

Evaluation of the AVANCE Parent-Child Education Program

Final Report

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EXECUTIVE SUMMARY

The AVANCE Parent-Child Education Program (PCEP) adopts a two-generation approach to increase parenting knowledge and promote school readiness among low-income Latino families. AVANCE PCEP provides parenting education sessions, community resources, home visitation, and early childhood education to families with children from birth through three years of age through local AVANCE chapters across the state of Texas.

The current study is the first evaluation to rigorously compare pre-kindergarten (pre-k) participation, school readiness, and kindergarten attendance between AVANCE children and demographically similar children whose families did not participate in AVANCE. We compare AVANCE children and non-AVANCE children who entered kindergarten in Dallas ISD between 2013 and 2017. We find that children who participated in AVANCE attended Dallas ISD pre-kindergarten at a rate 11 percentage points higher than demographically matched children who did not participate in AVANCE. Even after accounting for pre-k participation, AVANCE children entered kindergarten school-ready at a rate 5.1 percentage points higher than their peers who did not participate in AVANCE. Similarly, AVANCE children missed 1.5 fewer days of kindergarten, on average, than non-AVANCE children. Overall, findings from Dallas participants indicate that AVANCE PCEP promotes positive early academic outcomes.

INTRODUCTION AND BACKGROUND

Purpose

AVANCE contracted with Dr. Cynthia Osborne and the Child and Family Research Partnership (CFRP) at the Lyndon B. Johnson School of Public Affairs at The University of Texas at Austin to conduct an impact evaluation of the AVANCE Parent-Child Education Program (PCEP). AVANCE PCEP is a parenting program that serves low-income, primarily Latino families in communities across Texas. AVANCE PCEP serves families with children from birth through three years of age, with the goal of increasing parenting knowledge and promoting school readiness.¹

The goal of the evaluation is to rigorously examine how participation in AVANCE PCEP is associated with school readiness at kindergarten entry and other positive early academic outcomes. The purpose of the current report is to present the final evaluation findings.

AVANCE Parent-Child Education Program

In 1974 Dr. Gloria Rodriguez, building upon the initial AVANCE-Mother Infant Program created in 1972, opened the AVANCE San Antonio office, established AVANCE PCEP, and began offering classes to mothers in the Marisol Housing Project.² Today, the program operates in several locations across Texas (Austin, North Texas, Houston, San Antonio, El Paso, and in the Rio Grande Valley), as well as in California (not included in this evaluation). The program also operated in Waco, Texas, until the fall of 2017.^{3,4}

The AVANCE Parent-Child Education Program (PCEP) adopts a two-generation approach that aims to increase parenting knowledge and promote school readiness among low-income, primarily Latino families, with exact eligibility requirements varying slightly between regional chapters.⁵

AVANCE PCEP consists of nine months of parenting education sessions, early childhood education, and supplemental support services offered during the school year and delivered through both parent- and child-focused sessions.⁶ The parent sessions comprise three one-hour classes per week: a parenting education class, a toy-making class, and a community resources course.⁷ The parenting education class informs parents about child growth and development; provides tools and techniques to understand children's social, emotional, cognitive, and physical growth; and teaches ways to support and advance their child's educational experiences. The toy-making class teaches parents to create educational toys out of inexpensive, readily available materials and fosters peer support through group activities. The community resources course introduces a range of topics to address parents' needs, hosts guest speakers from the community, and helps parents develop networks of community-based resources and supports.⁸

The children's sessions provide a nurturing educational environment for children age zero through three and occur during the weekly three hours when parents participate in the PCEP classes. The program offers a learning-based curriculum, including concepts such as letters, numbers, figures, and colors, as well as activities intended to stimulate the five senses and develop fine and gross motor skills, to prepare children for preschool and beyond.^{9,10}

Additional components of the PCEP include home visiting, transportation to and from classes, food for families in need, and continued education opportunities for parents.¹¹ The exact format of these services differs across sites.

AVANCE PCEP: The Evidence Base

Previous research provides a limited picture of AVANCE PCEP's effectiveness. Prior studies link AVANCE PCEP to knowledge and skills gains for parents, but existing research is insufficient to assess whether AVANCE PCEP promotes positive outcomes for children.

