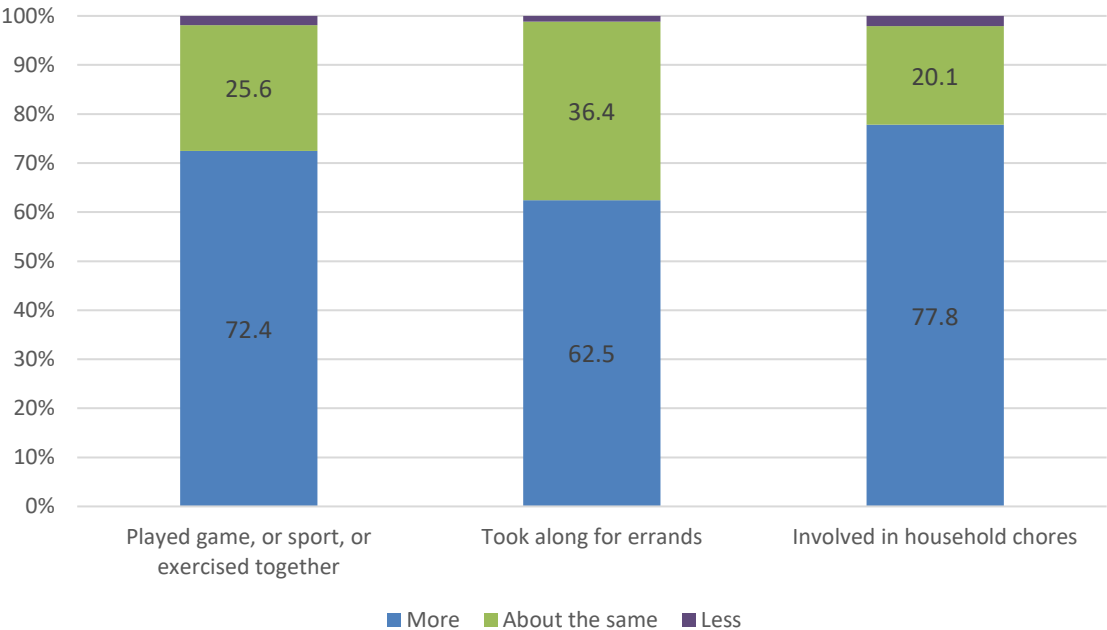
Figure 8. Parent/guardian confidence in supporting children’s academic needs



Parent/Guardian Reported Change in Behavior

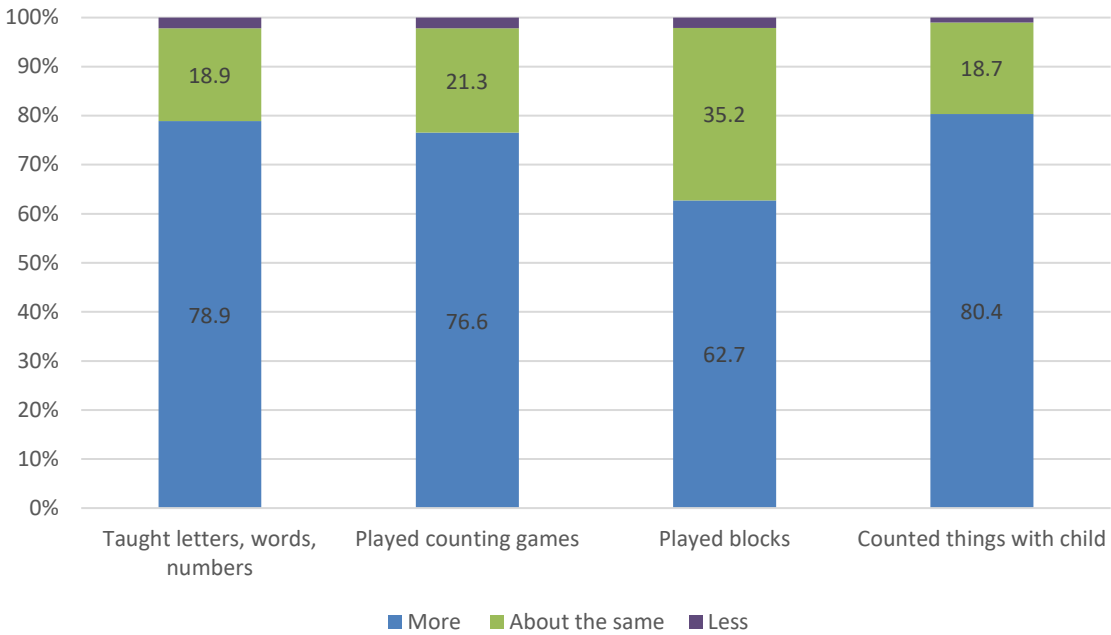
Parents/guardians were asked, as part of the survey, to indicate how often they engaged in a number of activities with their children, compared to the beginning of the year (before Pre-K 4 SA). Similar to the results for increases in confidence, the majority of respondents indicated increases in their engagement in a range of life skill (Figure 9), academic (Figure 10), and relationship-building activities (Figure 11) with their children. For example, more than 70 percent of respondents indicated they played games or exercised with their children more (or much more) than before participating in Pre-K 4 SA.

Figure 9. Parent/guardian participation in life skill activities with children



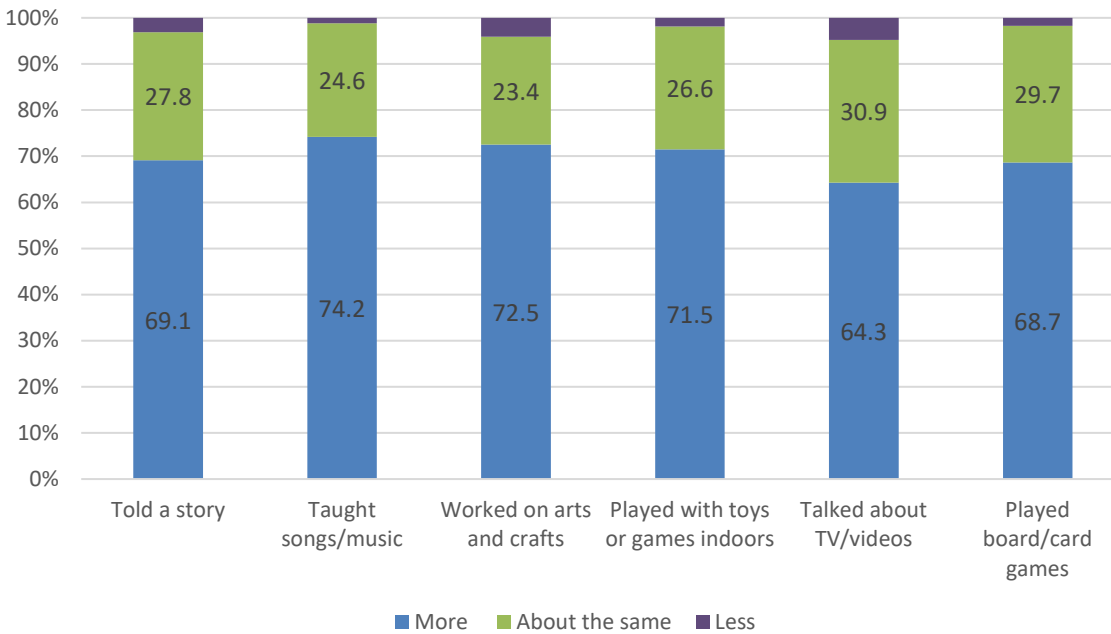
In the area of academic activities, more than 80 percent of respondents indicated they count more with their child, and nearly 80 percent also more often teach their child letters, words, and numbers.

