Evaluation of the Stretch to Kindergarten Program: 2012

Findings

FINAL REPORT

Contents

Introduction

The American Institutes for Research (AIR), a not-for-profit education research firm, continued an evaluation of the Stretch to Kindergarten (STK) program in Mountain View, California in 2012, the program's fourth year. This six-week school readiness program serves children with limited prior preschool experience during the summer prior to their kindergarten entry. This evaluation of the 2012 STK program aims to answer several research questions:

1) What is the level of quality of Stretch to Kindergarten classrooms, as measured by the Classroom Assessment Scoring System (CLASS) and the Early Language and Literacy Classroom Observation (ELLCO) dual language learner addendum?
2) How do parents' knowledge and skills change over the course of their participation in the program?
3) How do children's language skills change over the course of their participation in the program? How do STK children perform on a measure of pre-academic skills?
4) How do children who participated in Stretch to Kindergarten perform on reading and math assessments in kindergarten, first, and second grade compared with their peers who did not attend the program?
5) How do kindergarten, first, and second grade attendance rates of children who participated in Stretch to Kindergarten compare to those of their peers who did not participate in the program?

The 2012 study builds on STK evaluation work conducted by AIR during the three previous years. Findings from 2009, 2010, and/or 2011 are presented in different places in this report as context for the 2012 evaluation results.

The Stretch to Kindergarten Program

The Stretch to Kindergarten program is designed to prepare children with limited prior preschool exposure for kindergarten through a focused six-week early childhood program. The program also includes a parent component offered before and throughout the summer program. The 2012 program began with programming one morning a week over a four-week period starting in late April, during which parents and their children attended four Saturday mornings from 9 am until 12 pm. Parents spent the first hour and a half in structured time with their child in the kindergarten classroom, with activities guided by the teacher. Parents then attended seminars on a variety of topics for the second hour and a half while their children remained in the classrooms with the assistant teachers. In addition to the Saturday morning sessions, three parent nights were held over the course of the program. These sessions focused on understanding the STK classroom daily schedule, nutrition and obesity, dental health, routines, social-emotional development, reading practices, the district kindergarten handbook, the importance of attendance at school, math games to play with children, and other strategies to support their children's

learning and development at home. The program also aims to strengthen parents' advocacy skills for their child as they navigate the public school system, and provides information on how to access educational and community resources. Specifically, parents were introduced to the Family Engagement Institute, where Stretch to Kindergarten is now housed, which provides many services and classes to parents. Parents were required to participate in parent education sessions and strongly encouraged to volunteer in their child's STK classroom; the parent volunteer program is designed to help parents become comfortable in their child's classroom and informally learn from teachers about daily routines, effective discipline practices with children, and strategies to support their child's learning at home.

From late June through late July 2012, children attended an intensive six-week school readiness program, which operated five days a week, for up to 9 hours per day. In 2012, a fourth classroom was added to the program—one more than in previous years. Teachers in these four STK classrooms collaborate in lesson planning, striving for consistency across classrooms while maintaining flexibility in their approaches in order to meet the needs and interests of the children in their individual classroom. Extracurricular classes are incorporated as well, including a cooking class and a music and movement class provided every week by outside instructors. During each Friday of the six-week program, children and parents participate in field trips to introduce them to community-based educational activities—including trips to the library and a local educational farm.

The Stretch to Kindergarten program includes several unique elements. First, each classroom is staffed with a preschool teacher and a kindergarten teacher, along with two teaching assistants. The STK program is designed such that, within each classroom, the preschool and the kindergarten teacher each teach part-day (morning or afternoon). In 2012, seven of the eight teachers were new to the program. Each day of the summer session, teachers met during children's rest time to plan together while teaching assistants and youth volunteers supervised the children in the classrooms. A coach also worked with teachers on dialogic reading and other instructional strategies twice a week during the summer program.

All STK kindergarten teachers have master's degrees, and all STK preschool teachers have bachelor's degrees. Before the 2012 STK session, training was also provided to all teachers; this training included an overview of the domains and dimensions embedded within the CLASS tool, dialogic reading strategies, and oral language development.

As in previous years, youth volunteer interns were incorporated into the STK program to provide additional individual and small-group support for children's learning. Three interns (early high school students) volunteered in each classroom, along with a paid mentor (high school seniors or college students) in the morning and afternoon in each class. Interns were asked to commit to volunteer at least three weeks. Mentors and volunteers were trained by the program administrators before the STK program began, and mentors met weekly with each other and with

the other volunteers on their shift to plan classroom activities, build community, and reflect on and review on the week's activities.

One specific focus of the Stretch to Kindergarten program in 2012 was children's oral language development, to help English learners become reclassified. To support this focus, teachers used daily dialogic (interactive) reading activities with small groups of children. The program also focused on early math activities, supported largely by activities the youth volunteers did with children. In 2012, the Stretch to Kindergarten program served 81 children and their families in the four classrooms. Most children who participated in the program were Hispanic or Latino (94 percent), and most spoke primarily Spanish (82 percent)—more than in 2011. To best serve these families, there was at least one Spanish bilingual teacher or assistant in each classroom. Teachers focused on incorporating best practices to support English language development, with an additional emphasis this year on supporting home language. Instruction was primarily in English, but bridging techniques were used to support the home language when needed. The classrooms also used labels around the classroom in children's home languages. Every classroom had at least one teacher or teaching assistant who was fluent in Spanish to provide support when needed. A "message of the day" was posted outside the classrooms each day in English and Spanish, to inform and engage parents.

The vast majority of the children (97 percent) had no preschool experience upon entering the program. According to the program director, the program had "probably the highest number [they] have ever had" of eligible children who had never attended preschool, due to better coordination with the school district in identifying those children. In 2011, two preschool classes in the district were closed due to state funding cuts, and STK reached out to the families on the resulting waiting lists.

In 2012, fewer children participating in STK had preschool experience, compared with previous years. Additionally, fewer children spoke English at home than in prior cohorts. Participant demographics in 2012 and prior years are presented in Exhibit 1.

Exhibit 1. Stretch to Kindergarten participant demographics

Demographic Characteristic	2012 Number	2012 Percentage	2011 Number	2011 Percentage	2010 Number	2010 Percentage	2009 Number	2009 Percentage
Children's Gender								
Boys	45	57.7%	29	47.5%	40	61.5%	27	64.3%
Girls	33	42.3%	32	52.5%	25	38.5%	15	35.7%
Previously Attended Preschool								
Yes	2	2.6%	9	14.8%	24	36.9%	15	35.7%
No	76	97.4%	52	85.2%	40	61.5%	27	64.3%
No response	0	0%	0	0%	1	1.5%	0	0%
Home Language								
English	4	5.1%	9	14.8%	9	13.8%	10	23.8%
English and Spanish	7	9.0%	13	21.3%	15	23.1%	9	21.4%
Spanish	64	82.1%	38	62.3%	40	61.5%	22	52.4%
Other	3	3.9%	1	1.6%	0	0%	1	2.4%
Children's Ethnicity								
Asian			3	4.9%%	2	3.1%	5	11.9%
Black/African American	1	1.3%	0	0%	1	1.5%	0	0%
Hispanic/Latino	74	93.7%	53	86.9%	58	89.2%	31	73.8%
Multiracial	0	0%	2	3.2%	1	1.5%	0	0%
Hispanic/Filipino	1	1.3%	1	1.6%	0	0%	0	0%
Alaska Native or American Indian	0	0%	1	1.6%	0	0%	1	2.4%
Pacific Islander	1	1.3%	0	0%	1	1.5%	3	7.1%
White	2	2.5%	0	0%	0	0%	1	2.4%
Other	0	0%	1	1.6%	0	0%	0	0%
No response	0	0%	0	0%	2	3.1%	1	2.4%
Diagnosed with Developmental Disability								
No	71	91.0%	57	93.4%	46	70.8%	39	92.9%
Parent not sure	0	0%	0	0%	3	4.6%	0	0%
Yes	7	9.0%	4	6.6%	14	21.5%	3	7.1%
No response	0	0%	0	0%	2	3.1%	0	0%

	2012		2011		2010		2009	
Demographic Characteristic	*Number*	*Percentage*	*Number*	*Percentage*	*Number*	*Percentage*	*Number*	*Percentage*
Household Structure								
Both parents in home	63	80.8%	49	80.3%	51	78.5%	28	71.8%
Family caregivers other than parent	0	0%	0	0%	1	1.5%	1	2.6%
Single parent	15	19.2%	12	19.7%	10	15.4%	6	15.4%
Other/Missing	0	0%	0	0%	3	4.6%	4	10.3%
Parent Education								
Less than high school graduate	66	45.6%	60	52.1%	59	51.3%	30	40%
High school graduate/GED	50	33.8%	37	32.2%	38	33.0%	24	32%
Some college	15	10.1%	13	11.3%	13	11.3%	12	16%
4-year college degree or higher	4	2.7%	5	4.4%	5	4.3%	3	4%
Other	1	0.7%	0	0%	0	0%	0	0%
No response	12	8.1%	0	0%	0	0%	6	8%

Evaluation Findings

To assess the level of quality of STK classrooms, AIR conducted observations using the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008) preschool classroom observation tool. This tool assesses the degree to which adult-child interactions support children's learning and development. AIR staff conducted a similar evaluation of STK in the summers of 2009 and 2010. The CLASS scores from the 2009, 2010, and 2011 studies are provided in this report as context for the 2011 findings. To examine changes in parents' knowledge, beliefs, and parenting practices with their children, AIR analyzed data from pre- and post-surveys administered to parents. The pre-survey was administered during the first Saturday of the spring parent program (April 23), when AIR staff read survey items aloud to parents (in English- and Spanish-speaking groups). The post-survey was administered in the same way, by AIR staff, at the end of the summer session (late July). AIR conducted an interview with the executive director and associate director (Betsy Nikolchev and Carmen Ponce) to better understand the goals, structure, and content of the program and to provide context for the study.

The research team also analyzed data from new assessments piloted in the STK program in 2012: the IDEA Proficiency Test (IPT), a measure of productive language; the Children's Progress Academic Assessment (CPAA); and pre- and post- measures of teacher practices to support dual language learners, using the Early Language and Literacy Classroom Observation – Dual Language Learner supplement (ELLCO-DLL).

The team also continued the follow-up study of elementary school outcomes for children who participated in Stretch to Kindergarten in 2009, 2010, and—added this year—2011. STK participants in the new 2011 cohort were compared with a demographically matched group of children in the Mountain View Whisman School District. This treatment and comparison group, along with treatment and comparison groups from the 2009 and 2010 cohorts drawn last year, were compared on several outcomes: California English Language Development Test (CELDT) scores in kindergarten, district language arts assessment scores in kindergarten and first grade (2009 and 2010 cohort only), math assessments in first and second grades (2009 and 2010 cohort), California Standards Test (CST) language arts and math scores (2009 cohort only), and whether students had any unexcused absences or tardies.

This report summarizes findings from these evaluation activities.

Classroom Assessment Scoring System (CLASS) Results

The evaluation used the CLASS Pre-K observation tool to assess the quality of STK classrooms. The CLASS builds on a broad body of research that highlights the importance of adult-child interactions for supporting children's learning and development. The CLASS framework measures interactions between adults and children, as well as among children, across three domains: *Emotional Support*, *Classroom Organization*, and *Instructional Support*. The CLASS

draws from the varied research base on teachers' classroom management practices, teacher-child relationships, and children's language and cognitive development, emotional and social functioning, and self-regulatory skills. Underpinning the entire CLASS tool is the theory that the "primary mechanisms through which children acquire readiness-related competencies are social relationships children form with peers, parents, and teachers" (Mashburn & Pianta, 2006).

The three CLASS domains, *Emotional Support*, *Classroom Organization*, and *Instructional Support*, each consist of three or more dimensions, as shown in Exhibit 3. Scoring on each dimension is based on observation of a series of indicators, also listed in Exhibit 3. Scoring for the CLASS dimensions is *not* determined by the presence of materials, the classroom's physical environment, safety issues, or use of a specific curriculum. Rather, the CLASS focuses on teachers' interactions with children, children's interactions with each other, and what teachers *do* with the materials they have.

Scoring the CLASS

CLASS observations consist of four or more cycles. Each cycle includes a 20-minute observation period and a 10-minute scoring period. Scoring is completed immediately after the observation portion of each cycle. When scoring the CLASS, the observer selects a rating from 1 (minimally characteristic) to 7 (highly characteristic) for each of the 10 dimensions listed in Exhibit 3, based on the degree to which behavioral, emotional, and physical markers are observed and on the extent to which each dimension characterizes the classroom. To select a rating for each dimension, the observer must make judgments based on the ranges of frequency, intention, and tone of interpersonal and individual behavior during the observation period.

CLASS observations for the STK summer program were conducted in each of the program's four classrooms, over a period of four days. A total of eight observation cycles were conducted in each classroom.[1] Each classroom was observed for four cycles in the morning (with the morning teacher) and four cycles in the afternoon (with the afternoon teacher). The observer switched classrooms between morning and afternoon observations, such that no classroom was observed all day on a single day. The observation schedule is shown in Exhibit 2 below.

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[1] One classroom was observed for nine cycles.

Exhibit 2. 2012 STK CLASS observation schedule

	Day 1	Day 2	Day 3	Day 4
Morning observation	Classroom **1**	Classroom **4**	Classroom **2**	Classroom **3**
Afternoon observation	Classroom **3**	Classroom **2**	Classroom **1**	Classroom **4**

The CLASS is designed to reflect the typical experiences for a child in the classroom. Therefore, when multiple teachers and youth volunteers were in a classroom, teacher behaviors were weighted according to their responsibility for activities, the number of children they worked with, and the amount of time spent with children.

Given that youth volunteers are a unique component of the Stretch to Kindergarten program, care was taken to appropriately consider the role of these volunteers during CLASS observations. In the observation cycles that included center time (e.g., when children moved from small group activities organized throughout the room), the youth volunteers were particularly interactive with the children, facilitating the activity taking place at each table. However, the primary teacher led the activity as a whole and thus was responsible for the interactions at the classroom level. The CLASS manual provides guidance for conducting observations with multiple adults; observers are instructed to weigh the multiple adults' behaviors according to the number of students with whom they are working, the amount of time they spend with the students, and their responsibility for the activities. This typically results in a primary focus on the lead teacher. If students are working in small groups, observers are instructed to spend time watching each group and "code the average of these experiences over the whole 20 minutes, across the groups" (Pianta, La Paro, & Hamre, 2008, p.11). During AIR's observation of a center time cycle in STK classrooms, the observer circulated throughout the classroom. AIR observers followed the guiding principle that "CLASS dimensions are intended to reflect the value of the classroom environment for all of the students in the class or, in other words, the experience of a typical or average student in the class. The dimensions do not target a single student or a single adult but instead are intended to capture the resources present to all students in the classroom…. Most often, the primary teacher will be the focus of the codes" (Pianta, La Paro, & Hamre, 2008, p.10).

Exhibit 3. CLASS domains, dimensions, and indicators

Emotional Support	
Dimensions	**Indicators**
Positive Climate. Positive Climate reflects the emotional connection between the teacher and students and among students and the warmth, respect, and enjoyment communicated by verbal and nonverbal interactions.	• Relationships • Positive Affect • Positive Communication • Respect
Negative Climate. 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 scale.	• Negative Affect • Punitive Control • Sarcasm/Disrespect • Severe Negativity
Teacher Sensitivity. Teacher Sensitivity encompasses the teacher's awareness of and responsiveness to students' academic and emotional needs; high levels of sensitivity facilitate students' ability to actively explore and learn because the teacher consistently provides comfort, reassurance, and encouragement.	• Awareness • Responsiveness • Addresses Problems • Student Comfort
Regard for Student Perspectives. Regard for Student Perspectives captures the degree to which the teacher's interactions with students and classroom activities place an emphasis on students' interests, motivations, and points of view and encourage student responsibility and autonomy.	• Flexibility and Student Focus • Support for Autonomy and Leadership • Student Expression • Restriction of Movement
Classroom Organization	
Dimensions	**Indicators**
Behavior Management. Behavior Management encompasses the teacher's ability to provide clear behavioral expectations and use effective methods to prevent and redirect misbehavior.	• Clear Behavioral Expectations • Proactive • Redirection of Misbehavior • Student Behavior
Productivity. 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.	• Maximizing Learning Time • Routines • Transitions • Preparation
Instructional Learning Formats. Instructional Learning Formats focuses on the ways in which the teacher maximizes students' interest, engagement, and ability to learn from lessons and activities.	• Effective Facilitation • Variety of Modalities and Materials • Student Interest • Clarity of Learning Objectives
Instructional Support	
Dimensions	**Indicators**
Concept Development. 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.	• Analysis and Reasoning • Creating • Integration • Connections to the Real World
Quality of Feedback. Quality of Feedback assesses the degree to which the teacher provides feedback that expands learning and understanding and encourages continued participation.	• Scaffolding • Feedback Loops • Prompting Thought Processes • Providing Information • Encouragement and Affirmation
Language Modeling. Language Modeling captures the quality and amount of the teacher's use of language-stimulation and language-facilitation techniques.	• Frequent Conversation • Open-Ended Questions • Repetition and Extension • Self- and Parallel Talk • Advanced Language

*Source: CLASS Manual, Preschool Version (2008)

Stretch to Kindergarten CLASS Scores

An overview of the results from the three classroom observations, which includes average dimension and domain scores, is shown in Exhibit 3.

Exhibit 4. Average STK 2012 CLASS scores

Domain	Dimension	Average Dimension Scores	Min-Max	Average Domain Scores
Emotional Support	Positive Climate	6.00	5–7	5.62
	Negative Climate[2]	7.00	7–7	
	Teacher Sensitivity	5.24	4–7	
	Regard for Student Perspectives	4.23	3–6	
Classroom Organization	Behavior Management	6.02	3–7	5.44
	Productivity	5.50	4–7	
	Instructional Learning Formats	4.81	3–6	
Instructional Support	Concept Development	2.36	1–4	2.69
	Quality of Feedback	2.71	1–5	
	Language Modeling	3.02	2–5	

Throughout this report, scores are described as falling in the "Low," "Mid," or "High" range on the CLASS scoring continuum. Scores of 1–2 fall into the Low range, scores of 3–5 fall into the Mid range, and scores of 6–7 fall into the High range. Across all three classrooms, the *Emotional Support* domain received the highest overall average score (5.62), followed by *Classroom Organization* (5.44) and *Instructional Support* (2.69). The 2012 STK score for *Emotional Support* is in the top of the Mid range; the score for *Classroom Organization* also falls near the top of the Mid range; and the score for *Instructional Support* falls at the high end of the Low range, approaching the Mid range. Exhibit 5 displays the average classroom scores for each of the 10 dimensions that make up the three domain areas.

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[2] In raw scores for Negative Climate, lower scores indicate higher quality. In this table, the rating scale for Negative Climate has been reversed so that higher scores indicate higher quality to match the other dimensions.

Exhibit 5. Average STK 2012 CLASS dimension scores
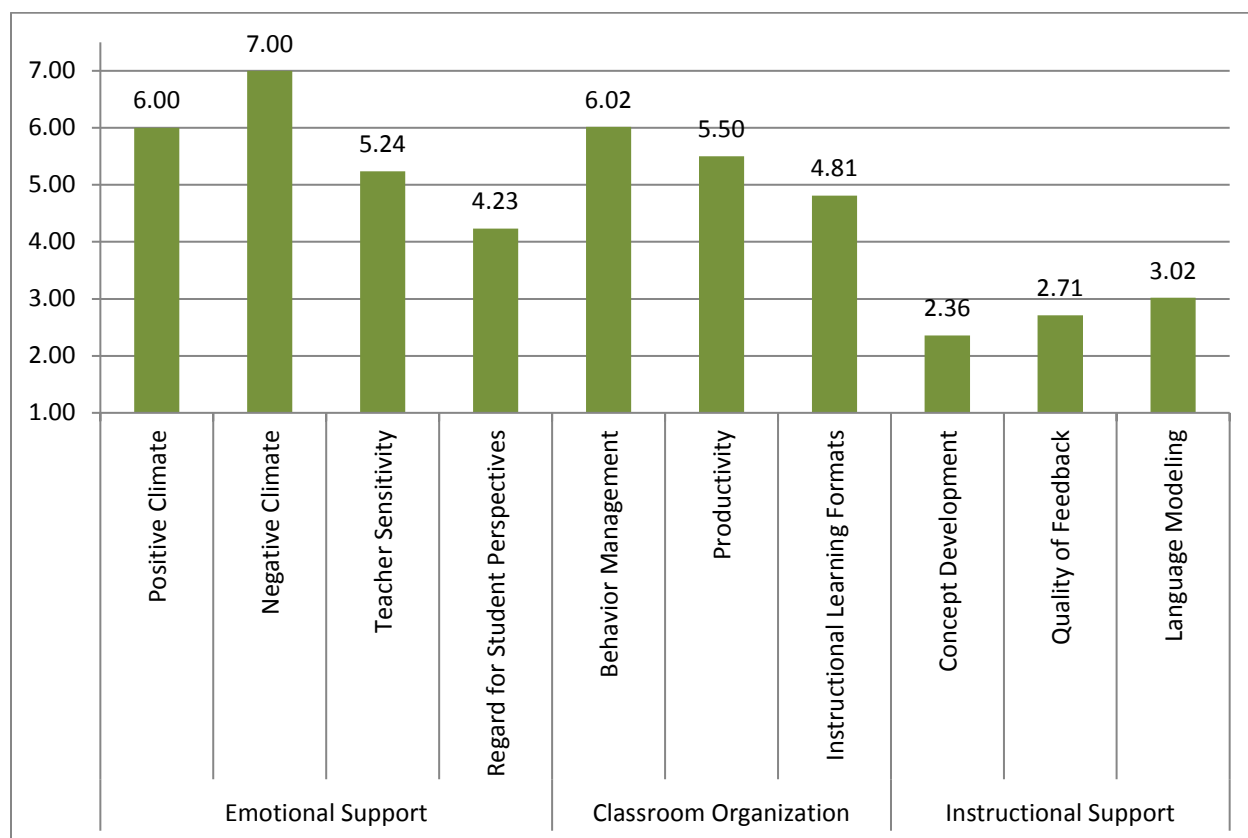
* In raw scores for Negative Climate, lower scores indicate higher quality. In this graph, the rating scale for Negative Climate has been reversed so that higher scores indicate higher quality, to align with the other dimensions.

The following sections provide greater detail regarding each of the three CLASS domains: *Emotional Support*, *Classroom Organization*, and *Instructional Support*.

Emotional Support

This domain reflects the emotional tone of the classroom, and includes measures of the positive and negative climate of the classroom, the extent to which teachers are sensitive to children, and teachers' regard for children's perspectives (e.g., focus on child autonomy and child-initiated activities). The *Emotional Support* domain consists of four dimensions: *Positive Climate*, *Negative Climate*, *Teacher Sensitivity*, and *Regard for Student Perspectives*. STK classrooms scored slightly lower on the *Emotional Support* domain in 2012 (5.62) than in 2011 (6.17), but the difference was not statistically significant (t=2.04, p=.0967).

The highest dimension scores across all domains were found for two *Emotional Support* domains—*Positive Climate* (with an average score of 6.00) and *Negative Climate* (with an average score of 7.00). Typical High-range *Positive Climate* classrooms include a teacher who enjoys warm, supportive relationships with students. There are frequent displays of positive affect by the teacher and/or children as well as positive verbal and physical communication. The teacher and the children consistently demonstrate respect for one another. In STK classrooms,

AIR staff observed that teachers were generally affectionate with the children and there were no instances of irritability, anger, yelling, harsh punishment, victimization, or bullying.

The average score for *Teacher Sensitivity* was 5.24, in the Mid range of the CLASS rating scale. In the typical Mid-range *Teacher Sensitivity* classroom, the teacher is sometimes aware of children who need extra support, assistance, or attention. He or she is responsive to children sometimes but at other times less responsive, matching his/her support to the needs and abilities of some students but not others. In addition, the children sometimes seek support from, share their ideas with, or respond to questions from the teacher. AIR staff observed some strong examples of STK teachers' awareness of and responsiveness to students—for example, a teacher helped a children who needed support in taking turns with a classmate, another teacher was aware of and affectionate towards a child who seemed to be developing a cold, and another effectively addressed children's concerns (e.g., "Antonia, I'm not sure we have time to start a painting because it's almost time to come inside"). There were other instances in which teachers appeared less responsive to students. For example, at some points, a teacher spent a significant amount of time distracted from children and instead focused on logistical issues, and she did not pay as much attention to the children and their needs. In another observation, a teacher failed to genuinely demonstrate warmth toward a sad child when trying to comfort him.

A Mid-range score (4.23) was found for the *Regard for Student Perspectives* dimension. To place this score in context, the typical High-range *Regard for Student Perspectives* classroom is characterized by a teacher who is flexible in his or her plans, goes along with children's ideas, and organizes instruction around children's interests. The teacher provides consistent support for student autonomy and leadership, there are many opportunities for student talk and expression, and the children have freedom of movement and placement during activities. In STK classrooms, teachers followed the students' lead during some periods but were more controlling during others (e.g., during center time, when children were asked to rotate from center to center, completing specific activities with limited flexibility in how they could carry them out). In addition, STK teachers sometimes provided support for student autonomy and leadership but at other times failed to do so.

An example of a High score on *Regard for Student Perspectives* was observed during one activity, when children were encouraged to draw things that could live in a pond, yet teachers were not prescriptive or rigid about what children did. Once children were engaged in the activity, they were not corrected if they drew various animals that did not specifically align with the intent of the lesson. In one case, the teacher noticed that the children enjoyed a particular book, and said, "I have more books on chicken and hens, would you like me to get them?" In another instance, a teacher followed the children's lead when they wanted to say the body parts of an animal in Spanish instead of English. She responded very positively to their efforts to teach her new words—"Oh, is that how you say it in Spanish?"—as well as asking them to teach her different words in Spanish that aligned with the lesson. An example of a lower score on this dimension occurred when a teacher pasted pictures of animal body parts on the wall (rather than

letting the children take turns deciding where the parts should go or placing the stickers on the wall themselves). In addition, there were periods during which there was a lot of student talk and expression, but there were other times when teacher talk predominated. Finally, STK teachers were somewhat directive of students' movements and placement during some (but not all) activities. All of these factors contributed toward a Mid-range CLASS score on this dimension.

