California Head Start Child Outcomes Bulletin 2010

California Head Start Association

p02 Results p03 Methodology p04 Collaboration p04 Impact of Preschool

Acknowledgements

We thank the 15 Head Start programs from across California who contributed their data to this analysis.

Center for Community and Family Services, Los Angeles County
Child Care Resource Center, Los Angeles County
Child Development Resources of Ventura County
Community Action Commission of Santa Barbara, Santa Barbara County
Community Action Partnership of Kern, Kern County
Community Action Partnership of San Luis Obispo, San Luis Obispo County
Kidango, Santa Clara and Alameda Counties
MAAC Project, San Diego County
Merced County Office of Education
Neighborhood House Association, San Diego County
Orange County Head Start
Placer Community Action Council, Placer County
Santa Cruz Community Counseling Center, Santa Cruz County
Sierra Cascade Family Opportunities, Lassen, Modoc, Plumas, & Sierra Counties
Tulare County Office of Education

California Head Start Programs Improve Child Development

Participation in Head Start was associated with seven to nineteen percentage point increases in the number of children in the top developmental levels. This finding comes from the first ever analysis of child assessment data on 6,600 children collected from 15 Head Start programs from across California. Such increases in child development are comparable to that found in other quality preschool programs and is direct evidence that these California Head Starts provide quality child development programs.

That quality preschool programs provide significant developmental advancement to children and significant benefits to society as a whole are well established in the academic literature. The key word, of course, is "quality." While many regulations are in place to ensure that Head Start and other government subsidized preschool programs maintain high quality standards, there are currently few, if any, operational metrics against which to track quality or program impact.

Many Head Start programs in California use the Desired Results Developmental Profile – Revised (DRDP-R) to assess and track child development. The DRDP-R was developed by the California Department of Education. Use of this operational data to measure program outcomes is imperfect, but does provide reasonable estimates of the positive impact that Head Start has on child development.

Children from all backgrounds were better prepared for school in all areas of development thanks to these Head Start programs. For example, as shown in the graph below, the estimated percentage of children in the top two developmental levels was 11% for children with Head Start the prior year and 4% for children without Head Start. The difference, 7 percentage points, is the estimated impact of these Head Start programs in the areas of Language and Literacy.

Head Start Programs Improve Language and Literacy
Percentage of Children with Ratings in the Top Two Developmental Levels Controlling for Age and Other Demographic Variables

California Head Start Child Outcomes Bulletin 2010

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Child Care Results
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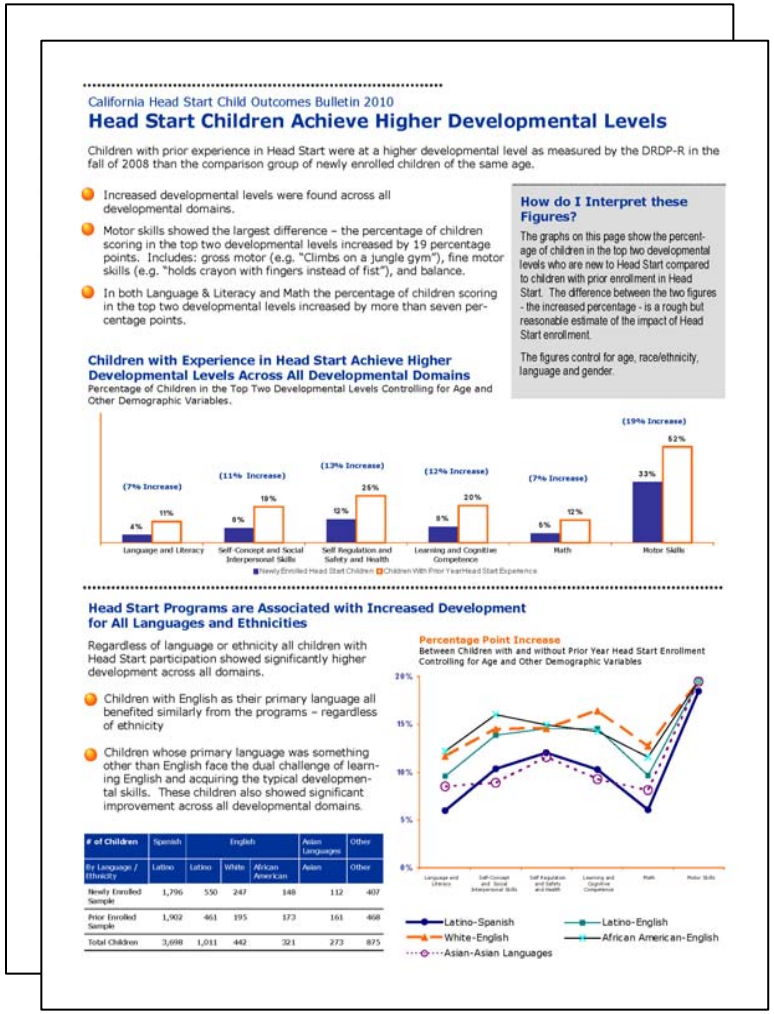
Learning Objectives

