California Head Start Child Outcomes Bulletin 2012

California Head Start Programs Increase School Readiness for Children

Children who attend Head Start reach developmental milestones two and a half to five months earlier than children who do not. This finding holds true across a variety of developmental areas. Child assessment data was collected on all three and four year-olds enrolled in 30 California Head Start programs. Statistical analysis was conducted on a subset of this group totaling 9,665 children to determine how much the children benefited from participating in Head Start as three-year-olds.

The analysis encompassed a broad array of developmental areas including:

- Self and Social Development
- Language and Literacy Development
- English Language Development
- Cognitive Development
- Mathematical Development
- Physical Development
- Health

The data demonstrate that Head Start programs significantly increase a child's development across all of these areas, better preparing them to enter kindergarten.

Importantly, one of the largest impacts was in cognitive development. Children who attended Head Start as three-year-olds demonstrated behaviors like persisting in the completion of a task despite a distracting environment, five months earlier than they would have without the Head Start experience. Other cognitive behaviors that were observed an average of five months earlier include demonstrating curiosity by asking questions, demonstrating a strong memory by telling a story about what happened to them on the way to school, or trying a problem solving strategy that the child observed someone else use. All of these behaviors are meaningful steps in a child's cognitive development.

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Although Head Start enrolls more four-year-olds than three-year-olds, this analysis focuses on the impact of Head Start on children as three-year-olds (two years before Kindergarten) due to data limitations. The Regression Discontinuity Design used in this analysis requires data on children who are from the age group being evaluated and from children who are a year older. To evaluate the impact of Head Start on four-year-olds using this methodology would require data on Kindergarteners, which was not available.

Given the many obstacles that Head Start eligible children face, the focus on three-year-olds also helps to highlight the importance of not waiting until children are four-year-olds to provide developmental support. Children who have two years of Head Start are more likely to be ready for Kindergarten than children with just one year. The findings in this Bulletin are another piece of evidence that demonstrate the benefits of two years of Head Start participation.

Head Start Children Achieve Developmental Milestones Earlier

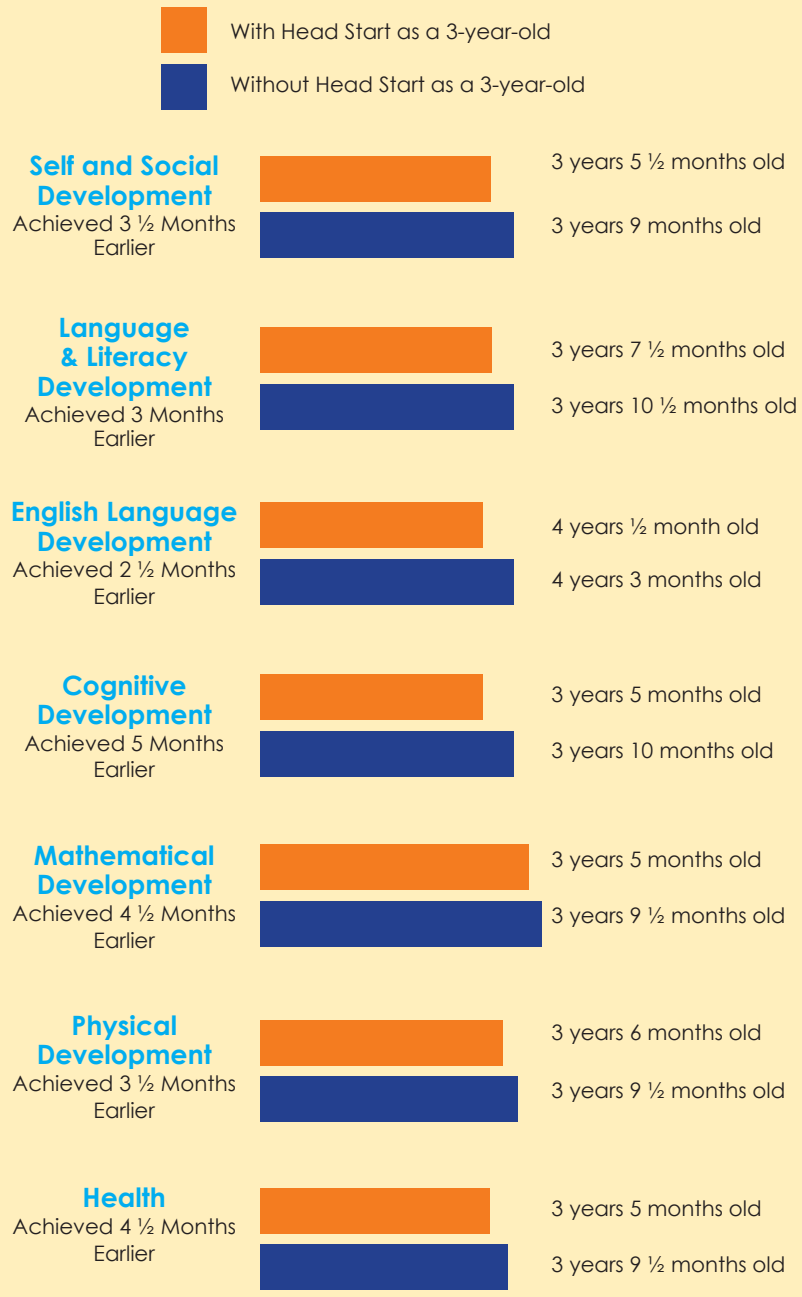
Children with prior experience in Head Start achieved developmental milestones at an earlier age than the comparison group of newly enrolled children controlling for age, race, ethnicity, language, and gender.