Classroom Organization

The *Classroom Organization* domain reflects the effectiveness of teachers' behavior management strategies, the extent *to* which children have opportunities to learn through the classroom session, and what the teachers do to maximize children's engagement and ability to learn. Following *Emotional Support*, the *Classroom Organization* domain received the second highest score (5.44—just short of the High range on the CLASS rating scale). The 2012 *Classroom Organization* score of 5.44 was not statistically different from the 2011 score of 5.59 (t=0.61, p=.5671). The *Classroom Organization* domain comprises three dimensions: *Behavior Management*, *Productivity*, and *Instructional Learning Formats*.

The *Behavior Management* dimension received an average score of 6.02, which is in the High range of the CLASS rating scale. In the typical High-range *Behavior Management* classroom, rules and expectations are clear and consistently enforced. The teacher uses mostly proactive strategies, and monitors the classroom and reacts to early indicators of behavior problems while rarely missing or ignoring them. The teacher effectively redirects misbehavior by focusing on positives and using subtle cues. Instances of High-range examples for this dimension included a teacher singing a song to help children calm down as they returned to the classroom from outdoor play. In another instance, a teacher said to a child, "Do you think he wanted you to push that tower down? Let's help him build it back up." In many classrooms, the high scores for *Behavior Management* were reflected in children's knowledge of behavior expectations in the classroom—classroom agreements were posted on the wall (with each child's fingerprint at the bottom as their "signature") and it was clear that children understood what was expected of them. A higher score for *Behavior Management* was not achieved because there were several instances in which the teacher did not employ effective behavior management techniques (e.g., long-lasting instances of misbehavior among children that the teacher did not address).

The *Productivity* dimension also received a score at the top end of the Mid range, approaching the High range (5.50). In the typical High-range *Productivity* classroom, the teacher has activities prepared for students almost all of the time and rarely takes time away from instruction to handle last-minute preparations. There is evidence of classroom routines that allow all students to know what is expected of them. Transitions are efficient, and learning time is rarely lost in dealing with disruptions and the completion of managerial tasks. In the typical Mid-range *Productivity* classroom, the teacher provides activities for the students most of the time, but some learning time is lost in dealing with disruptions and the completion of managerial tasks. Transitions are very efficient at times, but at other times are less efficient or too frequent, and the teacher is usually prepared for activities but takes some time away from instruction to take care of last-

minute preparations. STK classrooms were strong in the *Productivity* dimension and were often characterized by thorough preparation and clear routines. For example, the classroom and the teachers were typically prepared and children usually transitioned effectively from activity to activity, particularly during center time. Other adults usually prepared activities while the lead teacher conducted circle time, and sometimes volunteers were already sitting in small groups to greet children and welcome them into the activity. There were some observations of children "wandering" in the classroom and a limited number of times when routines were drawn out— bringing down the *Productivity* score somewhat.

A Mid-range score was found for *Instructional Learning Formats* (4.81). In the typical Mid-range classroom for this dimension, the teacher actively facilitates activities and lessons to encourage interest and expanded involvement, but at other times merely provides activities without as much of an effort to foster the child's engagement. The teacher is inconsistent in the use of a variety of modalities and materials to gain students' interest and participation during activities and lessons. Students may be engaged and interested for periods of time, but at other times their interest wanes and they are not involved in the activity or lesson. In the STK classrooms, teachers varied in how effectively they facilitated children's activities, from having an adult at every small table, actively engaging and talking with children, to less effective strategies (e.g., an adult sitting at a small table but not saying anything). In a very few instances, teachers were clear in identifying learning objectives for an activity (e.g., "It's important to learn the body parts of a pig because we're going to make some pigs for our farm"), but this was not typically the case across the observations. Together, these factors contributed to the Mid-range score for this dimension.

Instructional Support

The lowest average domain score (2.69) across the observed classrooms was found for *Instructional Support*. This domain reflects teachers' use of conversations and activities to promote children's higher-order thinking skills and cognition, the degree to which teacher feedback to children is focused on expanding learning and understanding, and the quality and amount of teachers' use of language stimulation and language facilitation techniques. The *Instructional Support* domain consists of three dimensions: *Language Modeling*, *Quality of Feedback*, and *Concept Development.* The 2012 STK score for the *Instructional Support* domain (2.69) was not statistically significantly different from the 2011 score of 2.57 (t=-0.65, p=.5422)

Within the domain of *Instructional Support*, the highest scoring dimension was *Language Modeling* (3.02), at the low end of the Mid range. In the typical Mid-range *Language Modeling* classroom, there are limited conversations in the classroom and the teacher asks a mix of closed-ended and open-ended questions. In addition, the teacher sometimes repeats or extends the children's responses. The teacher also occasionally maps his or her own actions and the children's actions through language and description. Finally, the teacher sometimes uses advanced language with students. AIR staff observed some instances of High-range *Language Modeling*. For example, a child said "A cooker…" and the teacher responded, "Do you know

what you call a cooker? A *chef*. Here is a picture." In another instance, a teacher commented on a child's play with blocks as he built a tower, "That structure is really *stable* and *tall*," emphasizing the words as she said them. Teachers also asked open-ended questions, such as "What types of jobs could people in restaurants have?" Conversely, other instances were observed in which teachers did not narrate their actions (e.g., when passing out felt objects to each child, a teacher did so silently, rather than talking). During sharing time, a teacher asked each child what the child did at his or her center. While each child had an opportunity to share what he or she did, the teacher failed to capitalize on the activity to extend and follow up on children's discussions.

STK classrooms received an average score of 2.71 for *Quality of Feedback*, which falls at the high end of the Low range of the CLASS rating system. In typical Low-range *Quality of Feedback* classrooms, teachers rarely provide scaffolding to students to acknowledge where the student is starting and provide the necessary level of help to allow the student to succeed or complete a task. Teachers tend to give more perfunctory feedback to students, as opposed to engaging in extended back-and-forth exchanges with students intended to help them understand a concept. Students are rarely prompted to explain their thinking and are rarely provided extensive additional information to expand on their understanding or actions. There were a few instances in which AIR observed STK staff providing high-quality feedback (e.g., a teacher initiated feedback loops by asking, "What did you notice about…?" and then followed up on the child's response, extending the conversation back and forth multiple times). In many other observations, teachers provided perfunctory feedback to children or did not prompt children to explain their thinking.

Concept Development received an average score of 2.36, which is in the Low range of the CLASS rating scale. For context, in classrooms with High-range *Concept Development* scores, teachers often use discussions and activities that encourage analysis and reasoning as well as provide opportunities for students to be creative and generate their own ideas and products. Teachers in classrooms with High-range *Concept Development* scores consistently link concepts and activities to one another and to previous learning, and they consistently relate concepts to the students' actual lives. In the observed STK classrooms, teachers did not ask many *why* or *how* questions, did not frequently encourage students to find applications to the real world, and did not consistently connect concepts to previous knowledge. Teaching staff did not tend to promote or foster problem solving, prediction, evaluation, brainstorming, or planning among children as frequently as would be needed to earn a strong score on this dimension. AIR did observe several examples among STK teachers of promoting children's concept development; for example, when one class was about to begin a group art activity, the teacher asked them, "How do you think we should do this?" which allowed children to generate ideas about how to go about the task. Another teacher asked a series of "why" questions of a child as he built with blocks, to help him think through the task and expand the interaction into one that promoted prediction and

experimentation. However, these examples were not representative of the pattern of activities in the classrooms as a whole.

Comparison CLASS Data

As mentioned in the sections above, the mean 2012 STK CLASS scores in the *Emotional Support* and *Classroom Organization* domains were slightly lower than in 2011 (decreasing from 6.17 to 5.62 for *Emotional Support* and 5.59 to 5.44 for *Classroom Organization*), and the *Instructional Support* domain score increased from 2.57 in 2011 to 2.69 in 2012. However, none of the differences were statistically significant. Exhibits 5–7 illustrate CLASS scores in the dimensions within each of these three domains, comparing scores from 2009 through 2012.

Exhibit 6 illustrates the pattern of STK CLASS scores from 2009 to 2012 for the *Emotional Support* domain. Arrows indicate statistically significant differences from year to year.

Exhibit 6. Average STK CLASS dimension scores in the *Emotional Support* domain, 2009 through 2012
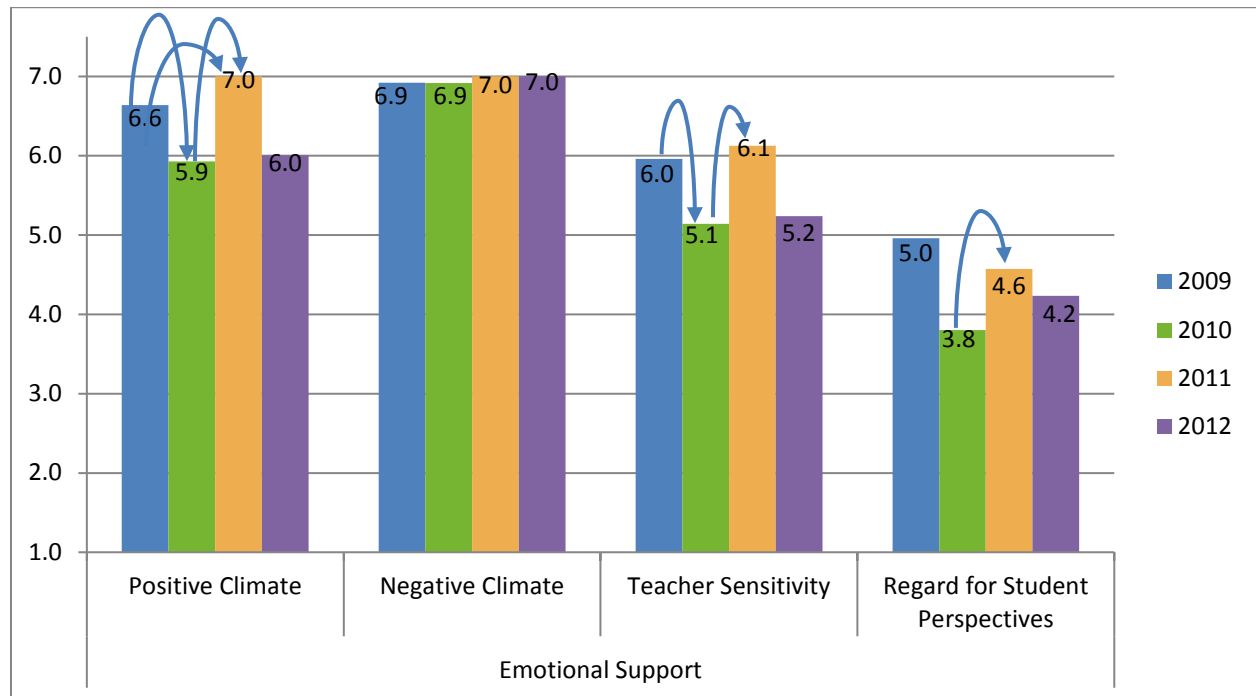
* Arrows indicate statistically significant differences at p <.05

Note: Negative Climate scores are reverse coded, such that high scores indicate fewer negative interactions.

Exhibit 7 illustrates the pattern of STK CLASS scores from 2009 to 2012 for the *Classroom Organization* domain. From 2011 to 2012, there were no significant differences in scores across any dimensions in this domain.

Exhibit 7. Average STK CLASS dimension scores in the *Classroom Organization* domain, 2009 through 2012
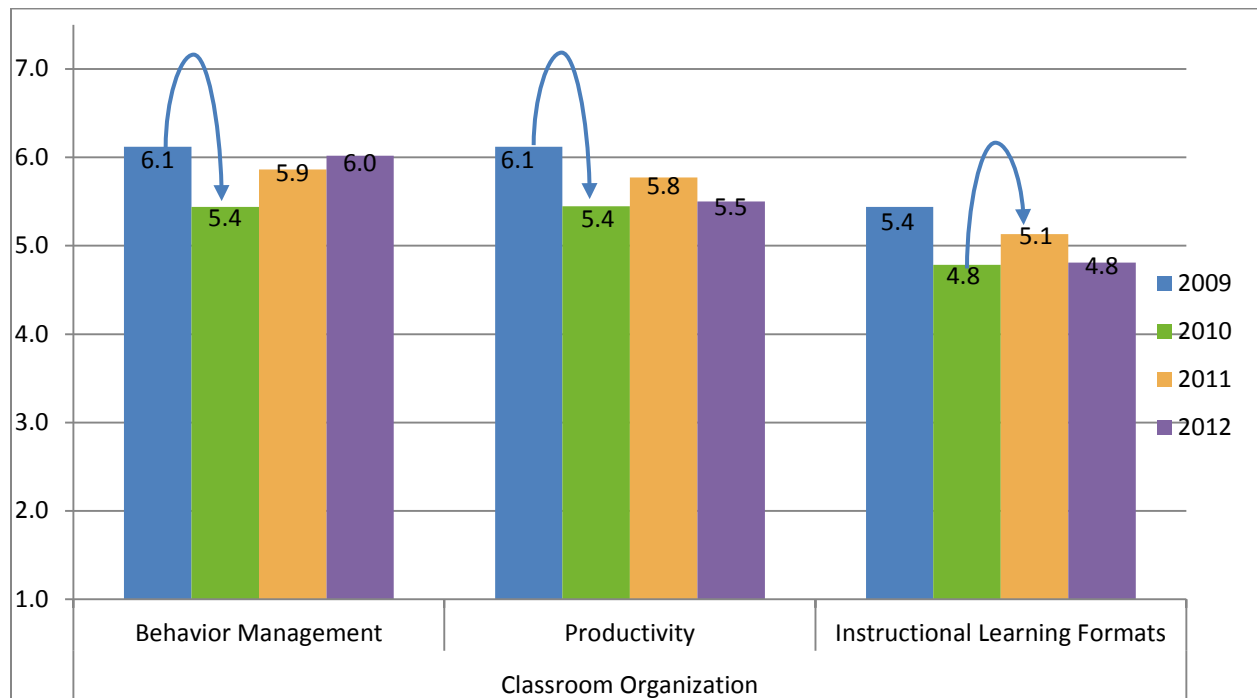
* Arrows indicate statistically significant differences at p<. 05

Exhibit 8 illustrates the pattern of STK CLASS scores from 2009 to 2012 for the *Instructional Support* domain. There were no significant differences across years for *Concept Development* or *Language Modeling*; however, *Quality of Feedback* STK scores decreased from 2009 to 2010, and have been increasing slightly over the last two years, though not statistically significantly.

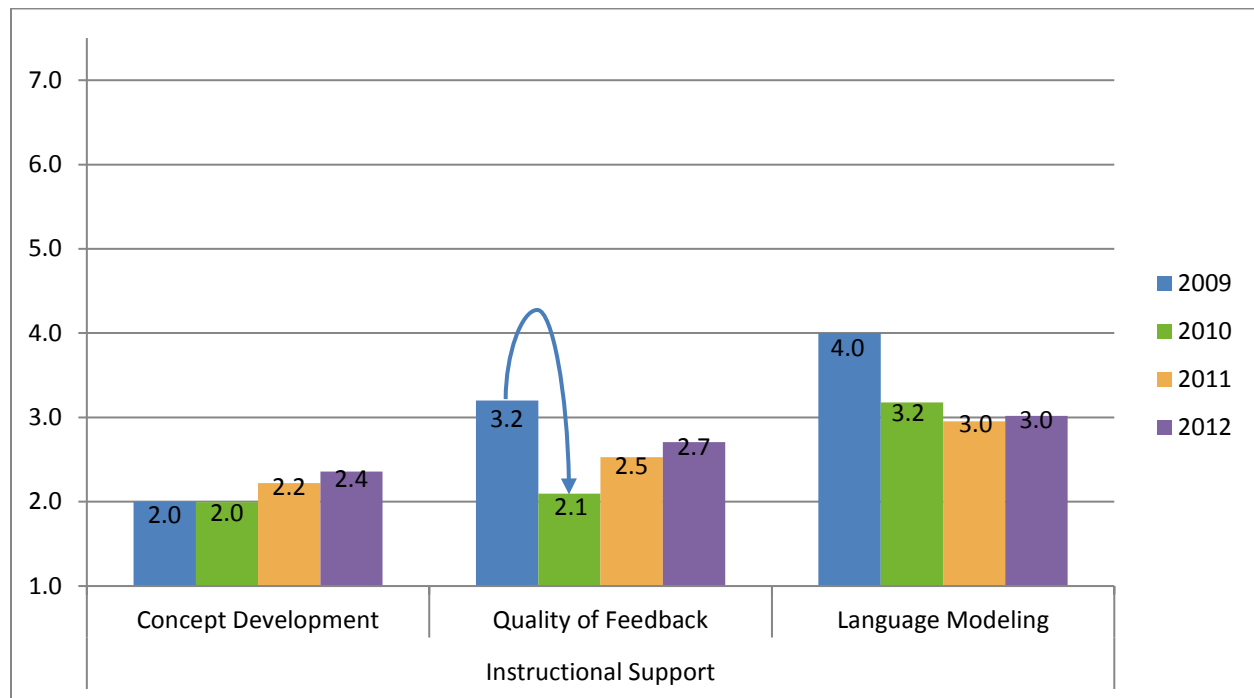**Exhibit 8. Average STK CLASS dimension scores in the *Instructional Support* domain, 2009 through 2012**

* Arrows indicate statistically significant differences at p<.05

It is important to note that, like in other domains, STK's lower scores in the *Instructional Support* domain mirror findings in other research studies of preschool quality. The National Center for Early Development and Learning (NCEDL) has conducted two major studies of state-funded prekindergarten programs that have used the CLASS: the Multi-State (MS) Study of Pre-Kindergarten (which included California) and the State-Wide Early Education Programs Study (SWEEP)[3]. The data in Exhibit 9 below include the average CLASS scores from the combined MS and SWEEP studies (n=694), compared with the average scores for STK 2012 observations (n=8). Only 8 of the 10 CLASS dimensions are included, as the MS and SWEEP studies used an older version of the CLASS, which did not include the dimensions *Regard for Student Perspectives* or *Language Modeling*.

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[3] The 11 states included across both studies included: California, Georgia, Illinois, Kentucky, Massachusetts, New Jersey, New York, Ohio, Texas, Washington, and Wisconsin.

Exhibit 9. Average MS/SWEEP and STK 2012 CLASS scores
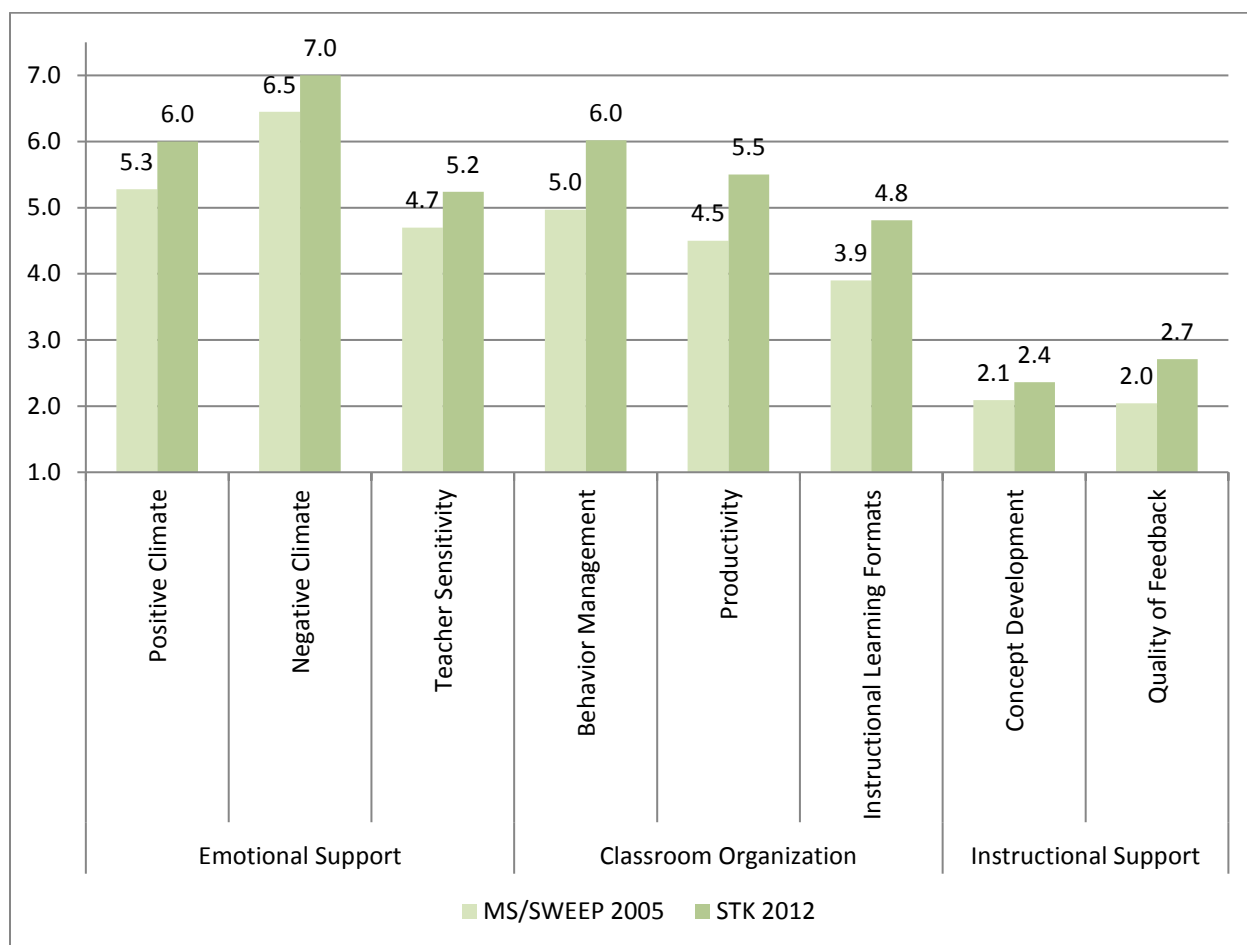
Note: Significance testing was not conducted between MS/SWEEP and STK scores, because standard deviations from the MS/SWEEP data were not available.

CLASS Scores: Morning and Afternoon Sessions

We examined CLASS scores separately for the morning session and the afternoon session for each observation day (see Exhibit 10), although we did not find any statistically significant differences on any of the CLASS dimensions. Dimensions within the *Emotional Support* domain received very similar scores in the morning and the afternoon. The morning CLASS scores were slightly higher than those in the afternoon sessions on the other two domains—*Classroom Organization* and *Instructional Support*.

Exhibit 10. Average STK 2012 CLASS scores, morning and afternoon sessions
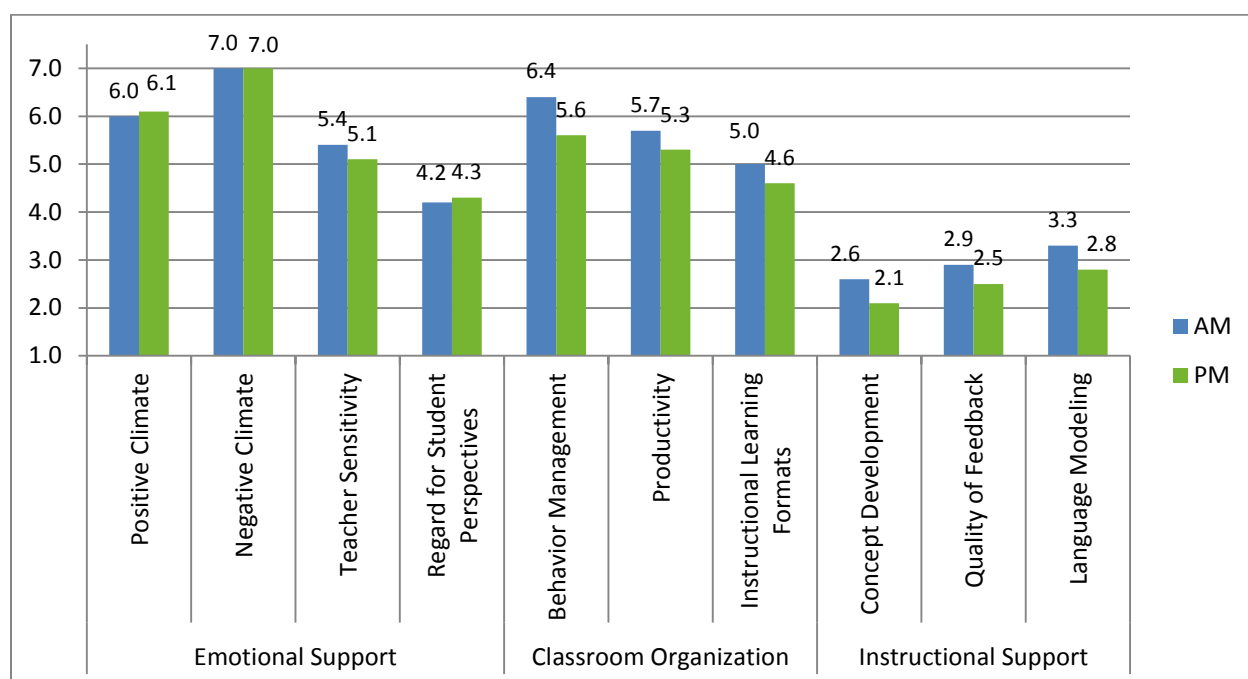
With eight observation cycles per classroom and four observation cycles per teacher, we were able to examine scores for each teacher separately. To protect confidentiality, scores are not presented by individual teacher. However, Exhibits 11 and 12 illustrate the number of teachers (n=6 in 2010 and 2011; n=8 in 2012) observed in STK classrooms whose average scores fell in the Low, Mid, and High range for each domain in 2010 (Exhibit 11), 2011 (Exhibit 12), and 2012 (Exhibit 13). More teachers scored in the High range for *Emotional Support* and *Classroom Organization* in 2011 compared with 2010, with *Instructional Support* remaining the same across the two years. In 2012 there were eight teachers in total—two more than the prior year. Fewer teachers scored in the High range for *Emotional Support* in 2012 compared with 2011. For *Classroom Organization*, the pattern for 2012 as compared with 2011 was the same, with one teacher scoring in the High range and the rest scoring in the Mid range. For *Instructional Support*, two teachers scored in the Mid range in 2012 and the rest scored in the Low range, whereas in 2011 all teachers scored in the Low range on this domain.

