FIRST 5 SAN JOAQUIN
INVESTING IN OUR CHILDREN

Building Blocks
For School Success

Findings From a 5-Year Longitudinal Study | February 2013

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Introduction

"I believe I was talking to the counselor at a preschool and she was telling me about First 5 and it just sounded really good. I try to do what I can to give them a little extra boost in their education."

— First 5 San Joaquin parent

Research shows that high quality early childhood programs such as preschool, early literacy, and parent education improve the school readiness of children, with some of the most significant impacts seen in at-risk children.[1,2] Other factors, such as mother's level of education and other socioeconomic indicators, often influence school readiness outcomes. In addition, longitudinal studies have shown that young children who participate in early childhood programs have improved outcomes later in life related to high school graduation rates, employment status, income level, and welfare dependency.

First 5 San Joaquin is dedicated to increasing access to quality early childhood education services and helping children and families have the knowledge, skills, and experiences necessary to succeed in school. To do this, a multi-pronged funding approach is used which includes School Readiness and Preschool Funding Initiatives.

1 Gormley WT, Phillips D, Gayer T, (June 2008) Preschool Programs can boost school Readiness, Science, Vol 320 (1723-1724)

2 Voices for Utah Children (April 20120) The Impact of High Quality Early Childhood Programs on Improving the Educational Achievement of At-Risk Children.

School readiness initiative

Since 2001, First 5 San Joaquin has funded school readiness programs including home visitation, family literacy, kindergarten bridge, and playgroups, which have been implemented with a combination of state and local funding. First 5 San Joaquin funded schools and community-based organizations to offer families access to vital resources and programs. Beginning in 2007-08, the School Readiness Initiative targeted at-risk families living in low performing school attendance areas (Academic Performance Index [API] of 1-5).[3] The most intensive service funded under the School Readiness Initiative was a researched-based home visitation program, Parents as Teachers. A variety of services are provided to families receiving home visits including modeling of parent-child interaction, health insurance screenings, developmental screenings, family literacy activities, parent education, and information and referral services. In 2010, the First 5 San Joaquin Commission changed its approach and invested in a School Readiness Rural Home Visitation Program that focused on providing home visitation services in rural areas in the county. In 2011-12, First 5 San Joaquin funded three programs under the School Readiness Rural Services Initiative.

Preschool initiative

To increase access to preschool, First 5 San Joaquin provided 8,148 quality preschool spaces over the past eight years, including those in underserved and high priority communities. By investing in school districts, community-based organizations, and private providers, First 5 San Joaquin based their funding approach on the Preschool For All (PFA) model, offering voluntary, free, and quality preschool throughout the county.[4] All programs funded under the Preschool Initiative provided health insurance screenings and developmental screenings and had the option of providing additional services such as family literacy activities, playgroups, kindergarten bridge, and parent education. Beginning in 2005, First 5 San Joaquin funded preschool programs in communities with API scores of 1-5; however, based upon the PFA model, some programs served communities with API scores of up to 8. In 2011-12, with a combination of state and local funding, First 5 San Joaquin funded 24 preschool sites throughout the county, providing 779 new funded preschool spaces.

This report presents the work done by Harder+Company Community Research to assess the short- and long-term benefits of First 5 San Joaquin funded School Readiness and Preschool programs during 2007-2012. Specifically, findings from the fifth and final year of data collection are explored.

3 A school's ranking on the Academic Performance Index is a function of students' performance on the Statewide Testing and Reporting (STAR) program of annual standardized tests. Schools are ranked based on their API scores, and schools in deciles 1–5 were defined by First 5 San Joaquin as low-performing for purposes of funding eligibility.

4 The PFA or "Universal Preschool" model provides preschool at no cost regardless of family income.

Evaluation Overview

First 5 San Joaquin commissioned Harder+Company Community Research to conduct a five-year longitudinal evaluation study of the short- and long-term benefits of its School Readiness and Preschool programs including improved school readiness skills (e.g., literacy skills, motor skills, and classroom behaviors), increased parent involvement in their child's learning, and increased parent participation in home educational activities with their child. The following overarching questions guided this evaluation:

Evaluation Questions

1. **School Readiness in the Home.** Do the parents of children attending a First 5 funded preschool or school readiness program increase their participation in home educational activities with their child?
2. **Family Involvement in School.** Do the parents of children attending a First 5 funded preschool or school readiness program increase their involvement in their child's learning?
3. **School-Based Outcomes.** Do children attending a First 5 funded preschool or school readiness program demonstrate improved school readiness skills?

This section of the report provides an overview of the evaluation, describing the study design and how the study was carried out over the five years. An explanation of the data collection methods and data analysis procedures can be found in Appendix A.

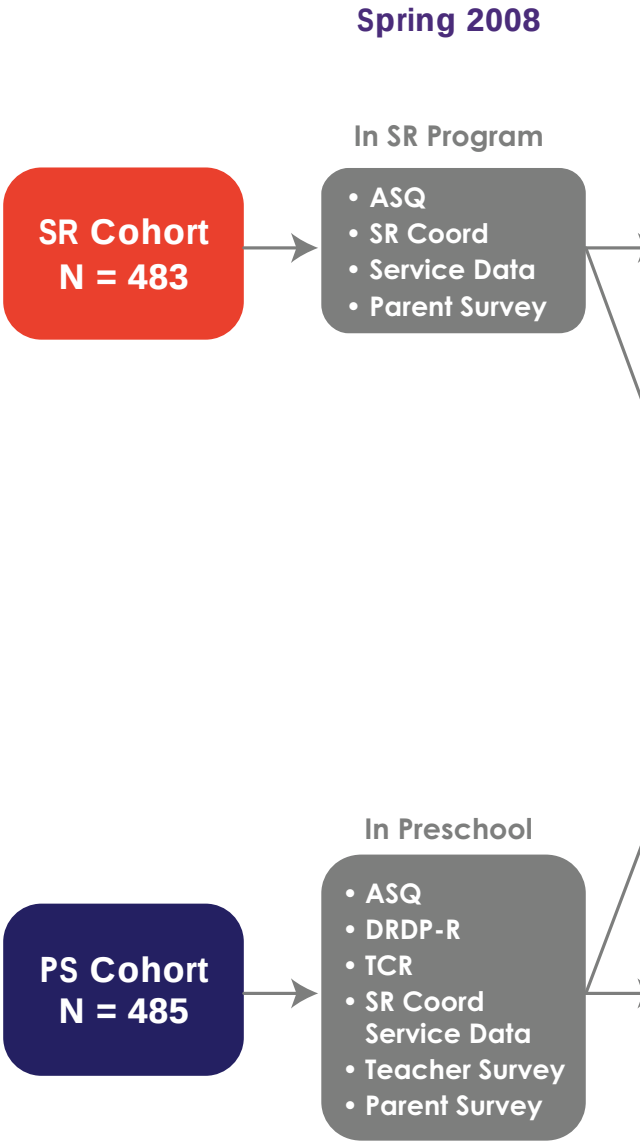
The School Readiness Longitudinal Study prospectively followed two cohorts of children, as follows:

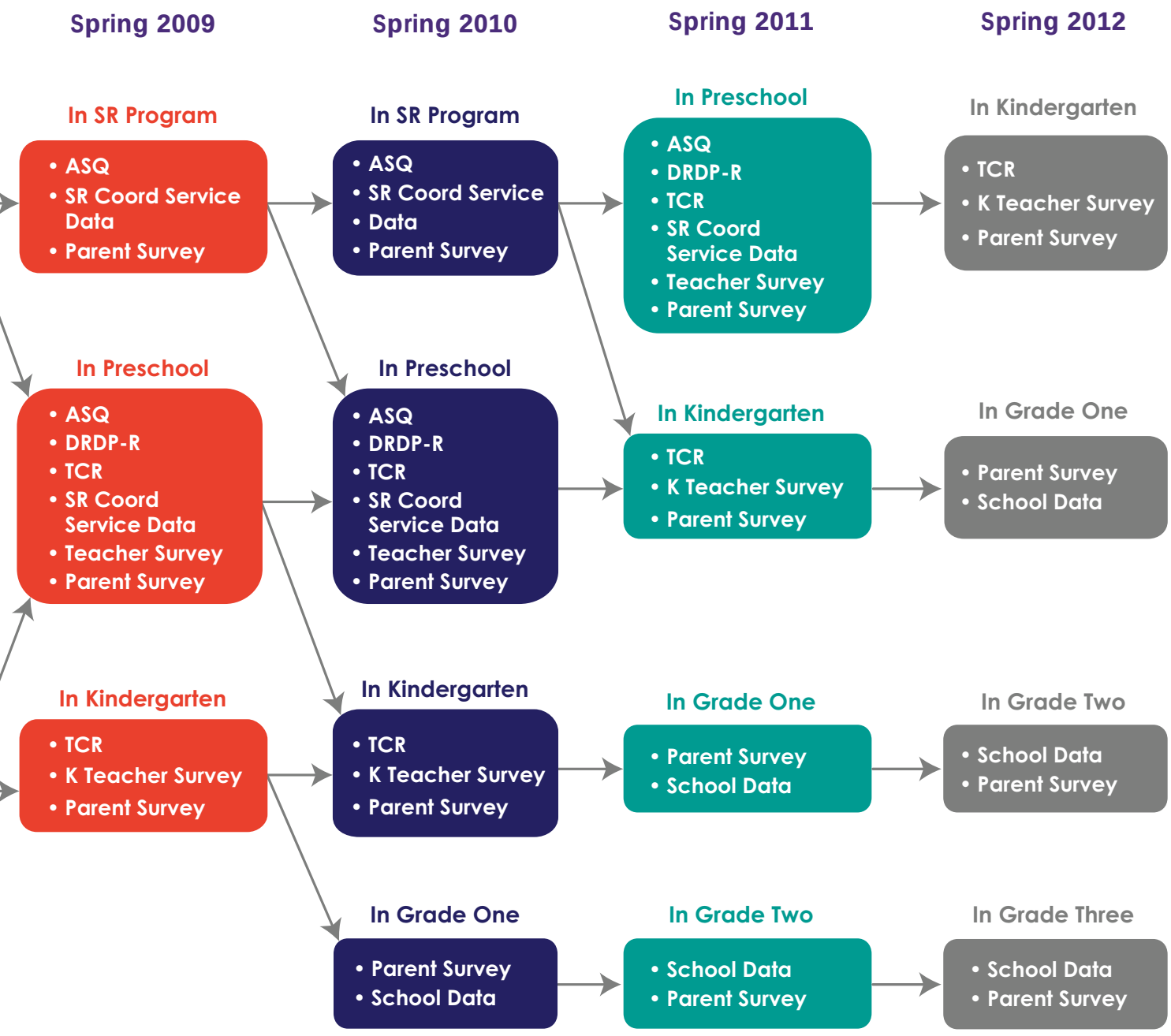
1. **School Readiness Cohort (SR Cohort):** Consists of a randomly selected, representative sample of children from birth to three years of age who were enrolled in a First 5 funded School Readiness program in Year 1 (spring 2008) of the longitudinal study.
2. **Preschool Cohort (PS Cohort):** Consists of a randomly selected, representative sample of children three to five years of age enrolled in First 5 San Joaquin funded Preschool in Year 1 (spring 2008) of the longitudinal study.

As can be seen in Exhibit 1, data collection methods varied depending on the age and grade of the child participating in the study. In the spring of 2012, data was collected from children's teachers, parents, schools, and school districts. Over the five year period, the children in the sample were followed, regardless of their stay in school readiness or preschool programs or priority catchment area, as long as they could be tracked within San Joaquin or an adjacent county. This allowed the study to analyze varying levels of participation in funded early childhood and school readiness services and link these variations to parent and child outcomes.

Indicators for the children in the longitudinal evaluation as a whole are compared to a group of children who did not attend preschool. These comparisons will lend some support for the impact of school readiness services on children's later school achievement (first through the third grades). The comparison group for this longitudinal study was selected from kindergarten enrollment forms from school districts involved in this study, where parents indicated that their child did not attend preschool prior to kindergarten entry.

E1. First 5 San Joaquin School Readiness Longitudinal Study design

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• TCR
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As illustrated in the table below, children in the SR Cohort (who began the study five years ago when they were 0-3 years old), were in varying grade levels in 2012 including preschool (n=23), kindergarten (n=68), 1st grade (n=76), and 2nd grade (n=21). Conversely, the PS Cohort, having started the study five years ago when they were 3-5 years old, were in either 2nd (n=38) or 3rd grade (n=152).

E2. Number of children in each subgroup 2012

Cohort	School Readiness	Preschool	Kindergarten	1st grade	2nd grade	3rd grade
SR Cohort (n=188)	0	23	68	76	21	0
PS Cohort (n=190)	0	0	0	0	38	152

How were the children sampled?

The SR Cohort was sampled from the program enrollment lists of children and families receiving school readiness services as of September 2007. Children were randomly sampled from the enrollment lists proportional to the numbers of children who were enrolled in each of the funded programs in order to ensure a representative sample. The SR Cohort started with a randomly selected sample of 483 children. The PS Cohort used a similar random selection process in which First 5 San Joaquin-funded preschool classrooms were randomly selected and all of the children in those classrooms were selected. The PS Cohort started with a randomly selected sample of 485 children.

Consent

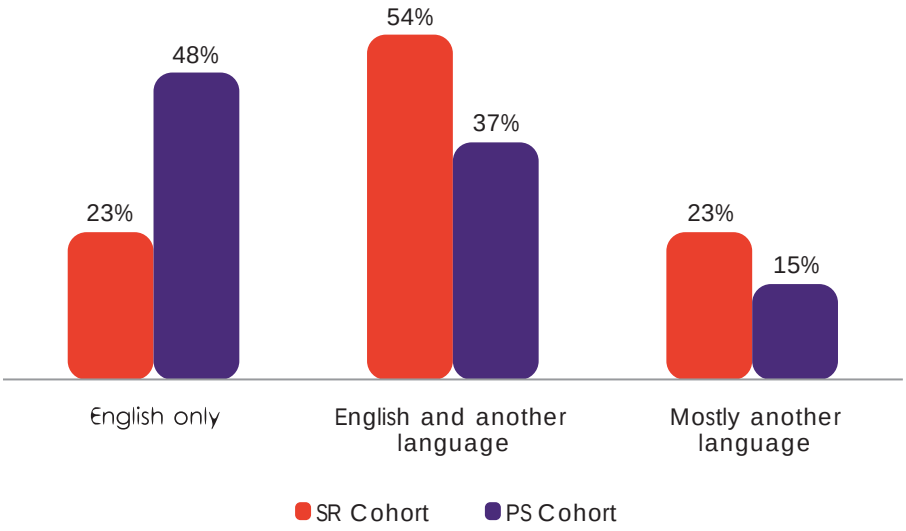
Parents of children selected for the study were asked to sign an informed consent and all study procedures were approved by an Institutional Review Board for Research on Human Subjects. Data was collected from the children only after a consent form was signed. Participation in the study was completely voluntary. Parents were informed that participation or non-participation would not affect their preschool or school readiness program experience and strict procedures were employed to protect client confidentiality.

Key Characteristics of Study Participants

Parents of children in the School Readiness (SR) and Preschool (PS) Cohorts were asked to complete a survey that gathered basic demographic information on their child, their family, and themselves. The findings from the parent survey are presented in this section, comparing the characteristics between the SR and PS Cohorts.

A total of 378 parents of children in the SR Cohort and PS Cohort completed a parent survey (188 from the SR Cohort and 190 from the PS Cohort) in the spring of 2012. Sixty-six percent of the surveys from the SR Cohort were completed in Spanish and the remaining 34 percent were completed in English. Conversely, in the PS Cohort, 34 percent of surveys were completed in Spanish and 66 percent were completed in English. In both cohorts, over 90 percent of survey respondents were the mothers of children.