Expect More From Your Data

Expect More From Your Data



California Head Start Child Outcomes Bulletin 2010

Head Start Children Achieve Higher Developmental Levels

Children with prior experience in Head Start were at a higher developmental level as measured by the DRDP-R in the fall of 2008 than the comparison group of newly enrolled children of the same age.

- Increased developmental levels were found across all developmental domains.
- Motor skills showed the largest difference – the percentage of children scoring in the top two developmental levels increased by 19 percentage points. Includes: gross motor (e.g. "Climbs on a jungle gym"), fine motor skills (e.g. "holds crayon with fingers instead of fist"), and balance.
- In both Language & Literacy and Math the percentage of children scoring in the top two developmental levels increased by more than seven percentage points.

How do I Interpret these Figures?

The graphs on this page show the percentage of children in the top two developmental levels who are new to Head Start compared to children with prior enrollment in Head Start. The difference between the two figures - the increased percentage - is a rough but reasonable estimate of the impact of Head Start enrollment.

The figures control for age, race/ethnicity, language and gender.

Children with Experience in Head Start Achieve Higher Developmental Levels Across All Developmental Domains

Percentage of Children in the Top Two Developmental Levels Controlling for Age and Other Demographic Variables.

Head Start Programs are Associated with Increased Development for All Languages and Ethnicities

Regardless of language or ethnicity all children with Head Start participation showed significantly higher development across all domains.

- Children with English as their primary language all benefited similarly from the programs – regardless of ethnicity
- Children whose primary language was something other than English face the dual challenge of learning English and acquiring the typical developmental skills. These children also showed significant improvement across all developmental domains.

Percentage Point Increase
Between Children with and without Prior Year Head Start Enrollment Controlling for Age and Other Demographic Variables

# of Children	Spanish	English			Asian Languages	Other
By Language / Ethnicity	Latino	Latino	White	African American	Asian	Other
Newly Enrolled Sample	1,796	550	247	148	112	407
Prior Enrolled Sample	1,902	461	195	173	161	468
Total Children	3,698	1,011	442	321	273	875

Learning Objectives

- Understand the results of the Child Outcomes Bulletin 2010
- Understand how we got these results (what was our methodology?)
- Understand the strengths and weakness of this type of operational analysis
- Use the Outcomes Bulletin to promote Head Start

The Collaboration

- The California Head Start Child Outcomes Bulletin 2010 was constructed through a collaboration of:
  - Child Care Results
  - California Head Start Association
  - 15 participating Head Start programs
- Data was collected during the 2008-2009 school year and analyzed in the fall of 2009
- Seven people served on the advisory committee

Peter Huffaker, Partner
Child Care Results
Rick Mockler, Executive Director,
California Head Start Association
April Morris, Partner,
Child Care Results
Jennifer McCulley, Education Manager, *Sierra Cascade Family Opportunities*
Brenda Poteete, Executive Director,
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Wassy Tesfa, Head Start Administrator,
Center for Community and Family Services
Kay Wernert, Director,
Marin Head Start Community Action Marin

