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## Educational Outcomes for Preschool for All Participants in Redwood City School District

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### Background

Partners at the San Mateo County Office of Education, which administered the *Preschool for All* (PFA) program, and Redwood City School District (RCSD) approached the John W. Gardner Center for Youth and Their Communities (JGC) at Stanford University in 2009 to conduct a study of the early elementary school outcomes of PFA graduates. This study would build on an earlier Applied Survey Research (ASR) study of school readiness among PFA graduates in San Mateo County. That study found that PFA graduates were: (1) more ready for kindergarten than their RCSD kindergarten classmates who had not attended preschool and (2) equally ready for kindergarten as classmates with other preschool experiences (Applied Survey Research, 2009).

PFA San Mateo County was established in 2004 as a five-year demonstration project aimed at reducing the achievement gap by supporting high-quality, targeted preschool programs for three- and four-year old children. The program was supported by extensive preschool research suggesting that one of the most effective public policies for improving outcomes for low-income, minority, and otherwise high-risk children is increasing their access to high-quality preschool programs. Studies have shown that participating in these programs has a positive effect on students in the short-term—when they enter kindergarten—and this is especially so for disadvantaged students. These short-term effects include performing well on math and reading tests and a reduction in kindergarten retention (Magnuson, Meyers, Ruhm, & Waldfogel, 2004). Positive short-term effects are also present for high-risk children attending publicly funded preschool programs (Lee, Brooks-Gunn, & Schnur, 1988; Lee, Brooks-Gunn, Schnur, & Liaw, 1990). In the long-term, children participating in a high-quality private preschool program are shown to exhibit positive outcomes such as high school completion, college attendance, earnings, and reduced involvement with crime. Children attending state-run preschool programs also exhibit similar outcomes, though these varied by race (Garces, Thomas, & Currie, 2000).

This brief examines elementary school outcomes for PFA participants and explores which PFA and RCSD supports were associated with stronger educational outcomes for these children in early elementary school. With the extensive preschool literature in mind, particularly the finding that preschool attendance has the greatest effects for low-income and minority children, we address the following questions:

1. How did the performance of PFA participants compare to other RCSD students on early elementary school outcomes?
2. Which PFA or RCSD supports were associated with stronger in-school outcomes for PFA participants?

Using the Youth Data Archive (YDA), we relied on existing longitudinal data to link individual student records from three PFA cohorts to their records in RCSD in order to examine these questions.

## Preschool for All San Mateo County

With an aim of ensuring “access for all three and four year olds to high quality care and education that promotes success in school and life” (San Mateo County Office of Education, n.d.), *Preschool for All* San Mateo County targeted the county’s highest-need children and families by serving low-income neighborhoods. PFA San Mateo County contracted with public school districts, non-profit agencies, and family-based child care providers to offer preschool services. In order to ensure program quality, PFA set quality standards and supported partners in meeting these standards with funding for professional development, program assessment and quality improvement. PFA classrooms were capped at 24 children, and had a minimum staff-child ratio of 1:10. Teachers were required to have a college degree and special training in early childhood education. Curricula were developmentally appropriate and individualized to students. PFA also required developmental assessments and screenings of all children, promoted family engagement, supported home languages and cultures, and reserved 10% of its slots for children with special needs.

## Demographics of PFA Attendees

Between the 2006-07 and 2008-09 school years, 2,084 children attended PFA in the county. Exhibit 1 illustrates PFA participants, by PFA year, who attended kindergarten and first grades in RCSD. Of these, 876 moved directly from PFA to RCSD as kindergartners. Of these kindergartners, we tracked 497 through first grade in RCSD. This analysis focuses on the characteristics and outcomes of these 876 students and their RCSD classmates.

**Exhibit 1: RCSD Enrollment of PFA Students**

Year	PFA Students		
	Attended PFA	Attended Kindergarten in RCSD	Attended First Grade in RCSD
2006-07	614	272	215
2007-08	701	289	282
2008-09	769	315	N/A
Total	2,084	876	497

Notes: For students attending PFA for multiple years, PFA cohort was defined as their final year in PFA. Data are listed as “N/A” where a cohort had not yet entered this grade.