PARENTING OUTCOMES

Prior research demonstrates that mothers who participated in AVANCE PCEP provided a more educationally stimulating environment and demonstrated higher-quality interactions with their children, including more effectively communicating and demonstrating more positive affect than control group mothers.¹² Additionally, AVANCE PCEP participants were more likely to view themselves as effective teachers for their children than control group mothers.¹³ A recent pre-post study of AVANCE PCEP participants found that AVANCE participants increased their knowledge of child development and positive parenting practices from the beginning to end of the program.¹⁴ Complementing findings from quantitative evaluations, a qualitative study on mothers' experiences in AVANCE reveals that mothers participating in AVANCE PCEP believe that it is important for their children to go to college, and commonly report participating in parenting activities that support their children's education.¹⁵

Overall, existing research indicates that AVANCE PCEP promotes knowledge of positive parenting practices, high quality parent-child interactions, and facilitates parent participation in their children's education.

CHILD OUTCOMES

Research to date on the extent to which AVANCE PCEP promotes positive outcomes for children is more limited, and no prior studies rigorously examine AVANCE PCEP's effect on children's readiness for kindergarten. School-readiness at kindergarten entry is associated with better future academic outcomes as well as long-term economic outcomes.^{16,17} Children from poor families who are school-ready at age five are more likely to reach middle class status by age 40 than their peers who are not school-ready.¹⁸ Importantly, children who grow up in poverty are less likely to be school-ready at kindergarten entry, emphasizing the importance of interventions that target students who are most vulnerable to entering kindergarten unprepared.¹⁹

Though research does not indicate whether AVANCE PCEP promotes school readiness, prior research shows that PCEP is associated with higher elementary attendance rates. Specifically, a quasi-experimental study of AVANCE PCEP across Dallas Independent School District found that first through fourth grade students who previously participated in PCEP attended more days of school than similar children who were not served by AVANCE.²⁰ Recent research links school absenteeism between kindergarten and eighth grade with poorer academic and social-behavioral outcomes at age 15,

including lower literacy skills, lower grade point averages, and increased internalizing and externalizing behavioral problems, underscoring the importance of primary and middle school attendance.²¹

The Current Report

The purpose of the current report is to examine the effectiveness of AVANCE PCEP in promoting positive early academic outcomes among children whose families participate in AVANCE PCEP. Specifically, we assess whether AVANCE children are more likely to attend pre-kindergarten (pre-k), more likely to be school-ready at kindergarten entry, and attend more days of kindergarten than a sample of demographically similar peers who did not participate in AVANCE. We compare AVANCE and non-AVANCE children who entered kindergarten in Dallas Independent School District between September 2013 and September 2017.

METHODOLOGY

To assess whether AVANCE PCEP promotes positive early academic outcomes, we conducted a rigorous matched sample evaluation to compare students who participated in AVANCE PCEP and subsequently enrolled in kindergarten in Dallas ISD with a group of similar students in the same kindergarten cohorts. The following section details the data sources, analytic sample, outcome measures, and analytic strategy used for the evaluation of AVANCE PCEP.

Data Sources

To assess the extent to which AVANCE is associated with positive early academic outcomes, we relied on two sources of administrative data: 1) AVANCE program records maintained for each family who participates in PCEP; and 2) school district data from Dallas ISD.

AVANCE ADMINISTRATIVE DATA

AVANCE collects data on PCEP participants at program enrollment, including name and date of birth for all parent and child participants. We use AVANCE program data to identify AVANCE child participants who subsequently enrolled in Dallas ISD schools.

DALLAS ISD ADMINISTRATIVE DATA

To assess academic outcomes, we use administrative data maintained by Dallas ISD. For the AVANCE PCEP participant children and a matched sample of similar non-AVANCE children, we obtained student-level school data, including demographic information, kindergarten readiness assessment scores, an indicator of pre-k attendance, and kindergarten attendance records.

Analytic Sample

To create the final, matched analytic sample, we took a multi-phased approach to identify AVANCE students in school district data and create a matched sample of comparison students who are similar to the AVANCE students across numerous demographic characteristics.

PHASE 1: LINKING AVANCE STUDENTS TO SCHOOL RECORDS

To identify AVANCE children in Dallas ISD and select a comparison group, we first worked with Dallas ISD Evaluation and Assessment staff researchers to identify AVANCE children who enrolled in kindergarten in Dallas ISD between 2013 and 2017. In the data we received from Dallas ISD staff, student names were masked. We identified 2,205 out of 5,527 children who participated in the North Texas AVANCE program and likely attended school in the Dallas area between 2013 and 2017 (39.90%). We expect that most students who we could not identify in Dallas ISD records enrolled in kindergarten outside of Dallas ISD, including at private schools, charter schools, and in other school districts.