Fifteen Participating Agencies

1. Center for Community and Family Services, Los Angeles County
2. Child Care Resource Center, Los Angeles County
3. Child Development Resources of Ventura County
4. Community Action Commission of Santa Barbara, Santa Barbara County
5. Community Action Partnership of Kern, Kern County
6. Community Action Partnership of San Luis Obispo, San Luis Obispo County
7. Kidango, Santa Clara and Alameda Counties
8. MAAC Project, San Diego County
9. Merced County Office of Education
10. Neighborhood House Association. San Diego County
11. Orange County Head Start
12. Placer Community Action Council, Placer County
13. Santa Cruz Community Counseling Center, Santa Cruz County
14. Sierra Cascade Family Opportunities, Lassen, Modoc, Plumas, & Sierra Counties
15. Tulare County Office of Education

Desired Results

A **Very Brief** Overview

About the DRDP-R

- The California Department of Education (CDE), Child Development Division (CDD), provided funding and the leadership to develop the Desired Results Developmental Profile (DRDP-R).
- WestEd manages the Training and Technical Assistance services related to Desired Results.
- The DRDP-R is an observation based assessment tool, not a test based assessment tool.
- The tool has 39 measures (41 counting ELL!) which are grouped into 10 indicators.

10 Indicators become 6 Developmental Domains

1. Self Concept – Social Interpersonal Skills
2. Self Regulation – Safety and Health
3. Language – Literacy
4. Learning – Cognitive Competence
5. Math
6. Motor Skills

Validating the Tool

In validating the tool, researchers combined the indicators into six developmental domains (or indicator groupings). Since the validity of the tool was demonstrated using scores combined at the level of the developmental domains, the analysis was conducted at that level and the Child Outcomes Bulletin reports on these **6 developmental domains**.

How We Got Here

Understanding the Methodology and the Sample

Understanding Regressions

Method Acting Instructions

- It is the fall of 2008…
- You are a child…
- You know your name, age, if you were enrolled in Head Start last year or not and…
- You also know your developmental level for Math 5…
- We are going to divide the children into groups depending on whether or not you were in Head Start last year.
- Children not enrolled in Head Start last year (no prior enrollment), place your post-it note on the graph at the appropriate intersection of age and developmental level

