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Educational Outcomes for Preschool for All Participants in Redwood City School District - Update

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Background

At the request of partners in the Youth Data Archive (YDA), the John W. Gardner Center for Youth and Their Communities (JGC) at Stanford University updated the [June 2011](#) analysis examining school-based outcomes for San Mateo County *Preschool for All* (PFA) students who go on to attend elementary school in Redwood City School District (RCSD). This study also builds on an earlier Applied Survey Research (ASR) analysis of school readiness among PFA graduates in San Mateo County. The ASR study found that PFA graduates were: (1) better prepared 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).

As the 2011 JGC brief describes, PFA San Mateo County was established in 2004 as a five-year demonstration project aimed at reducing the achievement gap by supporting high-quality preschool programs for low income three- and four-year old children. The program, which ended in 2009, 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.

This brief builds upon the findings from the 2011 JGC analysis: it examines first and second grade outcomes for PFA participants and explores which RCSD supports were associated with stronger educational outcomes for these children in their early elementary school experiences. This update also includes an additional year of RCSD student data (2010-11) and uses California Standards Test (CST) scores in addition to report card outcomes to examine student performance. To conduct the analysis, we linked data from PFA to data from RCSD to address the following questions:

1. How does the performance of PFA participants compare to other RCSD students on early elementary school outcomes in first and second grade?
2. Which RCSD supports are associated with stronger in-school outcomes for PFA participants in first and second grade?

We relied on existing longitudinal data through the Youth Data Archive (YDA) to link individual student records from three PFA cohorts to their records in RCSD in order to

examine these questions. The YDA is a collaboration of public, private, and university partners that links individual-level data on youth across agencies in order to answer questions that agencies cannot answer independently.

Key Findings

All of the key findings take into account students' demographic and background characteristics when reporting proficiency rates and standardized test outcomes, a procedure described in more detail later in the brief.

- PFA participants in first and second grade had academic outcomes that were on par with, and sometimes higher than, non-participants in the five report card subjects of math, listening/speaking, reading, writing, and work study skills and on standardized tests in math and English Language Arts.
- Children who attended PFA for two years had higher proficiency rates in some subjects, varying by grade level, than children who attended PFA for just one year.
- PFA graduates who went on to participate in the federal Free and Reduced Price Lunch (FRPL) program in elementary school had higher rates of proficiency than their non-PFA peers in many of the five report card subjects in first and second grade.¹ PFA students in other traditionally underserved subgroups performed comparably to their non-PFA classmates.
- Students in nearly all subgroups who participated in PFA had higher proficiency rates in work study skills. These higher rates were mostly seen in kindergarten and first grade, indicating that the effects may fade over time.

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. 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

In the previous analysis, we determined that between the 2006–07 and 2008–09 school years, 2,084 children attended PFA in the county. Exhibit 1 illustrates the number of PFA participants, by PFA year, who attended kindergarten through second grade in RCSD. For example, students in the 2006-07 PFA

¹ Free and Reduced Price Lunch (FRPL) participation is customarily used to approximate the population of students from low-income families.

cohort year attended RCSD kindergarten during the 2007-08 school year, first grade in 2008-09, and second grade in 2009-10. In total, 876 students moved directly from PFA to RCSD as kindergarteners. With the addition of 2010-11 school year data in this report, we were able to track 780 (89%) of these kindergartners through first grade in RCSD – an increase of 283 students in the first grade cohort compared to the previous report. A total of 467 students could also now be tracked through second grade. The number of students added to each grade level with the inclusion of 2010-11 data are italicized and bolded in Exhibit 1.

Exhibit 1. RCSD Enrollment of PFA Students, PFA Years 2006-07 to 2008-09

PFA Cohort Year	PFA Students			
	Attended PFA	RCSD Kinder	RCSD 1 st	RCSD 2 nd
2006-07	614	272	215	209
2007-08	701	289	282	258
2008-09	769	315	283	N/A
Total All Years	2,084	876	780	467
% of RCSD Grade Level		25%	23%	20%

Note: For those students who attended PFA for multiple years, PFA cohort year is 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 targeted to traditionally underserved students who may not otherwise have had access to high-quality preschool programs, demographic differences between participants and non-participants were expected. The vast majority of PFA families were low-income and qualified for subsidized preschool under California Department of Education guidelines. Overall, the majority of PFA families were at risk due to low parent education levels, English language learner status, and low-income status.