Because PFA was a targeted program, demographic differences between participants and non-participants are expected. Indeed, PFA participants were more likely to be Latino, have a parent who did not complete high school, be an English learner, and participate in the Free or Reduced Price Lunch program (FRPL) once they enter elementary school (Exhibit 2).

**Exhibit 2: Demographics of RCSD Kindergarteners by PFA Attendance, 2006-07 to 2008-09**

	Attended PFA	Did Not Attend PFA
English Learner	82%	49%
Free or Reduced Price Lunch	68%	44%
Ethnicity		
Latino	93%	59%
White	5%	30%
Other	3%	11%
Parent Education		
Some College	8%	34%
High School Graduate	40%	34%
Not a High School	49%	29%
No Data	3%	2%
<i>Number of Students</i>	<i>876</i>	<i>2,609</i>

We learned from other research in the Redwood City community that PFA participants were more similar demographically to children who did not attend preschool than they were to students with other preschool experiences (Applied Survey Research, 2009). From this research we also learned that 89% of kindergarteners in RCSD had some preschool experience, most commonly attending a private preschool. Unfortunately, we were not able to identify which students made up the 11% of district kindergarteners who did not attend preschool and who we know most closely resembled PFA participants. In effect, therefore, this study compared PFA participants to children who, for the most part, attended private preschool.

**Outcome Measures: Kindergarten and First Grade Report Cards**

To measure school outcomes for PFA participants, we used their kindergarten and first grade report cards to see how students fared after preschool. These report cards include a variety of measures focusing on both academic subjects and child behavior and development. This study concentrated on five subjects from the report cards: math, listening/speaking, writing, reading, and work study skills. Each subject consists of three to 18 sub-categories. For example, math is made up of 11 sub-categories, including "Uses groups of objects to represent numbers to 10," "Counts numbers to 30," and "Names days of week." Report cards are produced three times a year in RCSD. We counted a student as proficient in a subject if he or she was proficient on *all* of that subject's sub-categories in *any* of the three report card periods.

**The Proficiency Rates of PFA Graduates and their RCSD Kindergarten Classmates**

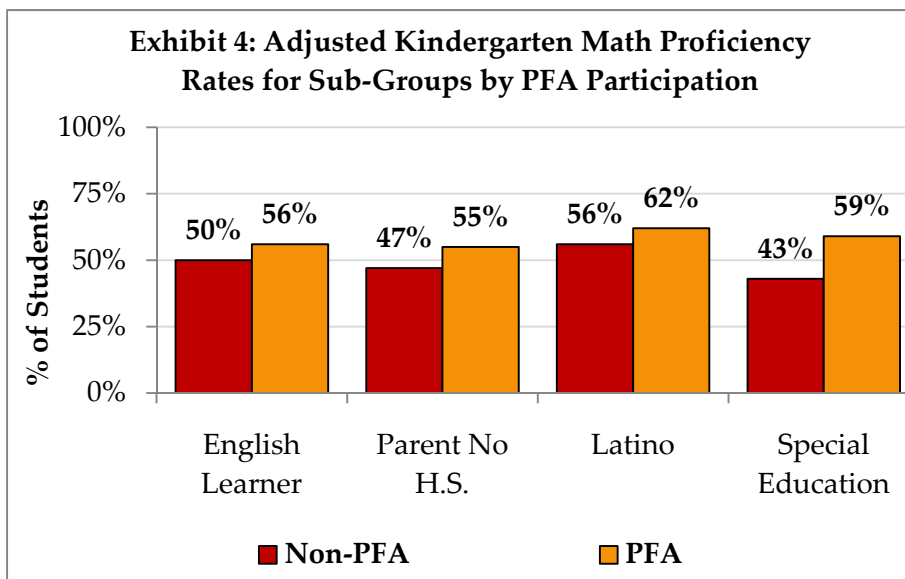
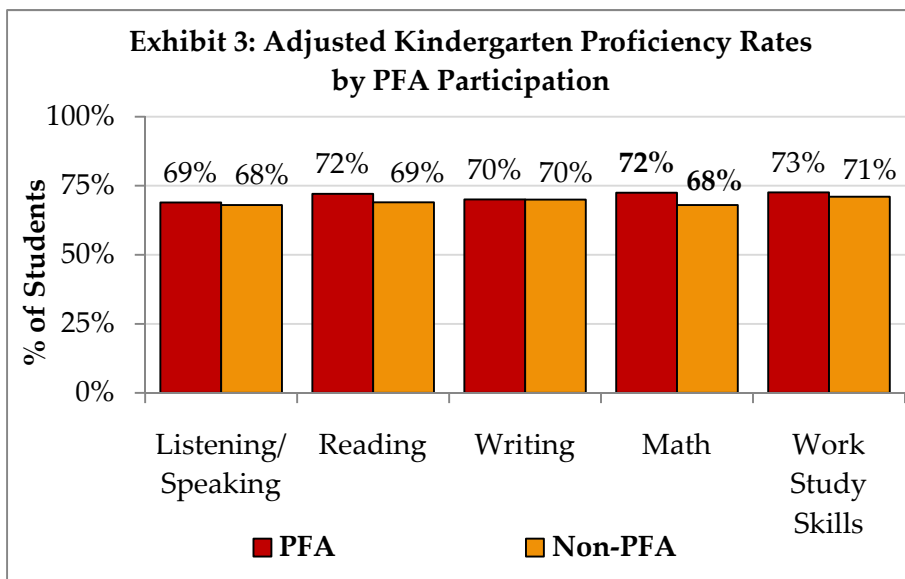
Children who attended PFA had lower raw proficiency rates than children who did not attend PFA in all five kindergarten report card subjects we examined. Because of the significant demographic differences described above, these differences in raw proficiency rates are to be expected. In order to account for these demographic differences, this study used regression analysis to produce adjusted proficiency rates for children who attended PFA. These adjusted rates allowed us to compare proficiency rates of the two groups as if they were demographically aligned.