Hi, My name is Alice

I'm 4.5 years old

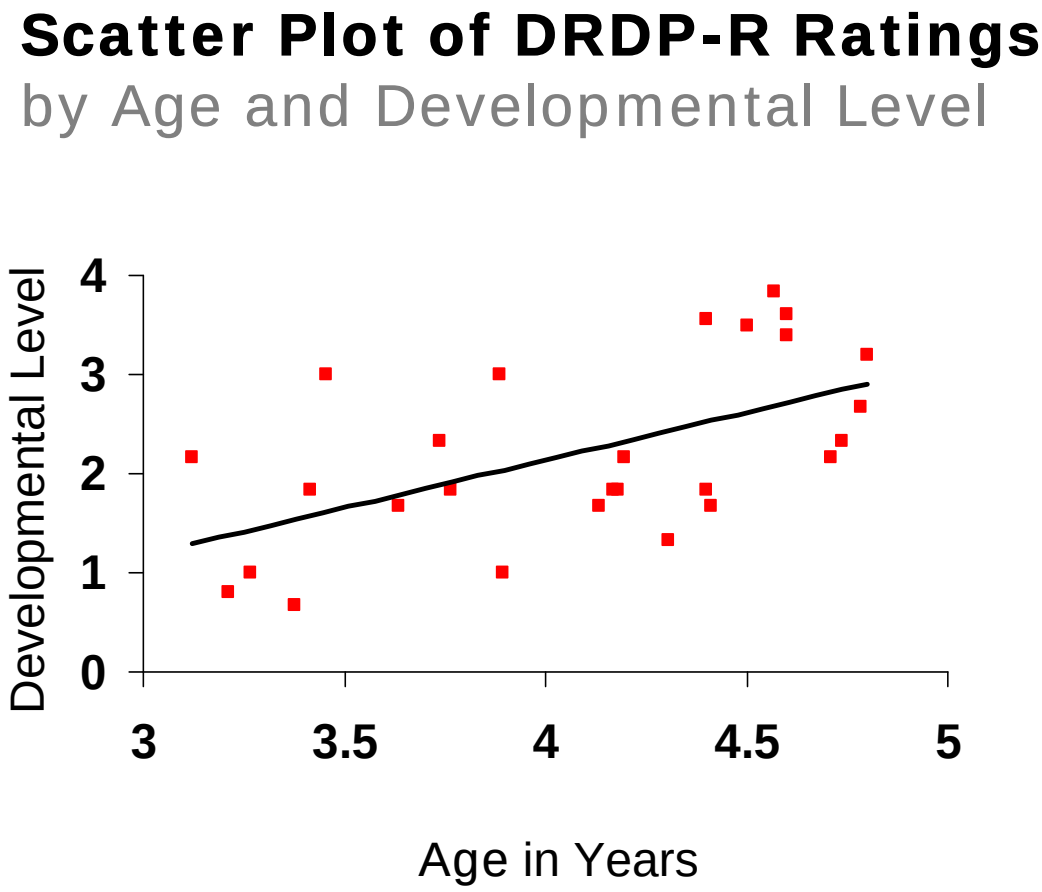
Not in Head Start last year

Math 5 Rating:

2-Understanding

What is a Regression Analysis?

- A regression analysis looks at all of the different points on the scatter plot and shows the best fitting line through a series a points.
- The “best-fit” regression line minimizes the distance between points to form a line – sort of an average.



Determining the Sample

Agency	County	# of Children	% of Total
Community Action Commission of Santa Barbara	Santa Barbara County	761	5%
Community Action Partnership of Kern	Kern County	1,575	11%
Community Action Partnership of San Luis Obispo	San Luis Obispo County	295	2%
Center for Community and Family Services	Los Angeles County	988	7%
Child Care Resource Center	Los Angeles County	590	4%
Child Development Resources of Ventura County	Ventura County	821	6%
Kidango	Santa Clara and Alameda Counties	183	1%
MAAC Project	San Diego County	803	6%
Merced County Office of Education	Merced County	870	6%
Neighborhood House Association	San Diego County	3,421	24%
Orange County Head Start	Orange County	1,889	13%
Placer Community Action Council	Placer County	297	2%
Santa Cruz Community Counseling Center	Santa Cruz County	257	2%
Sierra Cascade Family Opportunities	Lassen, Modoc, Plumas, & Sierra Counties	159	1%
Tulare County Office of Education	Tulare County	1,535	11%
	TOTAL	**14,530**	

The Final Sample – from 14k to 6k Children

1. Data were collected on all preschool children served by the Head Start programs.
2. The analysis focuses on typically developing children in center based programs between the ages of 45 and 59 months.
3. Excluding children who do not fit into these categories or for whom key information was missing, a total of 6,619 were included in the analysis.

    - **1,034** special needs children were excluded from the analysis
    - **977** children serviced through non-center based care option were excluded from the analysis.
    - **3,335** children fell out side this age range of 45 to 59 months
    - **2,565** children were excluded from the analysis because of incomplete demographic info– most of whom we did not have information on whether the children had a special need.

Final Sample By Prior Enrollment Status

Prior Year Enrollment at same Head Start

	No		Yes		Total	
Age	#	% of row	#	% of row	#	% of column
45 to 47 months	866	71%	346	29%	1,212	18%
48 to 50 months	745	50%	756	50%	1,501	23%
51 to 53 months	666	46%	793	54%	1,459	22%
54 to 56 months	620	43%	836	57%	1,456	22%
57 to 59 months	362	37%	629	63%	991	15%

Methodology in a nut shell

- The children were divided into those children with half a year or more of prior Head Start enrollment and those without prior enrollment (the comparison group). The group without prior enrollment were enrolled for less than 60 days.

- The developmental scores from the fall of 2008 for the two groups were compared controlling for age, race/ethnicity, language, agency and gender.

- A logit regression model was used to determine the probability of the children being in the top two of four developmental levels on the DRDP-R.