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 kindergartners 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 kindergartners 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.

Data and Methods

First and Second Grade Report Cards. To measure school outcomes for PFA participants, we used their first and second 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.

California Standards Test (CST). To examine the standardized test outcomes of PFA participants compared to their RCSD peers we used students' CST scores in math and English Language Arts (ELA). We computed z-scores in order to aggregate results for the different school years represented in each PFA cohort. Z-scores reflect student differences above or below the observed mean for all students – in this case we standardized against all students in California. We used z-scores, rather than the scaled-score CST outcomes, because CST scaled scores are not meant to be compared across different years or grade levels.

Because of the significant differences in the student and family characteristics described above, we would expect there to be differences in raw proficiency rates on academic assessments. Raw proficiency rates reflect the proficiency rates students receive on their report cards, before adjusting for demographic and other background characteristics. In order to account for differences in student background characteristics, we used regression analysis to produce adjusted proficiency rates and z-scores for children who attended PFA. These *adjusted* rates, which are presented in this brief, allowed us to compare proficiency rates of the two groups as if they were demographically aligned, as is customary for nearly all rigorous research reports on this topic.

Kindergarten Proficiency Rates of PFA Graduates and their non-PFA RCSD Peers

In the previous analysis, we found that children who attended PFA had lower raw proficiency rates than children who did not attend PFA in all five kindergarten report card subjects. After controlling for demographic background characteristics, we found that PFA participants had similar proficiency rates to non-participants in all five subject areas. This was an important finding because leveling the playing field was a key goal of PFA. We also found that children who attended two years of PFA had higher adjusted rates of proficiency in many kindergarten subjects than children who did not attend PFA. We also examined the outcomes of PFA graduates in traditionally underserved subgroups – English learners, students participating in FRPL in elementary school, and students whose parents did not complete high school – and found that in many of these groups, PFA students had higher kindergarten proficiency rates than classmates who did not attend PFA, after controlling for student demographics.

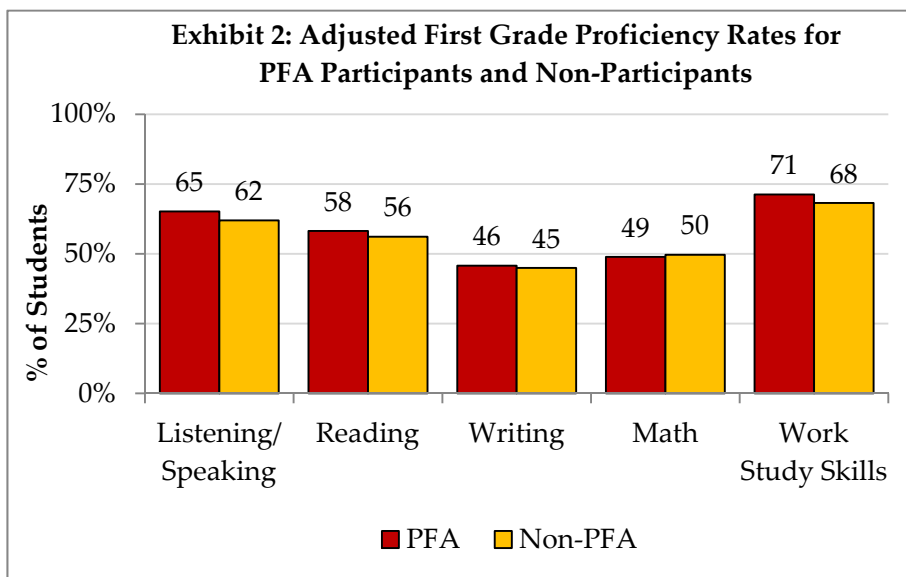
First Grade Proficiency Rates of PFA Graduates and their non-PFA RCSD Peers

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. Exhibit 2 shows first grade outcomes by PFA participation after adjusting for student background characteristics and shows that PFA participants had proficiency rates that were similar to those of non-participants in all five subjects. None of these differences were statistically significant, which means that statistically, the two groups' outcomes are indistinguishable from each other. As we found for kindergartners, PFA graduates performed similarly to their non-PFA peers in first grade, suggesting that PFA plays an important role in closing the achievement gap among San Mateo County students.