Controlling for demographic differences, Exhibit 3 shows kindergarten outcomes by PFA participation. After adjusting for background characteristics, children who attended PFA had proficiency rates equal to those of children who did not attend PFA in listening/speaking, reading, writing, and work study skills. In math, children who attended PFA had significantly higher proficiency rates. Because of

the significant demographic differences between children who attended PFA and children who did not, we might expect children who attended PFA to underperform their non-PFA classmates. Knowing that children who did not attend PFA likely attended a private preschool further reinforces this expectation. Our finding that PFA graduates performed similarly to, or even slightly better than, their non-PFA peers in kindergarten is, therefore, quite significant and suggests that PFA plays an important role in closing the achievement gap among San Mateo County kindergarteners.

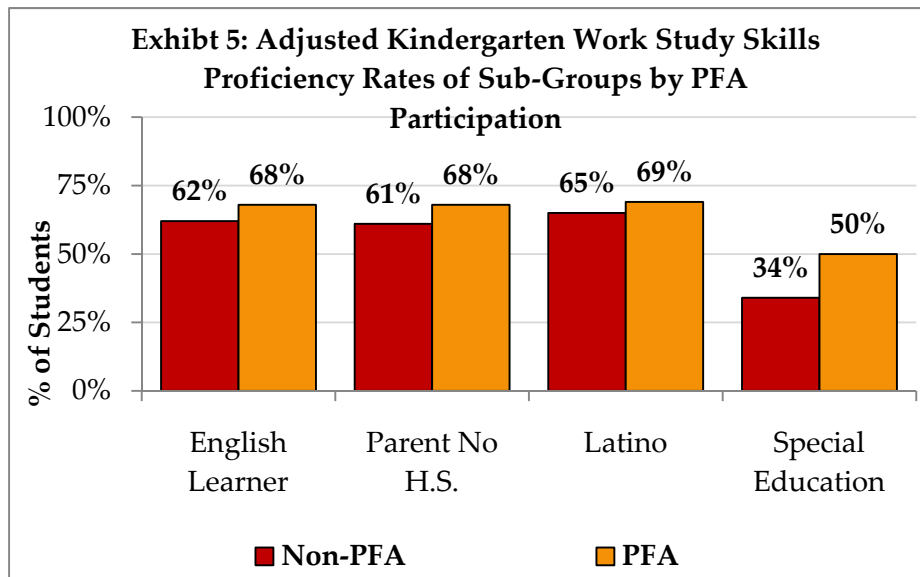
Because PFA targeted low-income and high-need children and families, we examined how outcomes differed for children with different demographic characteristics. Consistent with the literature, among the highest-need students, we found that children who attended PFA had much higher proficiency rates than children who did not attend PFA, particularly in math and work study skills (Exhibits 4 and 5). Though similar results were found for some subgroups in other subjects, we present the results here for math and work study skills where we found the largest differences in proficiency rates.

