

issue brief

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A LONGITUDINAL VIEW OF EDUCATIONAL OUTCOMES FOR *PRESCHOOL FOR ALL* PARTICIPANTS IN REDWOOD CITY SCHOOL DISTRICT

Monika Sanchez

Since 2011, the John W. Gardner Center for Youth and Their Communities at Stanford University (Gardner Center) has examined school-based outcomes for San Mateo County *Preschool for All* (PFA) students who went on to attend elementary school in Redwood City School District (RCSD). *Preschool for All* was San Mateo County's high-quality preschool demonstration project, which ended in 2009. The Gardner Center has previously reported on PFA students' outcomes through kindergarten (2011 report) and first grade (2012 report). This study follows these students through third grade, providing a complete look at the Pre-K to third grade experiences of children who participated in PFA. The two prior reports focused on student outcomes within each grade level. This report is a longitudinal examination of PFA participants, tracking students' experiences across their first four years in elementary school.

This study builds on a 2009 study that found that PFA graduates in San Mateo County were: (1) better prepared for kindergarten than their classmates who had not attended preschool and (2) equally ready for kindergarten as classmates with other preschool experiences.¹ The Gardner Center study seeks to extend that knowledge of PFA students' outcomes into the elementary grades and focuses on two main questions:

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

The Gardner Center's Youth Data Archive (YDA) enables public, private, and university partners to link individual-level data on youth across agencies in order to answer questions that each agency cannot answer independently. We relied on the YDA to link individual student records from three PFA cohorts to their records in RCSD in order to examine these questions.

¹ Applied Survey Research. (2009). *School Readiness in San Mateo County: Results of the 2008 Assessment*. San Jose, CA.

Key Findings

Examining these two research questions longitudinally, the analysis yields several key findings on students' unadjusted report card outcomes in five subjects (language arts listening/speaking, language arts writing, language arts reading, math, and work study skills), including:

- PFA students were just as likely to be persistently proficient (3-4 years of proficiency) on report cards as non-PFA students in listening/speaking and work study skills, but less likely to be persistently proficient in reading, writing, and math than students who did not attend PFA.
- Among students in traditionally underserved subgroups—in particular Latino students, low income students, and students with a parent who did not complete a high school diploma—PFA students were more likely than their non-PFA peers to be persistently proficient in many report card subjects, depending on the subgroup.
- Two-year PFA participants were more likely to be persistently proficient (3-4 years) and less likely to have never been proficient compared to one-year PFA participants. They were just as likely as non-PFA students to be persistently proficient on all report card subjects.
- When compared to each other, half- and full-day PFA participants were performing similarly on report card subjects, except in work study skills where half-day participants were more likely to be persistently proficient between kindergarten and third grade.
- PFA students attending a community school for their first four years in elementary were more likely to be persistently proficient in listening/speaking and work study skills than PFA students attending traditional schools, and just as likely to be proficient on other report card subjects.

In this brief, we examine PFA and non-PFA students' unadjusted report card proficiency scores longitudinally and highlight the potential implications raised by the study findings in the context of a “Pre-K to Third” grade approach to early education.

Preschool for All San Mateo County

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. 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,”² PFA San Mateo County targeted the county’s highest-need children and families by serving low-income neighborhoods. The program contracted with public school districts, nonprofit 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

² San Mateo County Office of Education. (n.d.). *Preschool for All* (PFA - Archives). Retrieved September 24, 2012, from [http://www.smcoe.k12.ca.us/InstructionalServicesDivisionISD/ess/Pages/%E2%80%A2-Preschool-for-All-\(PFA---Archives\).aspx](http://www.smcoe.k12.ca.us/InstructionalServicesDivisionISD/ess/Pages/%E2%80%A2-Preschool-for-All-(PFA---Archives).aspx)

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.

PFA Participants in this Study

Using data from the PFA program during the 2006-07, 2007-08, and 2008-09 school years, we identified 2,084 PFA participants. Of those students, 876 enrolled in RCSD kindergarten immediately following their participation in PFA. The remaining students likely enrolled in other local school districts, moved, or joined another preschool program after the PFA demonstration project's end. Exhibit 1 illustrates the number of PFA participants who attended kindergarten through third grade in RCSD.

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

	PFA Students in RCSD			
	Kinder	1 st	2 nd	3 rd
Number of PFA Participants	876	780	732	709
PFA % of RCSD Grade Level	25%	23%	21%	21%

Note: For those students who attended PFA for multiple years, PFA cohort year is defined as their final year in PFA.

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, we found that the majority of PFA students were at risk for low achievement due to low parent education levels, English language learner status, and low-income status.