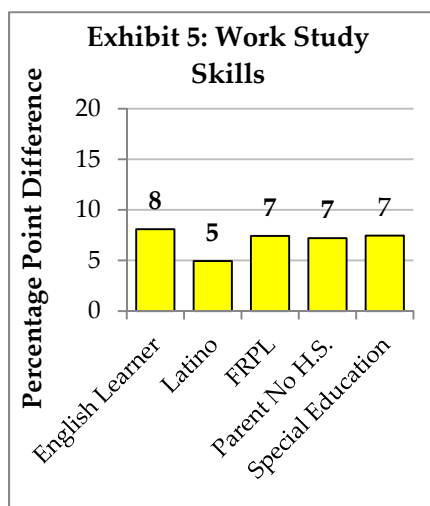
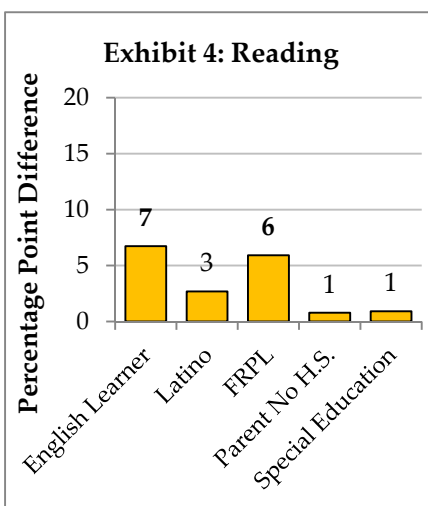
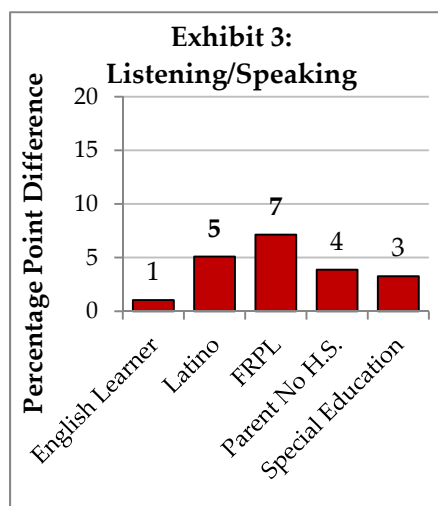
Because PFA targeted low-income and high-need children and families, we examined the outcomes of first grade children with these characteristics. Consistent with the literature, among the highest-need students, we found that first grade children who attended PFA had higher adjusted proficiency rates in certain subjects than children who did not attend PFA. Exhibits 3-5 illustrate that some traditionally underserved groups saw greater proficiency rates in listening/speaking, reading, and work study skills than their non-PFA peers after controlling for demographic differences. For example, Exhibit 3 shows

that students participating in FRPL in elementary school who attended PFA had listening/speaking proficiency rates 7% higher than FRPL students who did not attend PFA. Findings in bold are statistically significant, indicating that PFA students' outcomes are discernibly higher than non-PFA students' proficiency rates, and consistent with other research focused on the elementary school outcomes of at-risk

children attending high-quality preschools. In other subjects, children in these subgroups who attended PFA had similar proficiency rates to their peers who did not attend PFA. These results all control for student background characteristics.



Exhibits 3-5: Percentage Point Difference in First Grade Proficiency of PFA Participants and Non-Participants (Adjusted for Student Demographics)