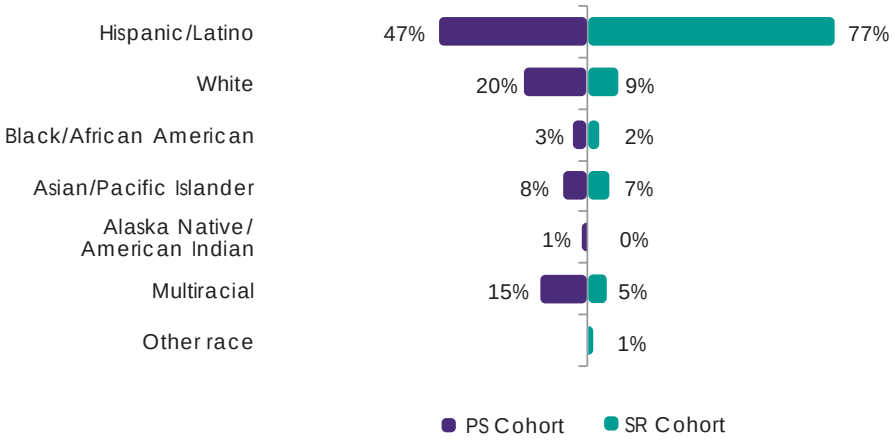
E3. Primary language spoken to the child 2012



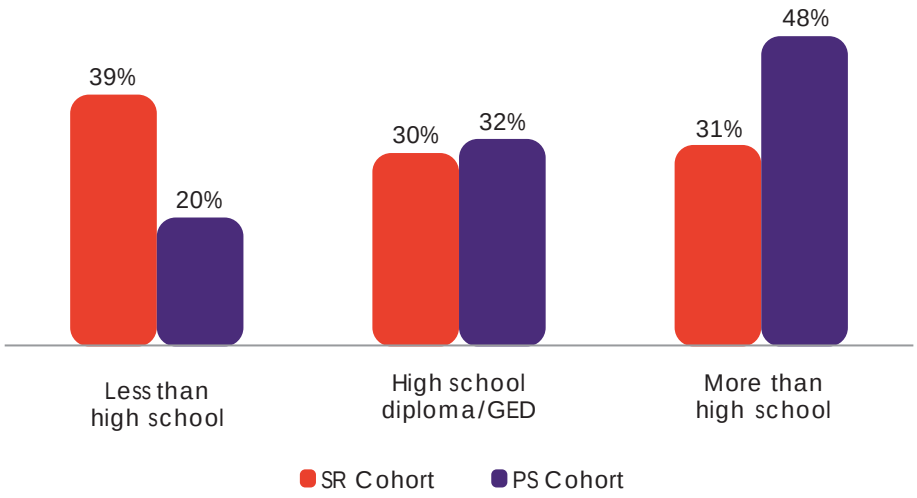
In Year 5 (2012) of the longitudinal evaluation, the majority of SR and PS Cohorts reported speaking English to their child, although 23 percent of the SR Cohort and 15 percent of the PS Cohort reported speaking mostly a language other than English to their child.

In Year 5 (2012) of the longitudinal evaluation, over three-quarters of children in the SR Cohort (77 percent) are Hispanic or Latino, followed by White (nine percent), Asian or Pacific Islander (seven percent), Multiracial (five percent), and Black or African American (2 percent). The PS Cohort was more ethnically diverse with 47 percent of children being Hispanic or Latino, 20 percent White, and 15 percent Multiracial.

E4. Child ethnicity 2012



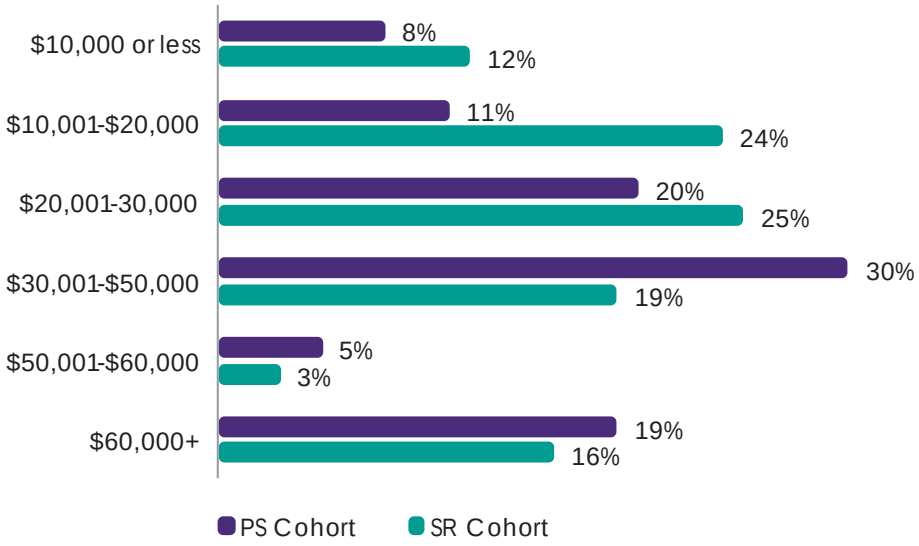
E5. Parent education 2012



Socioeconomic factors also distinguish parents in the SR and PS Cohorts. Although a similar percentage of parents in the SR and PS Cohort reported graduating from high school or earning their GED (30 percent of SR Cohort parents and 32 percent of PS Cohort parents), 20 percent of PS Cohort parents and 39 percent of SR Cohort parents reported having less than a high school education.

Differences are also observed in household incomes of the SR Cohort and PS Cohort parents. Exhibit 6 illustrates that half of PS Cohort families (54 percent) reported having a household income greater than $30,000 or higher, compared to only 38 percent of SR Cohort families. The percentage of SR Cohort families living at or below the federal poverty level was 52 percent, compared to 38 percent of PS Cohort families.

E6. Household income 2012



Since the start of the study in 2008, the SR and PS Cohorts have exhibited notable differences in demographic and socioeconomic characteristics. Specifically, the SR Cohort has a greater number of non-English speaking families that have overall lower levels of education compared to the PS Cohort. Additionally, the SR Cohort has consistently reported higher rates of poverty compared to the PS Cohort. These characteristics are important to highlight as research has shown that they can be factors associated with a child's school success. Overall, data from this section shows that First 5 San Joaquin's School Readiness programs are serving high need families that may need more intensive services related to their child's healthy development.

School Readiness in the Home

The following section presents findings from the SR and PS Cohorts who completed the Parent Survey and compares the frequency of how often parents participate in home-based school readiness activities with their child. Data is presented from the preschool, kindergarten, and 1st grade Parent Surveys to assess change over time. Whereas all PS Cohort families were enrolled in a First 5 preschool at the start of the study, SR Cohort families were receiving a school readiness service or combination of services including home visitation, family literacy (Raising a Reader), and/or playgroups. The majority of children in the SR Cohort were receiving home visitation services when they enrolled in the study (85 percent) and/or were participating in the Raising A Reader early literacy program (79 percent). One-quarter of children were participating in a playgroup (25 percent). [5]

"Well, I think that it's not just schools that are responsible for teaching our children, parents at home are responsible too."

—First 5 San Joaquin Parent

5 First 5 San Joaquin Longitudinal School Readiness Evaluation Study. Report on Baseline Findings – Year 1. October 2008.

First 5 San Joaquin School Readiness Services

Home visitation programs use a research-based curriculum that focuses on strengthening parenting, facilitating children's development, and linking families to services and support systems.

Raising a Reader is a research-based program that aims to promote family literacy. Each week books are introduced in the home, providing families with the opportunity to spend quality time together reading books.

Playgroups, which are held on the campus of an elementary school or at a community agency, are an opportunity for parents and children. They allow children to experience a variety of activities such as arts and crafts, music and movement, and books and stories, as well as the opportunity to socialize with other children. Parents learn about child development and also have the chance to learn from other parents and to support each other.

KEY FINDING:

Parents in the SR and PS Cohort report high levels of participation in home-based educational activities.

Overall, parents in the SR and PS Cohort report high levels of participation in school readiness activities. With the exception of arts and crafts, over half of parents reported participating in activities such as playing with toys or indoor games, reading to their child, and playing games outdoors at least three times in the week prior to completing the survey. As children got older, increases were seen in the percent of SR and PS parents who reported reading books to their child and involving their child in chores, whereas participation in all of the other activities decreased over time. Although decreases in participation rates may be expected due to the nature and age appropriateness of the activity (e.g., singing song, telling stories), it is also important to note that fewer parents reported playing indoor and outdoor games with their children. In comparing participation rates between the SR and PS Cohort, overall, a larger proportion of SR Cohort parents reported doing parent-child activities with their children compared to PS Cohort preschool parents.

