



Evaluation Matters

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Effects of Preschool Attendance on Third, Fourth, and Fifth Grade Achievement

1. What was the purpose of these analyses?

The purpose of this evaluation was to determine if there were long-term differences in achievement between students who had attended M-DCPS voluntary preschool, students who had attended community preschools, and students who had been reported as not having attended a preschool. An evaluation of the Title I funded public preschool program released in 2006 by the Program Evaluation office at M-DCPS (Sorhaindo, 2006) indicated that in kindergarten, children who had attended a pre-kindergarten program, M-DCPS or other, scored significantly higher on the kindergarten readiness screening assessment than children who had not attended a pre-kindergarten program (Sorhaindo, 2006). But, no further analyses of the students' achievement beyond kindergarten had been conducted. Hence, these analyses entail a retrospective assessment of those students' achievement in third, fourth, and fifth grades.

Readers of this report should understand that results of retrospective analyses should not be deemed conclusive. Following are three reasons why care must be taken with their interpretation. One, students from the original groups transfer out of the school system and the students who transfer might differ from those who stay such that results might be different if they had all stayed. Two, the families of students who choose voluntary preschool might differ from the families of students who chose other options. Over the years, those differences might maintain or increase achievement differences between the two groups of students. Three, teachers and schools might treat students with preschool experience differently than other students. Students with preschool experiences might be placed in more advanced groups, which might accelerate even more their initial advantage over other students.

2. What methods were used to collect and analyze the data?

In the 2006 Sorhaindo study, the evaluator classified students into three groups, those who in 2003-04 attended public preschools ($n = 2,235$), community preschools ($n = 3,055$), or no preschool ($n = 9,104$). For the current analyses, the students' third (2007-08), fourth (2008-09), and fifth (2009-10) grade FCAT reading and mathematics scores were compared. Included in the sample for analyses were the scores of all Black ($n = 4,586$) and Hispanic ($n = 9,067$) students who by third grade had not been classified as gifted or in need of Special Education services and who at each analysis point, i.e., third, fourth, and fifth grade, were in the appropriate grade because they had not repeated a grade. By the fifth grade 2007-2008 FCAT administration, of students still in the district who took the FCAT, this represented 89.7% of students who had attended public preschool, 91.7% of students who had attended a community preschool, and 91.2% of students who had not attended a preschool.

Separate regression analyses were conducted for Black and for Hispanic students and for each time point, i.e., third (Black = 3,780; Hispanic 7,421), fourth (Black = 3,010; Hispanic = 6,395), and fifth

grade (Black = 2,846; Hispanic = 6,180). In each analysis, students with preschool experience were compared to students of the same race who had not attended preschool. The students' third grade Limited English Proficiency status and participation in the free/reduced lunch (FRL) program were entered as statistical controls.

3. Were there long-term benefits of preschool attendance?

Results indicated that students who attended a community preschool and students who attended a public preschool performed significantly better than other classmates without preschool experience. As can be seen from Table 1, in third and in fourth grade, Black students who attended the public school preschool program scored on average 4.2 scale score points higher on the FCAT Reading than Black students who had not had public or community preschool attendance. In fifth grade, the advantage of public preschool attendance was 6.3 points more than non-attendance. In mathematics, the advantage of public preschool experience for Black students was 6.4, 6.8, and 5.5 points in third, fourth, and fifth grades, respectively. For Hispanic students, the advantage of the public preschool experience was 6.9, 5.7, and 4.7 additional FCAT Reading points in third, fourth, and fifth grades respectively. In mathematics, the advantage was 6.8 and 4.2 points in fourth and fifth grades, respectively.

Students who attended community preschool programs also experienced an advantage with respect to students who had not attended preschool. For Black students, in reading the advantage represented 7.7, 4.9, and 7.0 points in third, fourth, and fifth grade respectively. In mathematics it represented 3.6 points in fifth grade. For Hispanic students, the advantage in reading represented 8.9, 5.3, and 5.7 points respectively and in mathematics it represented 7.7, 7.3, and 5.2 points respectively.

Table 1

Longitudinal Effect on FCAT Standard Scores for Participation in M-DCPS and Community Preschool Programs, by Subject Area and Ethnicity.

Public Schools Preschool Program				Community Preschool Program			
Grade	Subject	Ethnicity		Grade	Subject	Ethnicity	
		Black	Hispanic			Black	Hispanic
3	Reading	4.2	6.9	3	Reading	7.7	8.9
	Mathematics	6.4	ns		Mathematics	ns	7.7
4	Reading	4.2	5.7	4	Reading	4.9	5.3
	Mathematics	6.8	6.8		Mathematics	ns	7.3
5	Reading	6.3	4.7	5	Reading	7.0	5.7
	Mathematics	5.5	4.2		Mathematics	3.6	5.2

Note. Values represent the number of FCAT scores points attributed to preschool participation while controlling for third grade FRL and LEP status.
ns = not significant.

4. What conclusions might be drawn from the results?

The results suggest that on average, preschool experience has a small, statistically significant effect on achievement that is consistent across years and lasts at least into 5th grade. The estimated point advantages are averages that do not take into account the quality of the programs that the students attended. Thus, it stands to reason that students who attended high quality programs had larger than average effects and students who attended lower quality programs had less than average effects.

5. How might the conclusions be interpreted?

The interpretation of the conclusions stated above must be done with caution because preschool might not be the only reason for the differences observed. The analyses used on the data controlled for student factors such as ethnicity, limited English proficiency, and participation in FRL. By limiting students to those who stayed in the same school, it also controlled for school characteristics. However, other factors might have contributed to these findings. For instance, the two sets of students could have differed on family characteristics that might have resulted in and maintained the initial difference between the students. Also, the two groups of students may have differed in the access they had to opportunities such as enrichment or accelerated content. Thus, it can be assumed that most likely the preschool experience played a role in these students' higher achievement, but it should not be assumed that preschool was the only factor or that if all students received preschool they would be similarly advantaged.

Sorhaindo, L R. W., (February 2006). *Evaluation Report for the Title I Pre-Kindergarten Programs 2003-04*. Miami-Dade County Public Schools Office of Evaluation and Research. Miami, Florida.