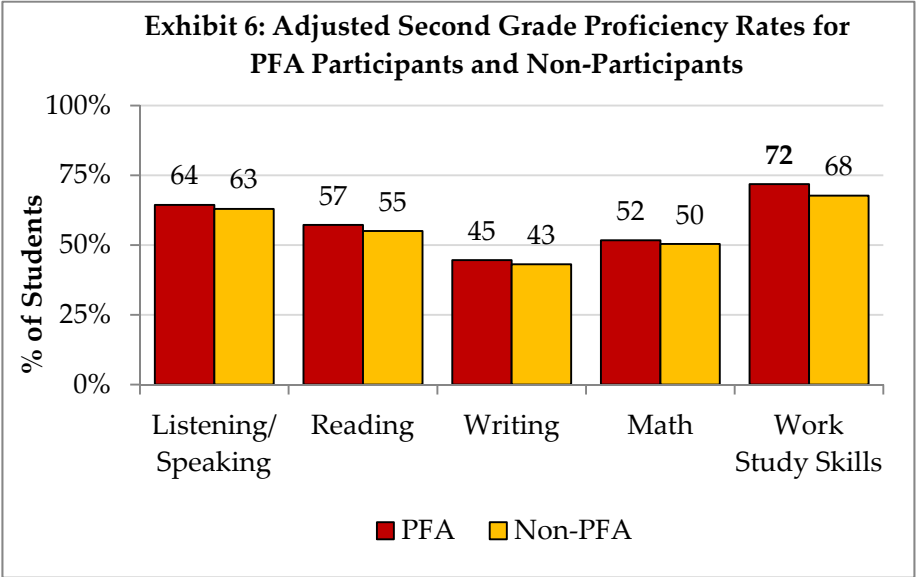
Note: The above exhibits illustrate percentage point differences in first grade proficiency of children in particular subgroups who did and did not attend PFA. For example, Latino students who attended PFA had listening/speaking proficiency rates 5 percentage points higher than Latino students who did not attend PFA, after controlling for differences. We illustrated only academic subject areas where we found statistically significant differences for multiple subgroups.

Among first grade English learners, children who attended PFA had higher adjusted report card proficiency rates in reading and work study skills than English learners who had not attended PFA. Among Latinos, children who attended PFA had higher adjusted proficiency rates in listening/speaking and work study skills. Students who participated in FRPL in elementary school and who were PFA graduates had higher adjusted proficiency rates in all three of the above subjects compared to similar students who did not attend PFA. Among children whose parents did not complete high school, children who attended PFA had higher adjusted proficiency rates in work study skills. Finally, children with special needs who attended PFA had adjusted proficiency rates that were

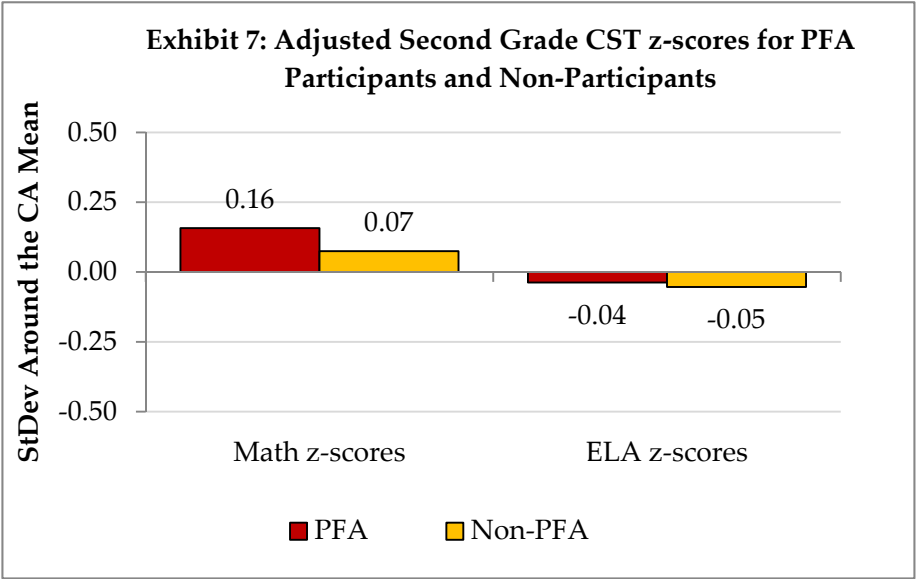
on par with special needs students who were not PFA graduates. These results demonstrate that participation in PFA was beneficial for the children with the highest needs.

Second Grade Proficiency Rates of PFA Graduates and their non-PFA RCSD Peers

In second 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 and first grade, when we controlled for demographic differences between these two groups of children, we found that children who attended PFA had similar – and in the case of work study skills, higher – proficiency rates than children who did not attend PFA (Exhibit 6).