Figure 10. Parent/guardian participation in academic activities with children



With respect to relationship-building activities with children, the majority of parents/guardians reported they had engaged more in stories (69%), arts and crafts projects (72%), and discussions about TV and videos (64%).

Figure 11. Parent/guardian participation in relationship-building activities with children



Parent/Guardian Kindergarten Selection and Perceptions of Readiness

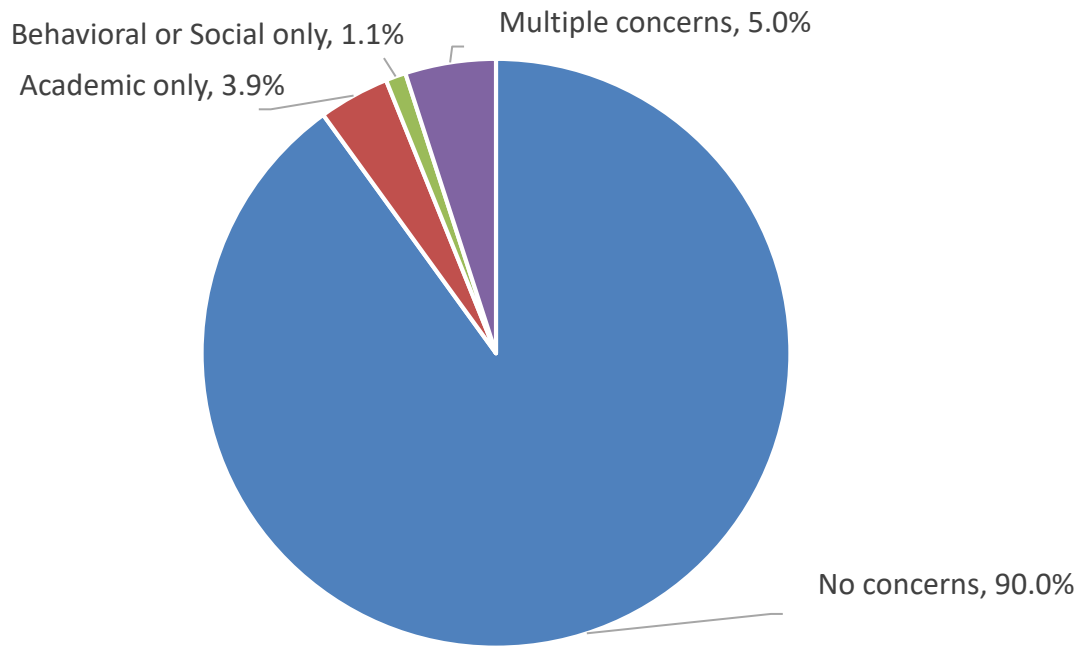
As part of the survey, parents/guardians were also asked to indicate where children would be attending kindergarten and the reasons for selecting the identified kindergarten. Of those who responded (n=356; 69%), more than 60 percent (n=218) indicated a public school kindergarten. The majority (n=202) reported their child would be attending their assigned public elementary school in the fall. An additional 16 parents/guardians also indicated the selected public school was not the assigned school; these respondents either named a specific public elementary school or indicated a school where a parent/guardian was an employee.

Reasons for kindergarten selection were varied. Parents/guardians most often said they had selected the kindergarten because it was close to home (n=242; 49%) or because of the quality of its program/curriculum (n=186; 38%) or staff (n=108; 22%). Other reasons for choosing the school included proximity to the parent/guardian's workplace, attendance by other children in the household, a recommendation from others, safety, and the offering of a dual-language program.

Finally, two survey questions inquired about parent/guardian perceptions of their child's readiness for kindergarten and what concerns they had for their child. Ninety percent of parents/guardians who responded to the question (n=326)¹⁷ indicated they had no concerns about their child's readiness. Of the approximately 10 percent who did indicate concerns, 39 percent were concerned only about academic readiness (3.9% of total respondents), and 6 percent each were concerned about only behavioral readiness or social readiness (each representing less than 1% of total respondents). An additional 30 percent of the respondents who indicated concern identified two of the three concern areas (3% of total respondents), and the remaining 19 percent indicated concern in all three areas (2% of total respondents). Figure 12 displays parent/guardian perceptions of kindergarten readiness.

¹⁷ Out of the 517 survey responses, 70 percent (n=362) included a response to these questions.

Figure 12. Parent/guardian perceptions of kindergarten readiness



Extended Day Results

The spring parent/guardian survey asked questions about the potential benefits of utilizing extended day services. Of the 426 respondents who completed the item, 203 (49%) indicated their children received extended day services. Among these parents/guardians, 99.5 percent (n=202) reported they did so to work full-time jobs, longer shifts/more hours, or a second or third job.¹⁸ Eighty percent (80.2%; n=162) indicated children received extended day services every day, 14.4 percent (n=29) reported children attended 3–4 days per week, and the remaining 5.4 percent (n=11) said children attended 1–2 days per week during the school year.¹⁹

Respondents also indicated which member of the household was able to work by taking advantage of extended day services. The majority of respondents (53%) reported extended day services allowed

¹⁸ This group included 173 who said they worked longer shifts/more hours and 29 who said they had a second or third job or a full-time job/work schedule that ended later than typical school hours.

¹⁹ These percentages are based on a total of 202 respondents who completed this item.

them to work full-time and/or more hours or jobs (n=106). An additional 45 percent (n=91) indicated both they and another caregiver were able to work full-time and/or more hours or jobs, and the remaining 2 percent said another caregiver was able to work full-time and/or more hours or jobs.²⁰ We found several statistically significant results between respondents who used and did not use extended day services. The first statistically significant difference was for respondents' ability to work for pay compared those who did not take advantage of extended day services ($t = 7.60$; $p < .000$). Effect size calculations showed this to be a large effect ($d = 0.81$). This finding indicates Pre-K 4 SA parents/guardians who used extended day services were significantly more likely to be able to work compared to parents/guardians who did not use such services. The following quote illustrates this finding:

"I'm a single mom and my work hours are 8am-5pm so I was able to complete my 40 hours a week without any stress to find someone to pick him up after school every day while I'm at work."

A statistically significant difference was also found for the number of hours respondents were working ($t = 2.988$; $p = .003$). Respondents who said they used extended day services reported working, on average, 4 more hours per week than respondents who did not take advantage of such services. More specifically, those who used extended day services reported working an average of slightly more than 40 hours a week (40.28 hours), while respondents who did not use these services reported working an average of 36 hours (36.21 hours). It is interesting that this difference falls between the thresholds for full-time versus part-time hours, which may also have implications for the availability of full-time fringe benefits such as health insurance and vacation. Effect size calculations showed this to be a small effect ($d = 0.38$). No statistically significant difference was

²⁰ These percentages are based on a total of 201 respondents who completed this item.

found for other caregiver’s ability to work or hours worked. A quote illustrating this finding is shown here:

“My family started the school year off receiving benefits. I was employed part time and attending school part time. Both parents in our family are now fully employed with stable jobs. I am still currently attending school part time to earn my bachelor's degree. We would not have been able to achieve this success without the extended day care.”

Finally, statistically significant differences were found with respect to household income. Respondents who indicated they used extended day services reported annual household earnings that were, on average, more than \$10,000 above those of respondents who did use extended day services. More specifically, parents/guardians who used extended day services reported average annual household earnings of \$54,400, which is above the median household income for San Antonio (\$50,044), while respondents who did not use extended day services reported average household earnings of \$42,120.

We found no statistically significant difference between extended day service users and nonusers on the question about attending school for coursework or job training. However, respondents did talk about educational attainment, as in the quotes presented here:

“Pre K 4 SA has given not only my child to continue her education, but both of my husband and I to finish our education.”