Exhibit 11. Number of STK teachers scoring in the Low, Mid, and High range in each CLASS domain, 2010
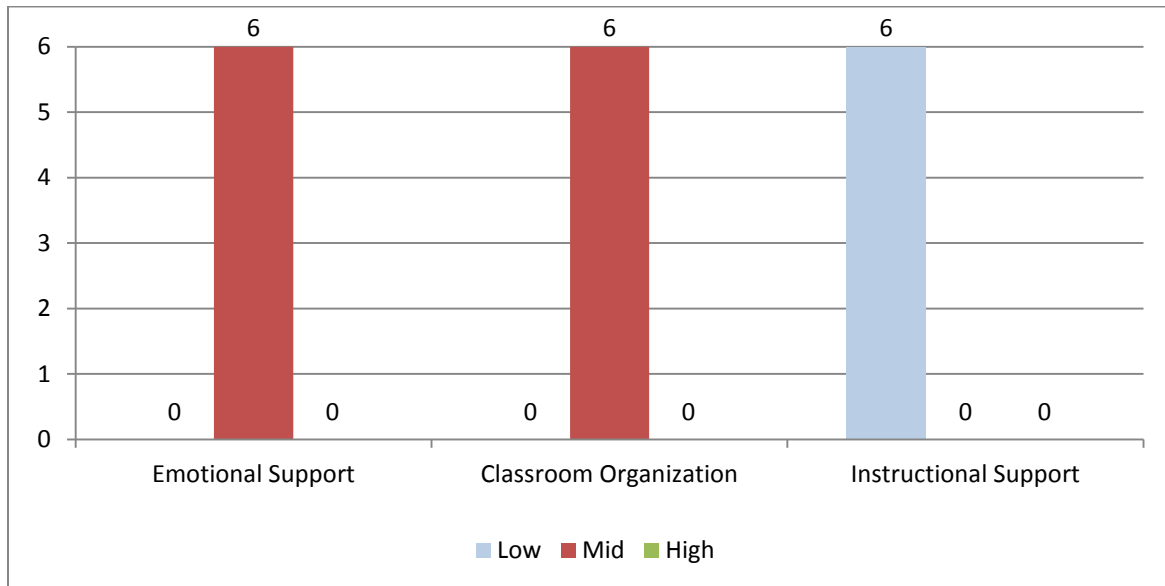
Exhibit 12. Number of STK teachers scoring in the Low, Mid, and High range in each CLASS domain, 2011
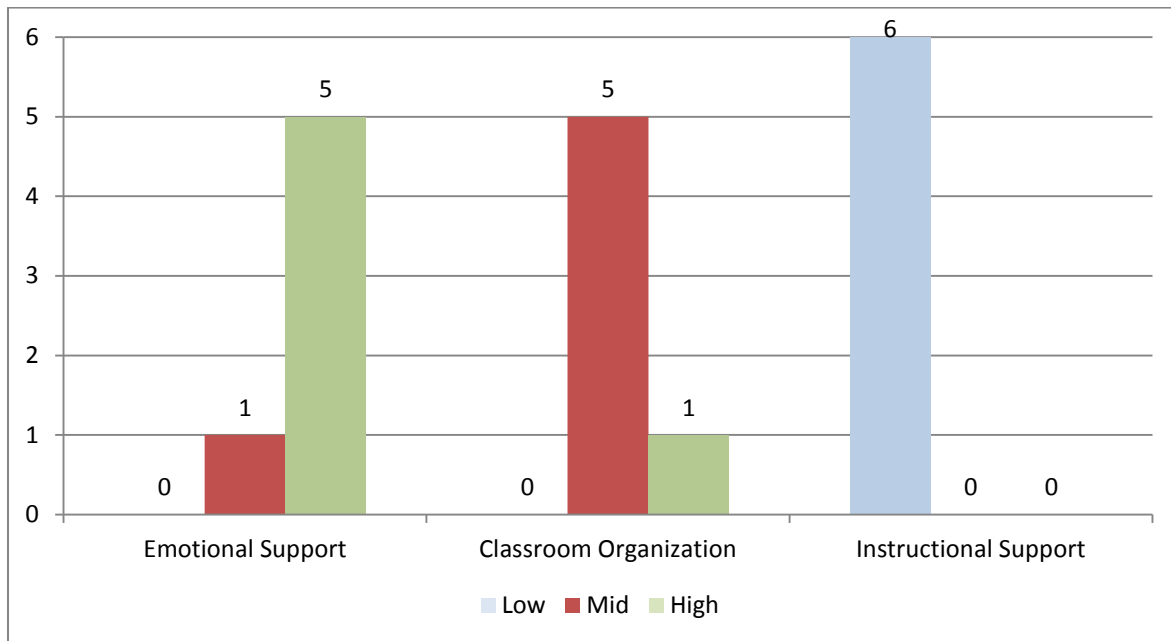
Exhibit 13. Number of STK teachers scoring in the Low, Mid, and High range in each CLASS domain, 2012
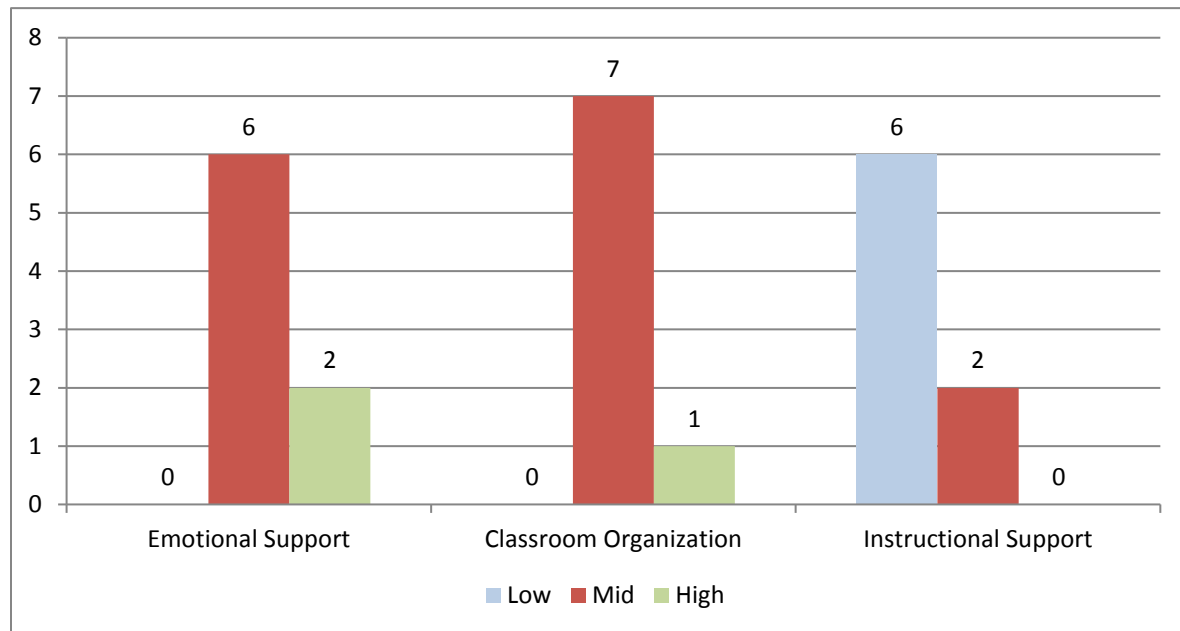
Summary of CLASS Findings

On average, STK classrooms received relatively strong scores for *Emotional Support* and *Classroom Organization*, yet they continued to struggle in *Instructional Support.* Classrooms received the highest scores on *Positive Climate*, *Negative Climate,* and *Behavior Management*. Similar to previous years, the lowest average rating of quality among the classrooms was found for the *Concept Development* dimension*,* in the *Instructional Support* domain, with *Quality of Feedback* and *Language Modeling* also receiving lower scores. As noted earlier, this pattern mirrors comparison CLASS data that are available. Over time, from 2009 to 2012, CLASS scores have remained fairly stable, with some exceptions (all but one of the significant increases in scores occurred in the *Emotional Support* domain over this period of time, with a limited number of significant decreases found in the *Classroom Organization* and *Instructional Support* domains).

Early Language and Literacy Classroom Observation—Dual Language Learner Supplement

In 2012, Stretch to Kindergarten program directors also conducted classroom observations using the ELLCO-DLL tool (Early Language and Literacy Classroom Observation—Dual Language Learner Supplement). The ELLCO-DLL is designed to obtain information about classroom practices that promote language and literacy development in dual language learners (DLLs). The grand total score—9 to 70 possible points—is made up of the dimensions outlined below.

<u>LITERACY ENVIRONMENT CHECKLIST (1–16 points total)</u>

Book Selection (1–4 points): *Availability of Spanish/bilingual books and range of difficulty level*

Book Use (0–9 points): *Availability of Spanish/bilingual books in different areas of the classroom; availability of recorded books/stories in Spanish*

Writing Materials (0–1 points): *Availability of Spanish word cards*

Writing around the Room (0–2 points): *Availability of Spanish/bilingual puzzles, labels, posters*

<u>CLASSROOM OBSERVATION (8–40 points total)</u>

General Classroom Environment

Presence and Use of Technology (1–5 points): *Availability of computers and/or other technologies in children's first language and English; use of technology for a variety of purposes, including supporting language development*

Classroom Management Strategies (1–5 points): *Communication of clear behavior expectations to dual language learners (DLLs) through a variety of methods*

Language, Literacy, and Curriculum

Presence of Books (1–5 points): *Availability of books in children's first language and English; appropriateness of content and level of available books*

Approaches to Book Reading (1–5 points): *Use of multiple strategies for supporting DLLs' comprehension; informal opportunities for children to explore/hear/read books in English and their first language*

Approaches to Children's Writing (1–5 points): *Availability of teachers to support/encourage all children's writing efforts in English and their first language*

Approaches to Curriculum Integration (1–5 points): *Organization of activities around goals for children's conceptual understanding*

Facilitating Home Support for Literacy (1–5 points): *Interactions between home and school about ways to support literacy; provision of appropriate materials and meaningful assignments to families for supporting their children's learning; encouragement to families for seeking out and using community resources that support literacy learning in the children's first language and English*

Approaches to Assessment (1–5 points): *Assessment in children's first language and in English*

<u>LITERACY ACTIVITIES RATING SCALE (0–14 points total)</u>

Book Reading (0–14 points): *Time spent on various reading activities in both languages*

Each of the eight STK teachers was observed by one of the two program directors at the beginning of the program ("pre") and at the end of the program ("post"). No coaching or guidance about classroom set-up was given to teachers before the first ELLCO-DLL observation, but such coaching was provided afterwards and throughout the program. At the beginning of the program, teachers were observed for 2–3 hours. At the end of the program, teachers were observed for 1.5–2 hours. The shortened length of observation time for the post observation period could result in teachers not receiving enough credit for the amount of time spent reading, which would affect their score in the *Book Reading* dimension in the *Literacy Activities Rating Scale*. Thus, it is possible that STK teachers' post scores on these dimensions might not represent their score if a longer observation period was given. However, because the group of teachers showed statistically significant growth on this dimension from the beginning of the program to the end of the program, the unequal observation times are not considered problematic.

The exhibits below show that STK classrooms improved from the beginning of the program to the end of the program on all ELLCO measures:

1. *ELLCO–DLL Scale Total*
2. *Literacy Environment Checklist*
3. *General Classroom Environment* and *Language, Literacy, and Curriculum* (within the *Classroom Observation* domain)
4. *Literacy Activities Rating Scale*

Exhibit 14 shows statistically significant growth on the *ELLCO-DLL Scale Total*, illustrating that Stretch to Kindergarten teachers improved over time in employing classroom practices to promote language and literacy development in children acquiring two languages, as measured by the ELLCO-DLL[4].

Exhibit 14. STK teachers' pre and post scores on the ELLCO-DLL scale total (9–70 possible points)
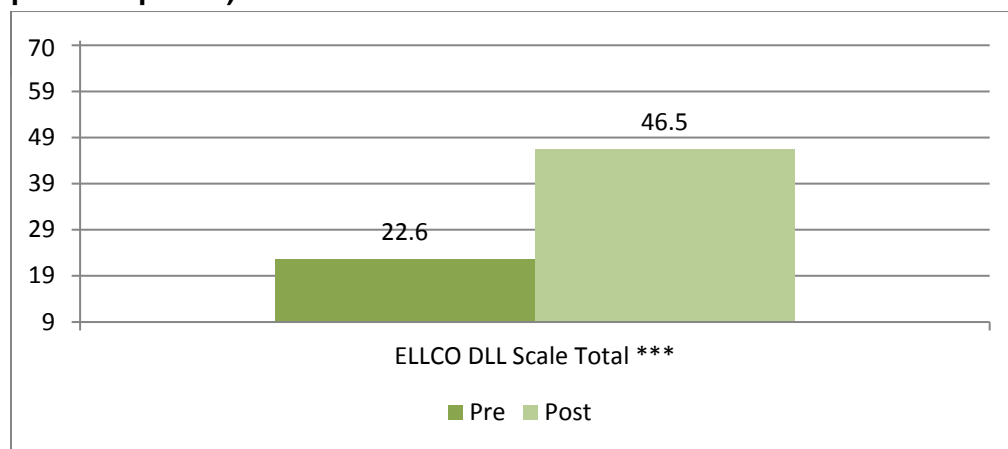
[4] As of the writing of this report, comparison data from other programs using the ELLCO-DLL was not available.

Exhibit 15 below shows teachers' pre and post scores on the *Literacy Environment Checklist*, illustrating that STK teachers improved from the beginning of the program to the end of the program in areas such as making Spanish or bilingual books available to children in different areas of the classroom and at differing difficulty levels, making recorded books or stories available in Spanish, making Spanish word cards available, and making Spanish or bilingual puzzles, labels, and posters available.

Exhibit 15. STK teachers' pre and post scores on the Literacy Environment Checklist (1–16 possible points)
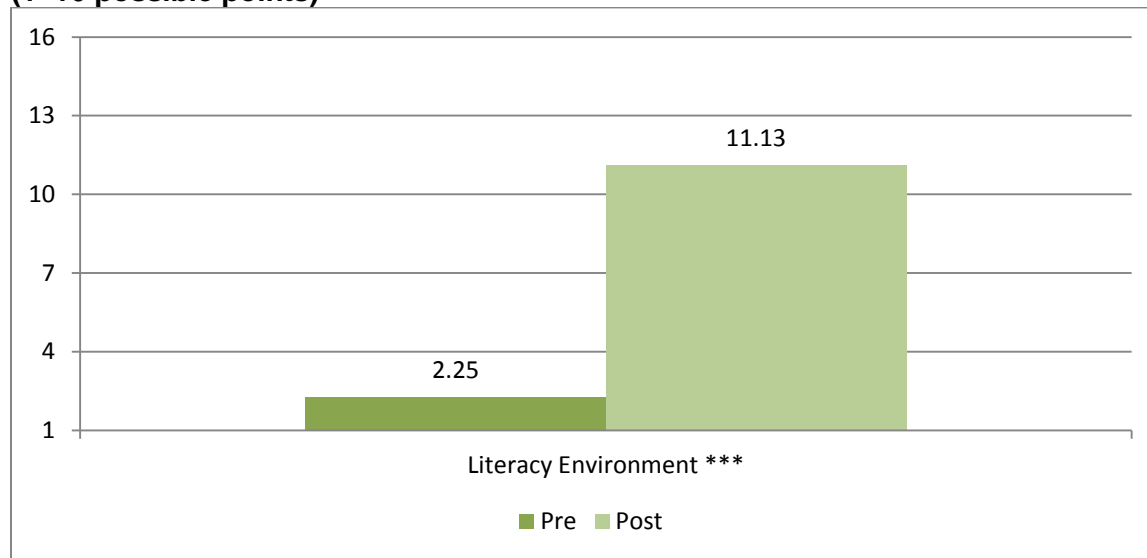
*p < .05 **p < .01 ***p<.001

Exhibits 16 and 17 show that STK teachers also improved on the *General Classroom Environment* checklist and the *Language, Literacy, and Curriculum* scale (both within the *Classroom Observation* domain). This can be interpreted to mean that STK teachers improved over time in areas such as making computers and/or other technologies available in children's first language and English, using technology for a variety of purposes, and communicating clear behavior expectations to English learners. They also improved in such areas as making books of appropriate levels and content available in children's first language and English, using strategies to support DLLs' comprehension, providing opportunities for children to explore books in English and their first language, supporting and encouraging all children's writing efforts in English and their first language, organizing activities around goals for children's conceptual understanding, conducting assessments in children's first language and English, and encouraging families to support literacy in their children's first language and English.

Exhibit 16. STK teachers' pre and post scores on the General Classroom Environment Checklist (2–10 possible points)

General Classroom Environment **

- Pre: 4.13
- Post: 5.38

■ Pre ■ Post
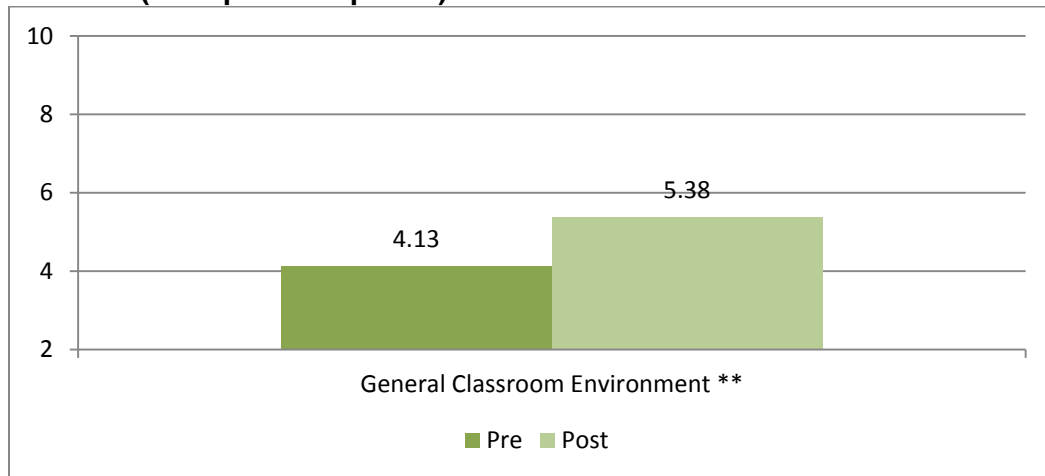
*p < .05 **p < .01 ***p<.001

Exhibit 17. STK Teachers' pre and post scores on the Language, Literacy, and Curriculum Scale (6–30 possible points)

Language, Literacy, and Curriculum ***

- Pre: 14.00
- Post: 24.13

■ Pre ■ Post
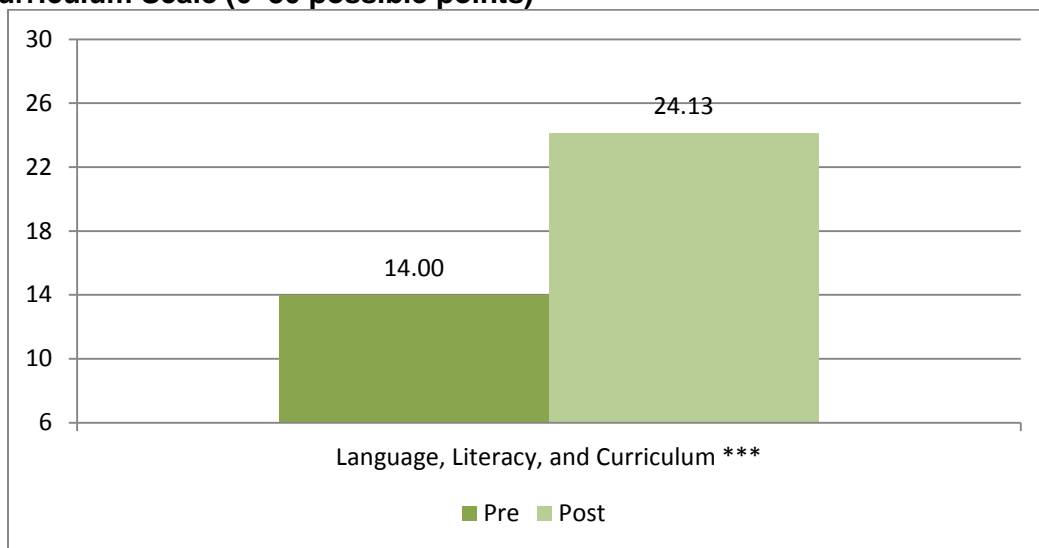
*p < .05 **p < .01 ***p<.001

Finally, STK teachers showed growth on the *Book Reading* dimension (Exhibit 18), the only dimension in the Literacy Activities Rating Scale, meaning that by the end of the program they had increased the amount of time spent reading in Spanish to the full group or small groups, reading in English using some words in Spanish to the full group or small groups, and engaging in one-on-one or small-group book reading—in Spanish or Spanish and English—with Latino DLLs.

Exhibit 18. Literacy Activities Rating Scale (0–14 points)
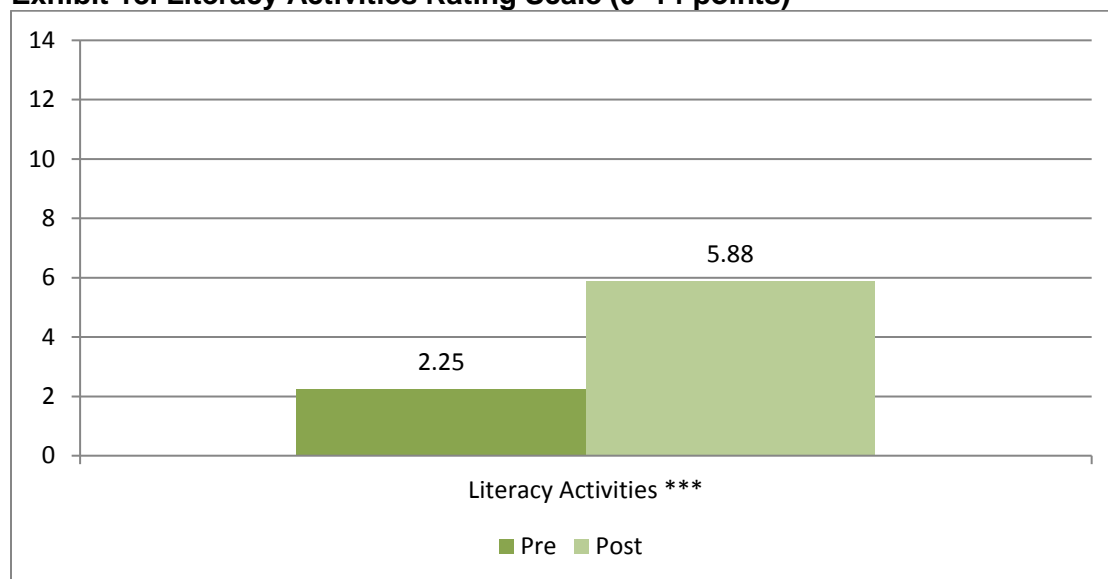
*p < .05 **p < .01 ***p<.001

As the exhibits above show, there were statistically significant differences from pre to post on all dimensions. Furthermore, with the exception of "Presence and Use of Technology," which stayed the same from pre to post (given that all classrooms were already supplied with all of the technology available to the program), all individual dimensions showed statistically significant improvement over time (graphs not shown because each item is measured on a different scale):

- Book Selection
- Book Use
- Writing Materials
- Writing Around the Room
- Classroom Management Strategies
- Presence of Books
- Approaches to Book Reading
- Approaches to Children's Writing
- Approaches to Curriculum Integration
- Facilitating Home Support for Literacy
- Approaches to Assessment
- Book Reading

At the post observation point, after guidance fromSTK staff and coaching was provided to teachers, STK teachers scored highly on all dimensions of the ELLCO-DLL, demonstrating many best practices in promoting language and literacy development in dual language learners, including making more Spanish or bilingual books available to children; making more puzzles, word cards, posters, labels, and/or recorded stories available in Spanish; using more technology

in children's first language and English; communicating behavior expectations more clearly; using more strategies to support DLLs' comprehension; providing more support for children's writing efforts in English and their first language; encouraging more family support for literacy; and spending more time reading in Spanish.

Changes in STK Parent Knowledge and Skills

The STK program aims to prepare both children and parents for the transition to kindergarten. For parents, this means helping them support their child's learning at home and at school. To examine changes in parent knowledge and practices, parents were asked to complete a short survey at the beginning of the program (during the first Saturday of the parent program) and again near the end of the summer session. The survey was available in English and Spanish. Sixty-four parents completed a survey at both time points, representing a 61 percent response rate from families in the program. Frequencies for all parent survey items are presented in Appendix A. Surveys in English and Spanish are included in Appendix D.