PHASE 2: CREATING A MATCHED SAMPLE OF COMPARISON STUDENTS

We next created a comparison group using a two-step selection process. In the first step, for each AVANCE child for whom we received school data, including a kindergarten readiness assessment score at the beginning of the kindergarten year ($n=1,577$), we used exact matching to select a comparison child whose family did not participate in AVANCE who had the same key demographic and family characteristics (school, kindergarten entry year, gender, race and ethnicity, socioeconomic status, English Language Learner (ELL) status, and special education status). To match AVANCE children to comparison children with similar levels of school mobility, we matched AVANCE children with non-missing third-grade STAAR data with non-AVANCE children with non-missing third-grade STAAR data (indicating the student remained in the same school until third grade) and AVANCE children with missing third-grade STAAR data with non-AVANCE children with missing third-grade STAAR data (indicating the child likely moved schools by third grade). Using exact matching, we found a match for 1,497 AVANCE children (94.93%).

Next, we progressively relaxed matching criteria to find matches for the remaining students, dropping the STAAR data criteria, special education, and socio-economic status through three subsequent matching rounds. We found a match for 1,564 students (99.18%). Lastly, because only five students were not Latino, and understanding that AVANCE targets Latino students, we dropped non-Latino students from the sample (AVANCE $n=5$; non-AVANCE $n=5$).

The final analytic sample includes 3,118 students (AVANCE $n=1,559$; non-AVANCE $n=1,559$). Table 1 presents the demographic characteristics for the sample of AVANCE children and the comparison group, as well as the overall demographic make-up of the schools in which AVANCE children entered kindergarten. The AVANCE children and non-AVANCE children are statistically similar across all demographic characteristics, with the exception that more AVANCE children receive special education services.

Table 1: Characteristics of the Sample

	AVANCE Children n = 1,559	Non-AVANCE Children n = 1,559	All Students[^] N = 39,362
Year of Kindergarten Entry			
2013	5.52%	5.52%	N/A
2014	25.40%	25.40%	
2015	24.95%	24.95%	
2016	20.72%	20.72%	
2017	23.41%	23.41%	
Race			
Hispanic	100.00%	100.00%	75.89%
White	0.00%	0.00%	4.80%
Black	0.00%	0.00%	17.83%
Other Race	0.00%	0.00%	1.48%
Gender			
Male	51.44%	51.44%	50.24%
Female	48.56%	48.56%	49.76%
Eligible for Free or Reduced Price Lunch			
Eligible for Free or Reduced Price Lunch	86.85%	87.94%	80.97%
English Language Learner			
English Language Learner	95.57%	95.57%	61.61%
Special Education			
Special Education	3.01%***	0.96%	2.79%

Notes: *** indicates statistical significance at the $p < .001$ level. ^ "All Students" represents the demographic makeup of all students who started kindergarten between 2013 and 2017 across the schools in Dallas ISD where AVANCE students attended kindergarten and for whom kindergarten readiness data are available.

Outcomes Measures

To compare early academic outcomes between AVANCE and non-AVANCE children, we compared rates of Dallas-ISD pre-k participation, kindergarten readiness, chronic absenteeism, and number of days of kindergarten attended. Table 2 describes the outcome measures in more detail.

Table 2: Outcomes Measures

Outcome	Definition
Pre-K Participation	Binary (Yes/No) measure of whether student participated in Dallas ISD pre-k. Does not measure pre-k attendance outside of Dallas ISD (including private pre-k or within other districts).
Kindergarten Readiness	Binary (Yes/No) measure of school readiness at kindergarten entry, as measured by the Istation assessment. We calculated school readiness using the student's raw score and Istation publisher's calculated benchmark for "on grade level."
Number of Days Absent	Count of the number of days of kindergarten a student was absent.
Chronically Absent	Binary (Yes/No) measure of whether the student was chronically absent, indicating they missed more than ten percent of the days of the year that they were enrolled in Dallas ISD.