Using the DRDP© 2010, three and four-year-old children were assessed at one of four developmental levels on a series of measures and domains. The second developmental level is called "Developing." The graph below compares children who had Head Start as three-year-olds with those who did not. It shows the average age at which each group reached the "Developing" developmental level. The difference between the two groups is a measure of Head Start's impact.

For example, a typical Head Start eligible child without Head Start would not reach the "Developing" level in Mathematical Development until they were 3 years 9 ½ months old, but with the help of Head Start as a three-year-old, children reach that level by the age of 3 years 5 months. That 4 ½ month head start can make the difference in whether or not a child is ready for Kindergarten.

Head Start Impact – Younger is Better

Average Age at which a Typical Head Start Eligible Child Reaches the "Developing" Developmental Level on the DRDP© 2010



Children with Head Start experience as a three-year-old…

Self and Social …exhibit empathetic behavior like hugging another child who is upset, 3 ½ months earlier.

Language & Literacy …use three to five word sentences, 3 months earlier.

English Language …understand commonly used English words and phrases, 2 ½ months earlier.

Cognitive …comprehend the cause and effect relationship between routine actions, 5 months earlier.

Mathematical …can correctly identify basic shapes, 4 ½ months earlier.

Physical …master fine motor skills like using scissors, 3 ½ months earlier.

Health …demonstrate personal care routines like using a tissue for his or her nose, 4 ½ months earlier.

The Methodology: Establishing A Causal Relationship

The Data Set

Desired Results Developmental Profile© 2010 (DRDP© 2010) data was gathered on 21,643 children from the 30 participating Head Start programs. The 30 Head Start programs were not randomly selected. Participation in the study was open to all California Head Start programs who use the DRDP© 2010 and were willing to share their data. Data was gathered from all of the children served by the 30 Head Start programs, but the analysis focused on typically developing children served in center-based programs. As a result, data from children enrolled in migrant Head Start programs or Home Based programs, children with special needs, or children who were four years old but had not attended Head Start as three-year-olds were not included in the final analysis. The data collected consisted of measure level assessment scores, child language, child race and ethnicity, child gender, child date of birth, and whether the child was enrolled in Head Start the previous year. Data was collected on the assessment conducted in the fall of 2010 and the spring of 2011. The core of the analysis focused on the fall 2010 data.