Advantages & Disadvantages

Using Operational Data

Advantages

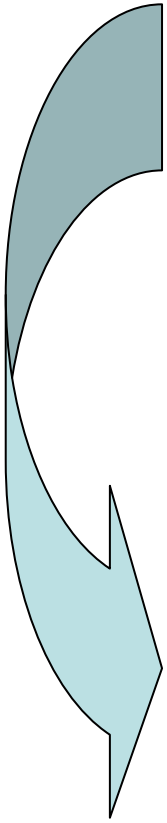
1. Cost – the costs of analyzing operational data are much lower

2. Timeliness – the results can be released in a meaningful timeframe.

3. Easy on agencies – Gathering the data was minimally invasive for Head Start programs.

4. Scale – It is much easier to collect data on very large samples using operational data.

5. Usable findings – the results are not as reliable as a full academic study would produce, but they are far better than the anecdotal stories that so often drive policy.



Impact – All of these factors together create the potential for this type of operational analysis to have a strong impact. The findings are fresher and we can produce them more frequently than with academic studies.

Disadvantages

- Potential selection bias
- Potential inter-rater reliability issues
- Uncertainty of prior enrollment data
- Concerns over data use and accountability

Potential Selection Bias

Domain	Score	No Prior Enrollment[1]	Prior Enrollment[2]	All Children	p-value, two tailed[3]
Self Awareness – Social Interpersonal Skills	Mean of Fall '08 Scores	199.2	209.4	204.4	
	Mean of Spring '09 Scores	231.7	238.8	235.3	
	Growth	32.4	29.4	30.9	<0.0000
Self Regulation-Safety and Health	Mean of Fall '08 Scores	200.6	211.3	206.0	
	Mean of Spring '09 Scores	234.0	240.8	237.4	
	Growth	33.4	29.4	31.4	<0.0000
Language-Literacy	Mean of Fall '08 Scores	201.4	210.9	206.2	
	Mean of Spring '09 Scores	231.7	239.0	235.4	
	Growth	30.3	28.1	29.2	<0.0000

Inter-rater reliability

- The DRDP-R assessment results are based on individual teacher observations and assessments.
- Research on the DRDP-R tool shows that it has high inter-rater reliability, between 0.87 and 0.90
- It may be argued that inter-rater reliability would be lower in less controlled field settings where there may be variability in training, experience, or effort.
- Even if it were possible to demonstrate that there are issues with inter-rater reliability in our sample, we do not believe that would undermine the clear pattern of children with prior enrollment having higher levels of enrollment. It may, however, make the precise magnitude of the differences less reliable.

Uncertainty of prior enrollment data

- It is possible that a child not enrolled in Head Start in 2007-2008 was enrolled another child development program or possibly even another Head Start program.
- The impact on the analysis is that we may be underestimating the program effect of these Head Start programs.
- If a significant number of children categorized as not having prior enrollment participated in other child development programs than our estimates of Head Start's program effect are too low – further enforcing our conclusion.