Analytic Strategy

To assess whether AVANCE facilitates positive early academic outcomes, we conducted a series of regression models comparing AVANCE children's outcomes to non-AVANCE children's outcomes. To compare pre-k attendance between AVANCE and non-AVANCE children, we conducted a bivariate logistic regression.

For the remaining outcomes, we conducted multivariate regression models controlling for pre-k attendance and including other key factors that could influence the outcome. To assess kindergarten readiness, we conducted a multivariate logistic regression, controlling for pre-k attendance and including the following covariates to assess how they influence school readiness: English Language Learner (ELL) status, gender, free or reduced-price lunch eligibility, special education status, and an indicator of whether the language of the assessment matched the student's ELL status (i.e., a student could be an ELL who took the assessment in Spanish, an ELL who took the assessment in English, or a non-ELL who took the assessment in English).

To assess chronic absenteeism, we conducted a multivariate logistic regression. To compare number of days absent, we conducted a negative binomial regression model. Negative binomial regression models are used when the outcome is a count and many observations have a value of "0." For both attendance outcomes, we controlled for pre-k status and included ELL status, gender, free or reduced-price lunch eligibility, and special education status as covariates to show how these characteristics influence attendance. The negative binomial regression model also accounted for the number of days the student was enrolled in kindergarten in Dallas ISD.

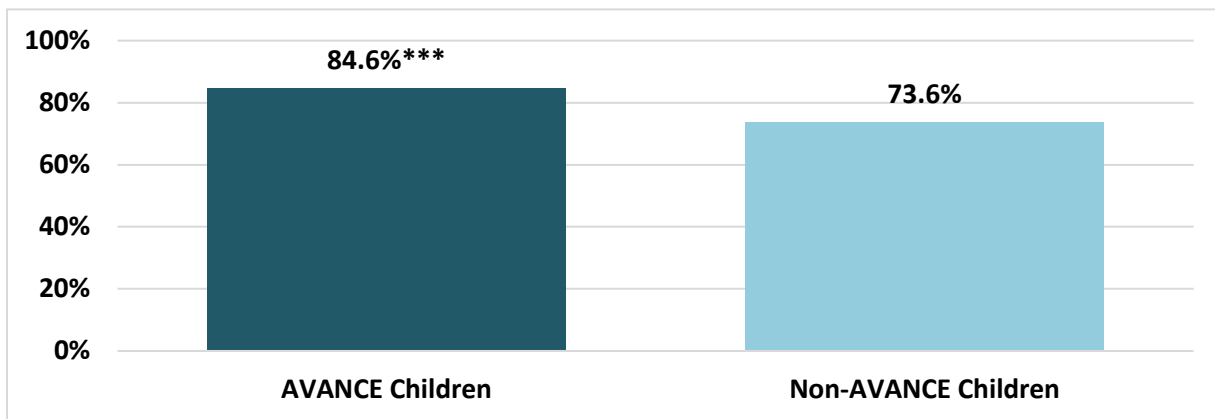
FINDINGS

Children who participated in AVANCE PCEP and subsequently enrolled in kindergarten in Dallas ISD between 2013 and 2017 demonstrated better early academic outcomes than their non-AVANCE peers across several key kindergarten metrics. Specifically, we find that AVANCE children were significantly more likely to participate in Dallas ISD pre-k, significantly more likely to be school-ready when they entered kindergarten, and missed significantly fewer days of kindergarten than non-AVANCE children. Overall, findings from Dallas participants indicate that participation in AVANCE PCEP is associated with better kindergarten outcomes. The following section describes early academic outcomes in more detail.

AVANCE children were more likely to attend Dallas ISD pre-K than their non-AVANCE counterparts.

Participation in pre-kindergarten is one of the biggest predictors of school readiness at kindergarten entry.²² Further, attending high-quality pre-k is associated with numerous positive long-term academic, economic, and social outcomes, including attaining higher education, higher employment rates, improved adult health, and reduced involvement in the criminal justice system.²³ AVANCE children were more likely to participate in Dallas ISD pre-k than non-AVANCE children. Specifically, despite having similar socioeconomic and demographic characteristics that indicate equal eligibility for Dallas ISD pre-k, approximately 11 percentage points more AVANCE children attended pre-k compared to their non-AVANCE peers. As shown in Figure 1, 85 percent of AVANCE children participated in Dallas ISD pre-k, compared to 74 percent of non-AVANCE children, indicating that AVANCE PCEP promotes pre-k participation among Dallas ISD students.^a