Among English learners, children who attended PFA had proficiency rates six percentage points higher in math (56% vs. 50%) and work study skills (68% vs. 62%) than English learners who had not attended PFA. Among children whose parents did not complete high school, children who attended PFA had proficiency rates eight percentage points higher in math (55% vs. 47%) and seven points higher in work study skills (61% vs. 53%).



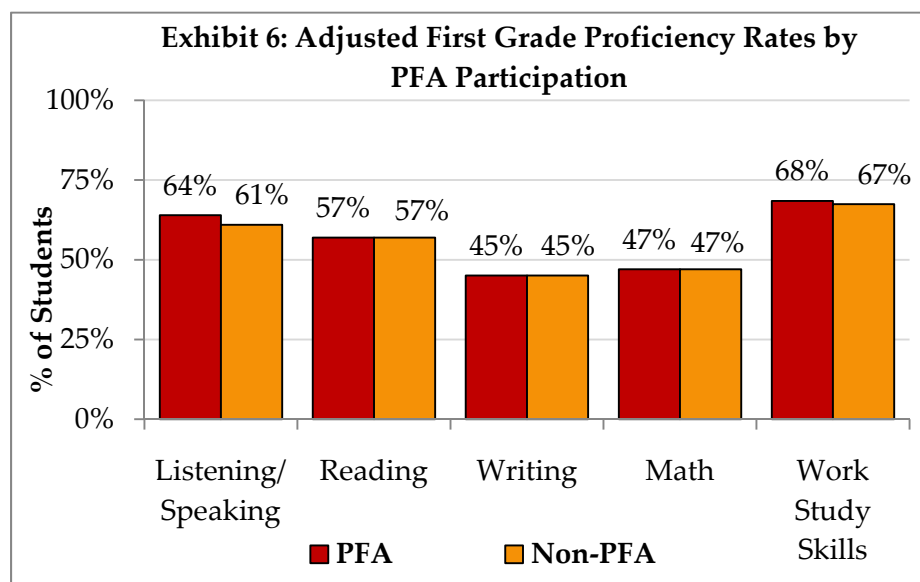
Among Latinos, children who attended PFA had proficiency rates six percentage points higher in math (62% vs. 56%) and four percentage points higher in work study skills (69% vs. 64%). Finally, children with special needs who attended PFA had math proficiency rates 16 percentage points higher in both math (59% vs. 43%) and work study skills (50% vs. 34%) than special needs children who did not attend PFA. All of

these findings were statistically significant. In other subjects, children in these subgroups who attended PFA had similar proficiency rates to their peers who had not attended PFA. These results all control for other background characteristics.



### The Proficiency Rates of PFA Graduates and their RCSD First Grade Classmates

In first grade, children who attended PFA still had lower raw proficiency rates than children who did not attend PFA in all report card subjects. As in kindergarten, when we controlled for demographic differences between these two groups of children, we found that children who attended PFA had similar proficiency rates to children who did not attend PFA in all subjects (Exhibit 6).