The Analysis

The children were divided into three groups:

1. Children expected to enter Kindergarten in the fall of 2012 (three-year-olds). n = 5,501

2. Children expected to enter Kindergarten in the fall of 2011 (four-year-olds) who were enrolled in the Head Start program the previous year (as a three-year-old). n = 4,164

3. Children expected to enter Kindergarten in the fall of 2011 (four-year-olds) who were new to the Head Start program (no previous enrollment). n = 6,507

Data from the remaining 5,471 children were excluded from the analysis either because they had a special need, were enrolled in a migrant or Home Based program, or were missing demographic information. The core of the analysis focused on the first two groups of children, n = 9,665. 6,204 of the children in the first two groups were assessed as English language learners.

Using Regression Discontinuity Design, the analysis controlled for development based on how far the child was from the cut-off date for entering kindergarten. Regression Discontinuity has become the preferred methodology for determining the impact of preschool programs over the past ten years because it eliminates the problem of selection bias. Used with large samples, Regression Discontinuity is nearly as rigorous and reliable as a controlled experiment with random assignment.

Typically, this methodology would be used to evaluate preschool the year before Kindergarten (rather than two years prior) by using assessment data from children entering Kindergarten and those entering preschool. However, the DRDP© 2010 is only used to assess preschoolers and not Kindergarteners. As a result, the analysis could only be used to evaluate Head Start's impact on three-year-olds.

The concept of Regression Discontinuity is easiest to understand by providing an extreme example: consider two children who differ only in that one was born the day before the cutoff date (December 1) and another born the day after the cut-off date (December 3). We look at the fall 2010 assessment results for both children. The first child serves as the experimental group because she attended Head Start in the previous year. The second child serves as the comparison group because she has just entered and not been exposed to Head Start in the prior year. The methodology eliminates selection bias because the parents of both sets of children made the decision to enter them into Head Start as three-year-olds. The statistical model incorporates children born further from the cut-off by controlling for their date of birth compared to the cut-off.

Most of the results were statistically significant at the 99.9% confidence level. The results for the English Language Development Domain were significant at the 95% confidence level.

Data Limitations

While the analysis demonstrates the effectiveness of the Head Start model, the results cannot be extrapolated to all California Head Starts (the sample is not based on a random sample) or to the impact on four-year-olds.

Head Start is designed as a comprehensive program to support children and their families. This analysis only captures Head Start's impact on child development as measured by the DRDP© 2010. Other demonstrated outcomes, such as increased medical and dental care and improved family outcomes, are not included.

Technical Information

For a more detailed explanation of the methodology and supporting data, please visit: www.childcareresults.com/ChildOutcomes2012

The DRDP© 2010 Assessment Tool

The Desired Results Developmental Profile© 2010 (DRDP© 2010) was developed for the California Department of Education by the UC Berkeley – BEAR Center. The DRDP© 2010 for preschoolers consists of 43 measures grouped into the seven domains listed on the first page. The DRDP© 2010 is an observation-based assessment tool, which means the assessment is not conducted in one sitting as a test would be. Rather the teacher continually records observations of student behavior over a period of weeks and compiles a portfolio of each child's development. The teacher then reviews the portfolio and assesses a child in each of the 43 measures. Most of the early education community prefers observation-based assessment tools over more test-like assessment tools because they are believed to be more authentic and to provide a more nuanced insight into a child's development.

Within each measure, children score one of four developmental levels:

- Exploring
- Developing
- Building
- Integrating

"Developing" is the second developmental level that children pass through in the three- to four-year-old age range. For the purposes of assessing and communicating the impact of Head Start on three-year-olds, this analysis uses Developing as a threshold for comparing the average ages at which children reach the threshold — with and without Head Start.

About the California Head Start Association

The California Head Start Association is the unified voice providing leadership and advocacy for the Head Start community.

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The Collaboration

This document and the supporting analysis were constructed through a creative collaboration of Child Care Results, the California Head Start Association, and the thirty participating Head Start programs listed to the right. The analysis was conducted by Child Care Results. A supporting methodology section can be found on-line at: www.childcareresults.com/ChildOutcomes2012

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An electronic copy of this bulletin is available at: www.caheadstart.org/ChildOutcomes2012

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