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# Cuyahoga County Universal Pre-Kindergarten Pilot: Preliminary Findings

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## Key Findings

- Strategic investments in the quality of early care and education settings have resulted in substantial (18%) and statistically significant gains in UPK site quality over one year.
- Children enrolled in UPK who were most at-risk at baseline (below the 50th percentile) showed marked improvement, and children in the midrange (51st and 75th percentile at baseline) maintained their achievement levels over time. The magnitude of the gains for the most at-risk children exceed the gains to be expected from simply having a preschool experience, and are comparable to the gains found in larger-scale UPK initiatives.
- While average achievement scores declined for the highest performing children (above the 76th percentile), the decrease was significant on a single measure, and the children remained in the top quartile; this result bears further study of the needs of high-performing students in relation to the UPK model.
- Children emerging from UPK sites and entering CMSD show an average level of school readiness that significantly exceeds the average readiness of all children entering the Cleveland Metropolitan School District (18.1 vs 15.8). This average is less than county and state averages, but does indicate significant improvement for UPK prepared children. In addition, the proportion of children in Band 1 (lowest achieving) was 28% in comparison with 41% of the children entering CMSD. Children in scoring in Band 1 require additional assessment by the school district.

## Introduction

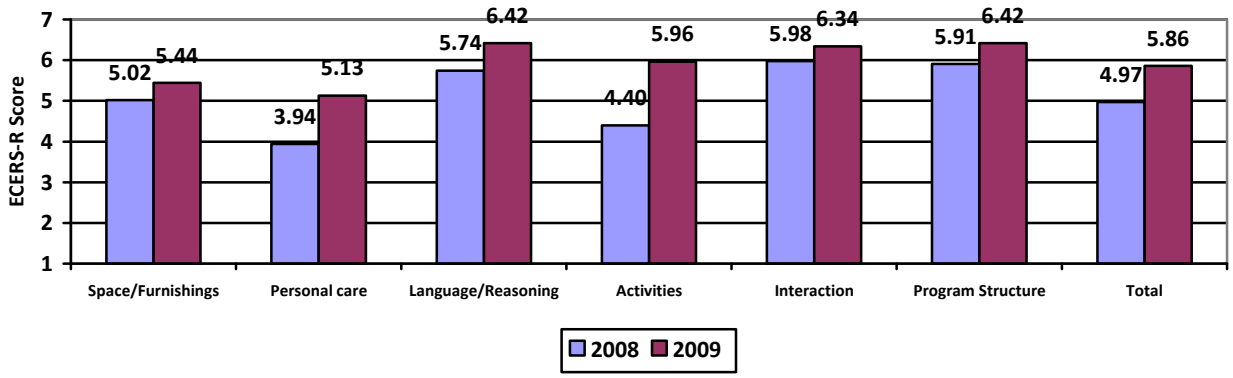
The goals of Invest in Children (IIC) are to promote and enhance the physical, social, and emotional well-being of Cuyahoga County's children prenatal to age six through a variety of strategies. IIC's 2005 strategic plan emphasized investments in quality early care and education, which developed into a community-wide UPK planning effort in 2006. This led to studies of childcare capacity and quality, which were used to understand the early care and education context in Cuyahoga County and plan a study of the UPK pilot program which commenced in fall 2007. This summary reviews data the UPK pilot collected as part of the evaluation of the program. Three analyses are presented: (1) data on the quality of the care provided in UPK sites, (2) analysis of data on a sample of 200 children observed at three time-points and assessed using standardized measures; and (3) analysis of data on

UPK children who entered kindergarten in fall 2008 and for which a school readiness score was available.

## Data on Care Quality in UPK Sites

A core emphasis of the UPK pilot was to invest in the quality of care in participating sites to enhance the child outcomes for the children in care. The funding provided to UPK sites could be used to enhance teacher compensation, provide additional program supports, and acquire specific program resources and materials. To assess the level of quality in the center-based sites, a standardized measure of structural quality of care was administered mid program year in 2008 and 2009. The scores on the *Early Childhood Environment Rating Scale –Revised* (Harms, Clifford, & Cryer, 1998) are reported on a seven-point scale, 1 (inadequate), 3 (minimal), 5 (good), and 7 (excellent).

**Figure 1 ECERS-R Scores at UPK Sites**




The program sites showed statistically significant ($p<.05$) improvements on all subscales and the total ECERS score between 2008 and 2009. See Figure 1. The overall ECERS score improved by 18% and the largest gains were found in the areas of personal care routines (30% increase) and activities (35% increase). These gains are substantial for a one year period of investment in these center-based programs.