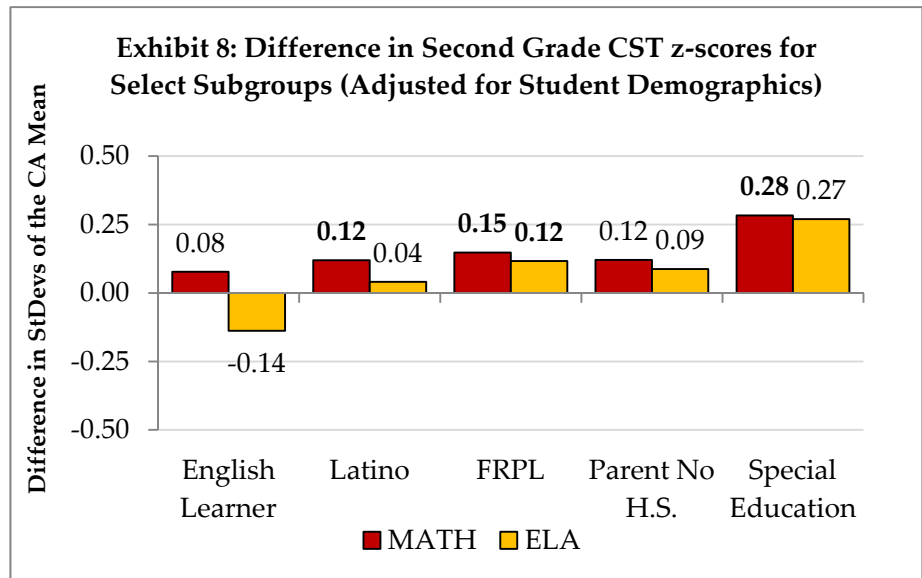
For this analysis, we also examined student outcomes on the California Standards Test (CST) in math and English Language Arts (ELA) and found similar patterns as we found for report card outcomes. After controlling for demographic background characteristics, we found that PFA participants’ CST z-scores were similar to those of non-participants (Exhibit 7).



When examining second grade outcomes for traditionally underserved subgroups, we found that PFA students had CST outcomes that were similar to those of students who did not participate in PFA, with a few exceptions. On the math CST, Latino students, students participating in FRPL in elementary school, and special education students had higher z-scores than their non-PFA peers. This was also true on the English Language Arts (ELA) CST for students participating in FRPL in elementary school (Exhibit 8).

We also examined report card results for these same subgroups and found few instances of statistical significance, indicating that PFA students’ outcomes were mostly on par with non-PFA students in these subgroups. One exception was that students participating in FRPL in elementary school had

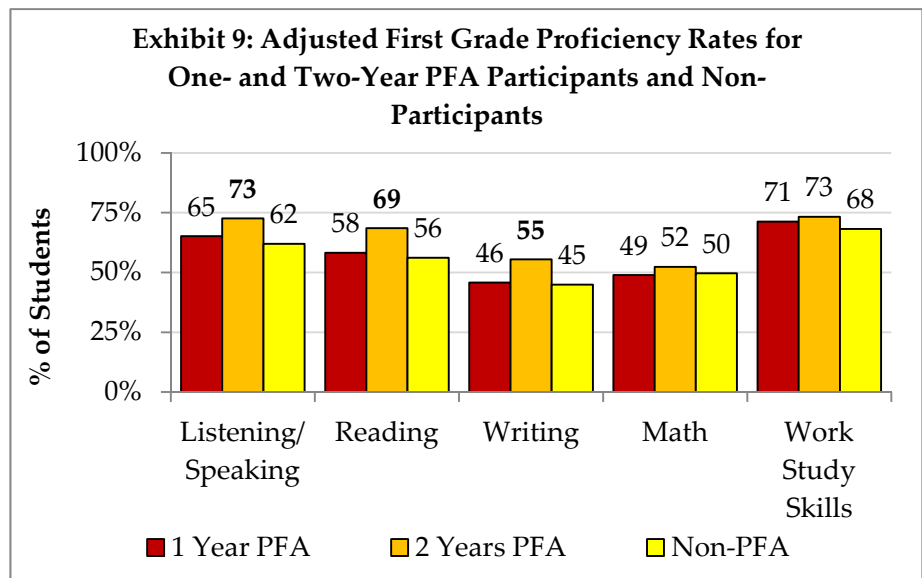
higher proficiency rates in reading and math than FRPL students who did not participate in PFA. Also, students whose parents did not complete high school had higher proficiency rates in work study skills compared to their non-PFA peers. Findings for other traditionally underserved subgroups in second grade were mixed – Latino students participating in PFA had lower second grade proficiency in listening/speaking – though outcomes for other subjects and for other subgroups were on par with outcomes for students in these subgroups who did not participate in PFA. Because this study is limited by the small number of students, inconsistent results among grade levels and between report card data and CST scores may be expected. While standardized tests are considered to be more reliable than report cards in general – they evaluate students more consistently – there is debate as to whether they are a better indicator of student performance, especially in the youngest grades.