E7. SR Cohort parent participation in preschool, kindergarten and 1st grade

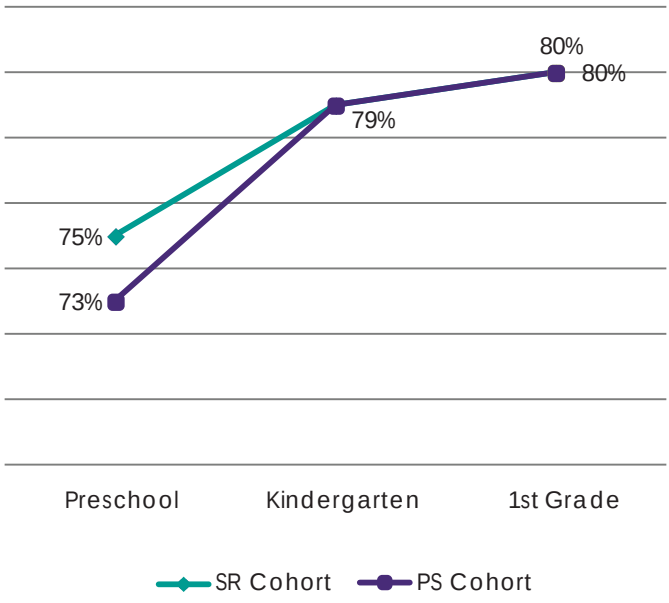
Parent Involvement Activities	Preschool (n=180)	Kindergarten (n=157)	1st grade (n=94)	Change
Played with toys/indoor games	85%	83%	80%	_
Read books	75%	79%	80%	+
Played games/outdoor	72%	69%	63%	_
Watched movie/tv together	70%	71%	65%	_
Involved in chores	66%	71%	71%	+
Sung songs	64%	71%	52%	_
Told stories	59%	67%	57%	_
Arts and crafts	38%	41%	34%	_

E8. PS Cohort parent participation in preschool, kindergarten and 1st grade

Parent Involvement Activities	Preschool (n=384)	Kindergarten (n=284)	1st grade (n=197)	Change
Played with toys/indoor games	87%	83%	78%	_
Read books	73%	79%	80%	+
Played games/outdoor	70%	68%	58%	_
Watched movie/tv together	55%	66%	61%	_
Involved in chores	68%	69%	75%	+
Sung songs	63%	55%	51%	_
Told stories	60%	58%	55%	_
Arts and crafts	32%	25%	26%	_

Parent Survey data showed that there has been an increase over time in the percent of parents in both the SR and PS Cohort who reported that they were reading with their child three or more times per week. By the 1st grade, 80 percent of SR and PS Cohort parents reported reading with their child at least three times per week.

E9. Percent of parents reporting reading to their child three days per week[6]



The data presented in this section shows that overall, parents in the SR and PS Cohort are frequently engaging with their child in a variety of educational activities, from playing with toys to playing games and reading together. Considering the demographic and socioeconomic differences between the two cohorts— which are often factors associated with school readiness —it is particularly noteworthy that the SR Cohort parents demonstrate overall higher levels of participation in parent-child activities in preschool, kindergarten, and 1st grade compared to the PS Cohort. This finding suggests that school readiness and preschool programs provide similar opportunities for parents related to home educational activities that help prepare children for school.

6 SR Cohort Preschool: 2009/2012; SR Cohort Kindergarten: 2010/2012; SR Cohort 1st Grade: 2011/2012. PS Cohort Preschool: 2008; PS Cohort Kindergarten: 2009; PS Cohort 1st Grade 2010.

Family Involvement in School

"[Preschool] helped me by knowing what to look forward to as far as what to teach them and how to teach them at home."

— First 5 San Joaquin Parent

The Parent Survey asked how often parents participate in school involvement activities with their child such as meeting their child's teacher and helping with class activities or field trips. Similar to the previous section of the report, data is presented from the preschool, kindergarten, and 1st grade Parent Survey to assess change over time.

Data show that parents were active in a range of activities with the vast majority of SR and PS Cohort parents participating in activities where they engaged with their child's teacher such as meeting with the teacher, talking to them about their child's development or behavior, and attending a parent-teacher conference. In both the SR and PS Cohort, there was an increase in the rate of participation over time (from preschool to 1st grade) for each activity, with the greatest increase seen in the percent of parents attending an open house or back to school night or attending a class event that their child was participating in. In comparing data between the SR and PS Cohort, the SR Cohort had overall higher rates of parent participation in preschool, but by 1st grade, participation rates were very similar between the two cohorts.

KEY FINDING:

Over time, SR and PS Cohort parents become more involved in their child's school.

E10. SR Cohort parent involvement in preschool, kindergarten and 1st grade

Parent Involvement Activities	Preschool (n=204)	Kindergarten (n=204)	1st grade (n=157)	Change
Met with child's teacher	93%	90%	94%	+
Talked to teacher about child's development or behavior	85%	85%	88%	+
Attended parent-teacher conference	80%	84%	89%	+
Helped with class activities or trips	61%	57%	71%	+
Attended parent advisory meeting	52%	50%	66%	+
Attended class event(s) that child was participating in	40%	45%	67%	+
Donated materials, money or goods	37%	46%	49%	+
Attended open house or back-to-school night	38%	36%	47%	+
Helped around school with repairs/ maintenance	20%	13%	17%	+

E11. PS Cohort parent involvement in preschool, kindergarten and 1st grade

Parent Involvement Activities	Preschool (n=418)	Kindergarten (n=284)	1st grade (n=197)	Change
Met with child's teacher	91%	93%	95%	+
Talked to teacher about child's development or behavior	78%	88%	91%	+
Attended parent-teacher conference	84%	93%	92%	+
Helped with class activities or trips	43%	69%	72%	+
Attended parent advisory meeting	32%	45%	60%	+
Attended class event(s) that child was participating in	27%	30%	33%	+
Donated materials, money or goods	31%	47%	47%	+
Attended open house or back-to-school night	42%	47%	52%	+
Helped around school with repairs/ maintenance	8%	5%	11%	+

SR and PS Cohort families increased their participation in their child's school in each activity assessed on the survey. Similar to the findings in the previous section, it is important to point out that the SR Cohort demonstrated similar (or in some cases higher) rates of participation in school involvement activities compared to the PS Cohort, which is noteworthy given the demographics of the population.

Children and School Readiness

"Academically she knew her sounds, knew her letters, knew her name, and she was ready to go to school. Because she had been in an environment with 23 other kids, she socially was ready for it as well...it really was the perfect way to prepare her for regular school."

— First 5 San Joaquin Parent

There are many factors that go into determining a child's readiness for school. In addition to their early childhood experiences (i.e., participation in First 5 programs, involvement in home educational activities, as described earlier in this report), a child's participation in preschool, social and emotional well-being and cognitive skills also play a role in how ready they are for school.

As part of this longitudinal study, children were observed by their preschool and kindergarten teachers using the Teacher's Child Report (TCR). The TCR, which was originally developed for the national Head Start Family and Child Experiences Survey (FACES),[7] asks teachers to rate each child in areas related to their school readiness:

- **Child Accomplishments.** This section measures a child's emerging literacy and cognitive skills.
- **Classroom Conduct.** This section of the TCR measures negative child behaviors that are known to be associated with learning problems and later grade retention.
- **Preschool Learning Behavior.** Approaches to learning are distinct sets of behaviors that indicate ways that children become engaged in classroom learning activities. This section assesses the child's ability to attend to relevant stimuli and persevere with difficult tasks.

7 Please see Appendix B for a full description of the national Head StartFACES study design and sample description.

Findings in this section focus primarily on the children in the SR Cohort, most of who were in preschool and kindergarten by the end of this study. The data is presented to show how they transitioned to kindergarten from preschool and their readiness for school in kindergarten. Preschool and kindergarten TCR data was analyzed cumulatively in order to have an appropriate n-size to report reliable findings.

Where applicable, data from the national Head Start sample is presented as a benchmark comparison. Data from the PS Cohort (when they were in preschool and kindergarten) was also presented for comparison, where applicable. Any comparison with children in the First 5 San Joaquin SR Cohort must be made cautiously as the characteristics of families from which these children come might be different.

KEY FINDING:

TCR findings show that preschool and positive social and emotional skills may be valuable for school readiness.

TCR cognitive skills findings

Findings from the emerging literacy and cognitive skills section of the TCR are reported below. At preschool, overall, there was a higher proportion of Head Start preschool children who mastered the Emergent Literacy Skills compared to SR Cohort preschoolers, as seen in Exhibit 12 below.

E12. Teacher's child report: Preschool Emergent Literacy Skills comparisons

	Preschool		
	SR Cohort (n=154)	Head Start	Difference
Can identify all primary colors by name	82.4%	90.5%	-8.1%
Writes/draws rather than scribbles	75.3%	85.4%	-10.1%
Can write his/her own first name	71.9%	86.8%	-14.9%
Can recognize most/all letters of the alphabet	46.7%	57.0%	-10.3%
Can count up to twenty	49.3%	44.9%	+4.4%

By the time the SR Cohort reached kindergarten, the vast majority of them demonstrated mastery of the Emergent Literacy Skills measured by the TCR, looking very similar to the Head Start sample. The difference in the proportions of the SR Cohort and Head Start sample that demonstrated mastery is minimal compared to the difference when they were in preschool.