## Data on Child Development Over Time

A sample of participants was drawn consisting of a stratified random sample of 208 children representing all 24 UPK sites participating in 2007-2008. Achievement was measured using the Peabody Picture Vocabulary Test (PPVT-III), as well as 2 subtests of the Woodcock Johnson III: Letter/Word Recognition (WJ-LW) and Applied Problems (WJ-AP). The PPVT-III measures receptive language skills; the WJ-LW measures the child's ability to recognize words and letters; and the WJ-AP measures children's beginning math skills. Children were assessed at 3 different time points: spring 2008 (T1), fall 2008 (T2), and spring 2009 (T3).

Paired t-tests were conducted between all time points. This report of preliminary findings focuses on the change between time points T1-T3, representing approximately one year. Results from this report are organized according to: (1) the change in scores over time for the entire sample of UPK participants; and (2) the change in scores over time according to the child's initial percentile rank. Initial percentile rank was determined by how the child's standard score compared to the average standard score on each of the measures. Because percentile rank was also determined for each measure, a child could be in a different percentile rank across measures. Four percentile ranks were used: the 25th percentile or lower; the 26th through the 50th percentile; the 51st through the 75th percentile; and the 76th percentile or above. Table 1 below shows the paired t-tests for T1-T3 on all three measures for the entire sample and the sample divided by percentile rank. An asterisk next to the significance level indicates that there is less than a 5% likelihood that the change in scores occurred by chance.

**Table 1 Paired T-tests on Achievement Measures**

| Measure | Group Measured | Sample Size | Time 1 Mean | Time 3 Mean | Raw Diff | Significance |
|---|---|---|---|---|---|---|
| **PPVT** | Full sample | 165 | 99.3 | 100.7 | +1.4 | .08 |
| | < or = 25th percentile | 42 | 82.6 | 90.5 | +7.9 | .00* |
| | 26th-50th percentile | 59 | 96.2 | 98.6 | +2.4 | .03* |
| | 51st-75th percentile | 26 | 105.2 | 104.0 | -1.2 | .51 |
| | > or = 76th percentile | 36 | 118.5 | 113.0 | -5.5 | .00* |
| **WJ-LW** | Full sample | 167 | 104.0 | 105.2 | +1.2 | .19 |
| | < or = 25th percentile | 22 | 83.3 | 94.7 | +11.4 | .00* |
| | 26th-50th percentile | 38 | 95.8 | 98.7 | +2.9 | .09 |
| | 51st-75th percentile | 66 | 106.1 | 105.2 | -0.9 | .42 |
| | > or = 76th percentile | 41 | 119.4 | 116.6 | -2.8 | .18 |
| **WJ-AP** | Full sample | 163 | 103.3 | 104.6 | +1.3 | .12 |
| | < or = 25th percentile | 18 | 83.1 | 90.0 | +6.9 | .03* |
| | 26th-50th percentile | 54 | 95.9 | 99.9 | +4.0 | .00* |
| | 51st-75th percentile | 48 | 105.7 | 105.0 | -0.7 | .62 |
| | > or = 76th percentile | 43 | 118.3 | 115.9 | -2.4 | .18 |

*P value <.05

As the results show, achievement scores improved on all tests for those who started the study in the 50th percentile or below. Only on the WJ-LW for those who started between the 26th and 50th percentile ranks was the improvement nonsignificant. Also, in only one case did scores decrease significantly for those who started above the 76th percentile rank. This could result from a common phenomenon in research called regression toward the mean.

Research has shown that a child having a single year of preschool compared to no preschool is associated with a standard score gain of 0.9 on the PPVT and gain of 2.5 on the WJ-AP (Barnett & Lamy, 2006). Results from other UPK programs, such as Georgia, show that gains on the PPVT average 4.7 (with the most disadvantaged children having gains of 7.0), and gains on the WJ-Ap average 3.8 over one year (Henry, Henderson, Ponder, et al, 2003).

Four conclusions can be drawn at this point from these sample data. First, these results suggest that achievement may improve for children enrolled in UPK who were most at-risk at baseline (started below the 50th percentile). Second, achievement remained relatively flat for children who were between the 51st and 75th percentile at baseline. Third, while scores decreased for those above the 76th percentile, the decrease was only significant on the PPVT. This result may indicate a need to examine the needs of high-performing students in relation to the UPK model. Fourth, the magnitude of the gains for the most at-risk children exceed the gains to be expected from simply having a preschool experience, and are comparable to the gains found in larger-scale UPK initiatives.