Note: The above exhibit illustrates differences in second grade CST z-scores for children in particular subgroups who did and did not attend PFA. For example, Latino students who attended PFA had math CST z-scores 0.12 of a standard deviation higher than Latino students who did not attend PFA, after controlling for differences.

Multiple Years of PFA Attendance

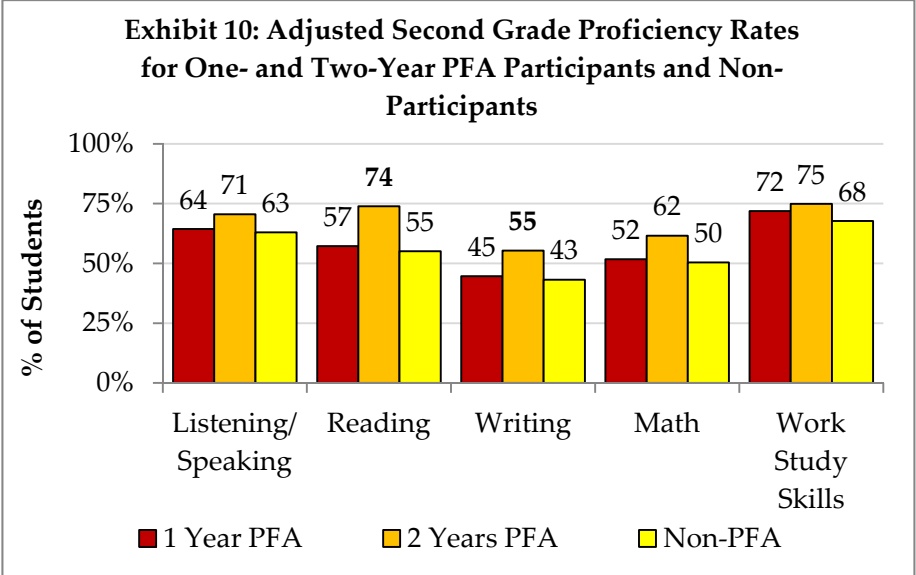
Approximately 17% of PFA participants who went on to enroll in RCSD attended the program for two years. Exhibit 9 illustrates adjusted first grade proficiency rates by the number of years a child attended PFA. In all five subjects, children attending PFA for one year, at age four, had adjusted first grade proficiency rates that were similar to those of children who did not attend PFA. Children attending PFA for



two years, however, had higher adjusted proficiency rates in listening/speaking, reading, and writing compared to children who did not attend PFA. Even before adjusting for student demographics, two-year PFA participants exhibited raw proficiency rates that were higher in work study skills than students who did not attend PFA. This is an important finding because it goes against the other raw

results for PFA participants in elementary school – namely that their raw proficiency rates were lower than their non-PFA peers. This finding illustrates that the PFA program was successful in bringing two-year participants’ unadjusted report card proficiency in line with their peers, many of whom likely attended some other kind of preschool.

In second grade, children who attended PFA for two years still had higher adjusted proficiency rates in reading and writing compared to children who did not attend PFA (Exhibit 10). One-year PFA participants also continued to perform on par with their non-PFA peers. And even before adjusting for student demographics, two-year PFA participants had higher raw proficiency rates in reading and work study skills compared to non-PFA students. Again, this is significant because it is counter to the other raw proficiency results for PFA participants.



On standardized tests, students who attended PFA for either one or two years had second grade CST z-scores similar to those of children who did not attend PFA, with the exception of math, where students who participated in PFA for two years had higher z-scores than their non-PFA classmates.

Community School Attendance

Thirty-nine percent (39%) 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 serve the district’s highest-need children and families. Of the three RCSD elementary community schools, two had a PFA program on-site. In the 2011 report, we found that PFA participants who attended a community school in kindergarten had higher proficiency rates in listening/speaking and reading than PFA graduates attending other RCSD schools, but were performing similarly in the other report card subjects. This was also true in first grade for listening/speaking and work study skills. By second grade, there were no statistically significant differences in either report card proficiency rates or CST z-scores of PFA graduates attending a community school and PFA graduates attending a traditional school.

