



Effects of Preschool Programs

Prepared for

Portland Public School District

University of Portland & Northwest Evaluation Association

Multnomah County Partnership for Education Research

October 2015

Executive Summary

Effects of Preschool Programs

Current research strongly supports the benefits of preschool education for students (Bowman, Donovan, Burns & National Academy of Sciences, 2001). The benefits of early childhood education include future academic success and social and emotional knowledge and abilities (Fantuzzo et al., 2007; Merrell & Gueldner, 2010). National dialogue in the United States has begun to focus on funding pre-K education in public schools, and since 2013, over 30 states have expanded their access to preschool (Kamenetz, 2014). The Education Commission of the States (Zinth, Christie, & Education Commission of the States, 2012) released a report that called for a smoother transition for students from “P” grades to early grades and claimed that the mindset of the country needs to shift from believing kindergarten is the first grade of school to believing pre-K is the beginning of formal schooling. The report stated challenges in valuing pre-K education, including funding, program quality, and instructional leadership. However, the report also highlighted positive signs of shifting thoughts on pre-K education, including numerous states allocating funding for early childhood education and creating initiatives focused on program and leadership development.

Academic Gains

Although preschool students are young, early education has been shown to greatly impact future school success. A recent meta-analysis of 84 preschool programs across the United States revealed several benefits to this form of early childhood education (Brooks-Gunn et al., 2013).

The analysis found th

half to one full year of additional learning in students who had attended preschool. Previous analyses of preschool programs were dominated by programs serving high-poverty students; however, results from the Brooks-Bunn et al. (2013) analysis showed gains in students from both high and low-income families.

2nd grade; and students were 30% less likely to repeat a grade after one year of enrollment in the *Abbott* program and 50% less likely after two pre-K years.

A study regarding Tennessee's Voluntary Pre-K Program (TN-VPK) revealed different results regarding the sustainability of academic gains for preschool students (VPK) revealed (-5mfOta)440m0aipssu

in the preschool years.

2. Responsive interpersonal relationships with teachers nurture young children's dispositions to learn and their emerging abilities.
3. Both smaller class size and reduced adult-child ratios are correlated with greater program effects.
4. While no single curriculum or pedagogical approach can be identified as best, children who attend well-planned, high-quality early childhood programs in which curriculum aims are specified and integrated across domains tend to learn more and are better prepared to master the complex demands of formal schooling.
5. Young children who are living in circumstances that place them at greater risk of school failure are much more likely to succeed in school if they attend well-planned, high-quality early childhood programs.
6. The professional development of teachers, including teachers' education and

demographics. The data also included third grade OAKS reading and math scores in order to further analyze the effects of preschool programs on student achievement.

The limitations of the data include the inability to compare students who participated in a pre-K program with those who did not participate in a pre-K program. It is recommended that some sort of a system or ‘flag’ be utilized in the dataset to better understand who attends PPS pre-K, who attends non-PPS pre-K, and who does not attend pre-K at all. Because of this, the researchers recommend caution when analyzing the results of this study. Additionally, apparent mistakes were found in the data: notably, Bridlemile, ESL Newcomer Site, and Llewellyn Elementary School each only served one student in the past seven years, which seems implausible. Results from the data analysis of both DIBELS and OAKS scores need to be interpreted cautiously due to small sample sizes and the fact that socioeconomic status was not controlled for.

Results

The data were analyzed in three different ways. First, the data were analyzed by participation rates. This analysis sought to answer the following research question: Which programs were serving the greatest number of students and by which year? Second, the data were analyzed by the beginning of the year kindergarten DIBELS LNF assessment score. This

Participation Rates

Table 1 shows the distribution of the 6,371 students who participated in a PPS preschool program during the seven school years between 2008 and 2015. It appears that Head Start Early Childhood served the largest proportion of students: 68% of students participating in PPS preschool programs participated in Head Start's program. Seven programs served over 100 students in the past seven years, these include: 1) Head Start (68%), 2) Special Education

Letter Naming Fluency

DIBELS Letter Naming Fluency (LNF) is one of the assessments administered to incoming kindergarteners in PPS. LNF is a standardized, individually administered test designed to provide a measure of risk. Students are provided with a page of both upper- and lower-case letters arranged in a random order and are asked to name as many letters as possible within one minute. Letter naming has been found to be highly predictive of later reading success, and researchers believed that it would provide indication of kindergarten readiness, an indicator of attending a high-quality preschool program. Table 2 shows the means and standard deviations of

These data must be interpreted cautiously, however, due to the fact that poverty is a varying issue for these schools; these data are noted in the percent Free and Reduced Lunch (i.e., a measure commonly used to represent socioeconomic status) column.