E13. Teacher's child report: Kindergarten Emergent Literacy Skills comparisons

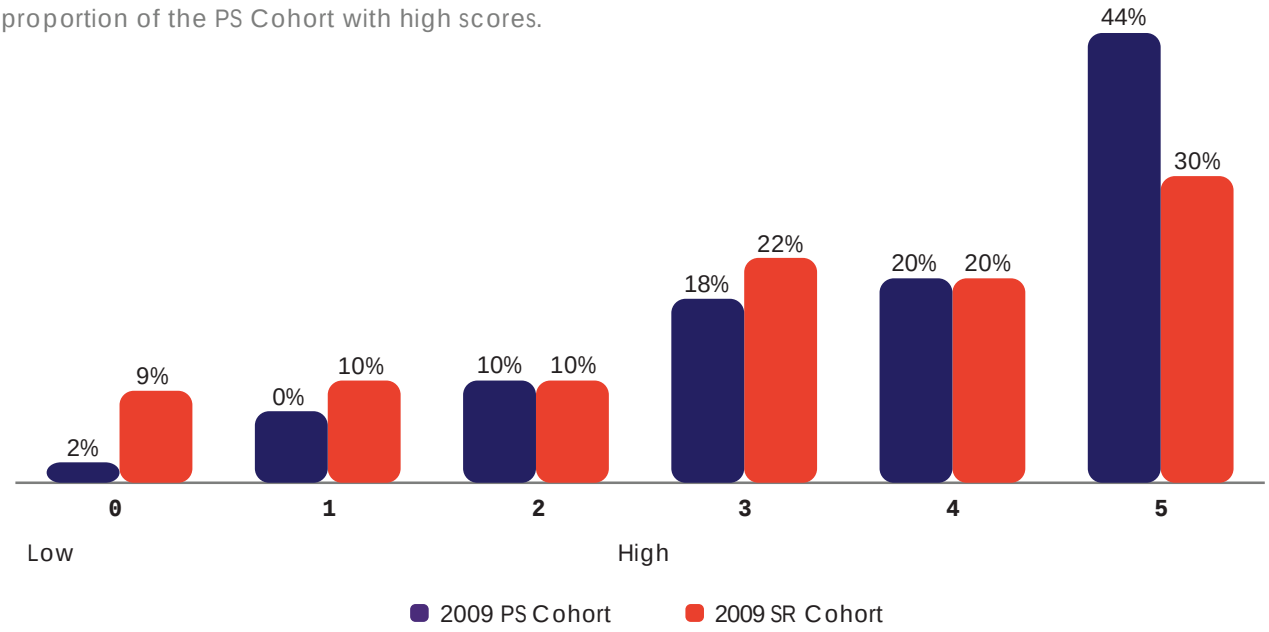
	Kindergarten		
	SR Cohort (n=141)	Head Start	Difference
Can identify all primary colors by name	95.0%	95.0%	0%
Writes/draws rather than scribbles	92.1%	95.2%	-3.1%
Can write his/her own first name	98.6%	99.1%	-0.5%
Can recognize most/all letters of the alphabet	90.0%	93.7%	-3.7%
Can count up to twenty	92.8%	95.5%	-2.7%

When looking at the net change in the proportion of children who mastered Emergent Literacy Skills from preschool to kindergarten, the SR Cohort children showed significantly more improvements compared to the Head Start sample.

An Emergent Literacy Skills subscale was analyzed in order to better understand how each child is observed to be performing along the above five skills. The Emergent Literacy Skills subscale scores range from a minimum of zero to a maximum of five, which indicates high emerging literacy. When looking at the difference in the distribution of subscale scores from preschool (Exhibit 14) to kindergarten (Exhibit 15) comparing the SR Cohort to the PS Cohort, there is a wider range of scores and more variability in preschool between the two groups, and the SR Cohort demonstrated lower Emergent Literacy Skills at preschool. The kindergarten level scores, however, show both groups with a similar distribution of scores, with the SR Cohort showing the greatest improvement.

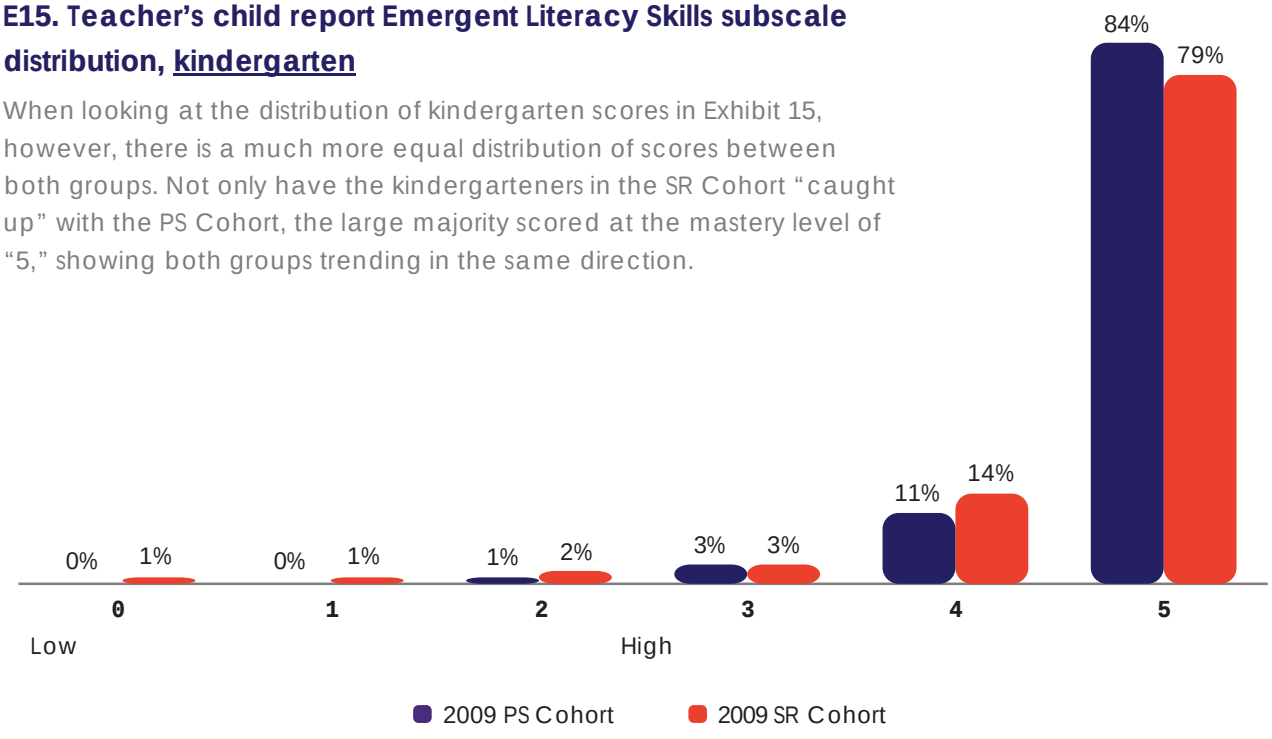
E14. Teacher's child report Emergent Literacy Skills subscale distribution, preschool

Exhibit 14 below shows a larger gap between the two groups. There is a high proportion of the SR Cohort with lower scores and a higher proportion of the PS Cohort with high scores.



E15. Teacher's child report Emergent Literacy Skills subscale distribution, kindergarten

When looking at the distribution of kindergarten scores in Exhibit 15, however, there is a much more equal distribution of scores between both groups. Not only have the kindergarteners in the SR Cohort "caught up" with the PS Cohort, the large majority scored at the mastery level of "5," showing both groups trending in the same direction.



TCR social and emotional findings

Recent studies have consistently shown that social and emotional skills at this age are one of the greatest predictors of later achievement in school. Children who demonstrate positive social and emotional skills and less problem behaviors are more likely to be successful in school and achieve benchmarks for early school success.[8,9] This section of the TCR asks teachers to report child behavior in three areas: aggressive behavior, hyperactive behavior, and withdrawn behavior. The fourteen items in this section of the TCR measures negative behaviors that are known to be associated with learning problems and later grade retention. For each of the scores, **a lower score is more desirable** – indicating fewer observed problem behaviors. Overall, SR Cohort preschool children averaged much lower scores compared to the other two groups.

Overall, the SR Cohort children's social and emotional skills were far more positive than those of the Head Start children as seen in Exhibit 16 below, which shows a comparison of the behavior problem subscales for the SR Cohort, PS Cohort, and the Head Start national sample.