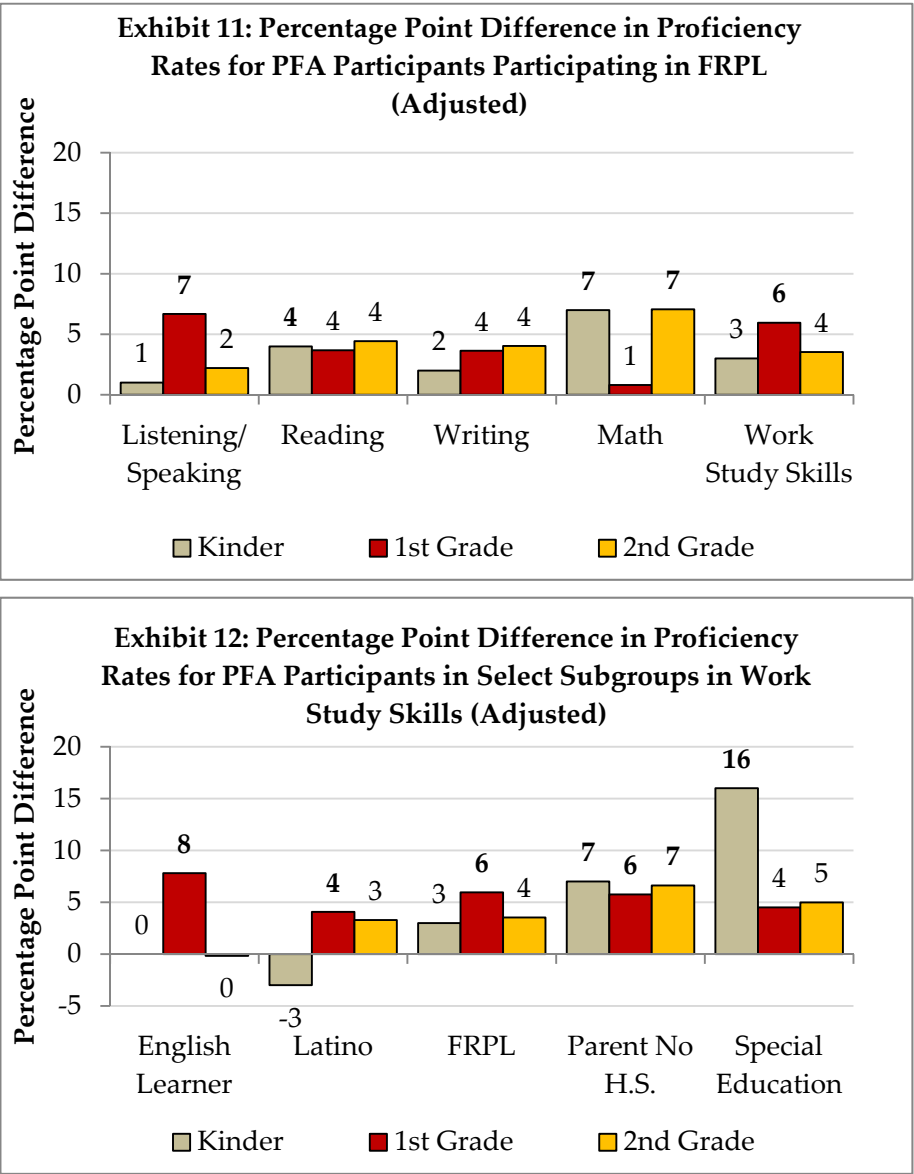
Research Implications

The findings from this research support previous studies that demonstrate the benefits of preschool. Specifically, after controlling for background characteristics, we found that students who attended PFA were equally likely to be proficient in a variety of subject areas as those who predominantly attended private preschools. The adjusted findings are important because PFA students were far more likely to have characteristics that placed them at academic risk, which indicates that overall, PFA was able to level the playing field after student background characteristics were taken into account.

Importantly, children 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.

In particular, PFA graduates participating in the federal Free and Reduced Price Lunch (FRPL) program in elementary school had higher report card proficiency rates than their non-PFA peers in many of the five report card subjects in kindergarten, first, and second grade, after controlling for demographic differences (Exhibit 11). PFA students in other traditionally underserved subgroups were performing comparably overall to their non-PFA classmates.

Also, students in nearly all demographic subgroups who participated in PFA had higher proficiency rates in work study skills. These higher rates were mostly seen in the earliest grades, indicating that the effects may fade over time (Exhibit 12).