“PreK4SA was a blessing for my son to participate. I’m a single mother that earned this past December my bachelors in Education from UTSA.”

Kindergarten Readiness – GOLD Results

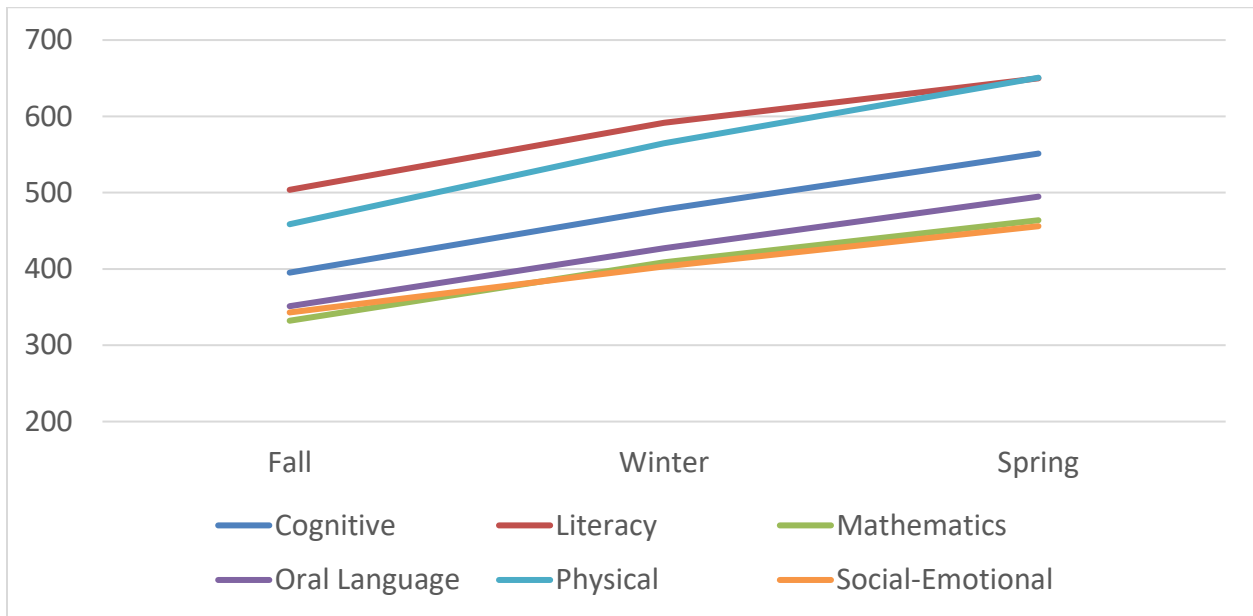
Pre-K 4 SA used the Teaching Strategies GOLD assessment to collect information on children at three points throughout the academic year: fall, winter, and spring. Children were included in

analyses if they had outcome data for all three time points (88.0%; n=1,822)²¹ in at least one of the following six outcomes: cognitive, literacy, mathematics, oral language, physical, and social-emotional. No significant differences were found between children included and excluded in analyses for gender ($X^2(1) = 0.329, p = .566$) and tuition status ($X^2(2) = 4.813, p = .090$); however, differences were found for free lunch status ($X^2(1) = 6.430, p = .011$) and race ($X^2(6) = 20.352, p = .002$). More specifically, children who could be included in at least one outcome analysis were less likely to qualify for free lunch ($Z = 2.536, p = .011$), more likely to be Hispanic ($Z = 3.604, p = .000$), less likely to be Asian ($Z = 2.499, p = .012$), less likely to be Black ($Z = 2.148, p = .032$), and less likely to be multiracial ($Z = 2.373, p = .018$).

Because data were not collected on a comparison or control group, in prior years comparisons were conducted using the nationally representative normed data for the GOLD assessment (Lambert, Kim, & Burts, 2013). The GOLD assessment has been modified so the range of scores now extends from birth through third grade. However, valid, updated norms were not yet available as of the writing of this report. Therefore, the GOLD data were compared from fall to spring for Pre-K 4 SA students only, to determine if there had been significant growth. For all six outcomes there was significant growth from fall to spring (see Figure 13). The growth ranged from 113 scale score points for the social-emotional domain to approximately 192 (192.01) scale score points for the physical domain.

²¹ Of the 249 children who could not be included in GOLD analyses, 24 (9.6%) appeared to have invalid data for at least one time point. The numbers of children excluded from the analysis were 3 for the cognitive, mathematics, physical, and social-emotional outcomes; 23 for literacy; and 22 for oral language.

Figure 13. Growth in GOLD outcomes over the pre-K year



Note: The scales for the GOLD outcomes are not equivalent; therefore, it would be inappropriate to compare the individual outcomes to one another based on starting and ending points or growth.

Differences in Readiness Outcomes by Center

We conducted analyses within the Pre-K 4 SA sample to explore potential differences related to GOLD outcomes for children by center. The results showed statistically significant variation in growth across centers for three GOLD outcomes (cognitive, mathematics, and oral language), meaning the average growth was not the same for children across all four centers (see Table 9). All of the significant findings favored children in the North center compared to children in the East, South, or West centers, with medium and large effect sizes. These findings suggest that, on the GOLD assessment, children in the North center had greater increases over time (from fall to spring) in their cognitive, mathematics, and oral language skills compared to children in the East, South, and West centers. We found no significant differences by center for the literacy, physical, and social-emotional domains, suggesting children’s growth in these domains was equal across centers.

We also analyzed each fall time point for the six GOLD domains to identify any significant differences in assessed skills across centers at entry into Pre-K 4 SA. There were no statistically significant comparisons for any of the domains, implying children entered Pre-K 4 SA with the same skills across the four centers.

Table 9. Year 6 significant GOLD domain growth scores from fall to spring, by center

GOLD outcome	Group mean by center				F statistic ^a	df	p-Value	Effect Size	Significant center differences
	East	North	South	West					
Cognitive	131.33	185.73	148.11	157.65	3.22	(3, 99)	.0260	0.88	East lower than North
								0.66	West lower than North
Mathematics	124.63	150.43	124.81	126.31	3.30	(3, 99)	.0236	0.76	South lower than North
								0.75	East lower than North
Oral language	130.13	169.57	131.59	140.73	2.91	(3, 95)	.0387	0.75	South lower than North
								0.74	East lower than North

df = degrees of freedom.

Note: There were no significant differences for literacy, physical, or social-emotional outcomes. Due to violations of the independence assumption, a cluster regression analysis was conducted. Effect sizes between 0.5 and 0.8 are medium, and effect sizes greater than 0.8 are large.

Differences in Readiness Outcome Growth by Child Characteristics and Classroom Quality

We also conducted analyses within the Pre-K 4 SA sample to determine if variation in growth in GOLD outcomes was accounted for by child demographics,²² the three CLASS domains, and the relationship between Pre-K 4 SA attendance and classroom quality. There were significant results for (1) all six GOLD outcomes, based on child demographics; (2) two of the six GOLD outcomes, in relation to classroom quality (as measured by the CLASS); and two interactions between Pre-K 4 SA attendance and classroom quality.

Child Characteristics

There were significant differences in the GOLD outcomes based on child gender, free or tuition status, fall GOLD score, and Pre-K 4 SA attendance. Girls were assessed as having higher growth than boys across three outcomes: the physical domain, more than four (4.56) additional scale score points; the oral language domain, more than six (6.14) additional scale score points; and the social-emotional domain, more than nine (9.05) additional scale score points. Children who paid tuition were assessed as having higher growth in the cognitive, oral language, and social-emotional domains than children who attended for free or on scholarship. In the cognitive and oral language domains, children who paid tuition grew more than seven (7.57 and 7.08, respectively) additional scale score points compared to children who attended for free or on scholarship. In the social-emotional domain, children who paid tuition grew more than five (5.75) additional scale score points compared to children who attended for free or on scholarship.