8 2009, Cooper, Masi, Vick, Social-emotional development in early childhood, What every policy maker should know

9 2003, Raver, Young Children's Emotional Development and School Readiness

E16. Teacher's child report: Behavior problems subscale score comparisons

	SR Cohort	PS Cohort	Head Start
	Mean Score	Mean Score	Mean Score
Aggressive Behavior Score (0-8) Preschool	**.65**	1.0	1.5
Kindergarten	**.73**	.90	1.5
Hyperactive Behavior Score (0-6) Preschool	.77	**.70**	1.4
Kindergarten	**.73**	.80	1.3
Withdrawn Behavior Score (0-14) Preschool	**1.3**	**1.3**	2.5
Kindergarten	**1.1**	1.2	1.5

"[My son] learned the alphabet, numbers, colors, and shapes. And, more than anything, he learned to be together with the other children."

— First 5 San Joaquin Parent

TCR learning behavior findings

The items in the Preschool Learning Behavior section of the TCR comprise the Persistence/Attention subscale, which assesses the child's ability to attend to relevant stimuli and to persevere with difficult tasks through their skills in attention, persistence and frustration tolerance. Young children's approaches to learning skills as measured by this subscale are critical early behaviors that help to establish later productive learning and study habits. **For this subscale a higher score is more desirable**. When examining children's preschool and kindergarten learning behavior, SR Cohort and PS Cohort children scored similarly, and both groups scored better than Head Start (Exhibit 17).

E17. Teacher's child report: Persistence/Attention subscale comparisons

	2012 SR Cohort Preschool (n=154)	2008 PS Cohort Preschool (n=265)	Head Start
	Mean Score	Mean Score	Mean Score
Preschool Persistence/Attention	15.1	15.2	13.6
Kindergarten Persistence/ Attention	15.1	15.1	13.6

Overall, when looking at longitudinal findings between preschool and kindergarten, it appears that **preschool attendance and social and emotional skills** are key factors for school readiness. The narrowing of the gap in cognitive skills (Emergent Literacy scores) between preschool and kindergarten among children in the SR Cohort was significant. As seen in the Family Characteristics section of this report, families in the SR Cohort showed the highest need based on parent education levels, household income and poverty levels, specifically in comparison to the PS Cohort. That disparity was reflected in the cognitive scores at preschool. Their social and emotional skills, however, were comparable to the PS Cohort and better than Head Start. By kindergarten, after completing preschool, the children in the SR Cohort caught up with their PS Cohort counterparts in their cognitive Emerging Literacy Skills demonstrating their readiness for school.

School-Based Outcomes

"I've always been a strong believer that if they go to preschool before kindergarten, then they're more ready and more successful later on."

— First 5 San Joaquin Parent

One of the goals of this five-year longitudinal study is to discover how children in the PS Cohort are performing in school by the time they reach the third grade. All of the children in the PS Cohort were enrolled in a First 5-funded preschool at the start of the study. This section examines their progress and achievement using school-based data, including descriptive data for free and reduced priced lunch, Individual Education Program (IEP), English Learner status, absenteeism, and outcome data for the CELDT (California English Language Development Test), grade reports, and CST (California Standards Test). For this data, the PS Cohort is compared to children who did not attend preschool, and in some cases with the county and state.

KEY FINDING:

Findings from school-based data suggest that children who attended a First 5 preschool are performing better or at the same level than other students in several areas related to school success.

Third grade school district data

Across all three groups — the PS Cohort, Comparison Group and San Joaquin County — the majority of the children qualify for free/reduced lunch.[10,11] The PS Cohort has the largest proportion of children who are eligible for the free/reduced school lunch program. Seven percent of the PS Cohort children had an IEP in the third grade compared to ten percent in the other two groups. The PS Cohort has the highest proportion of English Language Learners at 34 percent. Notable data in this table is the average number of days absent from school. Children in the PS Cohort had a lower average number of absent days compared to the Comparison Group, which is a trend that has been consistent for the PS Cohort since the first grade. Also the grade retention rate of the Comparison Group is about twice that of the PS Cohort group.

10 The free-reduced price meal program is a part of the National School Lunch Program which is a federally assisted meal program operating in over 100,000 public and non profit private schools and residential child care institutions. It provided nutritionally balanced, low-cost or free lunches to more than 31 million children each school day in 2011. Eligibility for a free or reduced price meal is based on household incomes at 130% to 185% of the Federal Poverty level.

11 The children in the Comparison Group did not attend preschool.

E18. School district data for third graders

School district variables	PS Cohort (n=242)	Comparison Group (n=174)	San Joaquin County
Qualify for free/reduced lunch	**71.7**	56.3	61.3
Does child have IEP	7.0	**10.3**	9.8
Is child an English Language Learner	**34.3**	25.1	30.7
Average number of days absent	**4.6**	6.5	—
Grade retention	7.4	**15.1**	—

Among those students who were retained, 50 percent were Kindergarteners in the Comparison Group compared to 13 percent in the PS Cohort group. Twenty percent were retained in the first grade from the Comparison Group compared to 57 percent in the PS Cohort group.

E19. Percent of students retained by grade (Out of those retained)

	PS Cohort	Comparison Group
Kindergarten	13.0	50.0
1st Grade	56.5	20.0
2nd Grade	26.1	26.7
3rd Grade	4.3	3.3

Third grade CELDT data

A child who is designated as an English Language Learner takes the CELDT until he/she is considered proficient. As shown in Exhibit 20, English Language Learners in the PS Cohort and Comparison Group scored similarly at the Advanced and Early Advanced levels with 34 percent of the PS Cohort scoring at those levels and 39 percent for the Comparison Group. Over half of the PS Cohort children scored at the intermediate level compared to less than half in the other two groups; and the PS Cohort had the smallest percentage of children in the beginning and early intermediate levels compared to the other groups.

E20. California English Language Development Test (CELDT) data for third graders

CELDT assessment levels	PS Cohort (n=95)	Comparison Group (n=49)	San Joaquin County
Beginning	1.1	12.2	8.0
Early Intermediate	12.6	10.2	17.0
Intermediate	52.6	38.8	45.0
Early Advanced	27.4	28.6	24.0
Advanced	6.3	10.2	6.0

Student grade reports

Student progress reported by teachers in spring 2012 was collected on all children in the PS Cohort and the Comparison Group in the areas of language arts and math. Although each school district reports on student progress differently, reported progress outcomes were adjusted and aggregated to three overall levels: Excellent/Advanced, Satisfactory/Proficient and Needs Improvement/Below Basic.[12]

E21. Overall student progress in language arts based on grade reports for third graders

Progress levels	PS Cohort (n=119)	Comparison Group (n=163)
Excellent/Advanced	**26.1**	6.1
Satisfactory/Proficient	61.3	72.4
Needs Improvement/Below Basic	12.6	21.5

E22. Overall student progress in math based on grade reports for third graders

Progress levels	PS Cohort (n=110)	Comparison Group (n=163)
Excellent/Advanced	**31.8**	11.0
Satisfactory/Proficient	54.5	74.8
Needs Improvement/Below Basic	13.6	13.5

12 This was done specifically for the purpose of this longitudinal study and should not be translated to be compared to students not participating in the study.

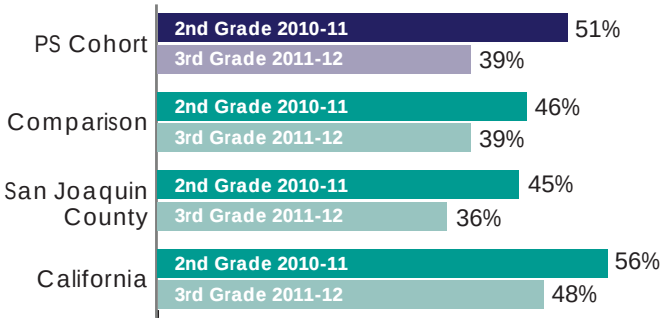
As the two exhibits show, overall it appears that there were more children in the PS Cohort who demonstrated excellent/advanced progress by the end of the third grade than the Comparison Group (children who did not attend preschool) in both language arts (26 percent versus six percent) and math (32 percent versus 11 percent). This trend has been consistent for these groups since the first grade when these data were first collected for the longitudinal study.

Third grade CST outcomes

The California Standards Tests (CST) is the statewide standardized test that is administered to all students attending a public school beginning in second grade. Results are widely reported in two main areas, English Language Arts (ELA) and Mathematics (Math), and are based on how well students achieved identified state-adopted standards.