Data use and Accountability

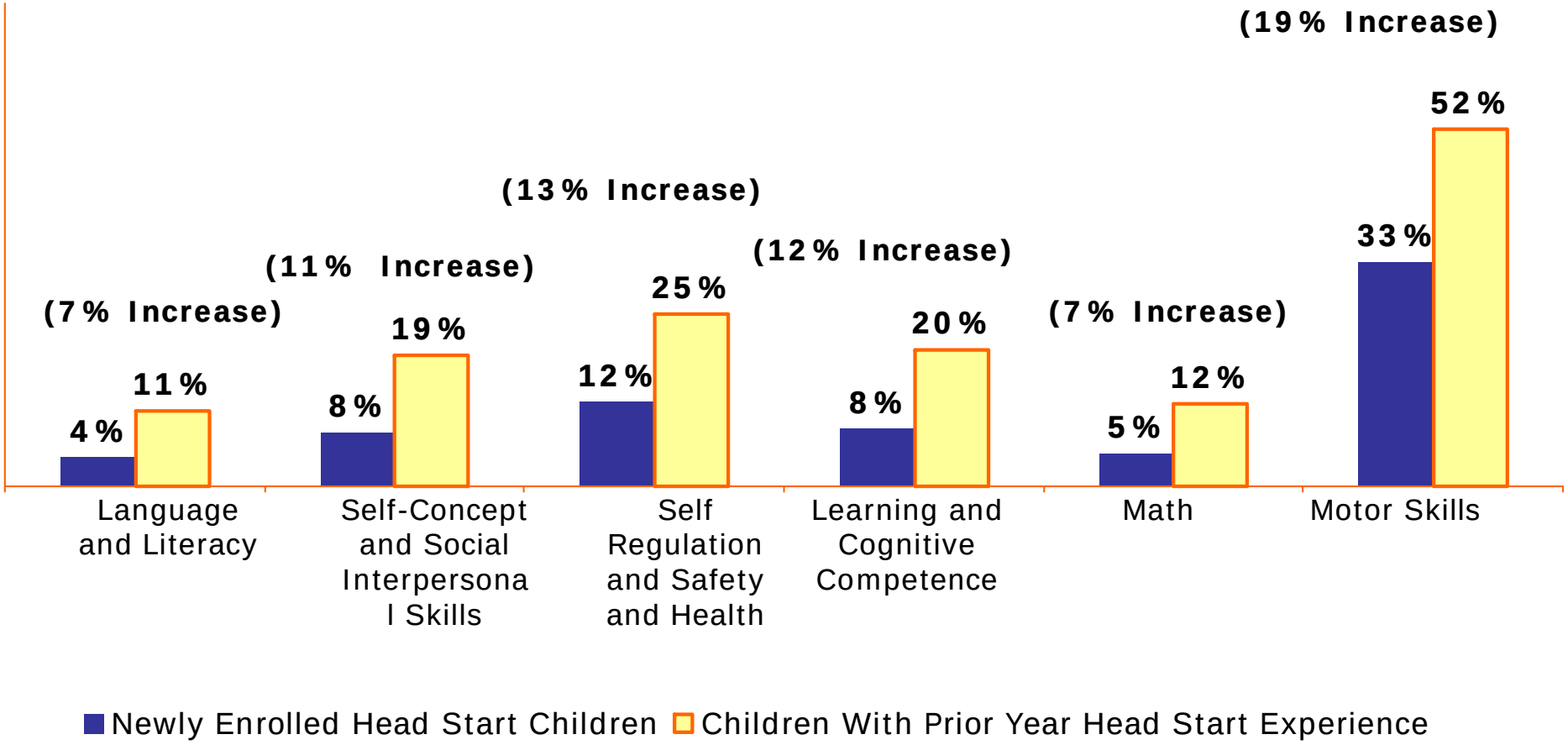
- From the perspective of many in the ECE field – there is a fear that DRDP-R data will someday be used to punish programs and teachers.
- We recognize that there is some risk that this type of analysis (using DRDP-R data to evaluate program effect) may be misused within an accountability framework.
- There is also tremendous value in giving programs and policy makers a direct measure of program effect.
- We believe strongly that the DRDP-R tool is not appropriate for use as an accountability tool. As an observation based tool, the DRDP-R is subjective by nature.
- Finally, we should note that this methodology requires very large sample sizes making it impossible to perform on a class level – or for even a small agency.

The Results

Head Starts Makes an Impact

Children with Experience in Head Start Achieve Higher Developmental Levels Across All Developmental Domains

Percentage of Children in the Top Two Developmental Levels Controlling for Age and Other Demographic Variables. *In Parenthesis: the Percentage Point Increase Between the Two Groups*