The fall GOLD score was significantly related to growth in four of the GOLD domains. If children entered Pre-K 4 SA with higher scores in the fall, their potential for growth over time was lower than for children with lower scores at pre-K entry, resulting in negative findings. Results ranged from -0.19 in the social-emotional domain to -0.31 in the literacy domain. For the social-emotional domain, this finding implies that for every scale score point increase in the fall, growth from fall to spring was decreased by 0.19 scale score points. Similarly, for the literacy domain, this finding

²²Child characteristics included gender, free or tuition status (scholarship children were categorized as free), race/ethnicity, Pre-K 4 SA attendance, and fall GOLD score.

implies that for every one scale score point increase in the fall, growth from fall to spring was decreased by 0.31 scale score points. We found no significant differences in growth based on entrance scores for the cognitive or oral language domain.

Finally, Pre-K 4 SA attendance was significantly related to growth in the cognitive domain. It appeared that as children attended Pre-K 4 SA more, there was less growth in the cognitive domain. This finding implies that for every 1 percent increase in Pre-K 4 SA attendance, growth from fall to spring was decreased by almost 434 (433.74) scale score points. Note that there was a significant interaction between emotional support and attendance for this outcome. Therefore, this finding will be discussed more in the next section.

Classroom Quality

There were two significant findings based on emotional support. In the cognitive domain, for every 1-point increase in the observed emotional support of a classroom, children's growth decreased a little more than 166 (-166.38) scale score points. In the social-emotional domain, there was also a finding with respect to emotional support. For every 1-point increase in emotional support, children's social-emotional growth decreased by a little more than 88 (-88.36) scale score points. These counterintuitive findings may be related to the truncated range of emotional support scores (almost all classrooms were in the high range, with a score between 6 and 7). (See Appendix D, Table D-1, for more information.)

Pre-K 4 SA Attendance and Classroom Quality

There were two significant interactions between Pre-K 4 SA attendance and classroom quality. The mean attendance was computed for each of the two significant outcomes based on students in the analytic sample. Children were classified as low if they attended below the average attendance and high if they attended at or above the mean (92.6%). One interaction between attendance and the instructional support domain was barely significant ($p = .046$); therefore, we will focus the discussion on the other significant interaction.

We found a significant interaction between Pre-K SA attendance and emotional support for the cognitive domain. For this domain, children with high attendance had greater gains in classrooms with emotional support scores of greater than 5.5. This finding implies children who attend Pre-K 4 SA more often and are in more emotionally supportive classrooms will have greater gains in the

cognitive domain, likely because they are more often in highly emotionally supportive classroom environments (attending Pre-K SA more) and are thus receiving the benefits. The cognitive domain of the GOLD assessment captures capabilities such as persistence, learning curiosity and motivation, and flexibility and inventiveness in thinking. This finding implies children will have greater gains in such skills if they attend Pre-K 4 SA more often and are in classrooms with greater emotional quality. These gains are likely due to the supportive, facilitative, respectful climate of such classrooms, which would be seen as safe places for children to experiment and take learning risks. (See Appendix D, Figure D-1, for a visual representation of the interaction between attendance and emotional support for the cognitive domain.)

Early Elementary Outcomes

Early Elementary Attendance (K–2)

We conducted analyses to explore the relationship between former Pre-K 4 SA participation and whether a student attended more school during kindergarten, first, or second grade. Even after controlling for gender, ethnicity, language, special education, and economic disadvantage, former participation in Pre-K 4 SA was significantly predictive of greater attendance in kindergarten ($p = .004$), first grade ($p = .008$), and second grade ($p < .000$), compared to demographically similar peers who were not identified as having attended a pre-K program. On average, former Pre-K 4 SA students attended school nearly 1 percent more annually (between 0.5% and 0.7%, or slightly more than 1 additional day each year).

Former Pre-K 4 SA participation appears to be consistently predictive of greater attendance throughout the early elementary grades, compared to children who were not identified as having attended a pre-K program prior to kindergarten entry.

Early Reading Results (K–2)

Logistic regression was conducted to explore the relationship between former Pre-K 4 SA participation and whether a student was eligible for accelerated reading instruction. Students were identified as being eligible for such instruction if they (1) did not show adequate progress in reading development and/or (2) were at risk for reading difficulties.

After accounting for demographic characteristics, former participation in Pre-K 4 SA was related to students being on track in terms of reading (not eligible for accelerated reading instruction) in both

kindergarten and first grade. More specifically, in kindergarten former Pre-K 4 SA children were 40 percent²³ more likely to be “reading ready” (less likely to qualify for accelerated reading instruction) compared to their peers with no identified pre-K experience ($p < .001$).

For students in first grade, former Pre-K 4 SA children were 18 percent²⁴ more likely to be “reading ready” (less likely to qualify for accelerated reading instruction) compared to their peers with no identified pre-K experience ($p = .030$). No significant results were found for second grade students.

Former Pre-K 4 SA participation appears to be predictive of greater reading readiness in kindergarten and first grade, compared to children who were not identified as having attended a pre-K program prior to kindergarten entry.

Kindergarten Readiness Results (kindergarten only)

We conducted separate analyses, by comparison group, for each available KEA for which there was a large enough sample of students across all comparison groups (no identified pre-K matched comparison, district pre-K matched comparison, and former Pre-K 4 SA waitlist student). Six assessments were explored for the matched comparison analyses: (1) DIBELS, (2) ISIP English, (3) ISIP Español, (4) MAP, (5) Tejas Lee, and (6) TPRI. Results from each analysis are described below.

Analysis of covariance (ANCOVA) analyses were conducted to explore the relationship between former Pre-K 4 SA participation and whether a student was assessed as more literacy ready at the beginning of kindergarten. Even after controlling for gender, ethnicity, language, special education, and economic disadvantage, former participation in Pre-K 4 SA was significantly predictive of greater readiness at the beginning of kindergarten when measured by four of the six tested KEAs. More specifically, former Pre-K 4 SA students were assessed as significantly more literacy ready than demographically similar peers who were not identified as having attended a pre-K program, as measured by ISIP English ($p < .000$), MAP ($p = .030$), Tejas Lee ($p < .000$), and TPRI ($p = .014$). On average, former Pre-K 4 SA students outperformed the no pre-K comparison sample by 0.83–3.76 point average mean differences, depending on KEA.

²³ The percentage translates into 0.40 times more likely to be “reading ready.” Odds ratio result = 1.40.

²⁴ The percentage translates into 0.18 times more likely to be “reading ready.” Odds ratio result = 1.18.

In terms of literacy, when measured by four of six KEAs, former Pre-K 4 SA participation appears to be predictive of greater kindergarten readiness, compared to children who were not identified as having attended a pre-K program prior to kindergarten entry.

Summary and Discussion

Overall, results from the Year 6 evaluation indicate Pre-K 4 SA has provided high-quality instructional environments to more than 2,000 predominantly low-income children from across San Antonio. The characteristics of those children were similar to those from previous years, as was the children's attendance in the program. Classroom quality scores, while sometimes lower than the previous year, were still high, indicating strong classroom quality. In fact, children who often experience lower classroom quality than their peers (ELLs) were actually found to have received the same and, in some ways, a higher quality classroom experience than their counterparts.