Findings from the 2010 and 2011 parent survey are included to provide context for the 2012 findings. Many patterns of growth observed among STK parents in 2012 were similar to previous years. For example, in all three years, parents reported reading to their children and using dialogic reading strategies more frequently after participating in STK. Parents' reported use of daily routines increased in 2011 and 2012, and parent's use of math activities increased in 2010 and 2012. However, there was no significant change from before to after participation in STK in 2012 in the number of books families had in their homes or the frequency with which they used the library; this finding contrasts with increases seen in 2010 and 2011. Furthermore, the frequency with which parents provided writing materials to their children did not change significantly in 2012, although it did in 2011. Also, as in 2011, we observed *no* significant change in the number of parents reporting they believed children should be read to beginning in their first year of life—a belief that increased among parents after participating in the 2010 program. Consistent with prior years, 2012 saw no significant increases in parents' familiarity with school or their reported use of social supports.

Language and Literacy Activities

Parents participating in the STK program showed statistically significant growth in several aspects of parenting knowledge and skills after participation in the program. In particular, parents reported doing more to support their children's language and literacy development. By the end of the program, parents reported the following:

- Reading to children more frequently (Exhibit 21)
- More frequently asking children to describe what is in a picture when reading a story (Exhibit 22)
- More frequently asking children to predict what will happen next when reading a story together (Exhibit 23)

- More frequently telling children a story (Exhibit 25)
- More frequently having children tell a story (exhibit 26)
- More frequently singing songs or playing music with children (Exhibit 27)

The percentage of parents reporting having more than 25 children's books in their home at the end of the 2012 program did not change significantly from before the program (33 percent compared with 24 percent at program entry), though there was a significant difference in prior years (Exhibit 19).

Exhibit 19. Percentage of parents reporting more than 25 children's books in their home at the beginning and end of the STK program, 2010, 2011, and 2012
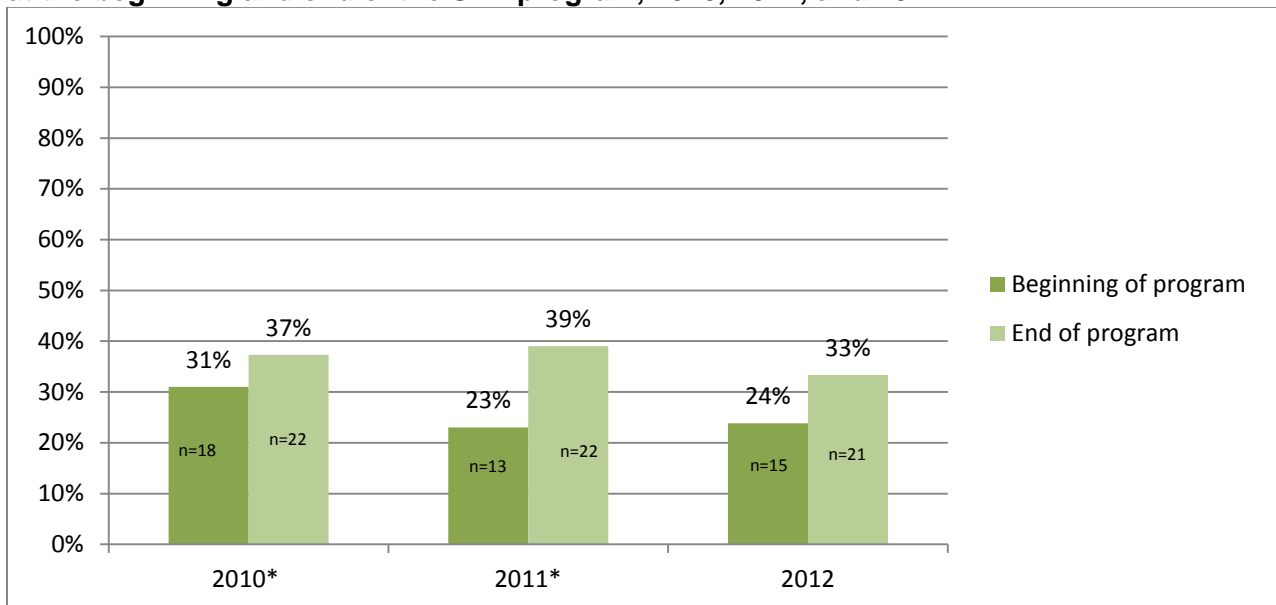
*p < .05 **p < .01 ***p<.001

By the end of the STK program, the percentage of parents who reported that they visit the library at least once per month—either to borrow books or materials for their children or to participate in other activities for their children such as story time—did not change significantly from the start of the program, though it did in 2010 and 2011 (Exhibit 20). However, more parents in 2012 reported using the library frequently when they entered the program than did parents in previous cohorts.

Exhibit 20. Percentage of parents reporting they go to the library at least once per month, beginning and end of the STK program, 2010, 2011, and 2012
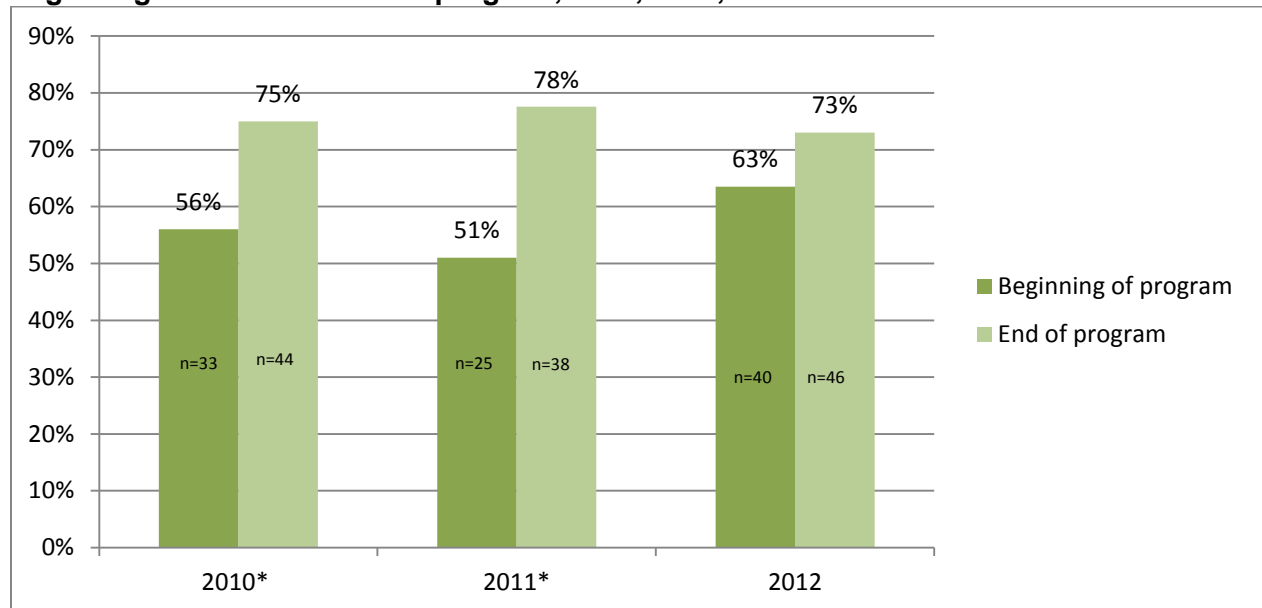
*p < .05 **p < .01 ***p<.001

As illustrated in Exhibits 21, 22, and 23, parents reported reading to their children more frequently as well as increasing their use of dialogic reading strategies. By the end of the 2012 STK program, the number of parents reporting they read to their child at least five times a week increased by 15 percentage points, from 31 to 46 percent. This is less growth than in 2010 and 2011, when the number of parents reporting doing so increased by 28 and 25 percentage points, respectively. Dialogic, or more interactive, reading strategies in particular have been shown to improve children's expressive language and vocabulary skills (Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, Valdez-Menchaca, Caulfield, et al., 1988; Hargrave & Senechal, 2000) more than less interactive reading does. In 2012, the STK program emphasized dialogic reading strategies in children's classrooms and with parents in parent sessions. Parent survey data show that parents increased their use of these emphasized strategies; the proportion of parents who reported asking children what was in a picture at least three times the previous week when reading with them increased from about half (51 percent) of parents to just under three quarters (72 percent) by the end of the 2012 program; in contrast, parent responses to this question did not show any significant change at the end of the 2011 program (Exhibit 22). Consistent with previous years, a greater percentage of parents at the end of the 2012 STK program than at the beginning reported having asked children at least three times the previous week to predict what was going to happen in a story (40 percent vs. 67 percent, Exhibit 23).

Exhibit 21. Percentage of parents reporting that someone in their family read to their children at least five times in the past week, beginning and end of the STK program, 2010, 2011, and 2012
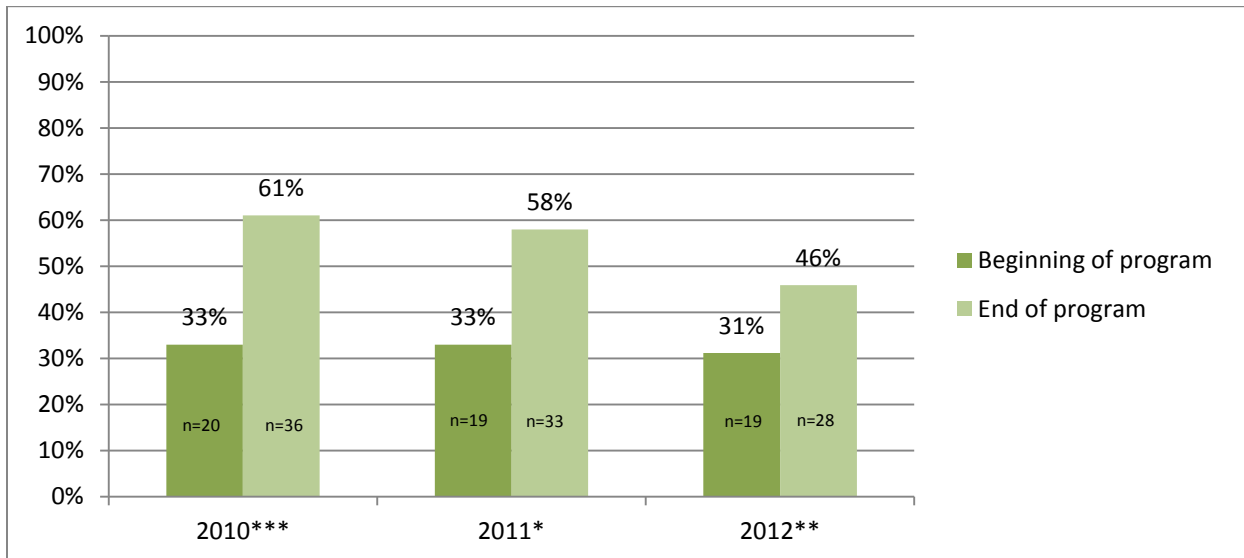
*p < .05 **p < .01 ***p<.001

Exhibit 22. Percentage of parents reporting asking their children what is in a picture at least three times per week while reading together, beginning and end of the STK program, 2010 and 2011
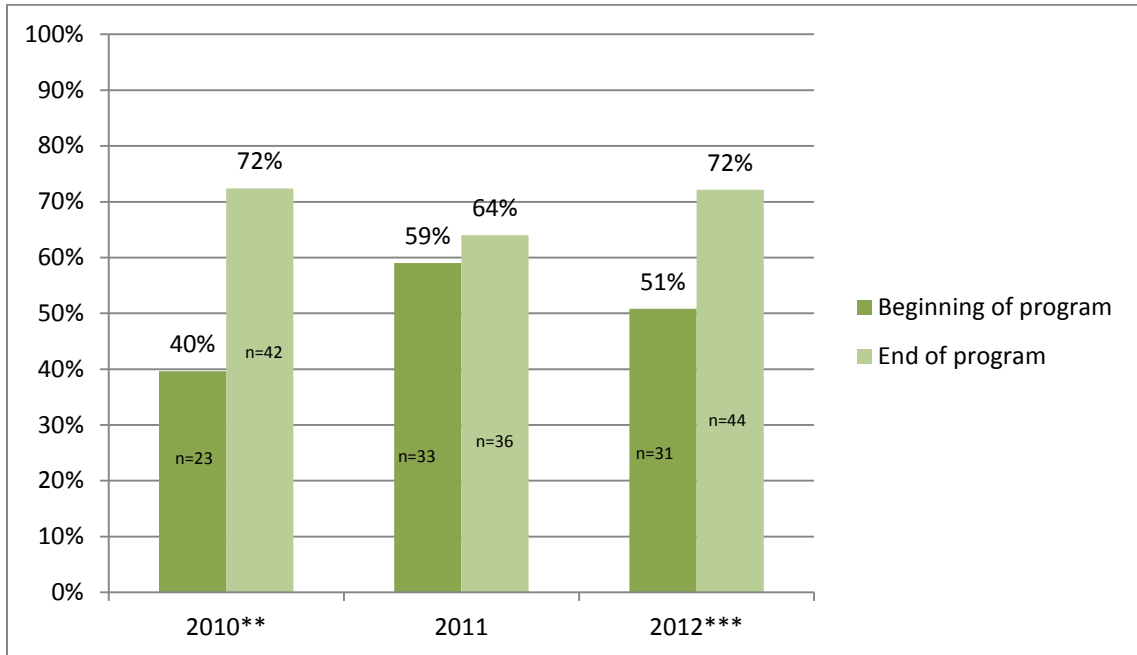
*p < .05 **p < .01 ***p<.001

Exhibit 23. Percentage of parents reporting asking their children what they think will happen next at least three times per week while reading together, beginning and end of the STK program, 2010 and 2011
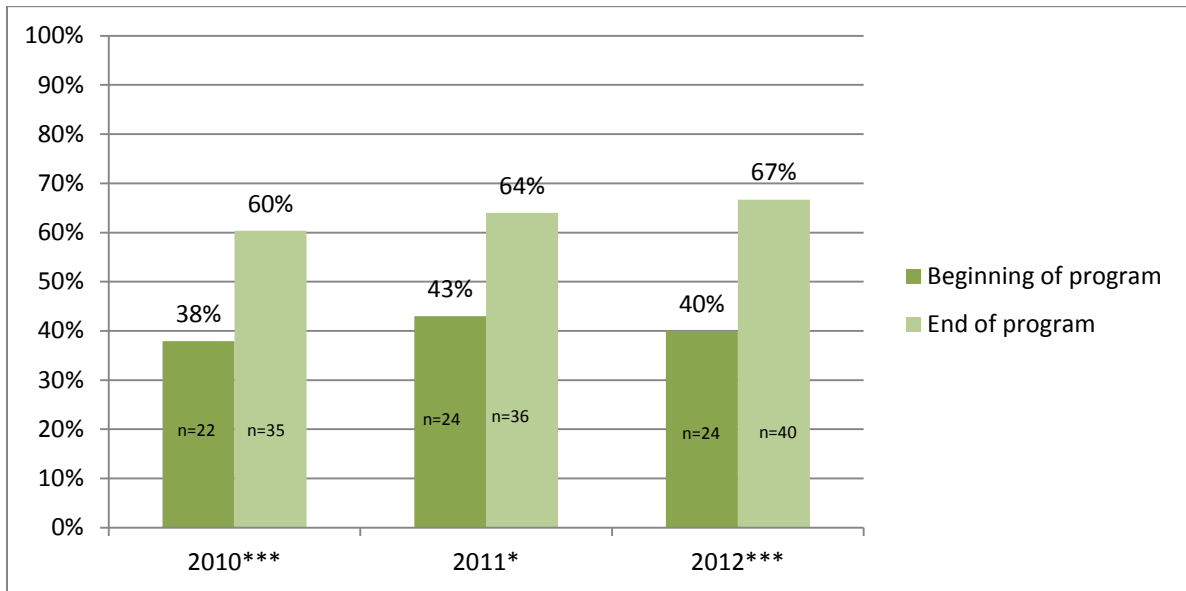
*p < .05 **p < .01 ***p<.001

The STK program also encouraged parents to read to their children in their home language (in almost all cases, Spanish). To learn more about this, a question on the parent survey asked parents what language(s) they read to their child in. Most parents did not report changing the language(s) they read to their child in after participation in the STK program (Exhibit 24).

Exhibit 24. Number of parents reporting using different languages to read to their child at the beginning and end of the STK program, 2012

Language used for reading…		At STK completion		
		Spanish only	English and Spanish	English only
At STK entry	Spanish only	18	6	0
	English and Spanish	1	19	5
	English only	0	1	8

Parents from the 2012 STK program also reported using several other strategies to support their children's literacy and language development more frequently after participation, though parents in prior-year cohorts did not show growth on these. A greater proportion of parents reported telling their children a story as well as having their children tell a story at least three times in the past week by the end of the program (Exhibits 25, 26). Parents' use of music as an activity to support their children's literacy and language development also increased. As illustrated in Exhibit 27, by the end of the 2012 STK program, more parents reported singing songs and

playing music with their children at least three times in the previous week (59 percent compared with 44 percent at program entry).

Exhibit 25. Percentage of parents reporting telling their child a story at least three times in the past week, beginning and end of STK program, 2010, 2011, and 2012
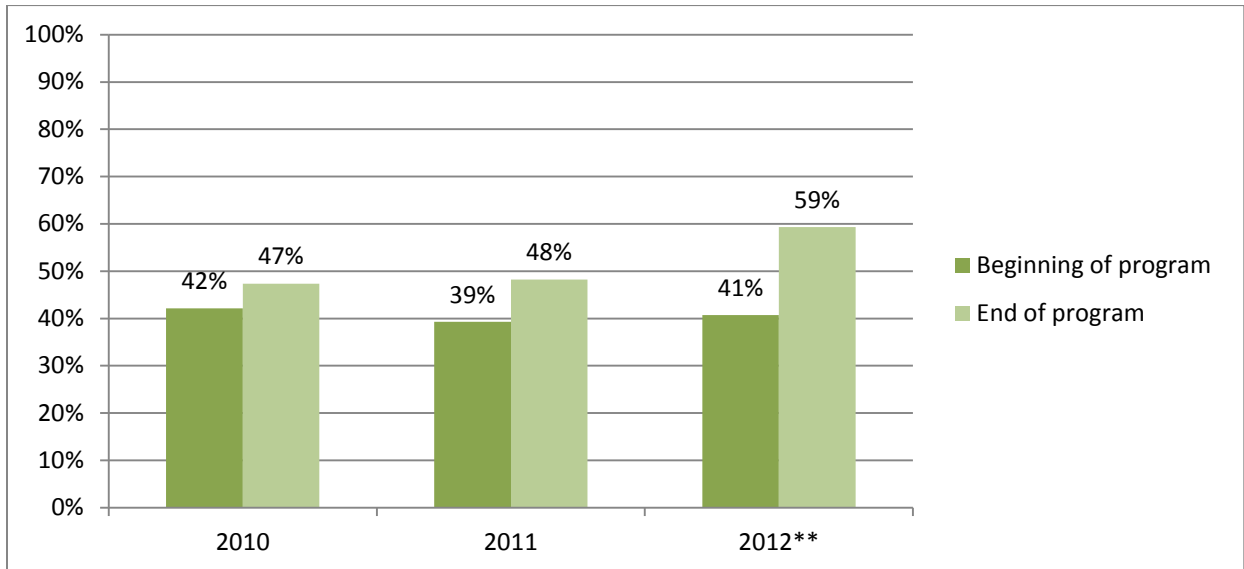
*p < .05 **p < .01 ***p<.001

Exhibit 26. Percentage of parents reporting having their child tell a story at least three times in the past week, beginning and end of STK program, 2010, 2011, and 2012
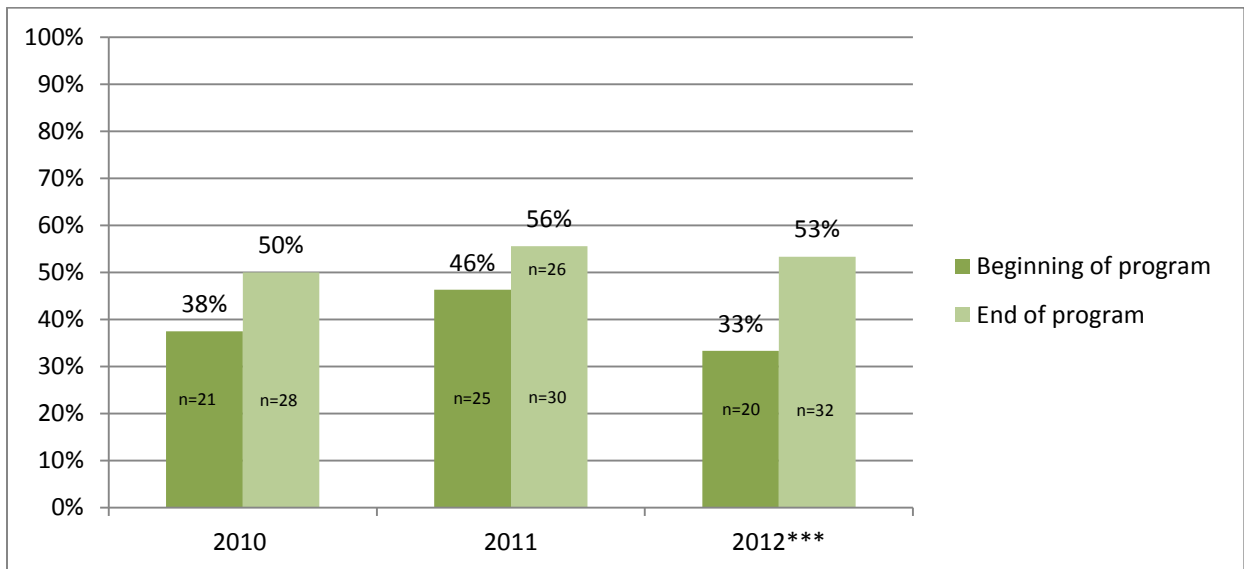
*p < .05 **p < .01 ***p<.001

Exhibit 27. Percentage of parents reporting singing songs or playing music with their child at least three times in the past week, beginning and end of the STK program, 2010, 2011, 2012
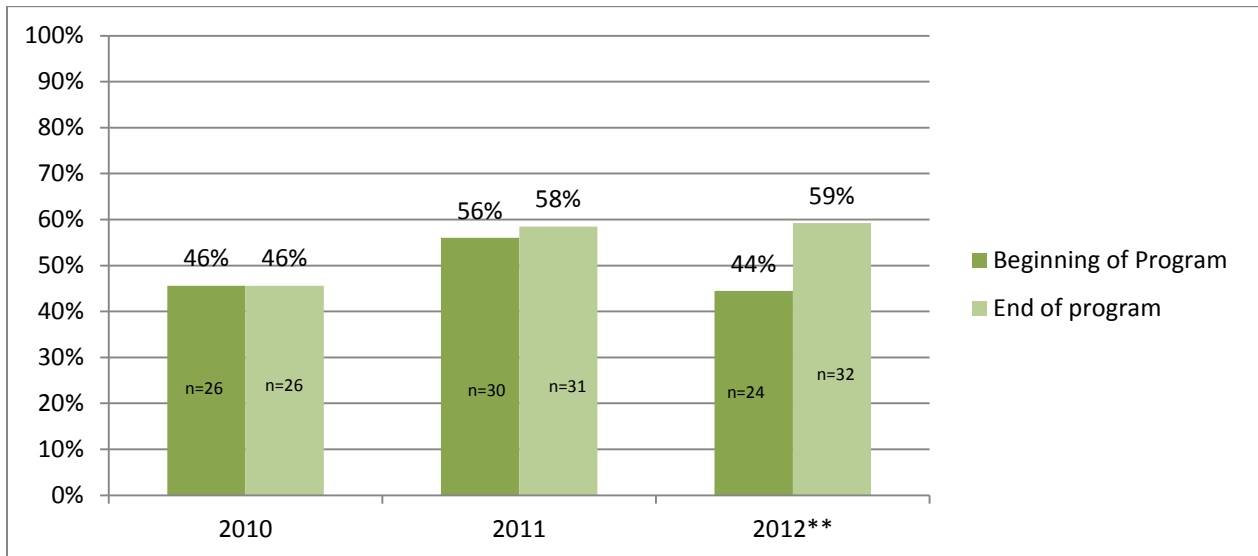
*p < .05 **p < .01 ***p<.001

To measure parental understanding of child development and appropriate reading strategies, parents were asked what they thought was the best time to start reading to children. In 2010, by the end of the program, more parents reported they believed that children should be read to beginning in their first year of life; however, in both 2011 and 2012, there was *no* significant change in this belief among parents (Exhibit 28).

Exhibit 28. Percentage of parents reporting that they believe the best time to start reading to children is during a child's first year, beginning and end of the STK program, 2010, 2011, 2012
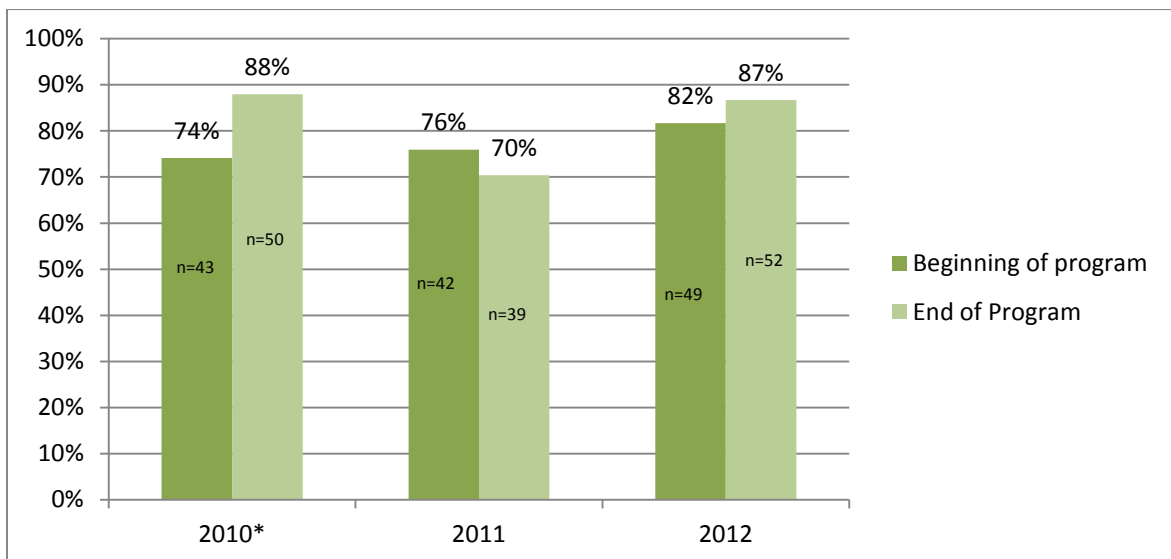
*p < .05 **p < .01 ***p<.001

Parent reports suggest that parents from prior-year cohorts did more to encourage their children to write after participating in STK than did the 2012 cohort. In 2011, more parents at the end of the program than the beginning reported providing writing materials (such as crayons or pencils) to their children for play at least three times during the previous week (96 percent vs. 82 percent). However, parents did not show any significant change when asked this same question at the end of the 2010 and 2012 STK programs (76 percent vs. 86 percent and 78 percent vs. 83 percent, respectively) (not shown).