We know from other studies that children who did not attend PFA likely attended some other preschool program,³ but we do not know specifically which students enrolled in other programs. Thus, this study compares children who participated in PFA to children who likely attended some other preschool program. Because PFA was intended to serve children unlikely to attend preschool at all, a more useful comparison would be to contrast outcomes for PFA participants to children who did not have a preschool experience. With available data, we are not able to make this type of comparison.

³ Applied Survey Research. (2009). *School Readiness in San Mateo County: Results of the 2008 Assessment*. San Jose, CA.

School Experience between Kindergarten and Third Grade

Once in RCSD, about 69% of PFA students remained enrolled in the same school between kindergarten and third grade, 15% switched to a different RCSD school, and 16% left the district (Exhibit 2). Compared to non-PFA participants, PFA students were less likely to make a school or district transition through third grade. Research has shown that frequent school moves are associated with negative outcomes for children and youth.⁴ To this end, RCSD has a stated preference for students to consistently enroll in the same school each year.

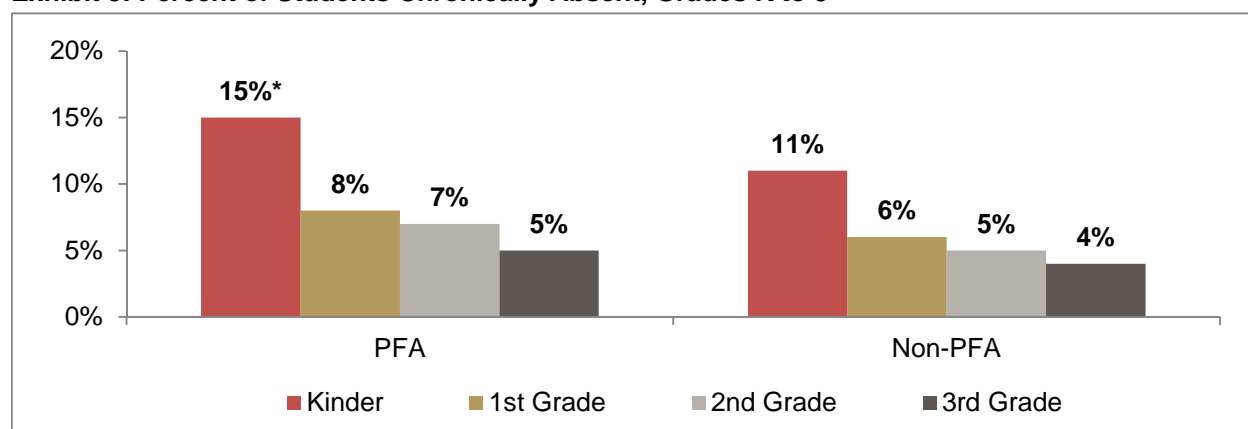
Exhibit 2: Number and Percent of Students who attended the Same School, Switched Schools, or Left the District during Grades K to 3

	Attended PFA		Did Not Attend PFA	
	Number	Percent	Number	Percent
Same School	606	69.0*	1,480	56.7
Switched Schools	133	15.2*	469	18.0
Left District	139	15.8*	660	25.3

Note: An asterisk (*) indicates that the PFA value is statistically different from the Non-PFA value.

Between kindergarten and third grade, PFA students' attendance patterns were similar to students who did not attend PFA, with one exception. PFA participants were more likely to be absent in kindergarten compared to non-PFA participants, missing an average of 10 days in contrast to 9 days for non-PFA participants. This seemingly small difference in the number of days missed accounted for a 15% chronic absence rate for PFA students in kindergarten, compared to 11% for non-PFA students (Exhibit 3). The chronic absence rate reflects the percent of students missing 10% (about 18 days) or more of the school year for both excused and unexcused reasons.

Exhibit 3: Percent of Students Chronically Absent, Grades K to 3



Note: An asterisk (*) indicates that the PFA value is statistically different from the Non-PFA value.

⁴ National Research Council. (2010). Student Mobility: Exploring the Impact of Frequent Moves on Achievement: Summary of a Workshop. Washington, DC: The National Academies Press.

Kindergarten through Third Grade Report Card Proficiency

Using unadjusted report card proficiency scores, we examined students' longitudinal proficiency between kindergarten and third grade in five subjects: language arts listening/speaking, language arts reading, language arts writing, math, and work study skills, categorizing students as never proficient (0 years of proficiency), intermittently proficient (1-2 years of proficiency), or persistently proficient (3-4 years of proficiency). We defined proficiency in a subject as scoring 3 or 4 on a four-point scale on every assessed item for that subject.