Survey results showed Pre-K 4 SA families from Year 6 engaged in activities with Pre-K 4 SA once every few months and parents/guardians reported positive perceptions of Pre-K 4 SA, as well as growth in their confidence to support their children's needs and transition to kindergarten. When parents/guardians were asked if they had changed their behavior after participating in Pre-K 4 SA, they indicated they currently spent more time engaging in life skill, academic, and relationship-building activities with their children. These findings suggest that parents/guardians are also gaining knowledge, skills, and confidence in engaging with their children after participating in Pre-K 4 SA.

Parents/guardians who took advantage of extended day services reported a greater number of work hours and a greater household income than those whose children did not participate in extended day services. These findings suggest the added benefit the extended day portion of Pre-K 4 SA provides to families.

Teacher-reported kindergarten readiness at the end of the pre-K year (GOLD) suggested there was significant growth over time. There were also significant differences in growth based on child characteristics, Pre-K 4 SA attendance, and center attended. Greater gains in the cognitive domain were found for children who attended more often and were in emotionally supportive classrooms. Greater gains in the physical domain were found for children who attended more often and were in instructionally supportive classrooms. There was statistically significant variation in growth across centers for three GOLD outcomes (cognitive, mathematics, and oral language). All of the significant

findings favored children in the North center compared to children in the East, South, or West centers. These findings suggest that when children have more exposure to the Pre-K 4 SA environment and better classroom quality, they display greater growth toward kindergarten readiness in multiple areas of development.

Finally, the longitudinal results suggest Pre-K 4 SA is supporting the children of San Antonio by increasing the number who (1) are coming to school with greater frequency, (2) come to school “ready to learn,” and (3) are more kindergarten ready according to district kindergarten entry assessments. Pre-K 4 SA appears to have a sustained relationship to increased attendance 1, 2, and 3 years after program participation, compared to demographically similar students with no identified pre-K experience. In addition, Pre-K 4 SA also appears to have a sustained relationship to a decrease in the need for additional reading support in kindergarten and first grade. Finally, it also appears to support kindergarten readiness. Overall, the evidence suggests Pre-K 4 SA children are receiving some sustained benefits compared to children who did not attend a pre-K program, especially in terms of lasting significant findings on attendance and early reading, up to 3 and 2 years, respectively, after participation. These findings speak to the potential relationship between high-quality early childhood experiences and sustained effects, rather than the fade-out issues described in the existing reports on other initiatives.

Taken together, the results from the Year 6 evaluation suggest children and families are both benefiting, in academic and non-academic ways, from participation at Pre-K 4 SA centers.

Limitations

In addition to the typically discussed limitations of (1) reliance on a teacher report measure as the primary outcome of interest during the pre-K year and (2) the lack of a control or comparison group of children with whom to compare participating children at the end of the pre-K year, three additional limitations require mention.

First, parent/guardian survey responses should not be interpreted as having been *caused* by Pre-K 4 SA, only that there appear to be relationships to positive outcomes for families. Additionally, only 25 percent of 2018–19 Pre-K 4 SA children’s families participated in the survey (n=517 out of 2,070); therefore, caution in extrapolation to all Pre-K 4 SA families is warranted.

Second, the kindergarten readiness results were somewhat limited by sample sizes, as measured by at the beginning of the kindergarten year. Because different districts use multiple assessments, we had to break the larger sample into much smaller samples for analysis purposes. Note that the kindergarten entry assessments used across districts measure different aspects of literacy and are also not comparable with one another.

Third, the comparison groups in the early elementary analyses are described as not having had identified pre-K experience; however, this variable, provided by TEA, relates only to district pre-K experience. Therefore, children in the comparison groups may have attended private pre-K or other pre-K settings not captured by this variable.

Finally, longitudinal outcomes were limited to literacy and attendance, as other relevant early elementary outcomes were not available statewide. For example, because (1) this portion of the evaluation relied on state data, (2) children attended elementary school in many different districts, and (3) primary data collection was not an option, the conclusions we have drawn about success in early elementary school are limited and may not tell the whole story. Without similar measures of mathematics, science, executive function, and other social-emotional constructs, we do not have a complete picture of readiness nor of continued success in the early grades.

References

- Barnett, W. S., & Friedman-Krauss, A. (2016). *State(s) of Head Start*. New Brunswick, NJ: National Institute for Early Education Research. Retrieved from http://nieer.org/wp-content/uploads/2016/12/HS_Digest_States_of_Head_Start.pdf.
- Bassok, D., & Galdo, E. (2016). Inequality in preschool quality? Community-level disparities in access to high-quality learning environments. *Early Education and Development, 27*(1), 128–144.
- Burchinal, M., Vandergrift, N., Pianta, R., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in pre-kindergarten programs. *Early Childhood Research Quarterly, 25*(2), 166–176.
- Campbell, F. A., Ramey, C. T., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science, 6*, 42–57.
- Chien, N. C., Howes, C., Burchinal, M., Pianta, R., Ritchie, S., Bryant, D., Clifford, R., Early, D., & Barbarin, O. (2010). Children's classroom engagement and gains in academic and social-emotional outcomes across pre-kindergarten. *Child Development, 81*(5), 1534–1549.
- Heckman, J. J., Moon, S. H., Pinto, R., Savelyev, P. A., & Yavitz, A. (2010). The rate of return to the High/Scope Perry Preschool Program. *Journal of Public Economics, 94*, 114–128.
- Hill, C. J., Gormley, W. T., Jr., & Adelstein, S. (2015). Do the short-term effects of a high-quality preschool program persist? *Early Childhood Research Quarterly, 32*, 60–79.
- Lambert, R., Kim, D., & Burts, D. (2013). *Technical manual for the Teaching Strategies GOLD assessment system* (CEMETR-2013-05). Charlotte, NC: Center for Educational Measurement and Evaluation, University of North Carolina. Retrieved from <https://education.uncc.edu/ceme/ceme-technical-reports>.
- La Paro, K. M., Pianta, R. C., & Shuhlman, M. (2004). Classroom Assessment Scoring System (CLASS): Findings from the pre-k year. *Elementary School Journal, 104*(5), 409–426.
- Locasale-Crouch, J., Konold, T., Pianta, R., Howes, C., Burchinal, M., Bryant, D., Clifford, R., Early, D., & Barbarin, O. (2007). Observed classroom quality profiles in state-funded pre-kindergarten programs and associations with teacher, program, and classroom characteristics. *Early Childhood Research Quarterly, 22*(1), 3–17.
- Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., Burchinal, M., Early, D. M., & Howes, C. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development, 79*(3), 732–749.
- Pianta, R., LaParo, K., & Hamre, B. (2008). *Classroom assessment scoring system*. Baltimore, MD: Brookes Publishing.

- Reynolds, A. J., Temple, J. A., White, B., Ou, S., & Robertson, D. L. (2011). Age-26 cost benefit analysis of the Child-Parent Center Early Education Program. *Child Development, 82*, 379–404.
- Rolnick, A., & Grunewald, R. (2003). Early childhood development: Economic development with a high public return. *The Region, 17*(4), 6–12.
- Valentino, R. (2018). Will public pre-K really close achievement gaps? Gaps in prekindergarten quality between students and across states. *American Educational Research Journal, 55*(1), 79–116.
- What Works Clearinghouse. (2014). *WWC procedure and standards handbook 3.0*. Washington, DC: WWC. Retrieved from <http://ies.ed.gov/ncee/wwc/DocumentSum.aspx?sid=19>.

Appendix A
Evaluation Methods

This page is intentionally blank

Appendix A

Evaluation Methods

Here we provide information on measures used in the Pre-K 4 SA Year 6 evaluation, as well as details on the analytic approach to the analyses described in the body of the report.