Math Activities

Parents showed significant growth in the frequency with which they reported engaging in math activities with their children by the end of the 2012 STK program. Change in parents' activities to support their children's math skills was measured using a composite of five survey items. These individual items, designed to assess the frequency with which parents engage in math activities with their children, were found to be highly correlated in 2012 (Cronbach's alpha of 0.83). Parents' responses across all five items were averaged, resulting in a single composite score called the math activity scale. Parents' average scores on this scale across all three years are illustrated in Exhibit 29. The scale is a four-point Likert scale; a score of zero on an item in the scale indicates a parent did not engage in that math activity with their child in the past week; a score of 1, 2, or 3 indicates that a parent engaged in that math activity either one or two times, three or four times, or five or more times, respectively, in the past week. The scale presented below is the average value across five math activities (helping children count, playing counting games or singing number songs, talking to children about shapes in the environment, having children help measure, and asking children to compare numbers in two groups).

Exhibit 29. Parent scores on math activities scale (scale of 5 items), beginning and end of the STK program, 2010, 2011, 2012

*p < .05 **p < .01 ***p<.001
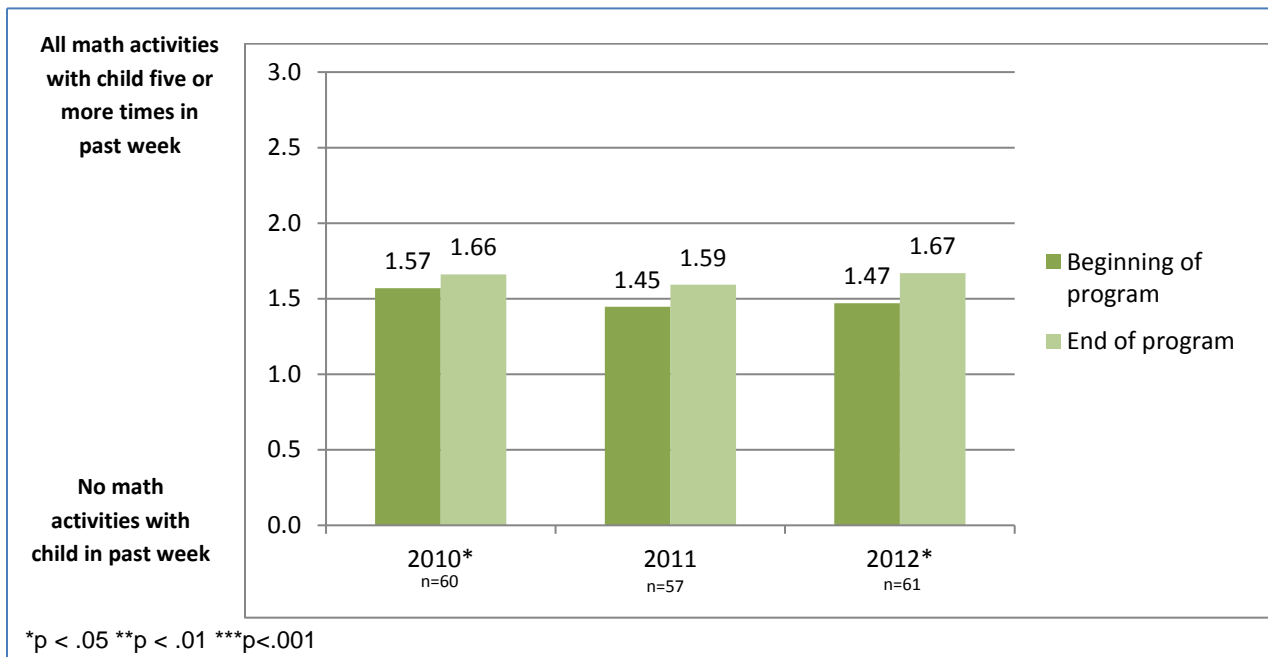
Routines and Child Behavior Management

By the end of the 2012 STK program, a greater percentage of parents somewhat or strongly agreed that they had routines for their children for daily activities, compared with program entry (67 percent vs. 82 percent, Exhibit 30), similar to the pattern seen in 2011. Additionally, more parents at the end of the program somewhat or strongly agreed that they have set rules and consequences for their children (67 percent vs. 83 percent, Exhibit 31). Parent responses to other survey items regarding discipline and support of their children did not change significantly over this period of time. At the end of the 2011 STK program, more parents strongly agreed that they talk to their child about what the child is feeling when the child is upset (78 percent vs. 93 percent). However, parents did not demonstrate any significant change in their responses to this same statement at the end of the 2012 program (not shown).

Exhibit 30. Percentage of parents who somewhat or strongly agreed that they had routines for their children for daily activities, beginning and end of the STK program, 2012, 2011, and 2012
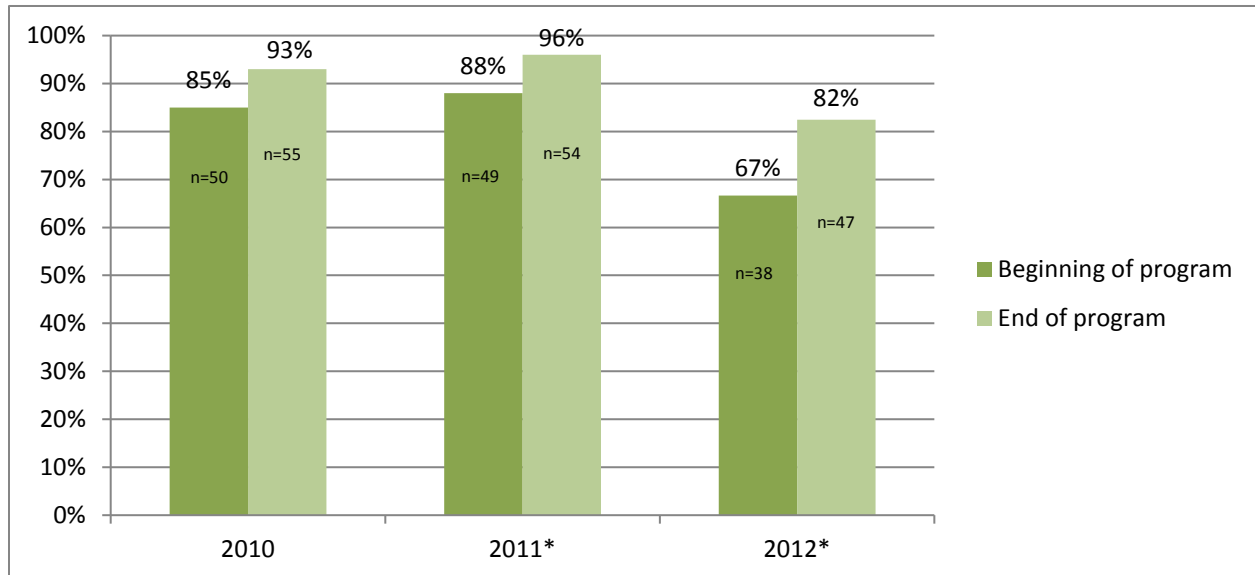
*p < .05 **p < .01 ***p<.001

Exhibit 31. Percentage of parents who somewhat or strongly agreed they had set rules and consequences for their children, beginning and end of the STK program, 2010, 2011 and 2012
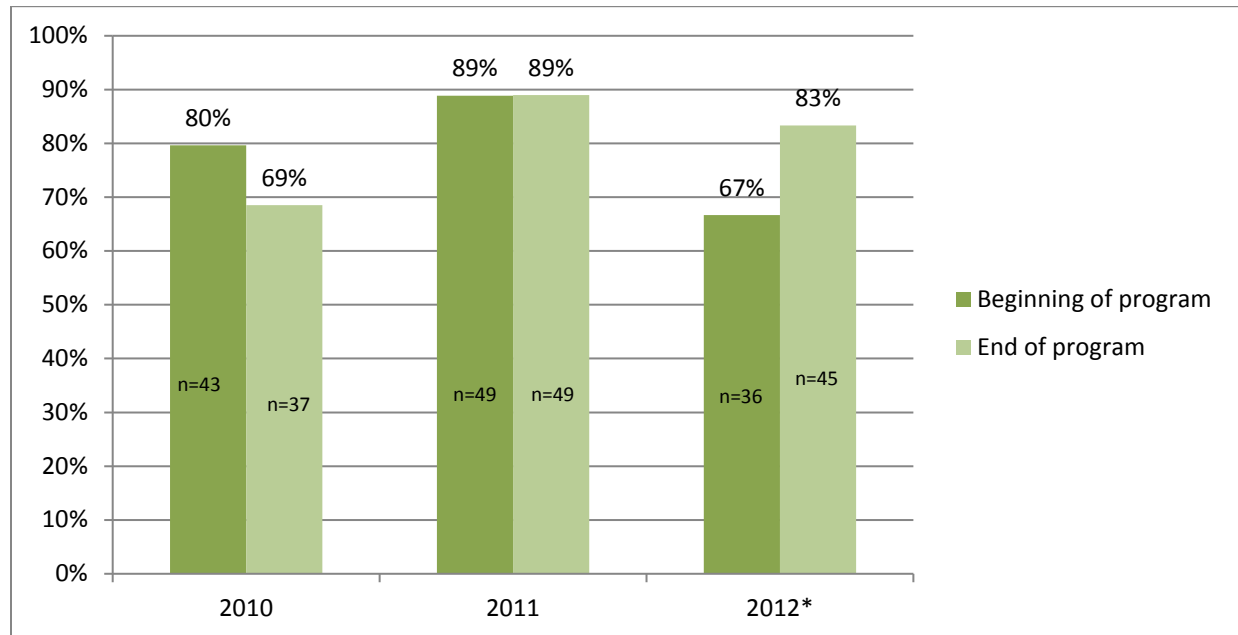
*p < .05 **p < .01 ***p<.001

Familiarity with School

In 2012, there was no statistically significant change from the pre- to the post-survey on items assessing parents' familiarity with the role they can play at their child's elementary school and their confidence that they will be able to support their child's learning once they enter kindergarten. This finding reflects the patterns found in 2010, where there was also no significant change from the pre- to the post-survey. Similarly, in 2011, the only significant increase was in the percentage of parents who reported that they had visited the school their child will attend in kindergarten at the end of the program than the beginning (82 percent vs. 96 percent, not shown).

Though the STK program emphasized to parents the importance of school attendance, there was no significant change in parents' level of agreement to the statement "Dropping off my child at school 15 minutes late is okay."

> **"It has been a great experience for me and my child. We both learned how to interact with each other and he is ready for kindergarten."**
> **– STK parent**

Parent Feedback about the STK Program

As a part of the second parent survey, administered near the end of the STK summer program, parents were asked how the STK program had helped their child and themselves; most feedback was very positive. For example, 88 percent of parents surveyed strongly agreed that they felt welcomed in their child's STK classroom, and 87 percent strongly agreed that they felt comfortable talking to their child's teacher. The largest percentage of parents strongly agreed

with these two items in both 2011 and 2012. Exhibit 32 illustrates the percentage of parents who strongly agreed with statements about their STK experience for both 2011 and 2012. Though the majority of parents from both years responded favorably about the program, parent reports were slightly more positive on most parent feedback items in 2011.

Exhibit 32. Percentage of parents who strongly agreed with various statements about their STK experience, 2011 and 2012
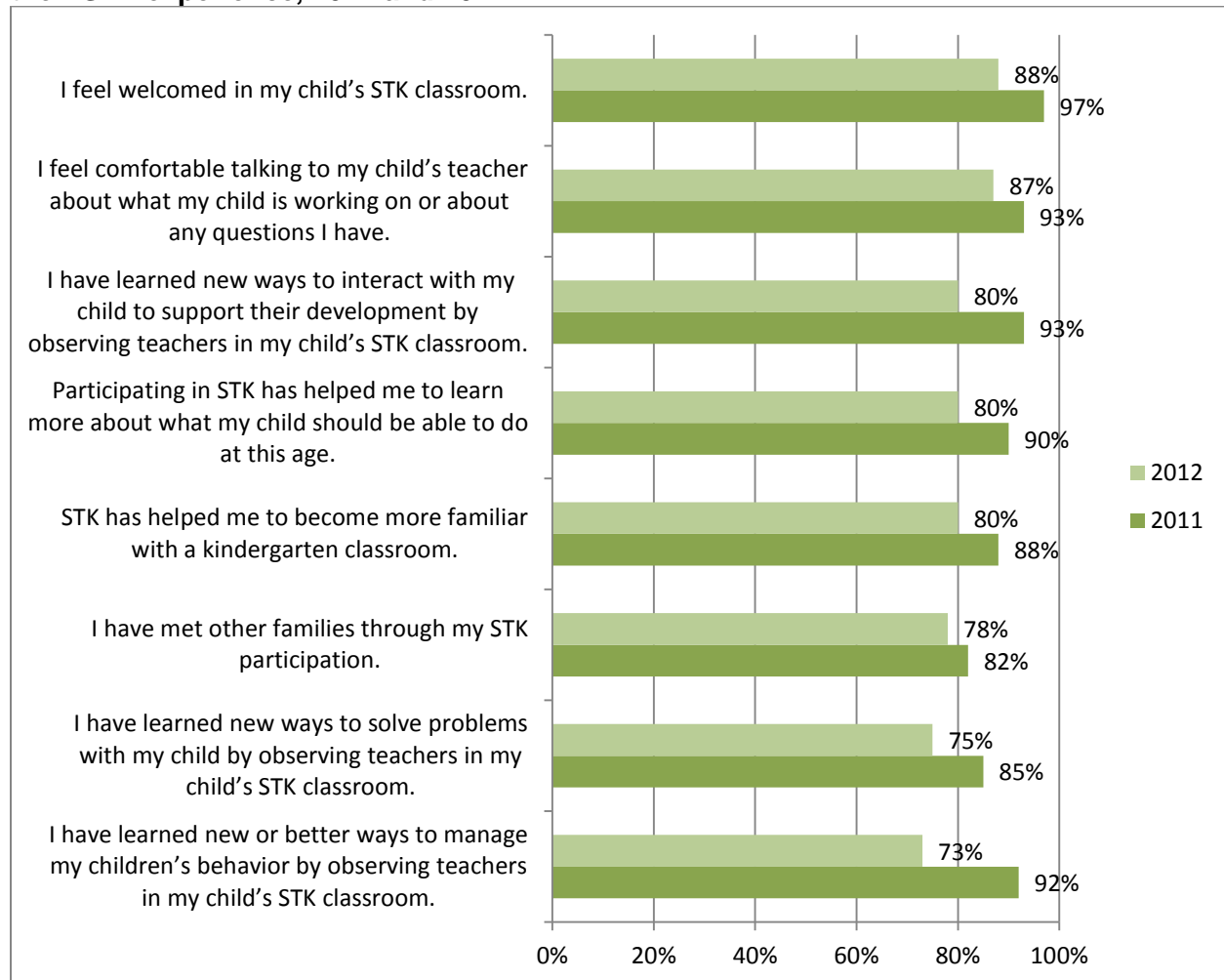
Parents were also asked how well STK helped prepare their child for kindergarten in several areas. Parent responses suggest that the greatest growth they saw in their children after participating in the 2012 STK program was in understanding and following directions and playing well with other children. This pattern is similar to what we observed during the 2011 program, when most parents also reported seeing development in their child's ability to understand and follow directions. The percentages of parents who said that STK helped their child "a lot" in various aspects of school readiness are presented in Exhibit 33. For most survey items, a greater percentage of parents in 2012 indicated that STK helped

> **"My child is learning numbers, letters, and writing her name."**
> **– STK parent**

their child "a lot" in that area, compared with 2011. For example, more parents from the 2012 program felt that STK had helped their child to play well with other children compared with 2011 (83 percent compared with 76 percent in 2011).

Exhibit 33. Percentage of parents who said that STK helped their child "a lot" in various areas of kindergarten readiness, 2011 and 2012

Area	n (2012)	n (2011)	2012	2011
Understanding and following directions	n=53	n=45	88%	76%
Using small items such as crayons, paintbrushes, buttons, etc.	n=50	n=50	83%	85%
Playing well with other children (for example, taking turns)	n=50	n=45	83%	76%
Learning colors	n=50	n=44	83%	75%
Doing more things for himself or herself (for example, eating)	n=50	n=42	83%	71%
Expanding his/her vocabulary in English	n=49	n=47	82%	80%
Learning numbers	n=48	n=42	80%	71%
Counting	n=48	n=42	80%	71%
Enjoying books (for example, reading or pretending to read)	n=47	n=45	78%	76%
Playing pretend games (for example, playing house or fire station)	n=47	n=42	78%	71%
Expressing himself/herself in words (for example, telling a story)	n=45	n=44	75%	75%
Learning letters	n=43	n=40	72%	68%
Caring for others and understanding the feelings of other children	n=43	n=37	72%	63%
Writing his or her first name	n=42	n=45	70%	76%
Expressing needs and wants to adults	n=42	n=45	70%	76%
Learning shapes	n=38	n=40	63%	68%
Expanding his/her vocabulary in home language (if not English)	n=35	n=44	58%	75%

Changes in Children's Productive Language Skills

One of the primary changes seen in STK participants in prior years was growth in English language skills. To measure these changes and also focus on home language development, in 2012 the STK program piloted the use of the IDEA Proficiency Test (IPT) to measure changes in children's English and Spanish language skills over the course of the program. The IDEA Proficiency Tests (IPT) were developed in response to legislation mandating that non-native English speakers' language proficiency be assessed to determine whether they need special interventions. The *IPT-Oral* test is designed to determine 3- to 5-year-olds' oral language proficiency. The English form is used to identify English learners and design appropriate instructional supports for them. The IPT is administered in Spanish to Spanish-speaking children to assess their oral language skills in Spanish as well.

The IPT is a one-on-one, interactive session between the test administrator and the child. It tests four basic areas of oral language: (1) vocabulary, (2) grammar, (3) comprehension, and (4) verbal expression. The primary purpose of the IPT tests is to give an initial "designation" of a child as Non-, Limited, or Fluent English/Spanish speaking. However, a given child's language proficiency can also be described by one of five proficiency levels or by a Normal Curve Equivalent (NCE). These measures are described in further detail below.

Program staff hoped to administer the IPT to all children in the 2012 program at the beginning of the spring parent session and again at the end of the summer session, in English for all children and also in Spanish for children whose home language was Spanish. Due to constraints in staff time, however, the IPT was ultimately administered in both English and Spanish at the beginning and end of the STK program to students in two of the four STK classrooms. External test administrators conducted the IPT Spanish and IPT English to a total of 34 children. Children did not necessarily have the same test administrator for the pre- and post-test sessions, in either language.

Before analysis began, the research team looked for outliers in the data; no observations were more than 3 standard deviations from the mean, so all observations were included in analysis.

Proficiency Level

During IPT administration, the test administrator counts the number of errors at each of five score levels and follows the test instructions for when to stop asking questions. At the end, the number of errors a child made is compared to a scoring rubric to find the child's language proficiency level (see Appendix B for details). Each level represents skills typical for language learners at different ages and stages of proficiency[5], based on a 2009 norming sample. The five

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[5] Scores are determined based on a child's age in years: 3, 4, or 5. Therefore, a child at age 48 months would be scored on the same scale as a child at age 59 months and 30 days.

proficiency levels are *Beginning*, *Early Intermediate*, *Intermediate*, *Early Advanced*, and *Advanced*.

Exhibits 34 and 35 below show the number of children (out of 34) in each proficiency level on the IPT at the beginning of the STK program (pre) and at the end of the program (post). The number of children scoring on the English test at the two lower levels, *Beginning* or *Early Intermediate*, decreased from pre to post, and the number of children in the higher levels, *Early Advanced* and *Advanced*, increased. In Spanish, the number of children classified as *Beginning* decreased from pre to post administration, and the number of children classified as *Advanced* increased.

Exhibit 34. Number of STK children scoring at each proficiency level on IPT English, Pre and Post
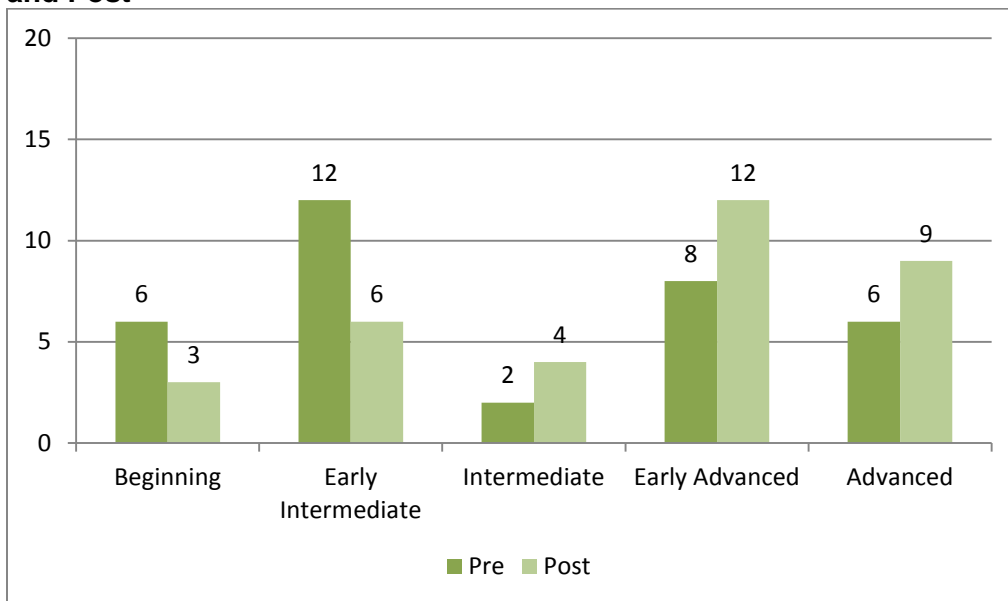
Exhibit 35. Number of STK children scoring at each proficiency level on IPT Spanish, Pre and Post
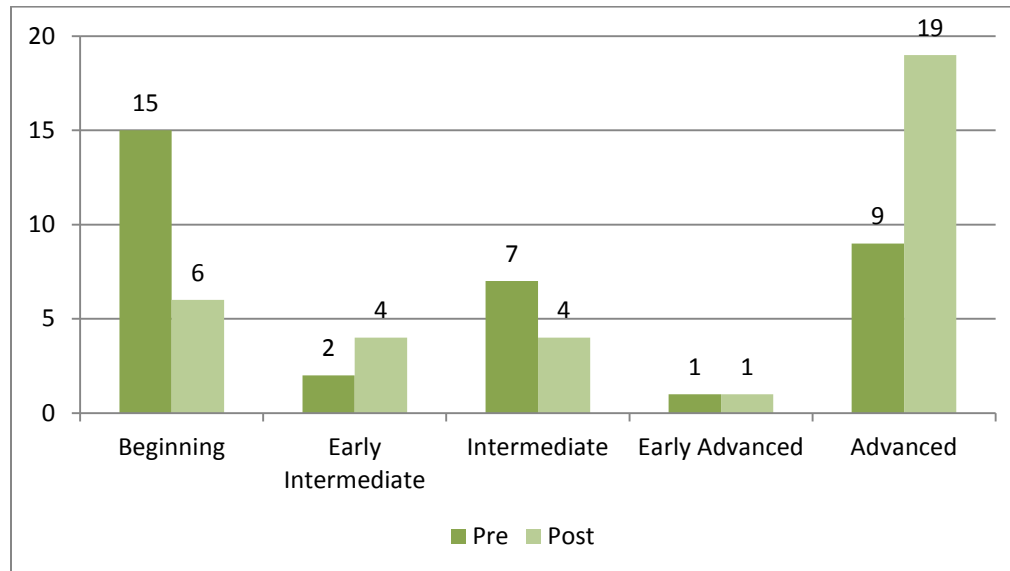
Exhibit 36 presents the number of children who improved, stayed the same, or declined in proficiency level from pre to post in each language. Slightly fewer than half of the 34 children did not change levels in English; this was also true for the Spanish test. Just over half of the children on each language test improved their proficiency level: 18 children improved at least one level on the IPT English, and 18 children improved at least one level on the IPT Spanish. Nine children improved at least one proficiency level in *both* languages.

Seven children (four on the IPT English, three on the IPT Spanish) declined one or two levels. This result is unexpected, as the test is not scored dependent on age, and children do not over the course of normal development lose language skills. The apparent decline may have been caused by several factors. It is possible that the child was not feeling well on the day of testing or did not feel comfortable with the test administrator, especially given that the same person did not necessarily administer the assessment to the child at both time points or in both languages. No child in the STK sample declined in both languages.