Results by Ethnicity-Language

Percentage Point Increase
Between Children with and without Prior Year Head Start Enrollment
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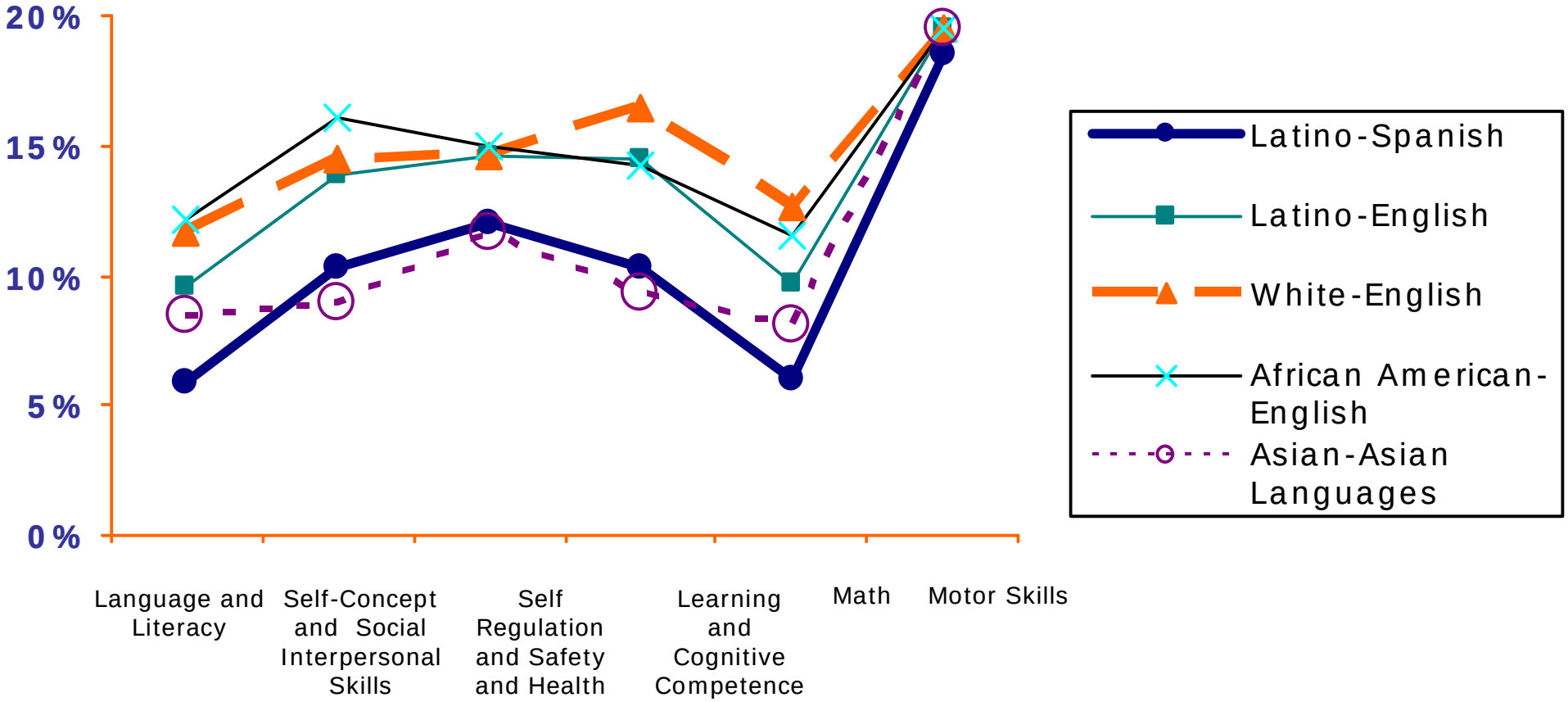

Effect-Size Calculation

- The "effect size" was calculated to determine the relative impact of these programs compared to other programs evaluated.
- The effect size is the change attributed to the program divided by the standard deviation of the comparison group.
- In the Language and Literacy domain, the change attributed to the program is the 7 percentage point (0.0734) increase in children in the top two developmental levels. The standard deviation for the comparison group was 0.2165

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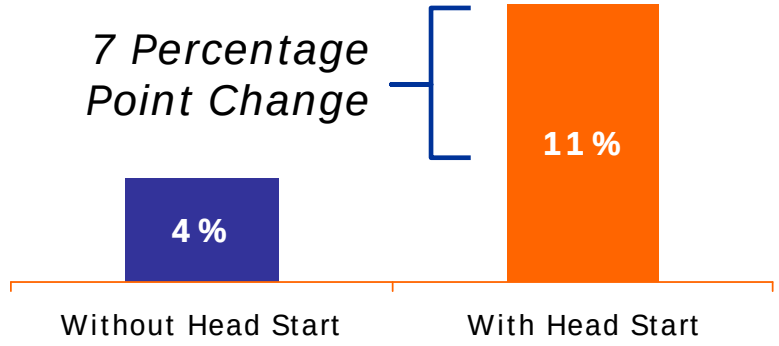


Effect Size = Change / Standard Deviation of comparison group

The effect size for Language and Literacy is: **0.0734/0.2165 = 0.339**

Effect-Size Comparison

California Child Outcomes Bulletin 2010

DRDP-R Domain	Effect Size
Lang Lit	0.339
Self Soc	0.405
Reg Sh	0.377
Lrn Cog	0.391
Math	0.323
Mot	0.406