Figure 1: Proportion of Students who Participated in Dallas ISD Pre-K (n=3,118)



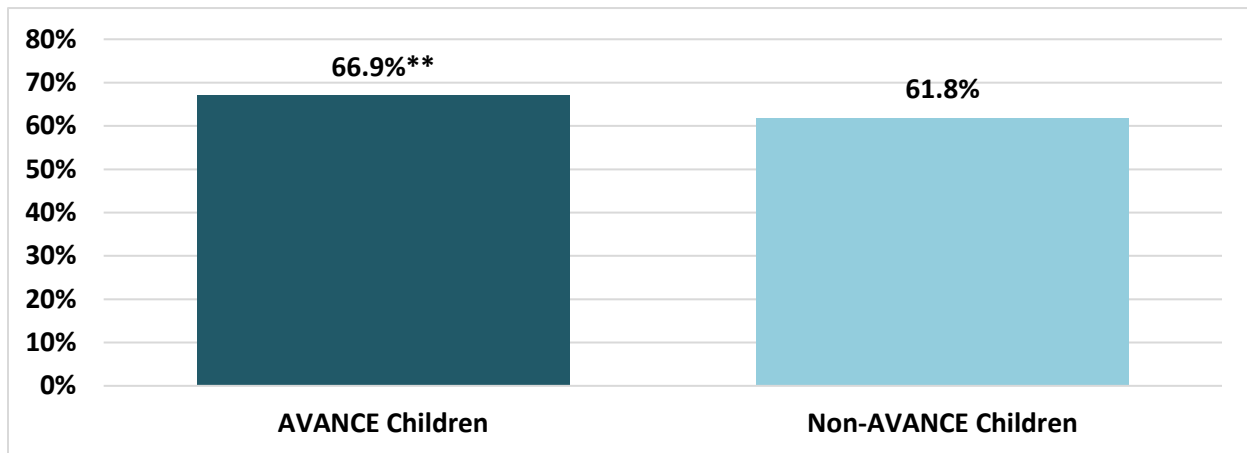
Source: AVANCE participant administrative data and Dallas ISD enrollment and testing data, 2012-2018. Notes: *** indicates statistical significance at the $p < .001$ level. Results presented are the raw proportions of pre-k attendees by group.

^a One way that AVANCE North Texas recruits participants is through fliers delivered at Dallas ISD schools. Therefore, it is possible that the difference in pre-k participation between groups is a result of AVANCE recruitment strategies.

AVANCE children were more likely to be school-ready at kindergarten entry than their non-AVANCE peers.

AVANCE children were significantly more likely to be school-ready when they entered kindergarten compared to similar non-AVANCE children. As shown in Figure 2, approximately 67 percent of AVANCE children were school-ready at kindergarten entry, compared to 62 percent of non-AVANCE children. Importantly, these results account for the fact that AVANCE children are more likely to participate in pre-k. In other words, even when controlling for pre-k participation, AVANCE children were more likely to enter kindergarten school-ready.

Figure 2: Proportion of Students who were “School-Ready” at Kindergarten Entry (n=3,118)



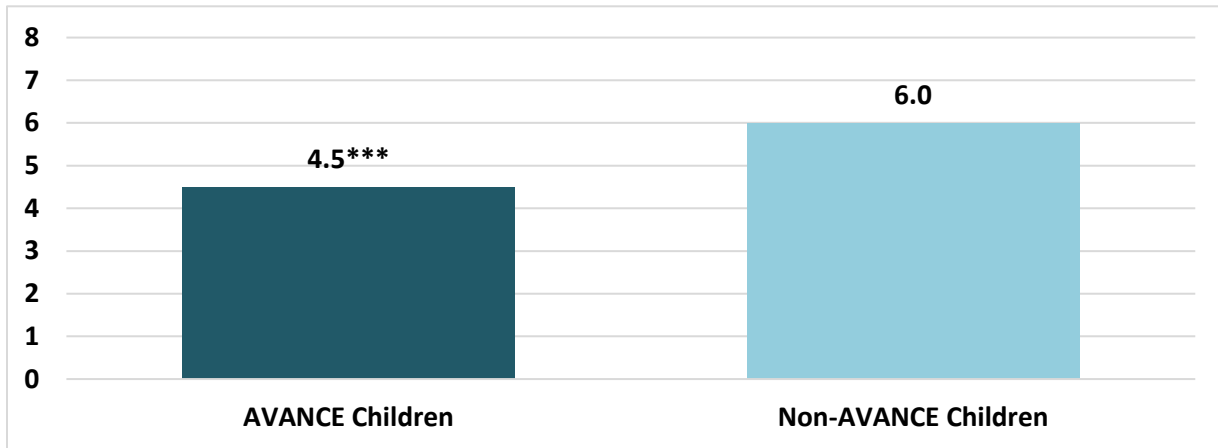
Source: AVANCE participant administrative data and Dallas ISD enrollment and testing data, 2013-2018. Notes: ** indicates statistical significance at the $p < .01$ level. Results are presented as predicted probabilities by group controlling for Dallas ISD pre-k participation, ELL status, gender, free or reduced-price lunch eligibility, special education status, and ELL status/assessment language.