Measures

Classroom Assessment Scoring System (CLASS)

CLASS (Pianta, La Paro, & Hamre, 2008) is an observational system that assesses classroom practices in preschool by measuring the interactions between children and adults. Observations in the Year 6 evaluation consisted of five 20-minute cycles, followed by 10-minute coding periods. Scores were assigned during various classroom activities and then averaged across all cycles for an overall quality score.

Interactions were measured on 10 different dimensions (see Table A-1 for descriptions of each CLASS dimension) divided into three larger domains. The Emotional Support domain is measured using four dimensions: positive climate, negative climate, teacher sensitivity, and regard for student perspectives. The CLASS also measures Classroom Organization using three dimensions: behavior management, productivity, and instructional learning formats. Instructional Support is measured using three dimensions: concept development, quality of feedback, and language modeling.

The CLASS uses a 7-point Likert-type scale, for which a score of 1 or 2 indicates low-range quality and a score of 6 or 7 indicates high-range quality. Each dimension and domain is assigned a score during each 20-minute cycle (or observation period). The number of children and adults in the classroom was also recorded during each 20-minute cycle.

Table A-1. Descriptions of CLASS dimensions

Domain	Dimension	Description
Emotional Support	Positive climate	Reflects the emotional connection between teachers and children and among children, as well as the warmth, respect, and enjoyment communicated by verbal and nonverbal interactions.
	Negative climate	Reflects the overall level of expressed negativity in the classroom. The frequency, quality, and intensity of teacher and peer negativity are key to this dimension.
	Teacher sensitivity	Encompasses the teacher’s awareness of and responsiveness to students’ academic and emotional needs.
	Regard for student perspectives	Captures the degree to which the teacher’s interactions with students and classroom activities emphasize students’ interests, motivations, and points of view and encourage student responsibility and autonomy.
Classroom Organization	Behavior management	Encompasses the teacher’s ability to provide clear behavior expectations and use effective methods to prevent and redirect misbehavior.
	Productivity	Considers how well the teacher manages instructional time and routines and provides activities for students so that they have the opportunity to be involved in learning activities.
	Instructional learning formats	Focuses on the ways in which teachers maximize students’ interest, engagement, and abilities to learn from lessons and activities.
Instructional Support	Concept development	Measures the teacher’s use of instructional discussions and activities to promote students’ higher-order thinking skills and cognition and the teacher’s focus on understanding rather than on rote instruction.
	Quality of feedback	Assesses the degree to which the teacher provides feedback that expands learning and understanding and encourages continued participation.
	Language modeling	Captures the effectiveness and amount of teacher’s use of language-stimulation and language-facilitation techniques.

Parent/Guardian Survey

Westat created the 32-item parent/guardian survey based on existing national surveys of parents of young children. The national surveys we consulted included the Early Childhood Longitudinal Study, Birth Cohort; the Early Childhood Longitudinal Study, Kindergarten Class of 2010–2011; and the National Household Education Survey Program of 2016. Items included topics such as (1) frequency of engagement with Pre-K 4 SA; (2) perceptions of Pre-K 4 SA teachers, staff, directors, and centers; (3) changes in parental confidence since participating in Pre-K 4 SA; (4) changes in parental behavior since participating in Pre-K 4 SA; (5) plans and reasons for kindergarten selection; and (6) concerns about the child’s readiness for kindergarten. The first part of the survey was used and is described here in the annual evaluation report. The second part of the

survey asked parents/guardians whether they took advantage of the extended day services provided by Pre-K 4 SA, as well as questions about their educational activities, employment, and household earnings.

Teaching Strategies GOLD

The GOLD assessment is a teacher-reported measure selected and used by Pre-K 4 SA to collect information on children’s progress on 36 objectives across six main categories: Cognitive, Literacy, Oral Language, Mathematics, Physical, and Social-Emotional. (Other categories are available to be tailored to specific programs.) The GOLD assessment is conducted at three points throughout the year: fall, winter, and spring.

Analytic Approach

Research questions were addressed by analyzing study data as well as existing Pre-K 4 SA databases. To address the first two questions—*What were the reported levels of child attendance during the pre-K year?* and *Are attendance rates stable over implementation years?*—Pre-K 4 SA data were submitted to Westat and descriptively analyzed. To address the questions *What was the overall observed teacher-child interaction quality in Pre-K 4 SA classrooms in Year 6?*; *Did the Year 6 interaction quality vary by center?*; and *By percentage of ELL children in the classroom?*, CLASS observation data were analyzed both descriptively and inferentially, using analysis of variance (ANOVA). *t*-Tests were conducted to assess *whether improvement had been observed in interaction quality from the previous year of implementation (Year 5) and the initial year of Pre-K 4 SA (Year 1)*. To address the questions about parent/guardian reports on the survey—*What are parent/guardian perceptions of Pre-K 4 SA as well as reported confidence and behavior changes since participating in Pre-K 4 SA?*—data were descriptively analyzed. Finally, we conducted inferential analyses to assess *differences in educational attainment, employment, or earnings for families who take advantage of Pre-K 4 SA extended day services for children*.

The primary pre-K year outcome research question, *Do Pre-K 4 SA children demonstrate significant growth, over the pre-K year, on GOLD outcomes?*, was addressed through dependent sample *t*-tests between the fall and spring GOLD assessment outcomes. In addition, we conducted inferential tests to investigate potential differences in GOLD results by center. Because children were nested in classrooms, a cluster regression was conducted to investigate whether there were significant

differences in the fall GOLD scores and growth in the GOLD scores by center. For GOLD outcomes that showed significant findings, we conducted followup pairwise center comparisons and used the Benjamini-Hochberg technique (1995) to adjust for multiple hypothesis testing. To determine if there was variation in GOLD growth, we used a multilevel modeling approach for the full sample of children, because individual child assessments (GOLD) were clustered within classrooms (Raudenbush & Bryk, 2002). A two-level model was used, with children at level 1 and classrooms at level 2. Child gender, free or tuition status, race/ethnicity, fall GOLD score, attendance in Pre-K 4 SA, the three CLASS domains, and the interactions between the three CLASS domains and Pre-K 4 SA attendance were included in the model.

The full model for GOLD growth is denoted as:

$$\begin{aligned}
 GOLD_{ij} = & \gamma_{00} + \gamma_{10} * Child\ Gender_{ij} + \gamma_{20} * Child\ FreeTuition_{ij} + \\
 & \gamma_{30}Child\ RaceEthnicity\ (Hispanic\ versus\ White)_{ij} + \\
 & \gamma_{40}Child\ RaceEthnicity\ (Hispanic\ versus\ African\ American)_{ij} + \\
 & \gamma_{50}Child\ RaceEthnicity\ (White\ versus\ African\ American)_{ij} + \gamma_{60}Child\ Fall\ GOLD_{ij} + \\
 & \gamma_{70}Child\ Attendance_{ij} + \gamma_{01}Emotional\ Support_j + \gamma_{02}Classroom\ Management_j + \\
 & \gamma_{03}Instructional\ Support_j + \gamma_{04}Child\ Attendance_{ij} * Emotional\ Support_j + \\
 & \gamma_{05}Child\ Attendance_{ij} * Classroom\ Management_j + \gamma_{06}Child\ Attendance_{ij} * \\
 & Instructional\ Support_j + u_{0j} + e_{ij}
 \end{aligned}$$

Where

$GOLD_{ij}$ is the individual growth for child i in classroom j ,

γ_{00} is the overall grand mean growth score,

γ_{10} is the child gender effect (girls were coded as 1 and boys as 0),

γ_{20} is the child free or tuition status effect (free and scholarship were coded as 1 and tuition as 0),

γ_{30} is the child Hispanic versus White race/ethnicity effect,

γ_{40} is the child Hispanic versus African American race/ethnicity effect,

γ_{50} is the child White versus African American race/ethnicity effect,

γ_{60} is the child fall GOLD score effect,

γ_{70} is the child attendance effect,

γ_{01} is the classroom emotional support effect,

γ_{02} is the classroom management effect,

γ_{03} is the classroom instructional support effect,

γ_{04} is the combined child attendance and classroom emotional support effect,

γ_{05} is the combined child attendance and classroom management effect,

γ_{06} is the combined child attendance and classroom instructional support effect,

u_{0j} is the deviation of teacher j , and
 e_{ij} is the deviation of child i in classroom j .