Table 3

Preschool Program	% FRL		Mean		Percent Meeting Benchmark
Rosa Parks E.S.	95%+	76	20.00	16.83	62%
Woodlawn PK-8	84%	107	21.40	15.72	70%
King PK-8	92%	17	22.76	14.18	71%
Head Start Early Childhood Ed	-	1,937	22.88	19.31	66%
King PK-5	92%	77	23.27	18.48	69%
Faubion PK-8	77%	91	24.98	13.63	84%
Special Ed KG Transition	-	170	26.30	22.22	66%
Humboldt PK-5	-	40	30.45	20.03	80%
Beach PK-5	58%	26	34.65	17.11	92%
Vernon PK-5	65%	49	36.41	22.48	88%
Richmond E.S.	13%	99	39.78	16.76	95%
Ramona Early Learners Academy	-	29	40.62	19.72	93%
Chief Joseph E.S.	51%	39	46.15	18.11	97%

. FRL stands for Free and Reduced Lunch. te

Table 4 disaggregates these data by ethnicity. Data were coded in this analysis, as it was in the dataset to maintain the largest potential differentiation of the data. Future rounds of data analysis may combine the data to create a "Multiple Ethnicities" category instead of the specificity noted here. Again, these are organized from smallest to largest mean score of LNF. One can see that there are disparities by ethnicity: White and Asian students performed highest on the LNF task.

Table 4

		Mean	
White/Hispanic	520	17.62	17.48
Native American/Hispanic	214	17.74	18.22
Black/Hispanic	59	21.19	19.84
Asian/Hispanic	12	21.83	17.60
Pacific Islander	54	23.72	16.67
Black	733	24.11	18.06
Pacific Islander/Hispanic	12	25.42	16.17
Native American	63	26.43	21.00
White	773	29.50	20.43
Asian	392	30.95	20.44

OAKS Reading and Math Scores

Analysis of the effects of participating in these preschool programs was also measured through the OAKS reading and math scores; however, the sample sizes for this particular analysis were quite small. Only students who were in third grade in the 2013-14 school year (i.e., had attended kindergarten in 2010-11 and preschool in 2008-09 and/or 2009-10) could be

included in this analysis. Although those students who were in third grade in 2014-15 were also included in the above analysis, because of the switch to Smarter Balanced in this year these data could not be included. The Smarter Balanced data were also not available at the time of this analysis. Table 4 shows the mean OAKS reading scores by program and the percent of students meeting the grade level standard. These results are again sorted from smallest to largest mean score; note that the percent meeting standard may be higher in schools that have a lower mean, such as Woodlawn. Again, these scores must be interpreted cautiously both due to sample size and due to poverty levels. Because of the small sample sizes, these data were not disaggregated further.

Table 4

	% FRL		Mean		Percent Meeting Standard (211+)
Rosa Parks E.S.	95%+	9	201.11	10.11	33%
Head Start Early Childhood Ed	-	255	210.78	11.85	70%
Faubion PK-8	77%	14	214.36	9.22	86%
Vernon PK-5	65%	5	216.20	14.27	80%
Beach PK-5	58%	27	216.44	14.43	78%
Woodlawn PK-8	84%	16	217.69	6.44	94%
King PK-5	92%	17			

must be interpreted cautiously both due to sample size and due to poverty levels. Because of the small sample sizes, this data set was not disaggregated further.

Table 5

	% FRL		Mean		Percent Meeting Standard (212+)
Rosa Parks E.S.	95%+	10	203.20	13.60	40%
Head Start Early Childhood Ed	-	239	209.93	12.07	64%
Faubion PK-8	77%	14	210.86	7.79	71%
Humboldt PK-5	-	8	213.38	14.10	75%
King PK-5	92%	14	214.50	12.84	86%
Chief Joseph E.S.	51%	20	215.75	8.16	90%
Beach PK-5	58%	20	215.95	11.95	85%
Woodlawn PK-8	84%	10	221.50	8.32	90%
Sabin PK-5	35%	18	222.00	6.39	100%
Richmond E.S.	13%	24	222.54	10.67	96%
Vernon PK-5	65%	6	223.83	11.92	100%

. FRL stands for Free and Reduced Lunch.

Kamenetz, A. (2014). Why math might be the secret to school success. National Public Radio. Retrieved from