Examining students' unadjusted report card scores, we found that PFA students were just as likely to be persistently proficient as non-PFA students in listening/speaking and work study skills, but less likely to be persistently proficient in reading, writing, and math than students who did not attend PFA.

We also examined unadjusted proficiency rates for students in subgroups typically at risk for low achievement, which comprised close to a majority of PFA participants. We found that among RCSD students in a given subgroup, PFA students were more likely to be persistently proficient through third grade in certain subjects than non-PFA students (Exhibit 4). In particular, PFA participants who were Latino, low income, and from families with low parent education levels were more likely to be persistently proficient than their non-PFA counterparts in listening/speaking and work study skills. PFA students who were English learners in elementary school were performing similarly to non-PFA English learners between kindergarten and third grade in all five report card subjects.

Exhibit 4: PFA Subgroups More Likely to be Persistently Proficient in Grades K to 3 than Non-PFA Peers, by Report Card Subject

	Listening/ Speaking	Reading	Writing	Math	Work Study Skills
Latino	X				X
Low Income	X		X		X
Parent without a HS Diploma	X	X		X	X

X = More likely to be Persistently Proficient

One- and Two-Year PFA Participants

Approximately 17% of PFA participants attended PFA for two years. Students attending for two years were more likely than children who only attended for one year to be English learners, be low income, and have a parent who did not complete high school. An additional difference was that two-year participants were more likely to begin kindergarten at age five and a half or older, making them slightly older than one-year PFA participants.

Between kindergarten and third grade, two-year PFA participants had higher unadjusted rates of persistent proficiency and lower rates of never being proficient than one-year PFA participants in all report card subjects we examined. Compared to their peers who did not attend PFA, two-year participants were just as likely to be persistently proficient on all report card subjects. These findings should be viewed cautiously, though, as two-year participants comprise a small group of students.

Half- and Full-Day PFA Participants

Most children who attended PFA were enrolled in a half-day program (82%) and just 18% attended a full-day program. Half-day and full-day participants were demographically similar to one another, except that half-day students were more likely than full-day students to have a parent who did not complete high school. Families enrolled in a full-day PFA program were required to show proof of employment, while half-day program participants did not have this obligation.

Between kindergarten and third grade, half- and full-day PFA participants exhibited similar unadjusted rates of zero, intermittent, and persistent proficiency in listening/speaking, reading, writing, and math. In work study skills, half-day PFA attendees were more likely to be persistently proficient than students who did not attend PFA and full-day participants were more likely to have had zero years of proficiency compared this same group. Again, these findings should be viewed cautiously due to the small number of full-day participants.

Community School Enrollment

Thirty-nine percent of PFA participants in RCSD and 24% of all RCSD kindergarteners attended one of RCSD's three full-service elementary community schools.⁵ Community schools offer integrated family and child services not usually available at traditional elementary schools and are similar to the wrap-around family and social services offered by high-quality preschool programs. 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.

PFA students who attended a community school through third grade were more likely to be persistently proficient in listening/speaking and work study skills than PFA students attending traditional schools. In the other report card subjects, PFA students were performing similarly, regardless of the type of school they attended. About 31% of PFA participants in RCSD attended a community school for all of their first four years in elementary school.

⁵ Full-service community schools are a model that RCSD and other school districts across the nation utilize to meet the needs of the whole child.

Third Grade Report Card and Standardized Test Outcomes

Earlier reports from this study showed that kindergarten and first grade PFA students performed on par with, and sometimes had report card proficiency rates that were higher than, their non-PFA peers after controlling for students' background characteristics. We find this pattern held in second grade as well. By third grade, the effect of PFA had lessened such that PFA students were performing on par with, but no longer outperforming, their non-PFA peers in any of the five report card subjects we examined, after accounting for student background characteristics.

This was also the case when we examined standardized test outcomes in math and English Language Arts (ELA) on the California Standards Test (CST). After taking into account students' background characteristics, PFA participants' CST z-scores were similar to those of non-participants in both math and ELA.⁶

These findings are not surprising; each school year builds upon the prior year and over time we would expect students' performance in more recent grades to begin to matter more than their experiences in preschool. In addition to school performance, other factors that are not controlled for in these analyses (e.g., family circumstances, community environment) likely also affect children's academic outcomes. This is consistent with findings from the larger field of research regarding preschool, which finds a "fade out" effect of even high-quality preschool programs.⁷ Though research has found that the academic benefits of preschool appear to diminish in elementary school, other, complementary studies have found that high-quality preschool attendance confers non-academic benefits beyond elementary school into adulthood (e.g., reduced involvement in crime and high school dropout rates).⁸

Implications and Conclusion

"Pre-K to Third" Approach

There is currently a strong policy movement in California and elsewhere to focus on the Pre-K to third grade years. 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 intentional, collaborative efforts between practitioners and administrators in early childhood education and elementary school settings. In light of this movement, we believe

⁶ 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.