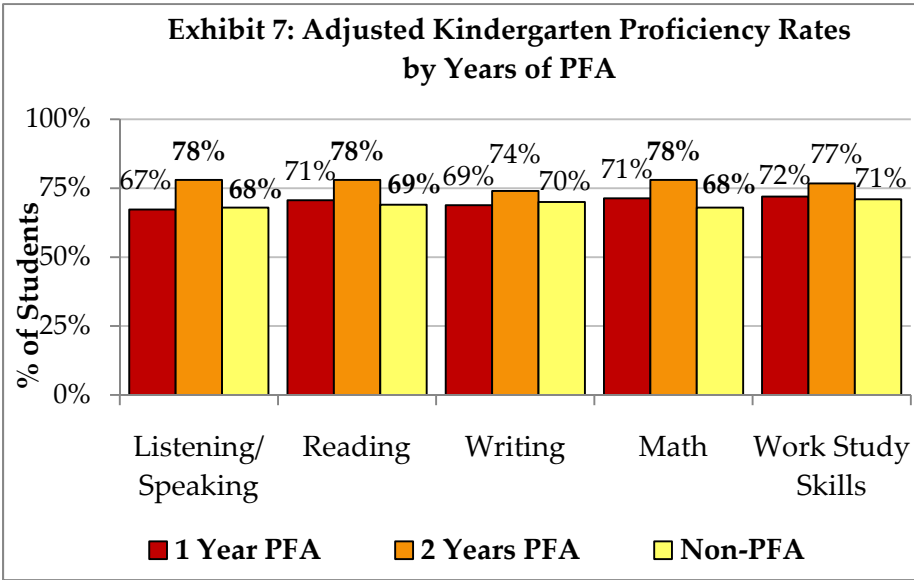
While we found that in kindergarten children who were most likely to have been targeted by PFA had significantly higher proficiency rates than their non-PFA peers, by first grade these children were performing similarly to their non-PFA peers. Only English learners who attended PFA had proficiency rates significantly higher than their counterparts who did not attend PFA. These children had proficiency rates seven percentage points higher in work study skills than English learners who did not attend PFA. In other subjects and for other subgroups, children who attended PFA performed similarly to children who did not attend PFA. This drop-off in effect may be explained by the decrease in the number of PFA participants we were able to follow to first grade. While we were able to follow 876 PFA participants into kindergarten, we were only able to follow 497 PFA participants into first grade,



as one cohort had not yet reached this grade level by the time of our analysis. Conducting the first grade analysis on a larger population of students may yield more statistically significant findings.

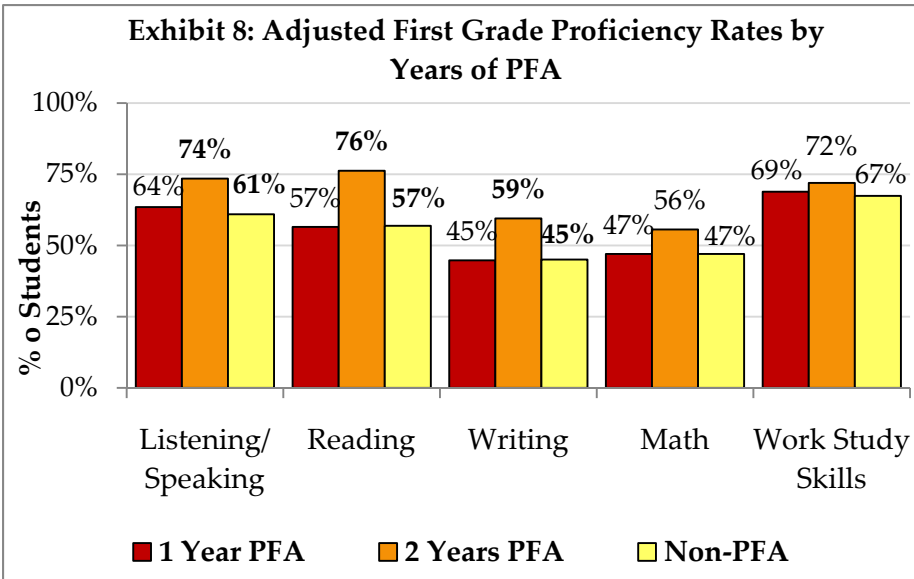
Multiple Years of PFA Attendance and Proficiency Rates

Approximately 17% of PFA participants attended the program for two years when they were both three and four years old. Exhibit 7 illustrates adjusted kindergarten proficiency rates by the number of years a child attended PFA. In all five subjects, children attending PFA for one year, at age four, had kindergarten proficiency rates that were similar to those of children who did not attend PFA. Children attending PFA



for two years, however, had proficiency rates 10 percentage points higher in listening/speaking (78% vs. 68%), nine percentage points higher in reading (78% vs. 69%), and 10 percentage points higher in math (78% vs. 68%) than children who did not attend PFA. All of these were statistically significant differences. They also had proficiency rates four percentage points higher in writing (74% vs. 70%) and six percentage points higher in work study skills (77% vs. 71%), but these were not statistically significant.