Exhibit 36. Number of children showing varying changes in proficiency level, Pre to Post
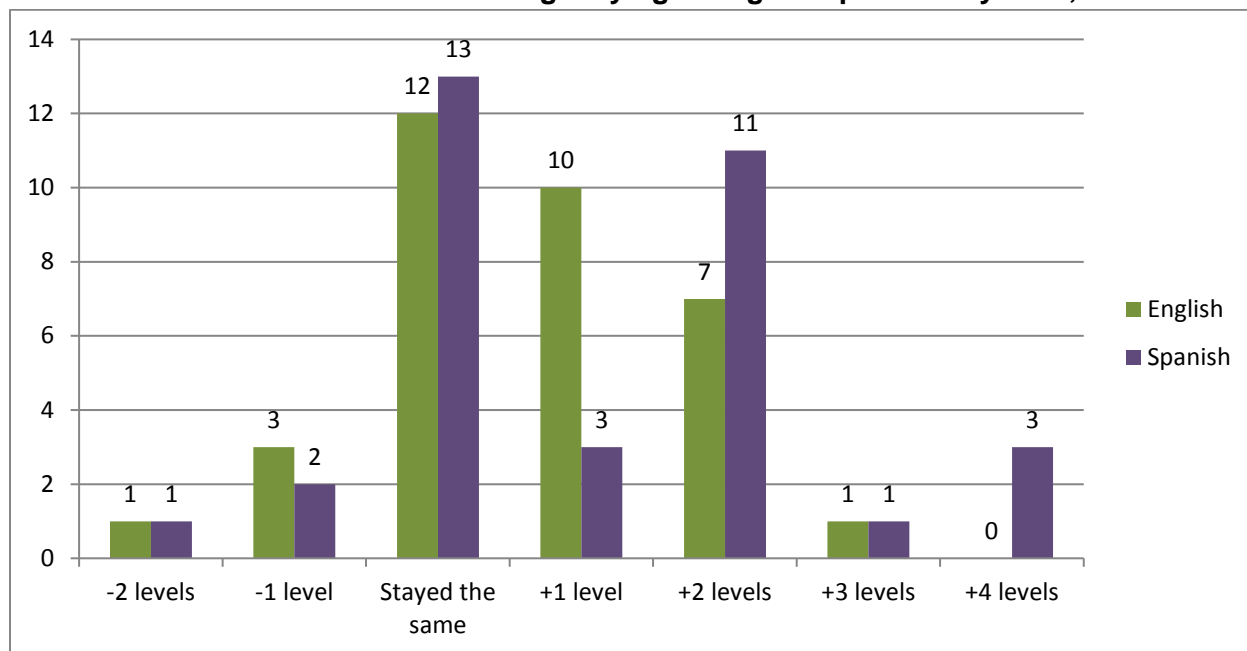
Designation

Once the proficiency level has been determined, children are further classified as Non-, Limited, or Fluent English/Spanish speaking. This classification is referred to as the "designation."

As shown in Exhibits 37 and 38, the number of children classified as Non-English or Non-Spanish speaking decreased from pre to post in both languages. The number of children classified as Fluent increased in both languages.

Exhibit 37. Number of STK children at each designation level, IPT English, Pre and Post
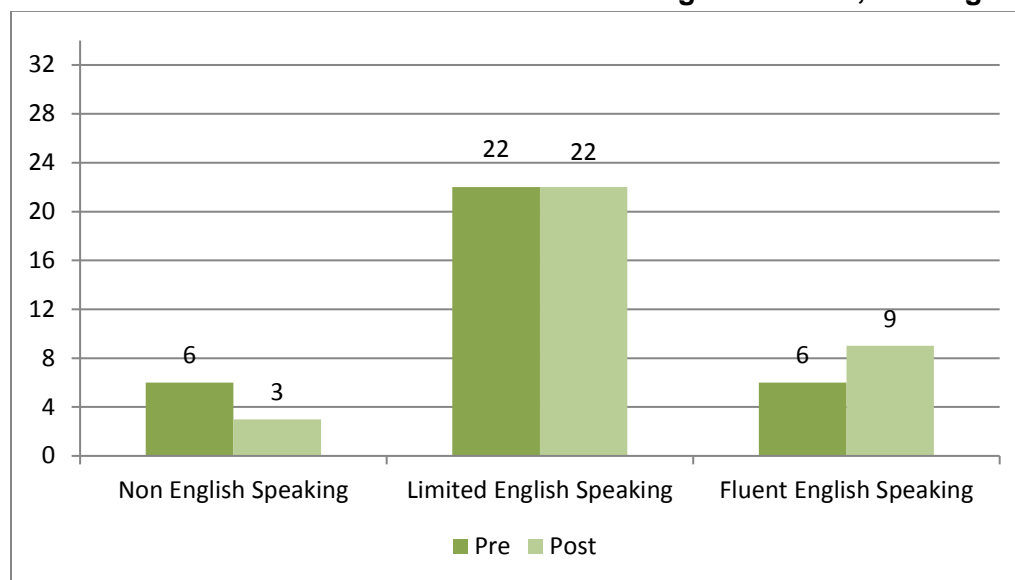
Exhibit 38. Number of STK children at each designation level, IPT Spanish
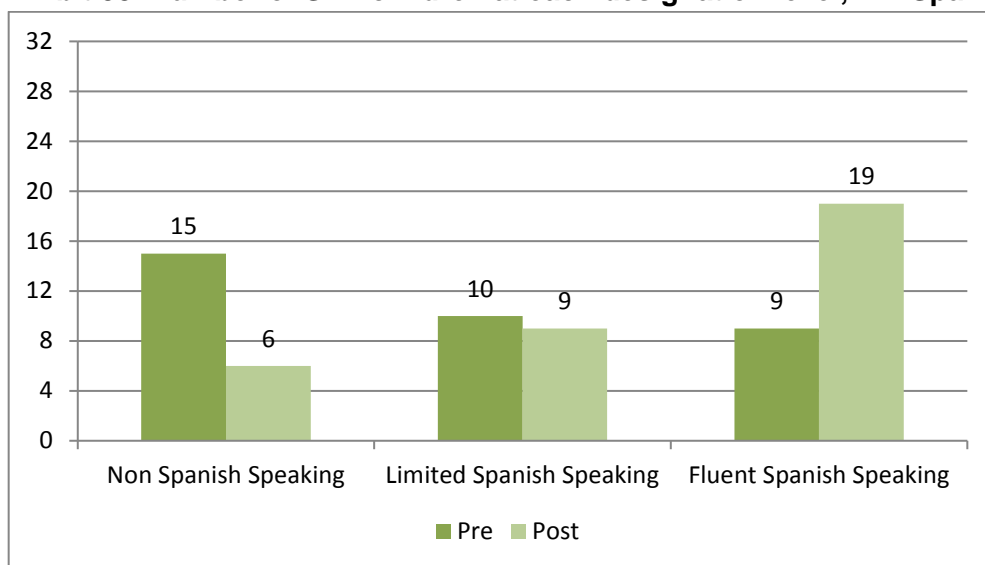
Normal Curve Equivalents

A Normal Curve Equivalent (NCE) is derived from percentile ranks. Like percentiles, the NCE scale has a range from 0 to 100, a mean of 50, and a standard deviation of 21.06. However, unlike percentiles, NCEs can be combined in order to take the average score for a group of children, because they represent an equal interval scale. NCEs are the best score to use to evaluate whether a group of children has, on average, made progress over time.

On average, STK children's language skills improved from pre to post in both English and Spanish (Exhibit 39). On average, the 34 children tested in both languages at both time points made more progress on the IPT Spanish (average NCE gain of 12.21 points) than on the IPT English (average NCE gain of 5.85 points).

Exhibit 39. Normal curve equivalent (NCE) scores of STK children on the IPT English and Spanish, Pre and Post
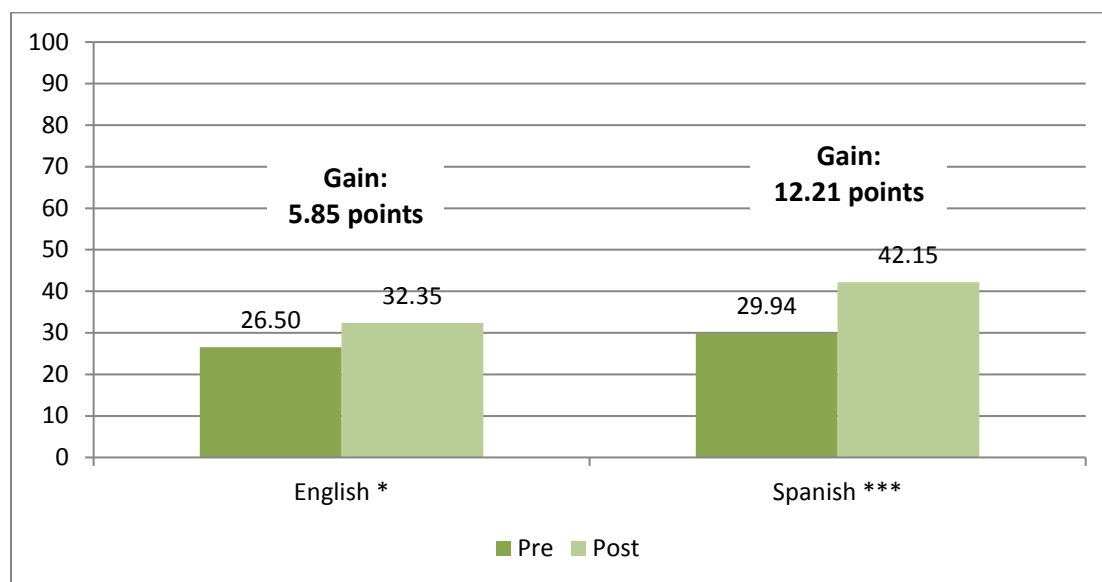
*p < .05 **p < .01 ***p<.001

STK Student Performance Compared to the Norming Sample

To understand how this language growth among children participating in STK compares to what might be expected, we can examine means among the sample of children used to establish IPT scoring norms. Using raw IPT scores (not shown above), we can compare the growth of children participating in STK to the difference in mean norming sample scores for 4-year-olds and 5-year-olds. Exhibits 40 and 41 illustrate the growth in raw scores of STK students on the IPT English and Spanish respectively, compared to the established norms for 4- and 5-year olds on each instrument. These comparisons show us that STK participants showed more language growth over the course of the STK program than the difference between average scores for children one year apart in age (age 4 to age 5)[6], although in English, children's scores are still below the four-year-old average. STK participants also show more growth in Spanish over the course of the program than the difference between average scores for children one year apart in age (age 4 to age 5); in addition, at the beginning of the program, children score below the four-year-old mean, but by the end of the program, they score above it.

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[6] It is important to note that the difference between the mean for four-year-olds and the mean for five-year-olds does not necessarily represent growth that would be expected over the course of a year.

Exhibit 40. Raw scores of STK children on the IPT English, Pre and Post, compared to norms for 4- and 5-year olds

Norming sample mean, age 5: **31.33**

Norming sample mean, age 4: **29.25**

Difference: 2.08 points

17.03

21.53

Gain: 4.5 points

IPT English raw score

■ Pre   ■ Post
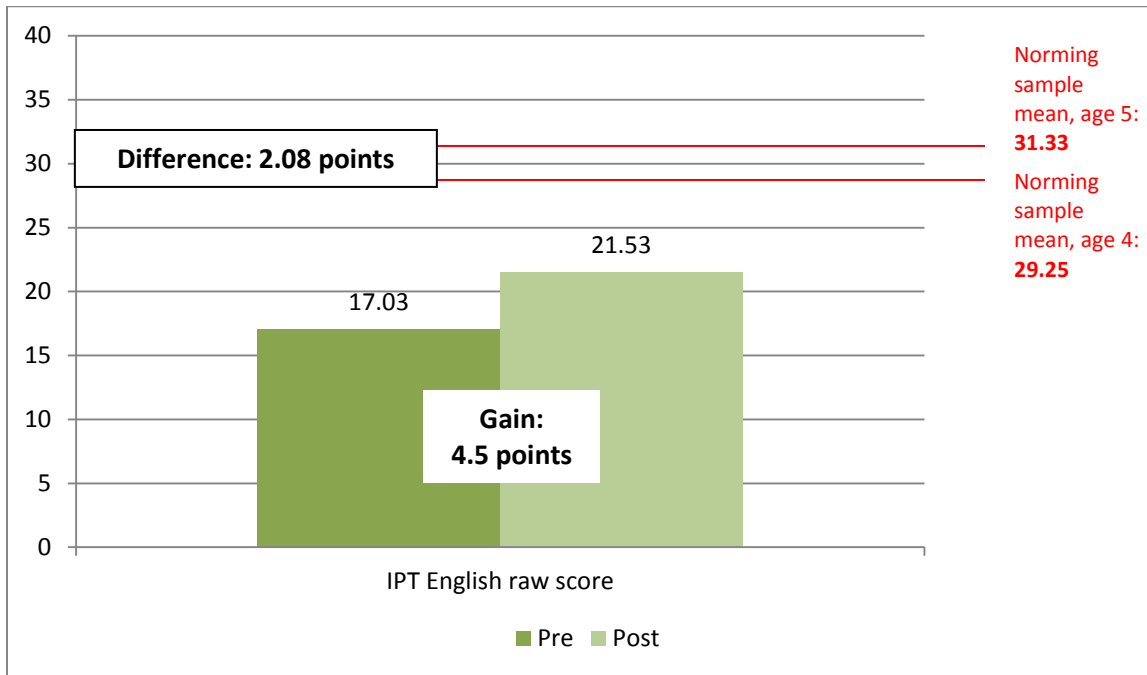
Exhibit 41. Raw scores of STK children on the IPT Spanish, Pre and Post, compared to norms for 4- and 5-year olds

Norming sample mean, age 5: **30.33**

Norming sample mean, age 4: **26.03**

Difference: 4.3 points

18.53

27.18

Gain: 8.65 points

IPT Spanish raw score

■ Pre   ■ Post
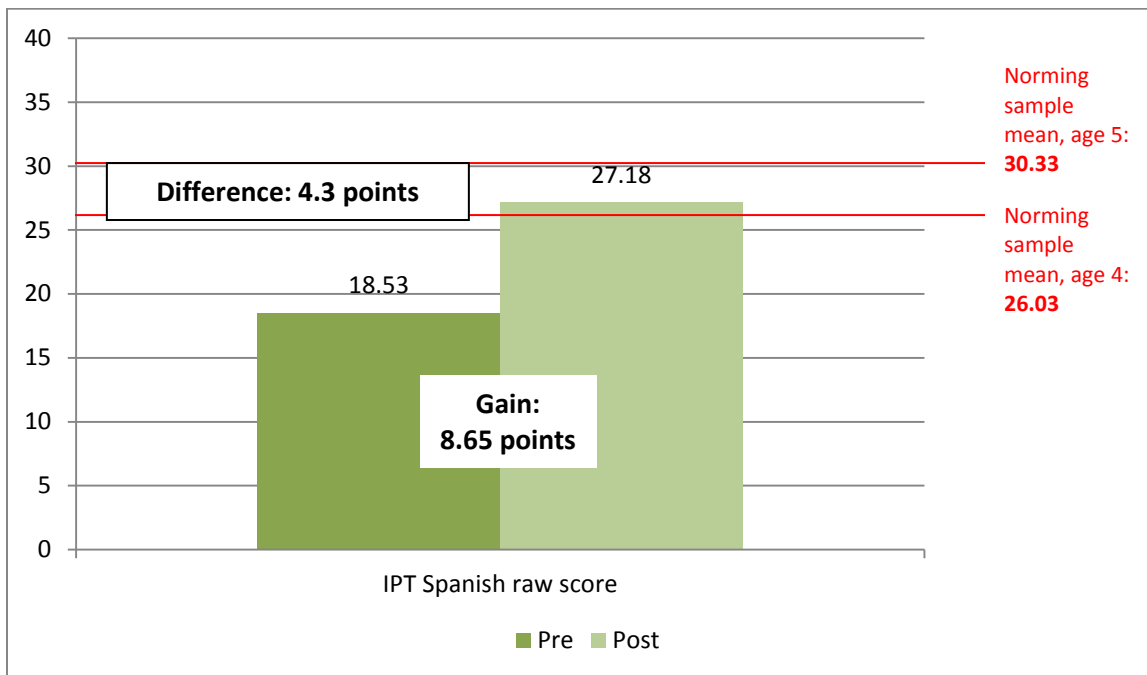
Relationships between IPT growth and Classroom Instruction, Family Characteristics, and Parent Practices

Teacher instructional practices, including teacher-child conversations, can support children's language development to different degrees. Because information is available both about the quality of STK classrooms (CLASS scores) and about children's language growth over the course of the program (IPT post scores), the research team endeavored to examine the relationships between the two. However, the available data do not lend themselves well to a good model for examining relationships between these, because of the small sample size (just 34 children) and because the CLASS scores are classroom-level variables (whereas the IPT scores are student-level variables). A series of basic regression analyses, incorporating IPT post scores in English and Spanish, CLASS dimensions, and family demographic characteristics, revealed no significant relationships among these factors.

The team also examined relationships between IPT scores and other language information available about families from intake forms, including whether they have books at home in their own language, and what language children speak with different family members and caregivers. Several of these regression models were unstable due to insufficient variability (i.e., most children had similar language environments); in those that were not, there were no significant relationships between language environments and IPT scores.

Of course, interactions between parents and their children also have a strong influence on children's language development. Therefore, the team also examined correlations between IPT scores and parent practices as reported on the parent survey. There were no significant correlations between reading behaviors (including in which languages parents read to children) and children's IPT gains for the 34 students with IPT data available.

No other parent survey items were correlated with children's performance on the IPT Spanish, but several other reported parenting practices were positively related to children's English IPT scores at the end of the STK program:

- Frequency of borrowing books from the library ($r = .44$, $p < .05$)
- Frequency of participating in library activities ($r = .53$, $p < .05$)
- Believing that parents are children's first and most important teachers ($r = .45$, $p < .05$)
- Parent confidence in knowing how to support children's learning ($r = .55$, $p < .05$)

It is difficult to draw conclusions because of the limited sample size, but for these two classrooms it appears that parent activities such as going to the library, as well as positive parent attitudes toward teaching their own children and supporting their learning, may be related to children's English language development. It is, however, unclear in what direction this finding should be interpreted; parents of children who already speak English well may be more likely to engage in these activities and hold these attitudes.

Children's Academic Skills

In 2012, the STK program piloted the Children's Progress Academic Assessment (CPAA) to assess children's academic skills. The assessment is computer based, and tests children's skills in several areas within early literacy and mathematics. In early literacy, listening, phonemic awareness, phonics and writing, and reading and reading mechanics are included. Measurement, numeracy, and patterns and functions are assessed within mathematics. The CPAA is available in English and Spanish. Exhibit 42 shows score ranges and performance levels for the CPAA.

Exhibit 42. CPAA Scores and Levels

1–1.5	Below Expectation
1.5–2.5	Approaching Expectation
2.5–3.5	At Expectation
3.5–4	Above Expectation

STK staff intended to assess all children participating in STK on the CPAA at the beginning and end of the program, and in English and Spanish for all children whose home language was Spanish. However, there were several challenges. First, there were technical issues. The district was not able to provide computers or technical support, so computers had to be secured from other sources; also, the internet connection, required for CPAA assessment, was not reliable. Second, staff had limited time available to administer the CPAA. Ultimately, STK staff were able to assess all children in two of the four STK classrooms (n=39).

Finally, it is important to note that children were pulled from their classrooms to be assessed in a separate classroom where several computers were set up. In this room, STK staff were working and often holding conversations with others. This environment might have been distracting for many children. Some children—especially those with no access to a computer outside of the program—also had difficulty using the mouse. Both of these factors could have impacted children's performance.

For all literacy concepts, children were, on average, Approaching Expectation. In mathematics, STK participants were, on average, Approaching Expectation in measurement and numeracy, and At Expectation in patterns and functions. Assessments completed in Spanish show slightly higher scores on average than those completed in English; given the large percentage of children whose home language is Spanish, these scores may be more reflective of children's academic level. On the Spanish assessment, STK participants on average were At Expectation in Listening, Measurement, Numeracy, and Patterns/Functions. Exhibits 43 and 44 present average scores by concept and by language administered.

Exhibit 43. Average scores of children participating in Stretch to Kindergarten on the Children's Progress Academic Assessment (CPAA) administered in English, by concept, 2012

Concept	Average Score	Average Level
Literacy (n=39)		
Listening	2.4	Approaching Expectation
Reading	2.4	Approaching Expectation
Phonics/Writing	2.4	Approaching Expectation
Phonemic Awareness	2.4	Approaching Expectation
Mathematics (n=39)		
Measurement	2.5	Approaching Expectation
Numeracy	2.0	Approaching Expectation
Patterns/Functions	2.8	At Expectation

Exhibit 44. Average scores of children participating in Stretch to Kindergarten on the Children's Progress Academic Assessment (CPAA) administered in Spanish, by concept, 2012

Concept	Average Score	Average Level
Literacy (n=35)		
Listening	2.6	At Expectation
Reading	2.2	Approaching Expectation
Phonics/Writing	1.8	Approaching Expectation
Phonemic Awareness	2.2	Approaching Expectation
Mathematics (n=35)		
Measurement	3.2	At Expectation
Numeracy	2.7	At Expectation
Patterns/Functions	3.0	At Expectation

The research team also examined the relationship between CPAA (academic skills) and IPT (language skills) scores at the end of the STK program. Perhaps not surprisingly, there was a statistically significant positive relationship between end-of-program IPT raw scores in English, and CPAA Listening ($r = .60$, $p < .001$) and Reading ($r = .69$, $p < .001$) concept scores. Similarly, CPAA Reading concept scores in Spanish were also higher for students whose IPT Spanish raw scores were higher ($r = .38$, $p = .02$). However, there were no significant relationships between IPT Spanish scores and CPAA Spanish early literacy concept scores.

Success on many assessments depends on solid language skills. It is therefore not surprising that students' performance on some math concepts in the CPAA was also related to IPT scores. This was particularly true for Spanish assessments. These relationships are presented in Exhibit 45.

Exhibit 45. Correlations between STK children's IPT raw scores in English and Spanish and CPAA concept scores (n = 34)

			End-of-program IPT English raw score	End-of-program IPT Spanish raw score
English	Early Literacy	CPAA Listening- English	**$r = .0.60$** **$p < .001$**	$r = 0.33$ $p = 0.06$
		CPAA Phonemic Awareness- English	$r = 0.34$ $p = .052$	$r = 0.03$ $p = 0.88$
		CPAA Phonics & Writing- English	$r = 0.11$ $p = 0.52$	$r = 0.06$ $p = 0.74$
		CPAA Reading- English	**$r = 0.69$** **$p < .001$**	$r = 0.25$ $p = 0.16$
	Mathematics	CPAA Measurement- English	$r = 0.25$ $p = 0.16$	**$r = 0.38$** **$p = 0.03$**
		CPAA- Numeracy- English	$r = 0.31$ $p = 0.08$	$r = 0.11$ $p = 0.55$
		CPAA- Patterns and Functions- English	**$r = 0.39$** **$p = 0.02$**	$r = 0.04$ $p = 0.83$
Spanish	Early Literacy	CPAA Listening- Spanish	$r = 0.28$ $p = 0.11$	$r = 0.13$ $p = 0.47$
		CPAA Phonemic Awareness- Spanish	$r = 0.22$ $p = 0.20$	$r = 0.12$ $p = 0.49$
		CPAA Phonics & Writing- Spanish	$r = 0.07$ $p = 0.68$	$r = 0.20$ $p = 0.26$
		CPAA Reading- Spanish	**$r = 0.38$** **$p = 0.02$**	$r = 0.33$ $p = 0.06$
	Mathematics	CPAA Measurement- Spanish	$r = 0.03$ $p = 0.87$	$r = 0.26$ $p = 0.13$
		CPAA- Numeracy- Spanish	$r = 0.003$ $p = 0.99$	**$r = 0.38$** **$p = 0.03$**
		CPAA- Patterns and Functions- Spanish	$r = 0.10$ $p = 0.59$	**$r = 0.60$** **$p < .001$**

Note: Correlations in **bold** are statistically significant.

Elementary School Follow-Up

To understand how STK participants perform in elementary school compared with their peers, the research team examined English language proficiency scores (California English Language Development Test, or CELDT), district assessment scores, California Standards Test (CST) scores, and attendance data (i.e., unexcused absences or tardies) for STK participants and a matched comparison group in kindergarten, first, and second grade.

To make appropriate comparisons, a demographically matched comparison sample was drawn for students who attended STK in 2009 (Cohort 1), 2010 (Cohort 2), and 2011 (Cohort 3) based on demographic variables. The comparison groups for Cohorts 1 and 2 were selected (in last year's analysis) using propensity score matching techniques using the following variables: parent education (at least some college compared to no college), free/reduced-price lunch eligibility, English learner status, preschool attendance, elementary school, and gender. In Cohort 3, preschool attendance information was missing for almost all students in the data; to make the match as precise as possible, an indicator of whether the student was of Hispanic origin or not was added. The model therefore matched on free/reduced-price lunch eligibility, English learner status, elementary school, parent education level, gender, and whether the student was of Hispanic origin.

Cohort 1 included 36 students. Thirty-four of these students were matched with an appropriate comparison student; there was no appropriate match for the remaining two, as they had propensity scores more than one standard deviation from the propensity score of a student who attended STK. Therefore, the final analysis sample for Cohort 1 includes 34 STK participants and 34 comparison students.

Cohort 2 included 60 students. Fifty-eight of these students were matched with an appropriate comparison student within one standard deviation of the propensity scores, giving the final Cohort 2 analysis sample 58 STK participants and 58 comparison students.

Cohort 3 included 58 students. All 58 were matched with an appropriate comparison student within one standard deviation of the propensity scores. The Cohort 3 analysis sample had 58 STK participants and 58 comparison students.

Before matching, STK participants were more likely than the group of all district kindergarteners to be identified as English learners, to receive free or reduced-price lunch, and to have a parent with less than a college education. In Cohorts 1 and 2, students were more likely to attend Theuerkauf or Monta Loma elementary school. In Cohort 3, STK participants were much more likely to attend Castro or Theurkauf. Confirming that the matching process was successful, the matched comparison groups for all three cohorts were not statistically different from STK participants on gender, English learner status, receipt of free or reduced-price lunch, Hispanic ethnicity, parent education level, or elementary school attended. Exhibit 46 presents demographic characteristics of the STK participants and matched comparison group for each cohort.