Children who enter kindergarten school-ready, on average, score better on math and reading tests later in school, and school readiness is associated with increased odds of moving into middle class status for children who grow up poor.^{24, 25} Children from poor families are less likely to be school-ready at kindergarten entry, indicating that AVANCE’s influence on school readiness may help reduce disparities across socioeconomic groups.²⁶

AVANCE children missed 1.5 fewer days of kindergarten and were less likely to be chronically absent than children whose families did not participate in AVANCE PCEP.

In addition to entering kindergarten more prepared, AVANCE children missed fewer days of kindergarten than their non-AVANCE peers. Controlling for pre-k participation, AVANCE children missed, on average, 4.5 days of kindergarten and their non-AVANCE peers missed almost 6 days, on average, as shown in Figure 3.

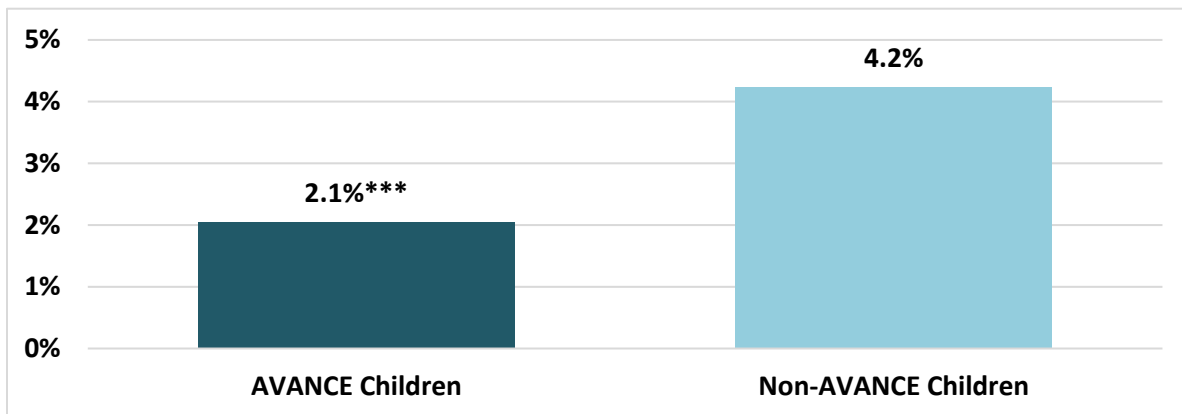
Figure 3: Average Number of Days Absent from Kindergarten (n=3,118)



Source: AVANCE participant administrative data and Dallas ISD enrollment and testing data, 2013-2018. Notes: *** indicates statistical significance at the $p < .001$ level. Results are presented as predicted number of days absent by group, controlling for Dallas ISD pre-k participation, ELL status, gender, free or reduced-price lunch eligibility, and special education status.

Similarly, half as many AVANCE participants were chronically absent, or missed at least 10 percent of days of school, during their kindergarten year, compared to non-AVANCE children. As shown in Figure 4, when controlling for pre-k participation, approximately four percent of non-AVANCE students were chronically absent, compared to two percent of AVANCE students.

Figure 4: Proportion of Students who were Chronically Absent (n=3,118)



Source: AVANCE participant administrative data and Dallas ISD enrollment and testing data, 2013-2018. Notes: *** indicates statistical significance at the $p < .001$ level. Results are presented as predicted probabilities by group controlling for Dallas ISD pre-k participation, ELL status, gender, free or reduced-price lunch eligibility, and special education status.