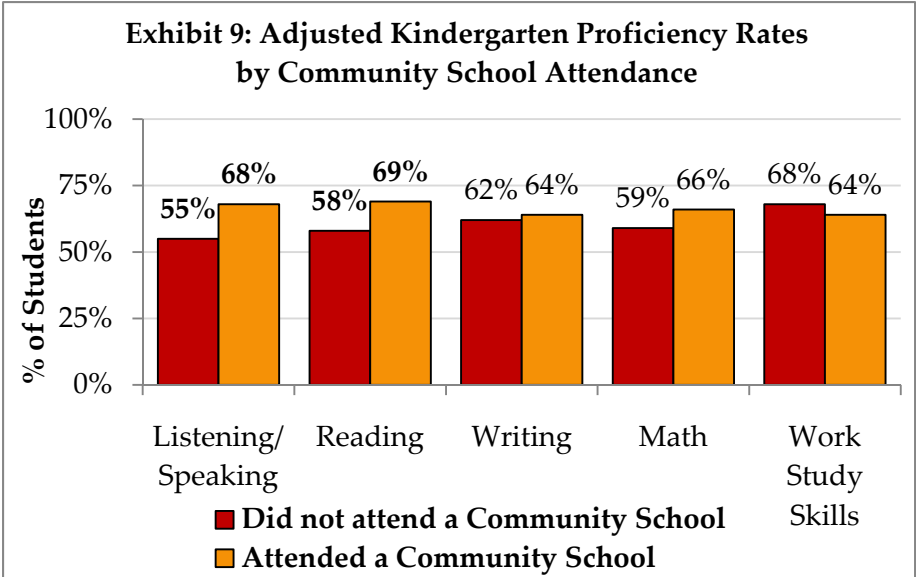
By first grade, the difference in proficiency rates of children who attended PFA for two years and children who did not attend PFA was even larger (Exhibit 8). Children who attended PFA for two years had proficiency rates 13 percentage points higher in listening/speaking (74% vs. 61%), 19 percentage points higher in reading (76% vs. 57%), and 14 percentage points higher in writing (59% vs. 45%) than children who had not attended PFA. These findings were all statistically significant. They also had proficiency rates nine percentage points higher in math, and five percentage points higher in work study skills, though these findings were not statistically significant.



Community School Attendance and Proficiency Rates

Thirty-nine percent of PFA participants and 24% of RCSD kindergarteners overall attended one of RCSD’s three elementary community schools. Community schools offer integrated family and child services not usually offered by traditional elementary schools and which often resemble the wrap-around family and social services offered by a high-quality preschool program (including PFA). In RCSD, these services vary across the community schools but include health services, parent engagement, social supports, and out-of-school-time learning opportunities. RCSD community schools are located in the district’s lowest-income neighborhoods and serve the district’s highest-need children and families. Of the three RCSD elementary community schools, two had a PFA program on-site.

Exhibit 9 shows that PFA participants who attended a community school in kindergarten had proficiency rates 13 percentage points higher in listening/speaking (68% vs. 55%) and 11 percentage points higher in reading (69% vs. 58%), both statistically significant differences. They also had slightly higher proficiency rates in math and slightly lower rates in work study skills, though these findings were not statistically significant. By first grade, there were no statistically significant differences in the proficiency rates of PFA graduates attending a community school and PFA graduates attending a traditional school.



Research and Policy Implications

The findings from this research are in line with previous research that shows the benefits of preschool. Specifically, we found that students who attended PFA were equally likely to be proficient as those who predominantly attended private preschools after controlling for background characteristics. In math, PFA students had higher adjusted proficiency in kindergarten. Although participating in PFA did not necessarily lead to higher unadjusted kindergarten and first grade proficiency, our adjusted findings are important because PFA students were far more likely to have characteristics that placed them at academic risk, which indicates that overall, the program was able to level the playing field after student background characteristics were taken into account.

Importantly, those who attended PFA for two years rather than just one saw much higher proficiency rates than non-PFA students. This speaks to the importance of not just the year prior to kindergarten, but also preschool at age three. When we examined specific subgroups, we found that students in some of the highest-risk groups were more likely to benefit from even one year of PFA, a finding consistent with the literature.