To address the final longitudinal research question, *Are there positive longitudinal outcomes for children who previously attended Pre-K 4 SA?*, we acquired data from the Texas Education Agency (TEA), used matching techniques; and conducted analyses using a combination of t -test, ordinary least squares regression, logistic regression, and ANCOVA tests between the Pre-K 4 SA children and their respective comparison groups to create demographically matched comparison groups of students.

Data Acquisition Process

We requested TEA provide all 2016–17 kindergarten, first grade, and second grade data (with a de-identified indicator) for children who participated in Pre-K 4 SA during the 2013–14 to 2016–17 school years, respectively. To obtain this de-identified indicator, we submitted identification numbers (available only for children who had attended Pre-K 4 SA for free), names, and birthdates of former Pre-K 4 SA children (tuition and scholarship children).

Matching Process and Resulting Analysis Samples

One of the key benefits of randomized experiments for estimating causal effects is that the treatment and control groups are guaranteed to be only randomly different from one another on all background covariates, both observed and unobserved; however, when only minimal proportions of a randomly assigned group can be used in analyses, we can no longer be confident those groups are truly similar on those characteristics (differential attrition). In these instances, carefully designed, non-experimental studies using matching methods have been used (Rubin, 2006; 2007). Work on matching methods (any method that aims to “balance” the distribution of covariates in the treatment and control groups) has examined how to replicate this as much as possible for observed covariates with observational (non-randomized) data. The preferred type of matching used in the current study was exact matching rather than reliance on propensity scores, because of the large potential comparison pool from which to draw, as well as the categorical nature of the matching

variables.²⁵ Exact matching was conducted for Cohort 1 and Cohort 2 students in prior years²⁶; however, some difficulties with data loss were apparent when this matching process was attempted with Cohort 3. Therefore, propensity score matching was used with the Cohort 3 sample.

A matching ratio of 1:3 was first attempted for all students (meaning three comparison students for every Pre-K 4 SA child). If three comparable matches did not exist within the same district, a 1:2 match was attempted. This same process was repeated down to a 1:1 match. No Pre-K 4 SA children went unmatched in either cohort sample. Baseline equivalence information for each matched group is available upon request.

²⁵ In the analyses, we included as covariates demographic characteristics whose standardized mean differences were found to be within acceptable thresholds (below 0.25) according to the What Works Clearinghouse (WWC, 2014) but were above 0.05.

²⁶ For Cohort 1 and Cohort 2, previously matched students were maintained and used in current analyses. The matching process was newly conducted for Cohort 3 this year.

Appendix B

Additional Classroom Assessment Scoring System (CLASS) Results

Appendix B

Additional CLASS Results

Table B-1. Average Year 6 CLASS scores by center

CLASS outcome	East		North		South		West	
	M (SD)	Total range observed	M (SD)	Total range observed	M (SD)	Total range observed	M (SD)	Total range observed
Emotional Support domain	6.26 (0.65)	(4.50–7.00)	6.64 (0.41)	(5.55–7.00)	6.40 (0.41)	(5.55–7.00)	6.37 (0.46)	(5.60–7.00)
Positive climate	6.23 (0.75)	(4.20–7.00)	6.60 (0.52)	(5.40–7.00)	6.39 (0.54)	(5.00–7.00)	6.38 (0.48)	(5.60–7.00)
Negative climate ^a	6.81 (0.33)	(6.00–7.00)	7.00 (0.00)	(7.00–7.00)	6.97 (0.09)	(6.60–7.00)	6.96 (0.11)	(6.60–7.00)
Teacher sensitivity	5.91 (0.79)	(4.20–7.00)	6.44 (0.63)	(5.00–7.00)	6.12 (0.58)	(4.60–7.00)	5.98 (0.69)	(4.60–7.00)
Regard for student perspectives	6.11 (1.01)	(3.60–7.00)	6.50 (0.63)	(4.80–7.00)	6.13 (0.68)	(4.80–7.00)	6.17 (0.79)	(4.80–7.00)
Classroom Organization domain	5.89 (0.72)	(4.07–7.00)	6.46 (0.48)	(5.60–7.00)	6.02 (0.58)	(5.07–7.00)	5.99 (0.63)	(5.00 – 7.00)
Behavior management	5.92 (1.02)	(3.20–7.00)	6.52 (0.55)	(5.40–7.00)	6.31 (0.61)	(5.20–7.00)	6.16 (0.68)	(4.80–7.00)
Productivity	6.15 (0.61)	(4.80–7.00)	6.62 (0.41)	(5.80–7.00)	6.27 (0.57)	(5.20–7.00)	6.20 (0.59)	(5.20–7.00)
Instructional learning formats	6.59 (0.77)	(4.00–7.00)	6.24 (0.63)	(5.00–7.00)	5.48 (0.70)	(4.00–7.00)	5.60 (0.78)	(4.40–7.00)
Instructional Support domain	3.84 (0.84)	(2.53–5.47)	4.52 (0.86)	(2.67–5.53)	4.05 (0.83)	(2.60–5.22)	3.94 (1.03)	(2.60–5.80)
Concept development	3.55 (0.82)	(2.20–5.40)	4.23 (1.10)	(2.20–5.60)	3.90 (0.79)	(2.20–5.25)	3.58 (0.90)	(2.20–5.20)
Quality of feedback	3.69 (1.03)	(1.80–5.80)	4.36 (0.95)	(2.60–5.80)	3.87 (0.94)	(2.00–5.20)	3.85 (1.25)	(2.20–6.20)
Language modeling	4.29 (0.93)	(2.80–5.80)	4.96 (0.73)	(3.20–6.20)	4.37 (0.87)	(3.20–5.80)	4.39 (1.04)	(3.20–6.00)

M = mean; SD = standard deviation

Appendix C
Additional Survey Results

Appendix C

Additional Survey Results

Table C-1. Survey responses for empowering parents/guardians

	A lot	Somewhat	A little	Not at all
I feel good about the way that my child's teachers helped my child adjust to pre-K. (n=469)	95.1% (n=446)	2.8% (n=13)	1.3% (n=6)	0.9% (n=4)
My child's teachers give me helpful ideas about how I can support my child's learning. (n=470)	84.7% (n=398)	10.9% (n=51)	3.0% (n=14)	1.5% (n=7)
My child's teachers let me know that I can make a difference in my child's learning. (n=467)	86.9% (n=406)	8.6% (n=40)	2.4% (n=11)	2.1% (n=10)
I feel respected by my child's teachers/center director. (n=490)	92.2% (n=452)	4.3% (n=21)	2.0% (n=10)	1.4% (n=7)

Note: Sample sizes are the total valid responses. Additional responses of "Don't know/Unsure" were selected for each item by at least one respondent (range, 3–26 responses). Percentages may not sum to 100 due to rounding.