Exhibit 46. Demographic characteristics of STK participants and matched comparison groups for analysis, 2009 and 2010 cohorts

	Cohort 1 (2009)		Cohort 2 (2010)		Cohort 3 (2011)	
	STK (n=34)	Comparison (n=34)	STK (n=58)	Comparison (n=58)	STK (n=58)	Comparison (n=58)
Gender						
Boys	65%	68%	57%	60%	47%	45%
English Learner	88%	88%	83%	88%	93%	93%
Attended Preschool	32%	35%	43%	43%	N/A	N/A
Receives Free or Reduced-Price Lunch	76%	76%	87%	87%	91%	93%
Hispanic	76%	79%	85%	88%	86%	86%
Parents Attended at Least Some College	38%	38%	27%	25%	40%	38%
School Attended in Kindergarten						
Bubb	15%	15%	17%	13%	7%	9%
Castro	3%	3%	20%	17%	43%	33%
Huff	6%	6%	2%	2%	4%	1%
Landels	15%	15%	10%	15%	17%	22%
Monta Loma	26%	24%	17%	20%	12%	14%
Stevenson	0%	0%	2%	2%	0%	0%
Theuerkauf	36%	38%	32%	30%	17%	21%

2009 Cohort

In the 2011 evaluation report, we reported that children who attended STK in the summer of 2009 outperformed their matched peers on several outcomes, including several pre-reading skills at kindergarten entry (Concepts of Print, Letter Names, and Letter Sounds district assessments). These students scored similarly on the CELDT test (overall and on Listening and Speaking), but a greater proportion of them scored at the "early intermediate" level or higher on the CELDT overall assessment.[7] Students in both groups also had similar numbers of unexcused absences or tardies. In first grade, 2009 STK participants scored higher on the Developmental Reading Assessment, but were not statistically different from their peers on math or language arts assessments, or in the number of unexcused absences or tardies they had.

In this year's analysis, we followed these students into second grade. In the 2011–12 district data, only 23 of the original 34 students in the cohort remain in the district. The comparison group, however, has 31 of the original 34. In order to determine whether the students who left the

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[7] The research team did not look at CELDT scores after kindergarten because only a select group of children—who are still designated English Learners—are tested in higher grades. In kindergarten, all children with a non-English home language are tested.

district between their participation in STK in the summer of 2009 and the 2011–12 school year are meaningfully different from those who stayed, the research team examined scores on district assessments given in kindergarten for those who remained in the district in 2011–12 compared to those who left. STK participants still in the district in second grade did not score consistently higher or lower on the district assessments given at kindergarten entry (Concept of Print, Letter Sounds, Letter Names, and High Frequency Words).

In second grade, students who participated in STK in 2009 showed no significant differences from their demographically matched peers on any outcomes examined. STK participants and their peers showed statistically equal scores on the following:

- District language arts assessments (Trimester 2)
- District math assessments (Trimesters 1 and 2)
- California Standards Test (CST) reading/language arts test
- California Standards Test (CST) math test

Analysis of unexcused absences and tardies was not possible for this cohort's second grade year due to missing data.

2010 Cohort

STK participants in 2010 performed similarly to their peers on the CELDT assessment and several district assessments, but performed better on the Letter Sounds district assessment at kindergarten entry. This year, we examined this cohort's performance in 2011–12, when they were in first grade. There were no differences between STK participants in 2010 and their matched peers on the following:

- Developmental Reading Assessment (Trimester 1)
- District language arts assessments (Trimester 2)
- District math assessments (Trimesters 1 and 2)
- High Frequency Words assessment (Trimester 3)

As in other years and cohorts, a statistically equivalent proportion of STK participants in 2010 and their peers had at least one unexcused absence or tardy greater than 30 minutes. There was also no difference between groups in total absences and tardies.

Results from the 2009 and 2010 cohorts in 2011–12 show that the relationship between STK participation and children's initial school readiness may be strong, but the relationship between participation and later academic performance is much weaker. The phenomenon of fading effects of early education programs—in other words, showing strong effects shortly after the intervention, with weaker effects later in children's lives—has substantial precedent. Head Start programs, for example, have been criticized for having effects fade out by third grade, though there are some methodological critiques of studies that show such results (Barnett, 2008).

As described above, the research team selected a group of demographically matched students in kindergarten in 2011–12 to compare with the group of 2011 STK participants. These comparison students were not statistically different from STK participants on gender, English learner status, receipt of free or reduced-price lunch, Hispanic ethnicity, parent education level, or elementary school attended.

There were no statistically significant differences detected between 2011 STK participants and their matched peers in kindergarten on any of the outcome measures examined. STK participants and their peers had statistically equivalent scores on the CELDT, district Letter Sounds assessment, Developmental Reading Assessment, and High Frequency Words assessments at different points during the kindergarten year. Additionally, there were no differences between groups in the number of unexcused or total absences and tardies.

The lack of effect observed for the 2011 cohort—in some contrast to the two earlier cohorts—may be explained by the different method used to select the comparison group. Recall that information on preschool attendance was not available for the 2011 cohort and therefore could not be used for drawing the matched comparison sample. In 2011, only 15 percent of STK participants attended preschool (see Exhibit 1). Even though the comparison group included students with similarly low parental education levels and similar proportions of Hispanic students—both groups that attend preschool at lower rates than the general population of four-year-olds—it is likely that a higher proportion of students in the comparison group than in the STK group attended preschool before elementary school. Preschool programs have been shown to produce positive effects on children's learning and development (e.g., Barnett, 2008; Heckman, 2010). Therefore, higher rates of preschool attendance, if present in the comparison group, may be contributing to the lack of significant differences found in this analysis.

To investigate whether this is likely (given that some significant differences were found for previous cohorts), propensity score matching was again used to draw a different comparison group for the STK 2009 and 2010 cohorts, *excluding* information available on preschool attendance. In the new comparison group for 2009, 46 percent attended preschool, compared to 31 percent of STK participants. In 2010, 63 percent of the new comparison group attended preschool, compared to 43 percent of STK participants.

When STK 2009 participants were compared to this newly drawn comparison group on CELDT scores in kindergarten and attendance variables and district assessments in kindergarten and first grade, there were substantially fewer significant differences. Only two differences between the STK 2009 cohort and the comparison group were found: STK participants outperformed the new comparison group on the Trimester 1 Letter Names assessment in kindergarten and the Trimester 1 High Frequency Words assessment in first grade. No differences were detected between STK 2010 participants and the new comparison group.

We conclude that the lack of differences detected between the 2012 STK cohort and the comparison group may very well be due to the fact that preschool attendance rates could not be matched. Mountain View Whisman School District (MVWSD) staff said that this information was not available in 2012. If future analyses of elementary school attendance are of interest, STK should work with district staff to ensure that preschool attendance information is collected and entered into the data system.

Kindergarten and First Grade Results Combined

Though the performance of STK participants compared with their peers on district-given assessments has varied by cohort and year, there is some evidence that STK participants have greater English proficiency than their matched peers at kindergarten entry. When kindergarten CELDT data is combined for all three STK cohorts (2009, 2010, and 2011), a higher proportion of STK participants scored at least at the "Early Intermediate" level on the CELDT Listening assessment (Exhibit 47), suggesting they might be on a path toward more rapid reclassification out of English learner status. STK participants also scored higher on the Listening and overall CELDT assessments, with differences approaching statistical significance (p < .10) (Exhibit 48).

Exhibit 47. Proportion of STK participants and comparison group scoring at the "Early Intermediate" level or higher on CELDT tests in kindergarten, all cohorts combined
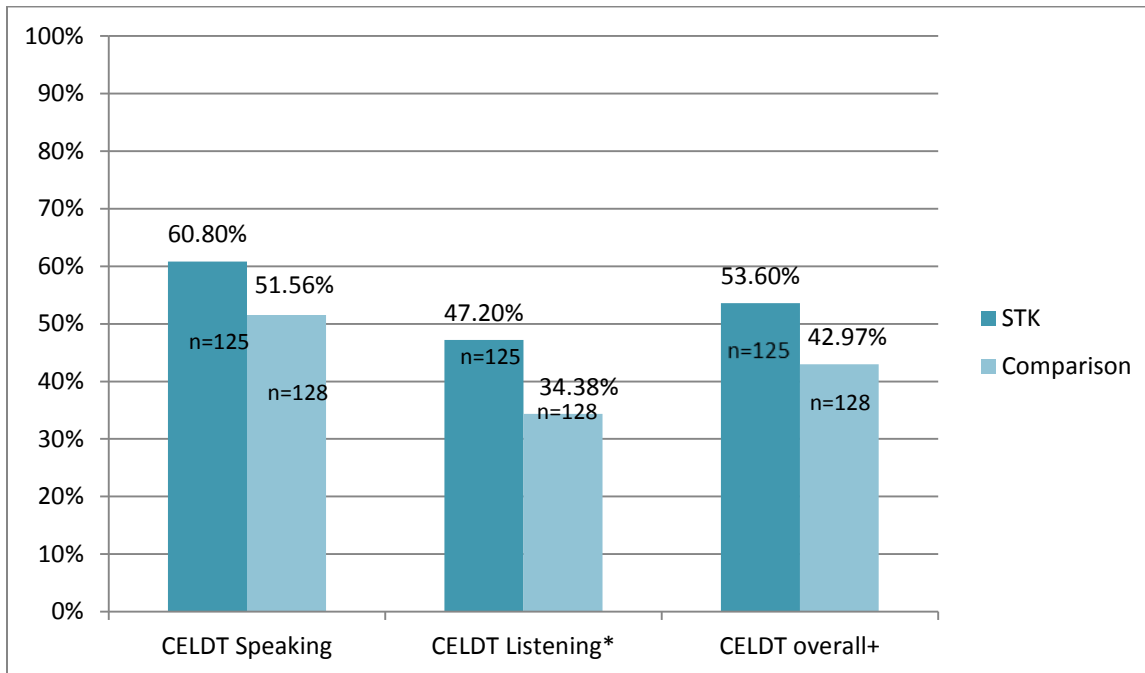
+ p < .10 *p < .05 **p < .01 ***p<.001

Exhibit 48. Kindergarten CELDT scores, STK participants (all cohorts) and comparison group
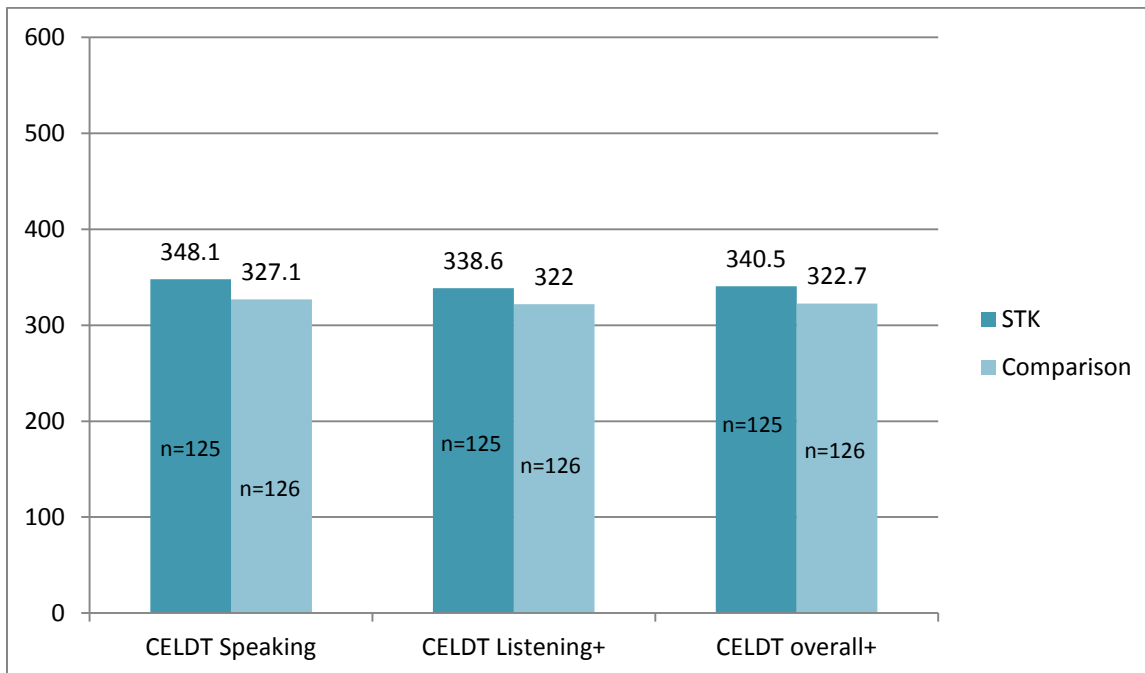
+ p < .10, *p < .05 **p < .01 ***p<.001

When cohorts are combined, STK participants also scored higher than their matched peers on the Letter Sounds district assessment at kindergarten entry (Trimester 1), at levels approaching statistical significance ($p < .10$).

However, when first grade data from the 2009 and 2010 cohorts are combined, STK participants and their matched peers perform similarly on district math and language arts assessments.

Consistent with previous findings, when data are combined, the proportion of students with any unexcused absence or tardy (greater than 30 minutes) are similar in both groups, in both grades.

A summary of findings from all three cohorts and combined results for kindergarten and first grade can be found in Appendix C.

Conclusions and Recommendations

The 2012 STK evaluation was a comprehensive examination of STK classroom quality (including a new observational measure of practices to support dual language learners), changes in parent knowledge and skills, perceived impacts of the program on children and parents, an initial examination of children's language and academic skills based on two piloted tools, and a continued study of outcomes for participating children in previous cohorts in elementary school.

In 2012, the STK program began using the ELLCO-DLL observation tool in addition to the CLASS. The ELLCO-DLL measures ways that classrooms support dual language learners. Classrooms showed growth on all dimensions of the ELLCO-DLL from the beginning of the program to the end, but this was not surprising given that program directors did not provide coaching or classroom set up guidance before doing the pre observation, but then did provide coaching (guided by many best practices measured in the ELLCO-DLL) shortly afterwards, resulting in a change in classroom set-up and practices (and thus an increase in scores), which was the intent of the program from the start. Nevertheless, teachers showed high scores on the tool at the second observation point, indicating that all STK staff were quite focused on ensuring that classrooms supported the needs of dual language learners.

Overall, classroom quality in the 2012 Stretch to Kindergarten classrooms, as measured by the CLASS, was about the same as in 2011. CLASS results indicate that STK classrooms offer warm and emotionally supportive teacher-child interactions. Additionally, STK teachers consistently implement effective behavior and instructional management strategies to maximize learning opportunities for children, although like last year, CLASS scores indicate room for growth in this area as well.

The CLASS holds teachers to a high standard, particularly in the *Instructional Support* domain. For example, the strategies embedded within *Concept Development* (e.g., promotion of higher-order thinking skills and cognition, analysis and reasoning, hypothesis testing) are likely the most challenging practices to implement in the classroom, particularly if teachers have not been

trained to do so. Like last year, STK CLASS scores are higher than, but show similar patterns to, national data, including scores at the high end of the Low range for *Instructional Support*. Aspects of early childhood instruction captured in this domain in particular are critical for children; recent studies have found a relationship between program quality, as measured by the CLASS—and in particular *Instructional Support—*and children's academic outcomes. Howes and colleagues (Howes, Burchinal, Pianta, Bryant, Early, Clifford, & Barbarin, 2008) found that, among the CLASS domains, *Instructional Support* was the most consistent and robust dimension for predicting children's gains on receptive and expressive language assessments. Research on determining a benchmark—above which the relationship between instructional quality and child outcomes is stronger—has still not been conducted. Recent research has suggested that there may be a critical threshold for improved child outcomes at a score of approximately 3 on the *Instructional Support* domain (Burchinal et al., 2010), but this research is far from conclusive.

Recommendation 1: Practices included in the Instructional Support dimension—including asking why and how questions, connecting concepts to previous knowledge and real-word applications, expanded conversations, and scaffolding—are areas that Stretch to Kindergarten should continue to target for ongoing teacher professional development.

CLASS scores in STK classrooms have not changed notably over the past three years. Professional development for teachers does have the potential to improve CLASS scores. Indeed, research has identified several aspects of early childhood professional development that are more effective than others, including on-site, classroom-based training (Dunst & Raab, 2010), and the use of coaching (Campbell & Milbourne, 2005; Joyce & Showers, 2002). The STK program has already begun incorporating coaching, bringing on board a part-time coach to work with teachers in 2012, and planning for that coach to attend Teachstone (CLASS) trainings before the 2013 program begins.

Recommendation 2: Continue investments in coaching for teachers to support their professional growth.

Recommendation 3: Moving forward, CLASS scores may be more useful to program staff early in the summer to serve as a basis for teacher coaching, rather than as an evaluation metric.

STK still faces challenges in regard to professional development for its teachers, given that it is a summer transition program that employs teaching staff over a limited time period. One possibility is a collaboration with Mountain View Whisman School District (MVWSD) to train preschool and kindergarten teachers jointly. However, there are some conflicts between the district's instructional philosophy and STK's. For example, the CLASS framework encourages child-directed learning, while the district's adopted Explicit Direct Instruction model does not. Other conflicts are less important, suggesting that joint training might be possible in some areas;

for example, the district and STK have used different strategies to support English learners, but they share similar goals, and thus joint training goals may be possible.

Recommendation 4: Look for joint training opportunities for STK and MVWSD teachers in areas where instructional strategies overlap.

In regard to STK's parent education, based on pre- and post-survey data, parents show growth in several aspects of their parenting knowledge and skills even over the relatively short course of the STK program. STK's focus on dialogic reading was apparent in parent reports of their interactive reading practices with their children; not only did more parents report reading frequently to their children, parents also reported, on average, more frequently asking children what is in a picture and asking them what might happen next when reading together. As in previous years, more parents reported using the library and instituting routines with their children than before participation in STK. As in previous years, parents in 2012 did not show significant change between survey administrations on items regarding their familiarity with their child's elementary school and their role in supporting children's learning. Though the STK program emphasized to parents the importance of school attendance, there was no significant change on parents' level of agreement to the statement "Dropping off my child at school 15 minutes late is okay."

On the IPT, a measure of language development given to children in two classrooms early in the program and at the end of the program, children showed growth in both English and Spanish language skills. On average, children showed more growth in Spanish than in English, even though instruction in STK classrooms is primarily in English. It is possible that language exposure and encouragement in any language is good for children's language and literacy development in general (Algeo, 2009). The fact that STK children showed greater gains on the IPT Spanish than on the IPT English could simply be an indication that they are making strides in developing language, which is manifesting itself most in their first language, Spanish.

The STK program also piloted the Children's Progress Academic Assessment (CPAA) in 2012. On this measure, administered in Spanish and English to children in two classrooms once during the program, children scored on average "Approaching Expectation" on all early literacy concepts, and scored "Approaching Expectation" to "At Expectation" on mathematics concepts. Children who performed better on the CPAA also showed higher scores on the IPT at the end of the program.

Due to staff time limitations and some technical difficulties, it was not possible to assess all children at two time points in both English and Spanish on both the IPT and CPAA. The small number of children for whom complete data are available limits how much we can learn about the program's success from these data. Moving forward, the staff time and investments required for these assessments should be balanced against what can be learned from them.

Recommendation 5: Ensure that data that are as complete as possible are collected for any assessments chosen, to maximize what can be learned. To balance staff time requirements, consider focusing on fewer assessments that reflect the priorities of the program.

Finally, analyses of elementary school outcomes suggest that potential initial benefits of STK identified by the 2011 evaluation may fade out over time, at least in the early grades examined here. Elementary school quality, which is outside the scope of this evaluation, certainly contributes to outcomes as children get older (e.g., Lee & Loeb, 1995). Fade-out may also decrease as PreK–3 alignment is strengthened, and research suggests that interventions that support children into elementary school and target key transition points in children's educational lives have the longest lasting effects (Brooks-Gunn, 2003).

Recommendation 6: STK may wish to consider some follow-up supports for families from prior cohorts to target key school transition points and support families in some capacity for additional years.

The current analyses could not detect differences between the 2011 STK cohort and the comparison group in kindergarten on CELDT and district assessments as was found for prior cohorts. However, due to the unavailability of data on preschool experiences of children outside of the STK cohort, preschool attendance could not be used as a matching variable to draw the comparison group. Given that it is likely that the comparison group attended preschool at higher rates than the STK group (of whom only 15 percent attended preschool), the lack of differences detected may be due to both groups having pre-kindergarten instructional experiences (either STK, or preschool). A re-analysis of 2009 and 2010 data excluding preschool from the propensity score matching lends evidence that this is likely the case.

Recommendation 7: Continue collaboration and alignment of instruction and assessments, as possible, with MVWSD.

Recommendation 8: If future analyses of elementary school outcomes are of interest, STK should work with district staff to ensure that preschool attendance information is collected and entered into the data system.

When all cohorts are pooled, STK participants still outperform their matched peers on several measures of English language skills (as measured by the CELDT) at kindergarten entry.

As in last year's analysis, STK participants did not show significantly better elementary school attendance than their peers. STK staff have already begun to emphasize with parents the importance of attendance; given the transiency often found among families similar to those served by STK, this emphasis should be continued.

In summary, STK teachers provide warm, supportive classroom environments, with strong supports for dual language learners in place. There is some room for growth, as in prior years, in terms of teacher's interactions with children to support higher-order thinking and language and cognitive development. The STK program has a strong focus on parent education and involvement, and this focus has shown over time to improve parents' practices at home that support their children's learning. In 2012, the program also aimed to measure children's language and academic skill growth over the course of the program, piloting the IPT and the CPAA assessments. Data that are available show that children participating in STK showed growth in both English and Spanish (with greater growth in Spanish) over the course of their participation, and their academic skills are "Approaching Expectation" in all areas except patterns and functions, where they perform, on average, "At Expectation." Elementary school follow-up analyses do not show significant differences between prior-year STK participants and their peers in kindergarten, first grade, or second grade in 2011–12, though the lack of differences between the 2011 cohort and the comparison group in kindergarten is likely due to the inability to control for the preschool experiences of children in the comparison group. However, when all cohorts are combined, STK participants show evidence of stronger English skills in kindergarten than non-participants.