Project	Effect Size Range	Length of Preschool
California Child Outcomes Bulletin 2010	**0.323 to 0.406**	**one year of preschool**
Head Start National Study 2010	0.147 to 0.319	one year of preschool
Tulsa Head Start Program	0.334 to 0.514	one year of preschool
Tulsa Public School Pre-K Program	0.355 to 0.985	one year of preschool
Abecedarian Project	1.08 average	three years of preschool
Perry Preschool Study	0.77 to 1.16	two years of preschool

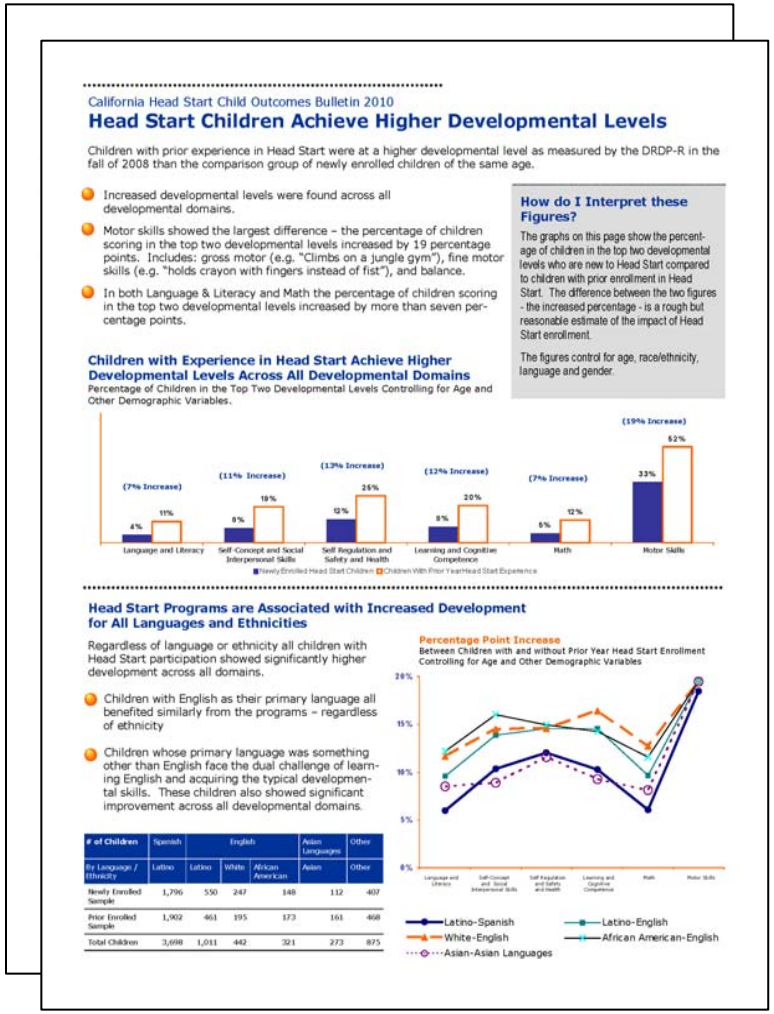
Impact of Quality Preschool

"[A] review of the rigorous evaluations of high-quality preschool programs demonstrates that well-designed programs that serve children one or two years before kindergarten entry can

- improve measures of school readiness,
- raise performance on academic achievement tests in the early elementary grades,
- generate sustained effects on academic achievement into the middle-school years …
- [reduce] special-education use and grade repetition and
- [increase] rates of high-school graduation"

Karoly, Lynn A., Preschool Adequacy and Efficiency in California: Issues, Policy Options, and Recommendations, Santa Monica, Calif.: RAND Corporation, 2009.

Expect More From Your Data



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Head Start Programs are Associated with Increased Development for All Languages and Ethnicities

Regardless of language or ethnicity all children with Head Start participation showed significantly higher development across all domains.

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- Children whose primary language was something other than English face the dual challenge of learning English and acquiring the typical developmental skills. These children also showed significant improvement across all developmental domains.

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