

Executive Summary

The aim of this study was to estimate the program impact of the PAT home visiting intervention on SUSD students and their parents who participated in the program (i.e., PAT group), relative to a comparison group of SUSD students who did not participate in the PAT program (non-PAT group). Using a matched comparison group quasi-experimental design, this study assessed three years of academic and school outcomes in the areas of:

- Reading and math standardized assessment scores;
- Achievement of English language proficiency of English Language Learner (ELL) students; and
- School indicators of absentee rates and number of suspensions.

This study also examined change in parenting skills of parents who participated in the PAT program from baseline to posttest assessment (within group change) on two parenting measures: Keys to Interactive Parenting Skills and the Protective Factors Survey.

Findings on Student Achievement in ELA: An analysis from school year (SY)2015 to SY2017 showed a statistically significant improvement in AzMERIT ELA scores achieved by PAT students, compared to their non-PAT counterparts. PAT students had a statistically significant larger posttest mean in ELA than the comparison group, after controlling for group differences in pretest means ($p < .05$).

Findings on Student Achievement in Math: An analysis from SY2015 to SY2017 also showed a statistically significant improvement in AzMERIT math scores from pretest to posttest between PAT students ($M=56.90$) and the comparison group ($M=48.18$) ($p < .001$).

Findings on RAPS 360 Fluency Scores: PAT participants showed larger mean gains from pretest to posttest and were associated with a larger adjusted posttest mean ($M=131.00$) than the comparison group ($M=126.55$) after controlling for pretest scores. However, this difference was not statistically significant ($p = .155$). Non-parametric analyses were also conducted on grade-level scores in the Phonics, Comprehension, Phonemic Awareness and Listening/Vocabulary subscales to test for differences in mean ranks between the two groups in the spring of SY2015, SY2016, and SY2017. The Phonics subscale consistently showed significantly higher ordinal scores for PAT students over the comparison group for all three SYs. The Comprehension scores in SY2017 were also significant for PAT students. The other subscales did not show a significant difference between the two groups.

Findings on AZELLA Reading, Writing and Total Scores: PAT participants were associated with consistently larger means than the comparison group in reading, writing, and total scores for all three SYs examined (2015, 2016 and 2017). Six of the nine F -tests were statistically significant and a statistically significant MANOVA effect was obtained in the canonically derived dependent variable ($p < .05$).






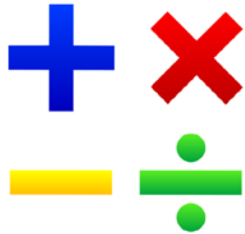






Findings on School Indicators of Absence Rates and Days Suspended: PAT participants appeared to have lower rates of absenteeism than comparisons as analysis had shown that there was statistically significant chi square (independence) tests in favor of PAT participants across absence rate categories for all three school-years, 2014-15, 2015-16 and 2016-17 ($p < .001$). Analyzing three school years of in-school and out-of-school suspension data, PAT participants had shown a statistically significantly lower number of suspension days than comparisons for the 2014-2015 school year. There was a significant chi square (independence) test between PAT participants and comparisons across three categories of in-school suspension days for school-year 2014-2015 ($p < .05$). All other categories of days suspended including the other two school years (2015-16, 2016-17) were not significant.

Findings on Parent Assessments: There was a statistically significant increase in the Keys to Interactive Parenting Scales (KIPS) sum scores and Protective Factors Survey (PFS) Total scores from pretest to posttest among PAT parents. For both assessments, the posttest mean of parents after program implementation was statistically significantly higher than their pretest means before starting the program ($p < .001$).

A summary of key findings is shown in the infographic on the next page of this report. This study shows promising results that participation in the PAT program in early childhood may lead to better academic outcomes in the future. Likewise, assessments of PAT parents showed a statistically significant improvement in parenting quality after program participation, which likely supported the positive academic gains realized by their children. Giving the positive findings of this study, further investigation of how participation in the PAT program impacts child and parent outcomes is warranted. Additional co-variates could include measuring program fidelity to the PAT National model and dosage of programming received (e.g., frequency of home visits, duration of program participation). As PAT National continues to collaborate with SUSD, additional data available in the coming years will allow for more rigorous analysis. Once a larger cohort of PAT participants advances into higher grades and completes academic assessments, there will be a better opportunity to evaluate relationships and differences between school outcomes and variables predictive of PAT participation.



PAT SUSD Impact on Student and Parenting Outcomes: Key Study Findings

Outcome Area	Research Question	Result
ELA/Reading Achievement 	Is there a difference in reading outcomes between PAT and non-PAT students as measured by the AzMERIT ELA assessment?	 PAT students performed significantly better from 2015 to 2017 on AzMERIT ELA/reading assessment outcome scores than the matched non-PAT comparison group.
	Is there a difference in reading outcomes in fluency between PAT and non-PAT students as measured by RAPS 360?	 PAT students performed significantly better than the matched non-PAT comparison group on RAPS 360 Phonics (in 2015, 2016, and 2017) and Comprehension (in 2017) subscales.
Math 	Is there a difference in math outcomes between PAT and non-PAT comparison students as measured by the state standardized math test?	 PAT students performed significantly better from 2015 to 2017 on AzMERIT math outcome scores than the matched non-PAT comparison group.
English Language Proficiency 	Is there a difference in reading outcomes between PAT and non-PAT students as measured by the AZELLA?	 PAT ELL students performed better than non-PAT comparison ELL students on the AZELLA. PAT ELL students significantly outperformed non-PAT ELL students in Reading, Writing and Total in 2015; Writing and Total in 2016; and Writing in 2017.
	Is there a difference between PAT and non-PAT students on child school indicators of absence rates in the last three school years?	 PAT participants had significantly lower rates of absenteeism than non-PAT comparison students in 2015, 2016, and 2017.
Absenteeism		
Suspensions	Is there a difference between PAT and non-PAT students number of suspensions (in-school and out-of-school) in the last three school years?	 PAT participants had significantly lower number of suspension days than non-PAT comparison students in 2015.
Parenting Quality	To what extent does the PAT intervention improve parenting skills from pre to post intervention?	 PAT parents demonstrated significantly improved parenting quality from their initial KIPS assessment to a subsequent assessment performed over the course of the program.