⁷ Puma, M. et. al. (2012). *Third Grade Follow-up to the Head Start Impact Study Final Report*, OPRE Report #2012-45, Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

⁸ Heckman, J. J., & Masterov, D. V. (2007). The Productivity Argument for Investing in Young Children. *Applied Economic Perspectives and Policy*, 29(3), 446-493.

this report's findings may be particularly salient to the work of practitioners and policymakers engaged in supporting a "Pre-K to Third" approach.

Our findings reflect that PFA participants were less likely to be persistently proficient through third grade compared to students who did not attend PFA on three out of the five report card subjects we examined. This may lend support to the need for an integrated "Pre-K to Third" approach to help maintain the academic momentum gained in PFA over the entire elementary experience and highlights the role elementary schools can play in sustaining the effects of PFA. One example of this multi-grade alignment is collaboration between the San Mateo County Office of Education and RCSD to pilot the Early Learning Mathematics Initiative, which seeks to improve the mathematics achievement of RCSD students in preschool through third grade at two school sites through teacher professional development.

Community School Model

PFA students attending an RCSD community school were more likely to be persistently proficient in listening/speaking and work study skills compared to PFA participants attending a traditional school. This may point to community schools' ability to support student achievement through on-site services such as afterschool programming, support services, and family engagement opportunities, which are similar to those provided by PFA. Other studies note community schools' unique position to advance a "Pre-K to Third" approach, citing the community schools' philosophy that learning develops along a continuum and is best supported through integrated services that support children and families.⁹ Additionally, other research confirms that linkages between early childhood education and community schools show strong alignment in philosophy and approach and suggest positive outcomes for youth.

Listening/Speaking, Work Study Skills, and the Common Core

The State of California implemented the Common Core State Standards (Common Core) for the first time in the 2013-14 school year to prepare students to graduate high school ready for college and careers. The Common Core replaces the previous California State Standards and calls for students to demonstrate a depth of understanding, as opposed to simply getting the right answer. Students will need to display their understanding by verbalizing or explaining in writing their thought process and articulating how they came to a solution or conclusion.

In this study, we found that PFA students in traditionally underserved subgroups were more likely to be persistently proficient in listening/speaking than students in those same subgroups who had not participated in PFA. This was also true for PFA participants who attended an RCSD community school. Proficiency in listening/speaking is particularly relevant to successfully

⁹ Geiser, K., Horwitz, I.M., and Gerstein, A. (2013) *Improving the Quality and Continuity of Practice across Early Childhood Education and Elementary Community School Settings*. John W. Gardner Center for Youth and Their Communities Research Brief. Stanford, CA.

meeting the Common Core standards, where verbal expression is an essential component. Likewise, these same PFA students were more likely to be persistently proficient in work study skills than non-PFA students in typically underserved subgroups and PFA students attending traditional schools. Work study skills reflect student habits such as completing homework on time, following directions, and making an effort to do their best work, which supports the Common Core's emphasis on student readiness for college and careers.

Conclusion

This analysis examined the longitudinal outcomes of three cohorts of PFA students during their first four years in elementary school, comparing PFA students to their RCSD counterparts. Overall, our analysis suggests that participating in a high-quality preschool program was associated with positive academic outcomes for children once they entered the K-12 school system.

It is important to note that PFA served children who might not otherwise attend a high-quality preschool program, targeting those in traditionally underserved groups. We would not expect these children to perform similarly given the documented disparities in achievement between at-risk students and their peers that persist throughout the elementary grades.¹⁰ Still, the fact that PFA participants were just as likely to be persistently proficient in some subjects as students who did not participate in PFA is noteworthy; in particular, because these longitudinal comparisons used students' raw proficiency scores, unadjusted for demographics, and because students who did not attend PFA likely participated in other preschool programs. In combination with integrated instruction, family engagement, and support through third grade, we hope that these efforts can reduce the achievement gap and that these children will have the opportunity to thrive in every future setting they encounter.

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John W. Gardner Center for Youth and Their Communities

Stanford Graduate School of Education
365 Lasuen Street, Third Floor
Stanford, CA 94305-2068

650.723.3099
www.gardnercenter.stanford.edu

¹⁰ Duncan, G. J., & Magnuson, K. (2011). The Nature and Impact of Early Achievement Skills, Attention Skills, and Behavior Problems. In G. J. Duncan & R. Murnane (Eds.), *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances* (pp. 47-70). New York, NY: Russell Sage Foundation.