**Data on School Readiness**

A third analysis examined the performance of children on the state's mandatory kindergarten entry assessment measure, the Kindergarten Readiness Assessment-Literacy (KRA-L). The KRA-L was first implemented in public school districts beginning in 2007. The assessment is administered on students entering kindergarten during the first few weeks of the fall term. It has a value of 0-29 and has three score bands: Band 1 0-13 (Assess broadly for intense instruction), Band 2 14-23 (Assess for targeted instruction), and Band 3 24-29 (Assess for enriched instruction). Children scoring Band 1 may be at serious risk of being unprepared for kindergarten.

KRA-L data on children in Cuyahoga County entering the Cleveland Metropolitan School District (CMSD) in Fall 2008 were obtained and matched to children who were in care in UPK and other settings during the 2007-2008 school year. Data on children entering other public school systems, charter schools, or private and parochial schools were not available for this analysis. Figure 2 summarizes the mean KRA-L scores for several subgroups of children. The mean scores for all children in Cuyahoga County and state-wide in Ohio came from reports produced by the Ohio Department of Education.

These data show that, on average, children served in UPK settings in 2007-2008, fare better on the school readiness measure compared to all children entering CMSD (14% better), and children entering CMSD from center-based settings (7.1% better). However, children do not fare as well compared to the average for all children in Cuyahoga County or state-wide in Ohio.

**Figure 2 School Readiness Data – Mean Scores**

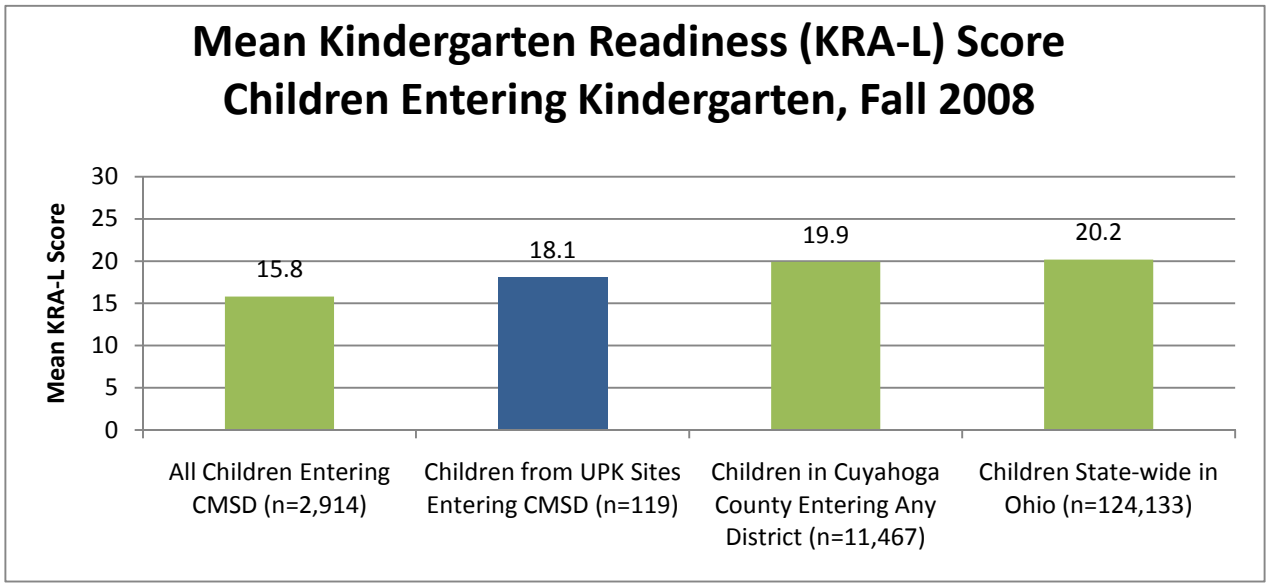



Figure 3 shows the proportions of children scoring in each of the three bands in each of these groups. These data also show that a larger percentage of children entering CMSD from UPK sites are prepared for a kindergarten experience compared to the general CMSD population (72% versus 59% in Bands 2 & 3).

**Figure 3 School Readiness Data – Scores by Bands**