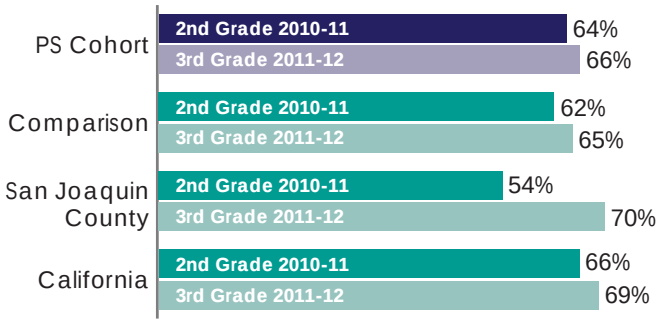
While at second grade a larger proportion of the PS Cohort demonstrated proficiency compared to the Comparison Group and the county, by the third grade it appears that an equal proportion of PS Cohort and Comparison Group students demonstrated ELA proficiency.

E23. Percent of students at or above "Proficient" on CST ELA



For CST Math, a slightly higher proportion of the PS Cohort demonstrated proficiency over the Comparison Group.

E24. Percent of students at or above "Proficient" on CST math



KEY FINDING:

Children in special subgroups appear to have benefitted the most from participating in a First 5 preschool program.

Although overall CST improvements and achievements appear to be subtle between the groups, key subgroups within the PS Cohort appear to demonstrate higher gains compared to the Comparison Group. In the following exhibits, children in the PS Cohort who come from families that are more economically disadvantaged (defined here as families that qualify for a free/reduced priced lunch) demonstrated more proficiency compared to similar families in the Comparison Group.

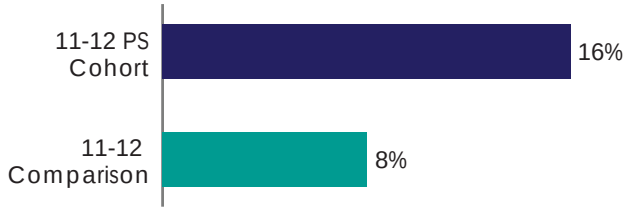
E25. Percent of high need 3rd grade students at or above "Proficient" on CST ELA

E26. Percent of high need 3rd grade students at or above "Proficient" on CST math

Similarly children designated as English Language Learners in the PS Cohort demonstrated higher gains compared to the Comparison Group.

E27. Percent of English Learner 3rd grade students at or above "Proficient" on CST ELA

E28. Percent of English Learner 3rd grade students at or above "Proficient" in CST math



Overall, children in the PS Cohort appear to have benefited from attending a First 5 preschool. Compared to children who did not attend preschool, **they have lower rates of absenteeism in school, lower overall rates of grade retention, and better classroom performance based on teacher-reported grade reports in the areas of language arts and math**. On the California Standards Test (CST) the PS Cohort outperformed the Comparison Group and the County in the second grade and by the third grade, the PS Cohort and Comparison Group performed equally in ELA and the PS Cohort had a slight edge over the Comparison Group in math. When looking at key subgroups, however, **students with high needs and English Language Learners in the PS Cohort clearly outperformed similar students in the Comparison group**.

Recommendations

- **Continue to incorporate activities into school readiness and preschool programs that encourage parent involvement in their child's education.** Recent research shows that students with involved parents, regardless of family income or background, are more likely to earn higher grades and test scores; attend school regularly; have better social skills; and graduate and go on to postsecondary education. First 5 San Joaquin school readiness and preschool programs encourage parent participation through home learning activities, including family literacy; parent workshops; parent advisory groups; and participation in their child's preschool. Data shows that parents in the SR and PS Cohort report high levels of participation in home-based education activities and reported becoming more involved in their child's school over time. It is recommended that parent involvement activities continue to be incorporated at both the school readiness and preschool levels, giving parents the tools and resources they need to continue to be involved in their child's education even as their child grows older.
- **Continue to focus on early intervention programs that target high need families with children 0-3.** School readiness services target high need families with very young children in San Joaquin County. Services include home visitation, family literacy, playgroups, health insurance screenings and developmental screenings. School readiness services also aim to connect families to needed services and supports. At least 42 percent of children who received school readiness services when they were 0-3 years (children in the SR Cohort) went on to attend a preschool program in San Joaquin County. First 5 San Joaquin should consider continuing to fund programs that target high need families with very young children as an opportunity to connect with families and get them exposed to services early. In addition to providing the above mentioned services, programs should focus on educating families on early childhood education, including the importance of high quality preschool programs as a means for preparing their children for school. In turn, these high need families will be aware of available services, understand what it means for their child to be ready for school, and may be more likely to enroll their child in a preschool program.
- **Increase efforts to target high need families for preschool programs.** Data from this study shows the economic and educational benefits of investing in preschool. Specifically, children who attended preschool (PS Cohort) had lower rates of absenteeism and lower overall rates of grade retention which are associated with lower costs for schools. Additionally, when looking at key subgroups, students with high needs and English Language Learners in the PS Cohort outperformed similar students in the Comparison Group (no preschool). Therefore, it is imperative to reach out to and enroll families who have the highest socioeconomic needs in the county. Approaches to targeted enrollment for high need families in preschool include: funding preschool programs in communities with API scores of 1-3; door-to-door outreach; outreach and advertisement at locations such as WIC, the county welfare department, Valley Mountain Regional Center, hospitals, and pediatricians' offices; and word of mouth/parent-to-parent communication.

- **Emphasize the importance of learning and mastering positive social and emotional skills early to parents and early educators.** To parents and early educators, funded programs should focus on emphasizing the importance of learning and mastering positive social and emotional skills early (i.e. preschool or earlier). Research studies and evidence from this longitudinal study show those who master social and emotional skills prior to entering school are more likely to be successful in school. More recent research shows that for many children, academic achievement in their first few years of schooling appears to be built on a foundation of children's emotional and social skills. They are more likely to be ready to learn literacy, language and math cognitive skills. Examples of benchmark social and emotional skills include the ability to self-regulate their behavior, interact with peers and adults, follow directions, control negative emotions and get along with others. Messages geared towards parents related to these behaviors may help emphasize the importance of social and emotional skills in the home and reinforce what is learned in preschool and school readiness programs. First 5 programs that may have contributed to the successes demonstrated in this longitudinal study include home visits, culturally sensitive parenting workshops, promoting preschool attendance, and providing access to high quality preschool classrooms.

Research Recommendations

- **Use research–based assessment/ measurement instruments with reliable and comparable benchmark data.** When conducting an evaluation study such as this school readiness longitudinal study it is important to select measurement instruments that have reliable and comparably valid benchmark data. When this study began, both the TCR and DRDP-R (Desired Results Developmental Profile-Revised) were used to measure domains related to school readiness. By the middle of the study, the TCR proved to be more useful for a longitudinal study as it had benchmark data that came from a national Head Start longitudinal study and also allowed for a more focused analysis of social and emotional skills, which, as described above, are important to understand. It is also worth noting that the DRDP-R was not originally designed to be an evaluation or research instrument, rather a classroom assessment tool for preschool and kindergarten teachers.
- **In order to assess success in school it is important to look at benchmarks and indicators other than standardized test results such as the CST.** Although standardized test results are common benchmarks for academic success, there are other benchmarks and indicators that also describe positive or negative school participation and success such as absenteeism, grade retention, and classroom grade/progress reports. It is also useful to look at subgroup performance on standardized tests. When CST performance for English Language Learners and low income children was examined, a notable difference was seen between those who attended preschool and those who did not. This finding suggested that key subgroups of high need families may benefit more from attending preschool.

Appendix A. Methods

Data collection

During the final year of the study, data was collected from the children's parents, teachers, schools, and school districts. Data from parents provided information on family backgrounds and home environment, as well as involvement in school readiness, preschool programs and home-based educational and learning activities. Data from teachers provided information about the child's development across several domains, including child classroom accomplishments, classroom behavior, behavior problems, and positive learning behaviors. School level data was collected to inform the quality level of the preschool classroom (entry, advancing, or PFA). Finally, school district level data, such as children's attendance records and standardized test scores, was also collected. Data from parents and teachers was collected or obtained in the spring of 2012, whereas school district level data was collected in the summer of 2012 due to the availability of California Standards Tests (CST) and California English Language Development Test (CELDT) scores.

A key design feature was the use of measures from large-scale national studies, which makes it possible to compare First 5 San Joaquin data with national benchmarks for some survey items. Changes over time that exceed the norms provide a means for determining whether programs had any impact, while testing the relationships between program participation and child outcomes will provide some support for the notion that the programs were responsible for changes in child outcomes over and above the norms. The measures are described below.