Policy Implications

There is currently a strong policy movement in California and elsewhere to focus on the Pre-K to third grade years. This comprehensive approach is intended to extend the benefit of high-quality early childhood programs into elementary school. The Pre-K to Third approach seeks to create a supportive environment for the youngest students and their families through high-quality instruction; to assist students and families during transitions, not only from pre-K to kindergarten but into the early elementary grades; and to foster the intentional, collaborative efforts of practitioners and administrators in both early childhood education and elementary school settings. Research has shown that disparities in achievement when students enter kindergarten persist throughout the elementary grades (Duncan & Magnuson, 2011) and the Pre-K to Third approach seeks to prevent that gap. These efforts are particularly important because our findings show that PFA students were largely performing on par with – not better than – non-PFA students. This means that any drop in proficiency could put them behind their peers and lead to a later achievement gap that PFA was intended to eliminate. Our findings reinforce the need for efforts to help maintain the academic momentum gained by traditionally underserved students in preschool over the entire elementary experience.

As mentioned in the background, PFA San Mateo County is no longer operating, and state funding for preschool has been reduced in recent years. In the latest round of budget cuts, the State of California has reduced funding for child care and development programs, including part-day state preschool, and has implemented measures such as charging parent fees for part-day state preschool. Recent changes to the state's kindergarten entry timing, through the introduction of Transitional Kindergarten, have also led to modifications in eligibility for state preschool participation, increasing the number of qualifying students as the state moves to an earlier kindergarten cutoff date. This increase, coupled with a loss of financial support for state preschool programs, may make it even more difficult for the state's neediest children to receive a high-quality preschool experience. With early learning programs like PFA losing funding in an exceptionally difficult state fiscal climate, there is an even greater need to invest, improve, and focus attention on increasing the quality of the programs that remain. Part of this improvement can be captured by the Pre-K to third grade approach, aligning early childhood educational experiences with elementary school and providing continuity and consistency between these settings, particularly for the children with the highest need.

There has also been a recent trend toward broad planning and coordination of preschool efforts across the state, emphasizing the need for *quality* in targeted preschool programs. This is notable because *Preschool For All* was largely a quality improvement effort, enhancing quality in existing programs while supporting a limited number of new spaces. Examples of similar types of efforts underway include First 5 California's Child Signature Program, a three-year effort to continue, increase access to, and provide quality enhancement of the Power of Preschool² program. The program period began in July 2012 and will continue through the 2014-2015 school year. Also, the California State Advisory Council on Early Childhood Education and Care is currently developing the California Comprehensive Early Learning Plan (CCELP), which will assess California's available services to children and families, propose a plan for the state's early learning system in the next five to ten years, and provide recommendations for achieving that vision. One of the first products of the CCELP, a meta-analysis of

² Power of Preschool is a high-quality, free, voluntary, part-day preschool program that helps to ensure that all children in California have equal access to quality preschool. The program is funded by First 5 California, working through First 5 Commissions statewide.

existing early childhood research in California has been released; the full CCELP is set to be completed by June 2013. The California Department of Education has also begun to take action with funds from the federal government's "Race to the Top" Early Learning Challenge Grant, in which 17 local and regional consortia will primarily focus on developing and implementing local Quality Rating and Improvement Systems (QRIS). These QRIS will utilize rating scores, based on common standards that are intended to help inform parents and policymakers about the quality of childcare programs available across the state. Over time, the hope is for the QRIS to improve the availability of high-quality early learning opportunities for children with the most need.

Local groups continually implement additional improvements and draw attention to the importance of quality early childhood experiences. In the vicinity of Redwood City, CA – where this analysis takes place – involved organizations include First 5 San Mateo County, the San Mateo County Office of Education, and Silicon Valley Community Foundation; Children Now, Preschool California, and other organizations with a focus on early education are involved at the state level. Our findings demonstrate that providing high-quality preschool experiences to traditionally underserved students can help prepare them to succeed in elementary school. In combination with integrated instruction and support through third grade, we hope that the achievement gap will shrink and that these children will have the opportunity to thrive in every future setting they encounter.

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For more information about the study on “Educational Outcomes for Preschool for All Participants in Redwood City School District – Update,” please contact Monika Sanchez at monikas1@stanford.edu.

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