Table C-2. Survey responses for compassion and responsiveness

	A lot	Somewhat	A little	Not at all
My child's center is responsive to parent/guardian feedback. (n=454)	87.2% (n=396)	9.5% (n=43)	1.8% (n=8)	1.4% (n=7)
Center staff encourage feedback from parents/guardians and the community. (n=465)	81.7% (n=380)	12.5% (n=58)	3.4% (n=16)	2.4% (n=11)
My child's teachers give me opportunities to share what I know about my child. (n=468)	85.9% (n=402)	9.0% (n=42)	3.2% (n=15)	1.9% (n=9)
My child's teachers try to understand families' problems and concerns. (n=444)	91.7% (n=407)	6.8% (n=30)	0.0% (n=0)	1.6% (n=7)

Note: Sample sizes are the total valid responses. Additional responses of "Don't know/Unsure" were selected for each item by at least one respondent (range, 25–49 responses). Percentages may not sum to 100 due to rounding.

Table C-3. Survey responses for cultural diversity

	A lot	Somewhat	A little	Not at all
My child sees people of many cultures/ backgrounds represented in the curriculum. (n=461)	84.4% (n=389)	11.1% (n=51)	3.9% (n=18)	0.6% (n=3)
My child's teachers incorporate students' cultures/ backgrounds into the curriculum to make learning more meaningful. (n=416)	88.9% (n=370)	7.7% (n=32)	1.9% (n=8)	1.4% (n=6)
My child's teachers connect to students of different cultures/backgrounds. (n=426)	91.1% (n=388)	6.1% (n=26)	2.1% (n=9)	0.7% (n=3)
My child's teachers appreciate our culture/ background. (n=426)	95.3% (n=406)	3.1% (n=13)	0.7% (n=3)	0.9% (n=4)
My child's teachers can communicate well with parents/guardians from different cultures/ backgrounds. (n=427)	94.6% (n=404)	4.2% (n=18)	0.5% (n=2)	0.7% (n=3)

Note: Sample sizes are the total valid responses. Additional responses of “Don’t know/Unsure” were selected for each item by at least one respondent (range, 32–77). Percentages may not sum to 100 due to rounding.

Appendix D

Additional Teaching Strategies GOLD Results

Appendix D

Additional Teaching Strategies GOLD Results

Table D-1. Year 6 significant GOLD growth results for total sample based on child characteristics and classroom quality

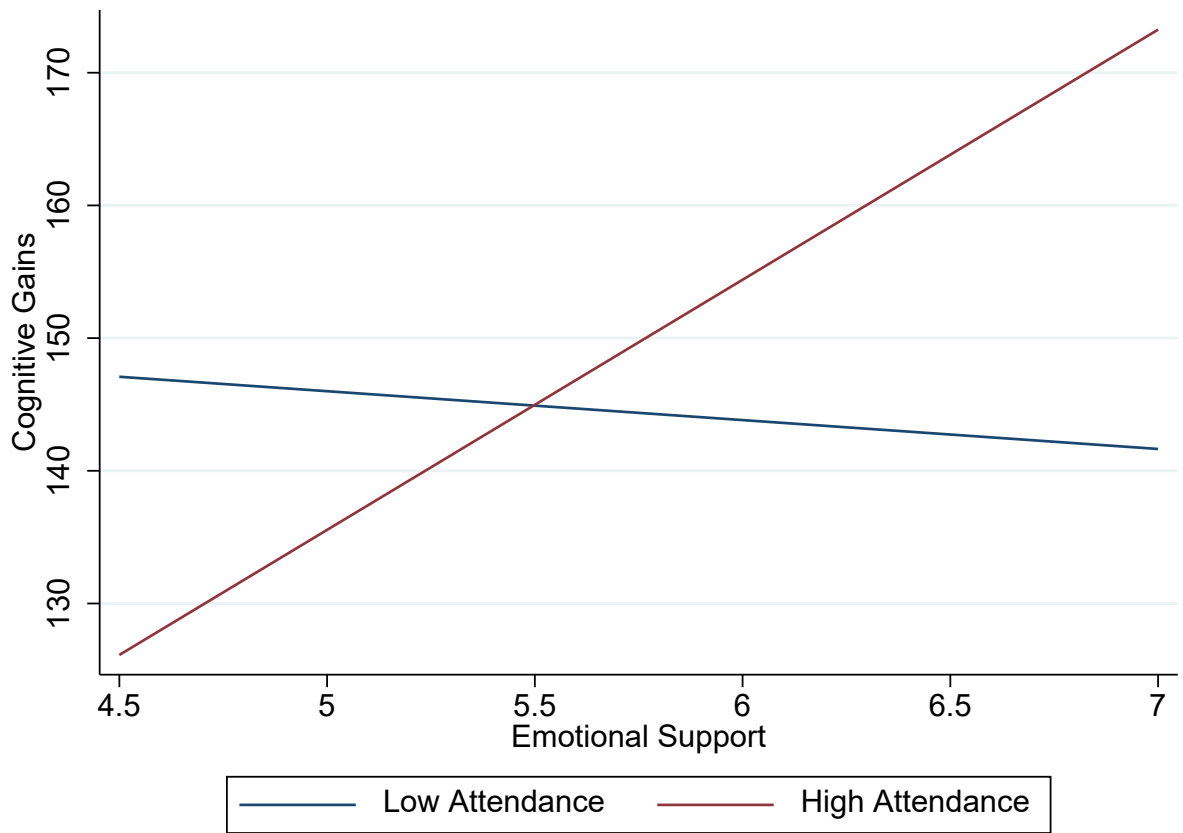
Child or teacher characteristics	Significant GOLD outcomes	Coefficient	Standard error	Z	p-Value	Favored group ^a
Child gender	Oral Language	6.135	2.140	2.87	0.004	Girls
	Physical	4.559	1.970	2.31	0.021	
	Social-Emotional	9.045	1.613	5.61	0.000	
	Cognitive	-7.573	2.781	-2.72	0.006	
Free or tuition status ^b	Oral language	-7.084	2.889	-2.45	0.014	Tuition
	Social-Emotional	-5.754	2.180	-2.64	0.008	
	Literacy	-0.305	0.018	-17.10	0.000	
	Mathematics	-0.216	0.021	-10.37	0.000	
Fall GOLD score	Physical	-0.300	0.026	-11.74	0.000	N/A
	Social-Emotional	-0.185	0.028	-6.50	0.000	
	Cognitive	-433.739	207.613	-2.09	0.037	
Pre-K 4 SA attendance Classroom Quality Emotional Support	Cognitive	-166.377	55.933	-2.97	0.003	N/A
	Social-Emotional	-88.361	43.159	-2.05	0.041	
	Child Pre-K 4 SA attendance by classroom quality interaction					
Emotional support by attendance interaction	Cognitive	164.990	55.905	2.95	0.003	
Instructional support by attendance interaction	Physical	40.109	20.074	2.00	0.046	

Note: The fall GOLD score, Pre-K 4 SA attendance, and classroom quality analyses are marked as N/A because no groups were compared.

^a If a statically significant difference was found, the group whose score was greater (the “favored” group) is listed in this column.

^b Scholarship children were included in the free category.

Figure D-1. Interaction between attendance and classroom emotional support for cognitive domain



Appendix References

- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B Methodological*, 57(1), 289–300.
- Pianta, R., LaParo, K., & Hamre, B. (2008). *Classroom Assessment Scoring System*. Baltimore, MD: Brookes Publishing.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (Vol. 1). Sage.
- Rubin, D. B. (2006). *Matched sampling for causal effects*. New York, NY: Cambridge University Press.
- Rubin, D. B. (2007). The design versus the analysis of observational studies for causal effects: Parallels with the design of randomized trials. *Statistics in Medicine*, 26, 20–36.
- What Works Clearinghouse. (2014). *WWC procedure and standards handbook 3.0*. Washington, DC: WWC. Retrieved from <http://ies.ed.gov/ncee/wwc/DocumentSum.aspx?sid=19>.