Parent survey

Parents of children in the SR and PS Cohort who were participating in a school readiness program, preschool, kindergarten, first grade, second grade, or third grade at the time of Year 5 data collection were asked to complete a brief parent survey (available in English and Spanish). The survey was distributed by school readiness staff, sent home with the child in school, or mailed to the parent. In some cases, the parent survey was completed over the telephone. In each of the versions of the survey (school readiness, preschool, kindergarten, first grade, second grade, or third grade) parents were asked about family structure, language, and home environment, as well as the parent's participation and involvement in their child's education.

Teacher's child report (TCR)

The TCR was developed for the Head Start Family and Child Experiences Survey (FACES) using items from several well-known rating scales, and asked teachers to rate each child in five areas related to their school readiness, as follows:

1. Child classroom accomplishments such as Emerging Literacy and motor skills;
2. Classroom behavior and behavior problems including aggressiveness, hyperactivity, and withdrawal;
3. Preschool learning behaviors such as task persistence and paying attention;
4. Child experiences and kindergarten transition (kindergarten TCR only); and
5. Health and developmental conditions or concerns (kindergarten TCR only).

The TCR is completed by the teacher for every child in the SR or PS Cohort who is in preschool or kindergarten and requires about 5-10 minutes per child.

Preschool quality criteria

First 5 San Joaquin funded preschools must meet one of three levels of quality criteria as part of a tiered reimbursement system. The three levels include entry level to PFA quality criteria, advancing level to quality criteria, and PFA level of quality criteria.

First 5 San Joaquin Preschool Requirements

- All classrooms must use an approved curriculum and staff must have a Child Development permit;
- Staff to child and teacher to child ratios must be 1:8 or 1:10;
- Classrooms with a staff to child ratio of 3:24 must have a minimum of one Master Teacher with a Teacher Permit and two Assistant Teachers with Assistant Permits;
- Classrooms with a teacher to child ratio of 1:10 must have a minimum of one Master Teacher with a Program Director Permit and 24 ECE units and one Assistant Teacher with a Teacher Permit and an Associate's degree with 24 ECE units.

School district level data

Data from several school districts provided information regarding children's attendance, enrollment in free/reduced price lunch, retention, and their CST and CELDT test scores. This data represented the cohort of children in the first, second, and third grades compared to the group of children who did not attend preschool and to San Joaquin County children overall. All data was obtained, with consent, from the school districts. San Joaquin County data came from the California Department of Education and represented the current year of the study.

Data analysis

Data was analyzed annually using both descriptive and inferential statistical methods. Year 5 data was compared to previous years using chi-square, t-test, and ANOVA techniques. The general analytic technique involved testing relationships between a set of independent variables related to the services and programs in which children participated and a set of key parent and child outcome (dependent) variables. Inferential analytic methods tested the statistical significance of relationships between parent demographic backgrounds and parent and child outcomes, as well as relationships between the type and amount of involvement in school readiness and preschool programs with both the demographic backgrounds and child and parent outcomes. These analyses look at the contribution made by children's involvement in school readiness programs in explaining variations in the outcome variables of interest, to determine the extent to which involvement in school readiness or preschool programs lead to higher or lower levels of outcomes or changes over time. This report includes a cross-sectional examination of the Year 5 data and makes comparisons with previous years in order to answer the questions outlined in the introduction of the report.

Study limitations

Strengths of the evaluation included the use of multiple instruments to validate findings, a sample size large enough to account for attrition and still provide sufficient statistical power, and the collection of data from several different sources. However, in the inherent tradeoffs made by any evaluation, there are some important limitations that must be considered when interpreting the findings, as follows:

- Although parents were told that there were no right or wrong answers, that their responses were confidential and to be as honest as possible, we cannot completely eliminate response bias which sometimes occurs when respondents provide a socially desirable response or a response that they thought was favorable or "correct."
- Since the TCR is a teacher self-report instrument, ratings of individual children may not only depend on the children's actual skill levels, but also on the particular classroom or teacher conducting the ratings. There may be a number of teacher rater effects, including having "stricter" or more lenient standards, or having a generalized "halo" regarding each child's abilities (in which teachers may rate children depending on their attitude towards the individual child). Teachers may also misunderstand culturally-based behavior by children as inappropriate or negative, and there may be language barriers between the teacher and child.
- Items asking respondents to remember events that occurred up to one year in the past may be subject to poor memory or selective recall bias, i.e. recalling more favorable events.
- The school readiness longitudinal study design is correlational, using evidence from program participation and teacher and parent reports to determine changes from year to year in children and parents and then linking these changes to program factors. This process, along with using national norms for comparison purposes, builds a circumstantial case for evidence that any changes were due to the funded programs and not to other factors, such as family backgrounds. However, without a randomized control trial design, we cannot be sure the changes are due only to program participation. Nevertheless, this design allows for sufficient methodological rigor to build a strong case for the contribution of funded programs to any changes in parent and child outcomes across time.

Response rates

Response rates are defined as the percentage of the originally drawn sample for which complete data were collected.[1] The main reason for not being able to collect data was that parents did not return the surveys. In some cases the parents had moved out of the county or could otherwise not be located. It should be noted that, even if they were no longer enrolled in the school readiness or preschool program, the evaluation team still attempted to locate them to mail a survey or to conduct the survey over the telephone. The overall response rates were in line with averages for studies that utilized data collected from individuals.[2]

The total number sampled at the beginning of the study took into account anticipated attrition each year. The desired sample size for the end of the sample was 225 for each cohort. Exhibit 31 shows the response rate from year to year. Exhibit 32 shows the total study response rate based on the desired sample size of 225 by the end of the study, which was 84 percent for each cohort.

1 The response rates for the data collection were based on the number of completed parent surveys.

2 *Survey response rate levels and trends in organizational research.* Human Relations August 2008 61: 1139-1160. Average response rate for studies that utilized data collected from individuals was 52.7 percent with a standard deviation of 20.4.

E29. Yearly response rates by cohort

	Total number sampled/ consented	Number with completed data 2008	2008 Response Rate	Number with completed data 2009	2009 Response Rate	Number with completed data 2010	2010 Response Rate	Number with completed data 2011	2011 Response Rate	Number with completed data 2012	2012 Response Rate
SR Cohort											
School readiness	483	399	82.6%	228	68.4%	74	66.7%	15	82.4%		125.3%
Preschool	—	—		45		84		52		23	
Kindergarten	—	—		—		24		65		68	
First grade	—	—		—		—		18		76	
Second grade	—	—		—		—				21	
PS Cohort											
Preschool	485	415	85.6%	33	73.3%	—	65.5%	—	54.3%	—	176.0%
Kindergarten	—	—		271		33				—	
First Grade	—	—		—		166		25		—	
Second grade	—	—		—		—		83		38	
Third grade	—	—		—		—				152	

E30. Longitudinal study response rates by cohort

	Desired Study Sample Size	Actual Study Sample Size	Study Response Rate
SR Cohort	225	188	**83.6%**
PS Cohort	225	190	**84.4%**

Appendix B

There are several acronyms and terms used in this report that are specific to First 5 San Joaquin, School Readiness, preschools, evaluation and longitudinal research. These are listed below.

E31. Acronyms used in this Report

Acronym or Term	Definition
SR Cohort	School Readiness Cohort
PS Cohort	Preschool Cohort
DRDP-R	Desired Results Developmental Profile – Revised
TCR	Teacher's Child Report
ASQ	Ages and Stages Questionnaire
RAR	Raising A Reader
SR Coord	School Readiness Coordinator
CST	California Standards Test
CELDT	California English Language Development Test
ELL	English Language Learners
ELA	English Language Arts
IEP	Individualized Education Plan

Appendix C.
The Head Start FACES Longitudinal Study

Study design

The Head Start Family and Child Experiences Survey (FACES) provides longitudinal data on the characteristics, experiences, and outcomes of children and families served by Head Start as well as the characteristics of the Head Start programs that serve them. FACES is a study with a nationally representative sample of Head Start children and their families. Data collection for the FACES 2006 cohort includes a nationally representative sample of approximately 3,315 newly entering 3- and 4-year-old children and their families from 60 Head Start programs. To participate in Head Start, children must come from families within 130% of the Federal Poverty Level or they must have been identified with a special need.

Description of families in FACES 2003

The children primarily fell into three racial/ethnic groups: Hispanic/Latino (35.3 percent), African American, Non-Hispanic (33.0 percent) and White (22.8 percent). Sixty-three percent of the children were 3 years old or younger and 37 percent were 4 years old or older. About half of the children were female (48.6 percent) and half were male (51.4 percent). The percentage of children whose parents reported speaking to the child primarily in a non-English language at home was nearly 30 percent. In FACES 2006, 36.8 percent of mothers had less than a high school diploma. Only six percent had a college degree or higher.

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