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Appendix A: Parent Survey Frequencies: 2011 and 2012

1. About how many children's books do you have in your home?

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
0=none	6.0	1.6	0.0	1.2
1=1-10 books	47.8	24.2	43.5	34.6
2=11-25 books	23.9	35.5	31.8	33.3
3=26-50 books	9.0	25.8	12.9	19.8
4=more than 50 books	13.4	12.9	11.8	11.1

2. About how often do you go to the library…

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
to borrow books or materials for your children?				
0= never	34.8	24.6	22.2	21.3
1= several times a year	24.2	19.7	18.5	18.8
2= once a month	15.2	14.7	19.8	13.8
3= several times a month	10.6	19.7	21.0	26.3
4= once a week or more	15.2	21.3	18.5	20.0
to participate in other activities for your children, like story time?				
0= never	45.0	26.8	49.2	21.7
1= several times a year	25.0	21.4	18.5	23.2
2= once a month	16.7	5.4	7.7	8.7
3= several times a month	8.3	33.9	9.2	33.3
4= once a week or more	5.0	12.5	15.4	13.0

3. How many times have you or someone in your family read to your children in the past week (during the last 7 days)?

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
0=zero times	2.9	0	4.7	2.5
1=1 or 2 times	36.8	12.9	45.9	15.0
2=3 or 4 times	26.5	30.6	20.0	35.0
3=5 or 6 times	5.9	17.7	9.4	15.0
4=every day	22.1	30.6	15.3	28.8
5=more than once per day	5.9	8.1	4.7	3.8

4. In what language do you read to your child?

	2012	
	Beginning of Program (%)	End of program (%)
English	62.4	60.7
Spanish	81.2	71.4
Another language	1.18	2.4

5. In the past 7 days, how often have you done any of the following activities with your children?

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
Told your children a story?				
0=zero times	17.9	4.8	13.3	3.8
1=1 or 2 times	43.3	46.8	50.7	41.3
1.5=marked both 1 and 2	0	1.6		
2=3 or 4 times	20.9	33.9	25.3	31.3
3=5 or more times	17.9	12.9	10.8	23.8
Sung songs or played music with your children?				
0=zero times	12.5	11.7	21.8	5.2
1=1 or 2 times	32.8	25.0	33.3	36.4
2=3 or 4 times	23.4	25.0	23.1	32.5
3=5 or more times	31.3	38.3	21.8	26.0

(Continued)

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
Talked to your children about letters of the alphabet, like pointing out letters on signs or in books?				
0=zero times	9.1	0	3.6	1.2
1=1 or 2 times	24.2	29.5	39.8	26.0
2=3 or 4 times	28.8	24.6	34.9	43.2
3=5 or more times	37.9	45.9	21.7	30.0
Asked your children to tell you what is in a picture when you are reading together?				
0=zero times	7.4	1.6	19.1	2.4
1=1 or 2 times	38.2	32.8	35.7	33.0
2=3 or 4 times	35.3	29.5	29.8	31.7
3=5 or more times	19.1	36.1	15.5	33.0
Asked your children what they think will happen next when you are reading a story together?				
0=zero times	19.4	13.1	20.2	6.2
1=1 or 2 times	40.3	24.6	46.4	33.3
2=3 or 4 times	28.4	39.3	21.4	27.2
3=5 or more times	11.9	23.0	11.9	33.3
Helped your children count things they see?				
0=zero times	4.5	1.7	3.6	0.0
1=1 or 2 times	29.9	20.0	25.3	15.9
2=3 or 4 times	28.4	30.0	26.5	45.1
3=5 or more times	37.3	48.3	44.6	39.0
Had your children tell a story?				
0=zero times	16.7	8.3	32.9	12.2
1=1 or 2 times	39.4	35.0	37.8	39.0
2=3 or 4 times	28.8	31.7	15.9	25.6
3=5 or more times	15.2	25.0	13.4	23.2

(Continued)

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
Given your children crayons, markers or other writing materials to use or play with?				
0=zero times	1.5	0	2.4	2.5
1=1 or 2 times	17.6	3.3	19.3	17.3
2=3 or 4 times	26.5	32.8	26.5	28.4
3=5 or more times	54.4	63.9	51.8	51.9
Helped your children count things they see?				
0=zero times	4.5	1.7	3.6	0.0
1=1 or 2 times	29.9	20.0	25.3	15.9
2=3 or 4 times	28.4	30.0	26.5	45.1
3=5 or more times	37.3	48.3	44.6	39.0
Sung songs or read books with numbers with your children?				
0=zero times	-	-	12.5	3.9
1=1 or 2 times	-	-	33.8	24.7
2=3 or 4 times	-	-	20.0	40.3
3=5 or more times	-	-	33.8	31.2
Played math games with your children, such as counting games, board games, or cards?				
0=zero times	-	-	36.1	11.1
1=1 or 2 times	-	-	31.3	48.2
2=3 or 4 times	-	-	18.1	25.9
3=5 or more times	-	-	14.5	14.8
Played counting games, sung songs with numbers, or read books with numbers with your children?				
0=zero times	15.0	8.1	-	-
1=1 or 2 times	32.8	32.3	-	-
2=3 or 4 times	21.0	21.0	-	-
3=5 or more times	31.3	38.7	-	-

(Continued)

	2011 Beginning of Program (%)	2012 End of program (%)	Beginning of Program (%)	End of program (%)
Talked to your children about shapes, like asking them to identify shapes they see around them?				
0=zero times	17.9	15.0	25.3	10.0
1=1 or 2 times	29.9	23.3	26.5	33.3
2=3 or 4 times	25.4	31.7	28.9	40.7
3=5 or more times	26.9	30.0	19.3	16.1
Had your children help measure something, such as their height or ingredients for cooking?				
0=zero times	51.5	41.7	48.8	29.3
1=1 or 2 times	25.0	36.7	31.7	41.5
2=3 or 4 times	16.2	16.7	11.0	18.3
3=5 or more times	7.4	5.0	8.5	11.0
Asked your children to compare the number of objects in two groups (like asking which bucket has more blocks)?				
0=zero times	30.9	26.2	24.1	14.8
1=1 or 2 times	33.8	32.8	48.2	46.9
2=3 or 4 times	17.6	23.0	14.5	23.5
3=5 or more times	17.6	18.0	13.3	14.8

6. What do you think is the best time to start reading to children?

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
1=during child's first year (from birth to 1 year)	77.6	72.1	74.4	82.72
2=after child turns one, but before his/her second birthday	11.9	16.4	15.9	10.0
3=when a child is 2-4 years old	10.4	11.5	9.8	6.2
4=when in kindergarten(age 5-6 years)	0.0	0.0	0.0	1.2

7. Please tell us how much you agree or disagree when thinking about your family.

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
My children and I have routines for daily activities such as bedtime and/or mealtimes.				
1=strongly disagree	2.9	0.0	4.9	4.9
2=somewhat disagree	5.9	0.0	4.9	1.2
3=neither agree nor disagree	1.5	3.3	22.2	12.4
4=somewhat agree	26.5	21.3	7.4	13.6
5=strongly agree	63.2	75.4	60.5	67.9
I know how to discipline my child without hitting or yelling.				
1=strongly disagree	1.5	1.7	-	-
2=somewhat disagree	1.5	1.7	-	-
3=neither agree nor disagree	8.8	8.5	-	-
4=somewhat agree	27.9	25.4	-	-
5=strongly agree	60.3	62.7	-	-
I have set rules and consequences for my children.				
1=strongly disagree	0.0	3.3	2.6	3.9
2=somewhat disagree	3.0	1.6	10.4	2.6
3=neither agree nor disagree	6.1	4.9	16.9	14.3
4=somewhat agree	30.3	24.6	20.8	23.4
5=strongly agree	60.6	65.6	49.4	55.8
I give my children positive feedback when they do something good.				
1=strongly disagree	0.0	0.0	-	-
2=somewhat disagree	0.0	0.0	-	-
3=neither agree nor disagree	0.0	1.6	-	-
4=somewhat agree	4.5	3.3	-	-
5=strongly agree	95.5	95.1	-	-

(Continued)

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
I give my children positive feedback .				
1=strongly disagree	-	-	4.0	2.6
2=somewhat disagree	-	-	2.6	0.0
3=neither agree nor disagree	-	-	6.6	7.9
4=somewhat agree	-	-	13.2	15.8
5=strongly agree	-	-	73.7	73.7
When my child is upset, I talk to him/her about what he/she is feeling.				
1=strongly disagree	0.0	0.0	2.4	2.6
2=somewhat disagree	0.0	0.0	1.2	1.3
3=neither agree nor disagree	1.5	0.0	8.3	3.9
4=somewhat agree	24.2	6.6	16.7	15.4
5=strongly agree	74.2	93.4	71.4	76.9
I am confident in my parenting skills.				
1=strongly disagree	0.0	0.0	1.2	2.6
2=somewhat disagree	1.5	1.6	8.6	2.6
3=neither agree nor disagree	4.5	9.8	12.4	9.0
4=somewhat agree	31.8	24.6	21.0	25.6
5=strongly agree	62.1	63.9	56.8	60.3
I am able to soothe my child when he/she is upset.				
1=strongly disagree	3.0	0.0	2.4	2.4
2=somewhat disagree	0.0	6.6	3.6	2.4
3=neither agree nor disagree	0.0	8.2	13.3	3.6
3.5= Marked both 3 and 4	0.0	1.6		
4=somewhat agree	25.8	11.5	24.1	23.0
5=strongly agree	71.2	72.1	56.6	68.7
I spend time with my child doing what he/she likes to do.				
1=strongly disagree	0.0	1.7	-	-
2=somewhat disagree	1.5	1.7	-	-
3=neither agree nor disagree	2.9	0.0	-	-
4=somewhat agree	26.5	15.0	-	-
5=strongly agree	69.1	81.7	-	-

8. Please tell us how much you agree or disagree.

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
I feel confident that I can help my children be ready for kindergarten.				
1=strongly disagree	0.0	0.0	4.9	3.7
2=somewhat disagree	2.0	3.0	9.9	0.0
3=neither agree nor disagree	2.0	3.0	7.4	11.1
4=somewhat agree	21.0	15.0	19.8	22.2
5=strongly agree	76.0	79.0	58.0	63.0
I understand where and how to enroll my children in kindergarten.				
1=strongly disagree	2.0	0.0	3.8	3.6
2=somewhat disagree	2.0	2.0	1.3	2.4
3=neither agree nor disagree	2.0	2.0	3.8	2.4
4=somewhat agree	13.0	7.0	11.4	9.6
5=strongly agree	82	90	79.8	81.9
I have visited the school my child will attend in Kindergarten.				
1=strongly disagree	9.0	5.0	8.6	5.0
2=somewhat disagree	3.0	0.0	3.7	5.0
3=neither agree nor disagree	6.0	0.0	7.4	1.3
4=somewhat agree	9.0	8.0	11.1	6.3
5=strongly agree	74.0	87.0	69.1	82.5
To help my child in school, I feel it is my duty to check in regularly with my child's teacher.				
1=strongly disagree	2.0	0.0	3.6	3.7
2=somewhat disagree	0.0	0.0	2.4	1.2
3=neither agree nor disagree	0.0	2.0	4.8	2.5
4=somewhat agree	10.0	2.0	6.0	6.2
5=strongly agree	88.0	97.0	83.1	86.4
Educating children is mostly the school's responsibility.				
1=strongly disagree	24.0	23.0	41.0	47.4
2=somewhat disagree	19.0	16.0	16.7	17.1
3=neither agree nor disagree	13.0	16.0	16.7	11.8
4=somewhat agree	24.0	31.0	3.9	9.2
5=strongly agree	21.0	15.0	21.8	14.5

(Continued)

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
I feel intimidated by the public school system.				
1=strongly disagree	16.7	21.7	-	-
2=somewhat disagree	12.1	8.3	-	-
3=neither agree nor disagree	19.7	18.3	-	-
4=somewhat agree	34.9	36.7	-	-
5=strongly agree	16.7	15.0	-	-
Parents are their children's first and most important teachers.				
1=strongly disagree	0.0	2.0	1.2	4.9
2=somewhat disagree	2.0	0.0	1.2	0.0
3=neither agree nor disagree	2.0	3.0	2.5	2.4
4=somewhat agree	4.0	0.0	3.7	4.9
5=strongly agree	93.0	95.0	91.4	87.8
I feel confident that I know how to support my children's learning.				
1=strongly disagree	2.0	0.0	2.5	1.3
2=somewhat disagree	2.0	3.0	1.3	5.3
3=neither agree nor disagree	3.0	7.0	6.3	4.0
4=somewhat agree	24.0	16.0	13.8	18.4
5=strongly agree	71.0	74.0	76.3	71.1
I feel confident that I will be able to talk to my child's kindergarten teacher in English.				
1=strongly disagree	-	-	19.8	19.0
2=somewhat disagree	-	-	13.6	11.4
3=neither agree nor disagree	-	-	11.1	10.1
4=somewhat agree	-	-	6.2	12.7
5=strongly agree	-	-	49.4	46.8
I feel confident that I will know how to ask my child's Kindergarten teacher questions?				
1=strongly disagree	-	-	11.3	5.0
2=somewhat disagree	-	-	6.3	5.0
3=neither agree nor disagree	-	-	7.5	8.8
4=somewhat agree	-	-	10.0	17.5
5=strongly agree	-	-	65.0	63.8

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
I feel confident that I will be able to communicate with my child's kindergarten teacher.				
1=strongly disagree	2.0	0.0	-	-
2=somewhat disagree	2.0	2.0	-	-
3=neither agree nor disagree	10.0	3.0	-	-
4=somewhat agree	7.0	8.0	-	-
5=strongly agree	79.0	87.0	-	-

9. Do you have any concerns about whether your child will be ready to start kindergarten?

	2011	
	Beginning of Program (%)	End of program (%)
0=no	77.0	77.0
1=yes	23.0	23.0

10. Please tell us how much you agree or disagree.

	2011		2012	
	Beginning of Program (%)	End of program (%)	Beginning of Program (%)	End of program (%)
If I have concerns or need advice, I have someone I can talk to.				
1=strongly disagree	3.0	2.0	3.61	7.5
2=somewhat disagree	0.0	0.0	6.0	2.5
3=neither agree nor disagree	8.0	5.0	15.7	11.3
4=somewhat agree	23.0	19.0	12.1	16.3
5=strongly agree	67.0	74.0	62.7	62.5
When I feel lonely, there are several people I can talk to.				
1=strongly disagree	2.0	0.0	3.6	4.9
2=somewhat disagree	3.0	3.0	6.0	8.5
3=neither agree nor disagree	6.0	5.0	13.1	13.4
4=somewhat agree	23.0	15.0	14.3	14.6
5=strongly agree	67.0	77.0	63.1	58.5

(Continued)

	2011	2012		
	Beginning of Program (%)	Beginning of Program (%)	End of program (%)	End of program (%)
If my child is having challenges at school or in the program, there is someone I can talk it over with.				
1=strongly disagree	2.0	2.0	3.6	4.9
2=somewhat disagree	2.0	0.0	4.8	2.5
3=neither agree nor disagree	6.0	2.0	9.6	9.9
4=somewhat agree	14.0	13.0	12.1	18.5
5=strongly agree	77.0	84.0	69.9	64.2

11. Do you know where to go in your community to get information about…

	2011	2012		
	Beginning of Program (%)	Beginning of Program (%)	End of program (%)	End of program (%)
Employment?				
0=no	48.0	39.0	44.6	43.2
1=yes	52.0	61.0	55.4	56.8
Housing?				
0=no	45.0	40.0	51.2	41.5
1=yes	55.0	60.0	48.8	58.5
Food Assistance?				
0=no	-	-	28.4	15.2
1=yes	-	-	71.6	84.8
Transportation?				
0=no	31.0	25.0	40.7	32.1
1=yes	69.0	75.0	59.3	67.9
Medical Insurance?				
0=no	13.0	26.0	13.8	11.4
1=yes	87.0	74.0	86.3	88.6
Medical Care?				
0=no	13.0	23.0	13.1	7.4
1=yes	87.0	77.0	86.9	92.6
Dental Care?				
0=no	16.0	26.0	20.0	12.7
1=yes	84.0	74.0	80.0	87.3
Immigration?				
0=no	41.0	46.0	53.8	49.4
1=yes	59.0	54.0	46.3	50.6

	2011		2012	
	Beginning of Program (%)	Beginning of Program (%)	End of program (%)	End of program (%)
0=no	-	-	37.0	26.9
1=yes	-	-	63.0	73.1
Basic Math classes?				
0=no	-	-	56.1	46.8
1=yes	-	-	43.9	53.2
Computer Classes?				
0=no	-	-	53.1	39.5
1=yes	-	-	46.9	60.5
Other continuing education opportunities?				
0=no	-	-	50.0	35.5
1=yes	-	-	50.0	64.5

11. Please tell us how much you agree or disagree.

	2011 (%)	2012 (%)
I feel welcomed in my child's STK classroom.		
1=strongly disagree	0.0	1.2
2=somewhat disagree	0.0	0.0
3=neither agree nor disagree	0.0	1.2
4=somewhat agree	0.0	4.8
5=strongly agree	85.0	87.0
No response	15.1	6.0
I feel comfortable talking to my child's teacher about what my child is working on or about any questions I have.		
1=strongly disagree	0.0	0.0
2=somewhat disagree	0.0	2.4
3=neither agree nor disagree	1.4	2.4
4=somewhat agree	1.4	3.6
5=strongly agree	80.8	87.0
No response	16.4	4.8
I have met other families through my STK participation.		
1=strongly disagree	1.4	6.0
2=somewhat disagree	0.0	2.4
3=neither agree nor disagree	4.1	2.0
4=somewhat agree	6.9	9.5
5=strongly agree	71.2	75.0
No response	16.4	6.0

(Continued)

	2011 (%)	2012 (%)
STK has helped me become more familiar with a kindergarten classroom.		
1=strongly disagree	1.4	2.4
2=somewhat disagree	1.4	0.0
3=neither agree nor disagree	2.7	0.0
4=somewhat agree	2.7	10.7
5=strongly agree	76.7	82.1
No response	15.1	4.8
Participating in STK has helped me to learn more about what my child should be able to do at this age.		
1=strongly disagree	0.0	1.2
2=somewhat disagree	0.0	1.2
3=neither agree nor disagree	16.4	1.2
4=somewhat agree	0.0	7.1
5=strongly agree	79.5	83.3
No response	16.4	6.0
I have learned new ways to interact with my child to support their development by observing teachers in my child's STK classroom.		
1=strongly disagree	0.0	1.2
2=somewhat disagree	0.0	2.4
3=neither agree nor disagree	1.4	1.2
4=somewhat agree	0.0	7.1
5=strongly agree	81.0	83.3
No response	17.8	4.8
I have learned new or better ways to manage my children's behavior by observing teachers in my child's STK classroom.		
1=strongly disagree	1.4	1.2
2=somewhat disagree	0.0	2.4
3=neither agree nor disagree	1.4	3.6
4=somewhat agree	0.0	9.5
5=strongly agree	81.0	77.4
No response	16.4	6.0

(Continued)

	2011 (%)	2012 (%)
I have learned new ways to solve problems with my child by observing teachers in my child's STK classroom.		
1=strongly disagree	1.4	0.0
2=somewhat disagree	1.4	1.2
3=neither agree nor disagree	1.4	2.4
4=somewhat agree	6.9	11.9
5=strongly agree	72.6	78.6
No response	16.4	6.0
I have learned to create daily routines that will support my child's school success.		
1=strongly disagree	-	1.2
2=somewhat disagree	-	0.0
3=neither agree nor disagree	-	3.6
4=somewhat agree	-	7.1
5=strongly agree	-	81.0
No response	-	7.1

12. How well has STK helped prepare your child for kindergarten in each of these areas?

	2011 (%)	2012 (%)
Understanding and following directions		
0= Stretch to Kindergarten helped not at all	2.0	2.4
1= Stretch to Kindergarten helped a little	19.0	3.6
2= Stretch to Kindergarten helped a lot	79.0	89.3
No response	0.0	4.8
Using small items such as crayons, paintbrushes, buttons, zippers, etc.		
0= Stretch to Kindergarten helped not at all	5.0	3.6
1= Stretch to Kindergarten helped a little	7.0	6.0
2= Stretch to Kindergarten helped a lot	89.0	85.7
No response	0.0	4.8
Doing more things for himself or herself (for example, eating, going to the bathroom, washing hands)		
0=Stretch to Kindergarten helped not at all	3.0	2.4
1=Stretch to Kindergarten helped a little	13.0	7.1
2=Stretch to Kindergarten helped a lot	84.0	84.5
No response	0.0	6.0

(Continued)

	2011 (%)	2012 (%)
Expressing needs and wants to adults.		
0= Stretch to Kindergarten helped not at all	5.0	3.6
1= Stretch to Kindergarten helped a little	18.0	14.3
2= Stretch to Kindergarten helped a lot	77.0	72.6
No response	0.0	9.5
Expressing himself/herself in words (for example, telling a story or describing an experience)		
0=Stretch to Kindergarten helped not at all	3.0	1.2
1= Stretch to Kindergarten helped a little	21.0	16.7
2= Stretch to Kindergarten helped a lot	76.0	75.0
No response	0.0	7.1
Expanding his/her vocabulary in English		
0= Stretch to Kindergarten helped not at all	2.7	2.4
1= Stretch to Kindergarten helped a little	6.7	6.0
2= Stretch to Kindergarten helped a lot	90.7	81.0
No response		10.7
Writing his or her first name		
0= Stretch to Kindergarten helped not at all	5.0	4.8
1= Stretch to Kindergarten helped a little	15.0	12.0
2= Stretch to Kindergarten helped a lot	81.0	72.6
No response	0.0	10.7
Enjoying books (for example, reading, or pretending to read)		
0= Stretch to Kindergarten helped not at all	2.0	4.8
1= Stretch to Kindergarten helped a little	18.0	7.1
2= Stretch to Kindergarten helped a lot	80.0	81.0
No response	0.0	7.1
Playing pretend games (for example, playing house or fire station)		
0= Stretch to Kindergarten helped not at all	5.0	2.4
1= Stretch to Kindergarten helped a little	21.0	9.5
2= Stretch to Kindergarten helped a lot	74.0	79.8
No response	0.0	8.3

(Continued)

	2011 (%)	2012 (%)
Caring for others and understanding the feelings of other children.		
0= Stretch to Kindergarten helped not at all	3.0	3.6
1= Stretch to Kindergarten helped a little	33.0	15.5
2= Stretch to Kindergarten helped a lot	64.0	73.8
No response	0.0	7.1
Playing well with other children (for example, taking turns or sharing)		
0= Stretch to Kindergarten helped not at all	5.0	2.4
1= Stretch to Kindergarten helped a little	16.0	4.8
2= Stretch to Kindergarten helped a lot	79.0	84.5
No response	0.0	8.3
Expanding his/her vocabulary in your home language (if not English)		
0= Stretch to Kindergarten helped not at all	2.0	2.4
1= Stretch to Kindergarten helped a little	19.0	25.0
2= Stretch to Kindergarten helped a lot	80.0	58.3
No response	0.0	14.3
Counting		
0= Stretch to Kindergarten helped not at all	3.0	2.4
1= Stretch to Kindergarten helped a little	23.0	8.3
2= Stretch to Kindergarten helped a lot	74.0	81.0
No response	0.0	8.3
Learning numbers		
0= Stretch to Kindergarten helped not at all	3.0	0.0
1= Stretch to Kindergarten helped a little	21.0	9.5
1.5= Marked both 1 and 2	2.0	0.0
2= Stretch to Kindergarten helped a lot	74.0	83.3
No response	0.0	7.1
Learning Shapes		
0= Stretch to Kindergarten helped not at all	3.0	2.4
1= Stretch to Kindergarten helped a little	23.0	19.1
2= Stretch to Kindergarten helped a lot	73.0	70.2
No response	0.0	8.3

(Continued)

	2011 (%)	2012 (%)
Learning letters		
0= Stretch to Kindergarten helped not at all	2.0	0.0
1= Stretch to Kindergarten helped a little	26.0	14.3
2= Stretch to Kindergarten helped a lot	72.0	75.0
No response	0.0	10.7
Learning colors		
0= Stretch to Kindergarten helped not at all	3.0	3.6
1= Stretch to Kindergarten helped a little	18.0	6.0
1.5= Marked both 1 and 2	2.0	
2= Stretch to Kindergarten helped a lot	77.0	83.3
No response	0.0	7.1

17. I would be interested in additional STK support in the following ways:

	2011 (%)	2012 (%)
Learning more about how children grow and develop.		
1= Yes	61.3	56.0
Learning more about how to play or talk with my child.		
1= Yes	66.1	52.4
Learning more about how to help and encourage my child to learn.		
1= Yes	87.1	67.9
Learning more about how to best work with my child's school and teachers.		
1= Yes	76.0	48.8
Learning more about how to handle my child's challenging behavior.		
1= Yes	79.0	56.0
Learning more about how to support a child with special needs. *		
1= Yes	65.0	39.3
Learning more about how to meet my child's nutritional needs.		
1= Yes	65.0	52.4
Receiving information about community resources that are available for my child and family.		
1= Yes	63.0	54.8

(Continued)

	2011 (%)	2012 (%)
Receiving information on child development and general parenting strategies.		
1= Yes	61.0	41.7
Meeting with other families for organized activities.		
1= Yes	44.0	31.0
Meeting in a regular parent discussion group.		
1= Yes	35.8	35.7

Appendix B: Relationships among Score Levels, Proficiency Levels, and Designations on the IPT

Exhibit B-1. IPT English – Relationship among score levels, proficiency levels, and designation

ENGLISH					
Designation	**NES** (Non-*English* Speaking)	**LES** (Limited *English* Speaking)			**FES** (Fluent *English* Speaking)
Proficiency level	Beginning	Early Intermediate	Intermediate	Early Advanced	Advanced
3 year olds	A	B	B[8]	C	D, E
4 and 5 year olds	A	B	C	D	E

Exhibit B-2. IPT Spanish – Relationship among score levels, proficiency levels, and designation

SPANISH					
Designation	**NES** (Non-*Spanish* Speaking)	**LES** (Limited *Spanish* Speaking)			**FES** (Fluent *Spanish* Speaking)
Proficiency level	Beginning	Early Intermediate	Intermediate	Early Advanced	Advanced
3 year olds	A	B	B[9]	C	D, E
4 year olds	A	B	C	D	E
5 year olds	A, B	C	D	D[10]	E

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[8] If a 3-year-old made two or fewer errors in test level B, s/he is classified into Proficiency Level *Intermediate*. If the child made three or more errors, s/he is classified into Proficiency Level *Early Intermediate*.

[9] If a 3-year-old made two or fewer errors in test level B, s/he is classified into Proficiency Level *Intermediate*. If the child made three or more errors, s/he is classified into Proficiency Level *Early Intermediate*.

[10] If a 5-year-old made two or fewer errors in test level D, s/he is classified into Proficiency Level *Early Advanced*. If the child made three or more errors, s/he is classified into Proficiency Level *Early Intermediate*.

Appendix C: Elementary School Follow-Up Summary

The following tables summarize elementary school follow-up study findings across cohorts and years.

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                           Legend

       nd = no significant differences between groups

       (+) = STK participants outperformed their peers

   Gray shading indicates assessment not given or not available for all
                           cohorts
```

Attendance

Cohort	Kindergarten At least one unexcused absence or tardy (> 30 min)	First grade At least one unexcused absence or tardy (> 30 min)	Second grade At least one unexcused absence or tardy (> 30 min)
2009	nd	nd	nd
2010	nd	nd	
2011	nd		
combined	nd	nd	

CELDT

Cohort	Kindergarten					
	Overall scale score	Speaking scale score	Listening scale score	% at least "early intermediate"- overall	% at least "early intermediate"- speaking	% at least "early intermediate"- listening
2009	nd	nd	nd	**(+)**	nd	nd
2010	nd	nd	nd	nd	nd	nd
2011	nd	nd	nd	nd	nd	nd
combined	nd (approaching **(+)**)	nd	nd (approaching **(+)**)	nd (approaching **(+)**)	nd	**(+)**

Letter Sounds District Assessment (kindergarten)

Cohort	Kindergarten		
	T1	**T2**	**T3**
2009	**(+)**	**(+)**	nd
2010	**(+)**	nd	nd
2011	nd	nd	nd
combined	nd (approaching **(+)**)	nd	nd

Developmental Reading Assessment

Cohort	Kindergarten			First grade			Second grade		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
2009		nd	nd	(+)			nd		
2010			nd	nd		nd			
2011			nd						
combined			nd	nd					

High Frequency Words District Assessment (kindergarten and first grade only)

Cohort	Kindergarten			First grade		
	T1	T2	T3	T1	T2	T3
2009	nd	(+)	nd	(+)	nd	nd
2010		nd	nd			nd
2011		nd	nd			
combined		nd	nd			

District assessments- math (1st and 2nd grade only)

	First grade			Second grade		
	T1	T2	T3	T1	T2	T3
Cohort						
2009	nd	nd	nd	nd	nd	
2010	nd	nd				
2011						
combined	nd	nd				

Language Arts District Assessment (1st and 2nd grade only)

	First grade			Second grade		
	T1	T2	T3	T1	T2	T3
Cohort						
2009		nd	nd	nd	nd	
2010		nd				
2011						
combined		nd				

California Standards Test (2nd grade only)

	CST- Math	CST- ELA
2011	nd	nd

Appendix D: Parent Surveys