Missing days of school inhibits students' ability to learn and develop on-track with their peers. Further, research indicates that early absenteeism is associated with more absences later in a student's academic career, and school absence is associated with worse academic and social outcomes at age 15.²⁷

In addition to promoting student learning and development, minimizing the number of days of school a student is absent ensures that the school receives adequate funding. Given that the state funds school districts based on the number of days of school students attend, minimizing student absences is vital for ensuring school districts obtain as much funding as possible per student.²⁸

Overall, findings from this evaluation indicate that AVANCE promotes positive early academic outcomes. Compared to a group of demographically similar children whose families did not participate in AVANCE PCEP, AVANCE children were more likely to attend pre-k, more likely to be school ready at kindergarten entry, missed fewer days of kindergarten.

LIMITATIONS

The current study is the first study to rigorously compare school readiness outcomes between AVANCE PCEP children and similar children who did not participate in AVANCE PCEP; however, several limitations should be considered when interpreting the results from this evaluation.

PARTICIPATION IN AVANCE PCEP

Families are not randomly assigned to participate in AVANCE PCEP, and therefore families who participate in the program may be different from families who do not. We cannot draw a causal link between AVANCE PCEP and early academic outcomes in this study. However, we use a rigorous matching approach to identify demographically similar students to compare outcomes among students who are as similar as possible to mitigate this limitation.

Additionally, we do not have dosage data for AVANCE families. We do not know whether the families in the AVANCE PCEP sample completed the entire program or how many families left before program completion.

KINGERGARTEN READINESS OUTCOME

The Istation assessment measures emergent-reading literacy skills of children in kindergarten. Though this is one component of school readiness, there are other domains of school readiness that the Istation does not measure, including mathematics and socio-emotional skills. Despite this limitation, the Istation is on the list of approved kindergarten readiness measures for the state of Texas, and thus, we assess kindergarten readiness in the same way as the state.²⁹

SCHOOL DISTRICT DATA QUALITY

Findings from this study represent students who enrolled in kindergarten in Dallas ISD and participated in AVANCE PCEP at the AVANCE North Texas chapter. Results may not be generalizable across other AVANCE programs in the state, however. We initially planned to incorporate early academic outcomes from five Texas school districts where a substantial number of AVANCE PCEP participants enroll in kindergarten. Data we received from each school district varied substantially, however, and we encountered numerous data quality issues that prevented the use of data from four of the five districts in the final analytic sample. Data quality issues we encountered included receiving end-of-year kindergarten assessment scores instead of beginning-of-year scores and receiving data that did not include a kindergarten readiness indicator or a raw score to calculate kindergarten readiness. Besides Dallas ISD, three of the four remaining school districts' data were unusable. The fourth school district sent usable data, however, the sample from that district was so small that we were unable to use it along with the relatively larger sample from Dallas ISD.

LINK RATE IN DALLAS ISD

An additional data quality limitation is that we were only able to link approximately 40 percent of students who participated in AVANCE PCEP at the North Texas chapter to school records in Dallas ISD. We do not know the extent to which early academic outcomes for the unlinked students are similar to the linked student outcomes used for the evaluation. We expect that

most of the unlinked students enrolled in school outside of Dallas ISD, either in a private school, charter school, public school in an adjacent school district, or moved out of the Dallas area prior to kindergarten enrollment.

CONCLUSION

Overall, we find that AVANCE PCEP facilitates school readiness at kindergarten entry and higher kindergarten attendance rates among students in Dallas ISD. Children who participated in AVANCE PCEP and subsequently enrolled in kindergarten in Dallas ISD were more likely to participate in Dallas ISD pre-k, more likely to be school-ready at kindergarten entry, attended more days of kindergarten on average, and were less likely to be chronically absent than a comparison group of demographically similar students.

Future research should focus on assessing the extent to which outcomes from students who participated in AVANCE PCEP through the North Texas chapter and subsequently enrolled in kindergarten in Dallas ISD are similar to children who participate in AVANCE PCEP through other AVANCE chapters. Future research should also assess the extent to which early academic gains are sustained throughout elementary school.

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⁸ Montecel and Chain, *AVANCE Parent-Child Education Program External Impact Evaluation Technical Report*.

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