This research also illustrates the value of using longitudinal administrative datasets to help local communities examine the outcomes associated with their early childhood programs and services. The vast literature on best practices in preschool helped inform the San Mateo County PFA program, but ultimately the program developed in this area responded to the unique needs of this community. Likewise, this research promotes understanding of these preschool efforts by allowing partners to explore and “drill down” into data from local agencies, and to understand the findings within a local context. The longitudinal aspect of the research points to the importance of collecting high quality data on students’ preschool experiences and using common identifiers in order to be able to link preschool data to elementary data. For local purposes, it is very important for county and school district officials to be able to understand the effectiveness of programs that were specifically designed for their locale and the specific populations within it. This analysis demonstrates the types of analyses that can be conducted when local data linking is available and highlights that administrative data can be important tools for policy and program makers locally because they reflect local context and support research that is relevant and meaningful to the community.

With continued community interest and more years of data, it would be possible to complete a multi-year longitudinal study on PFA students, following them with the Youth Data Archive through elementary and middle school, and into high school as well (with data from a different school district also contained in the YDA). The YDA could also be used to track the types of community school services that PFA families access and the other community support services utilized, to account for these in understanding the long-term effects of PFA. The analysis would be enriched, however, with the presence of more school districts in the county that offered the PFA program. We are currently working with other districts in order to bring them into the YDA to enhance this and other analyses.

As mentioned in the introduction, PFA San Mateo County is no longer operating. The results of this analysis have provided fuel for county officials to attempt to revive the program, but in today’s economic climate this is a challenging endeavor. Indeed, state funding for preschool has slowed down in recent years and in two-thirds of states with publicly funded preschool, spending per child dropped between 2008 and 2009 (Barnett, Epstein, Friedman, Sansanelli, & Hustedt, 2009). Most recently, California has faced ongoing—and unprecedented—budget cuts, further diminishing the prospect of reinstating PFA in the near term.

Still, this analysis provides important information to local and other policymakers as they continue considering how to best serve students. The analysis shows that two years of preschool is far better than one. It is possible that this finding relates more to the underlying motivations of families who send their children for two years instead of one, but being intentional about this and continuing to study the effects of multiple years of preschool will be important in designing the next wave of programs.

## References

- Applied Survey Research. (2009). School Readiness in San Mateo County: Results of the 2008 Assessment. San Jose, CA.
- Barnett, W. S., Epstein, D. J., Friedman, A. H., Sansanelli, R. A., & Hustedt, J. T. (2009). The State of Preschool 2009. Washington, D.C.: National Institute for Early Education Research.



- Garces, E., Thomas, D., & Currie, J. (2000). Longer Term Effects of Head Start. *National Bureau of Economic Research Working Paper Series*, No. 8054.
- Lee, V. E., Brooks-Gunn, J., & Schnur, E. (1988). Does Head Start work? A 1-year follow-up comparison of disadvantaged children attending Head Start, no preschool, and other preschool programs. *Developmental Psychology*, 24(2), 210-222.
- Lee, V. E., Brooks-Gunn, J., Schnur, E., & Liaw, F.-R. (1990). Are Head Start Effects Sustained? A Longitudinal Follow-Up Comparison of Disadvantaged Children Attending Head Start, No Preschool, and Other Preschool Programs. *Child Development*, 61(2), 495-507.
- Magnuson, K. A., Meyers, M. K., Ruhm, C. J., & Waldfogel, J. (2004). Inequality in Preschool Education and School Readiness. *American Educational Research Journal*, 41(1), 115-157.
- San Mateo County Office of Education. (n.d.). Preschool for All (PFA - Archives). Retrieved February 23, 2011, from [http://www.smcoe.k12.ca.us/InstructionalServicesDivisionISD/ChildYouthandFamilyServices/Pages/%E2%80%A2-Preschool-for-All-\(PFA---Archives\).aspx](http://www.smcoe.k12.ca.us/InstructionalServicesDivisionISD/ChildYouthandFamilyServices/Pages/%E2%80%A2-Preschool-for-All-(PFA---Archives).aspx)

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*For more information about the study on "Educational Outcomes for Preschool for All Participants in Redwood City School District," please contact Monika Sanchez at [monikas1@stanford.edu](mailto:monikas1@stanford.edu).*

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