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Measuring Head Start Across States

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Report

Presented to the Faculty of the Graduate School

of the University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Master of Arts

The University of Texas at Austin

May 2011

Measuring Head Start Across States

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The University of Texas at Austin, 2011

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This paper examines various ways Head Start has been measured across states. The contribution to the literature is to look at new variables, the role they play, and the contribution they make to measuring the effectiveness and enrollment numbers of Head State Programs across states.

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Chapter 1: Introduction

When Lyndon B. Johnson created the Head Start program as part of his "War on Poverty" in 1965, the purpose was to prepare disadvantaged children for school. However, there has been much debate over how and in what ways these children need to be ready for school. However, there is still an academic achievement gap that suggests poor and minority students are not performing as well as middle and upper-class white students in traditional public schools. In the last twenty-five years, there has been debate between the targeted Head Start program as a solution to closing this educational achievement gap versus the benefits of a Universal Preschool Program which would benefit all children regardless of income.

In this paper, I will look at state party affiliation and Head Start enrollment by state. By considering the number of children enrolled in Head Start programs by state compared to the number of students eligible for the Head Start program (population by state of children under five living in poverty) I will develop a variable considered "hypothetical need being met by Head Start by state." Also, I will look at state performance outcomes by using the National Assessment of Educational Progress (NAEP) for reading and mathematics in grades 4. The NAEP is the closes exam we have to a national assessment therefore I will use this variable to determine state achievement.

The aim of this paper is to measure the hypothetical need in each state that is currently being met by Head Start. Next, this variable of hypothetical need is correlated with party affiliation, percentage of children in each state under the age of 5 living in poverty, state academic achievement, and actual enrollment in Head Start. The paper will look at whether those states that have high performance, according to the National Assessment of Education Progress (NAEP), are utilizing the Head Start program amongst most of their poor populations.

Chapter 2: Hypotheses

Due to evidence from the educational achievement gap, I hypothesize that states with higher populations of poor students will have higher enrollment numbers in Head Start programs and that these states will have higher academic performance outcomes according to the NAEP test for reading and mathematics as tested in grade 4. In addition, I consider the variable "hypothesized percentage of need being met by Head Start by state" and see if there is correlation between state achievement according to NAEP results.

Head Start is a targeted program, meaning it was designed for the primary purpose of preparing low-income and minority students for school. Politically, these targeted programs often find more support among Democrats. Therefore, I will also use party affiliation as a variable in predicting NAEP score. I look at whether a state is Democratic or Republican according to the most recent Stateline.org red or blue state assessment. I expect to find higher enrollments in Head Start and therefore higher NAEP score among those states that are Democratic.

Chapter 3: Literature

Head Start is an example of a targeted program (versus a universal program). As stated, the Head Start program is designed specifically for poor and mostly minority students. However, preschool programs do not only benefit this socio-demographic group, but there is evidence that all children can benefit from preschool programs: Hence, the development of the Universal Pre-school movement (UPK). In general targeted programs are harder to gain political support so universal pre-school seems like a more viable option (Maeroff, 2006). However universal pre-school does not provide disadvantaged children with the specific skills that will help prepare them for kindergarten, skills not necessarily needed for children that come from more fortunate backgrounds.

In the case of Head Start, effectiveness is especially difficult to measure. Levels of poverty and inequality in the United States are undoubtedly high and there are many explanations for this. Some analysts have pointed to a gap in skills and education to explain this crisis. Head Start is a tool of the American welfare state used to help the disadvantaged through improving educational equality. Whether a welfare state does a good job of helping those in need is the ultimate test of its success- not, how many social policy programs are created or how much money the government spends on the programs (Howard, 2007). Applying this theory to Head Start specifically, its

effectiveness should be judged on the basis of whether or not the program is helping those who need it.

Across states, effectiveness is difficult to measure due to variability in racial, socioeconomic, and political factors. "Even inter-local studies within the US have data availability and comparability problems (Blomquist, 262, 2007)." Even though the states share a common institutional framework they differ in certain aspects of economic and social structure, political activity, and public policy (Dawson and Robinson 1963, p.265, in Blomquist, 2007).

Due to the diversity across states it makes this type of analysis quite difficult. This is partly due to the fact that policy change occurs "not only through innovation, termination, or replacement of policies, programs, or organizations, but also as the results of shifts in intergovernmental responsibilities and relationships (Blomquist, 272, 2007)."

In fact, O'Conner finds that Head Start overall enrolls a higher proportion of eligible Blacks than eligible whites, however differences at the state levels are enormous. "For Head Start specifically, the appearance of favoritism for poor blacks over poor whites would seem to increase Head Start's political vulnerability in several states (O'Conner, 595, 1998)."

O’Conner also looks at political variables across states. Since Head Start started as part of the War on Poverty under the Democrats it would naturally follow that Head Start would be more likely to flourish where Democrats are stronger. Alternatively, states where people think more conservatively are more likely to have conservative policies and less likely to support Head Start programs. (O’Conner, 1998)

Chapter 4: Previous Research

By the late 1960s nonwhite three- and four- year olds were more likely to be enrolled in early education programs than their white counterparts, presumably as a consequence of large-scale Head Start expansions (Bainbridge, 2005). The preschool experience helps low-income children narrow but not close the achievement gap, separating them from more advantaged children. International evidence suggests that maternal employment and reliance on childcare does not harm children and may yield benefits if the childcare is of good quality. In the long term, there is widespread evidence that the preschool experience appears to be a stronger force in the lives of low-income than more advantaged children (Boocock, 1995). Economically disadvantage children attending a state preschool program were at least as well prepared for school when they entered kindergarten, as were children who attended Head Start (Henry, 2006).

Oklahoma is one of three states in the nation to offer free preschool programs to all students in participating school districts on a voluntary basis. Evaluations showed strong, positive effects of the preschool program on children's language and cognitive test scores. Hispanic children benefited most from the program, and black students also showed sharp gains, especially when they attended full-day programs. As of 2002, 40 states had publicly funded preschool programs for four-year olds and to a lesser extent three-year olds, with total expenditures exceeding $2.4 billion dollars. The typical

pattern is to make these programs available to disadvantaged children. Only D.C., Georgia, Oklahoma, and New York have programs available to all four—year olds in participating school districts, irrespective of income (Gormley, 2005).

Internationally, government involvement in the provision of pre-school services takes different forms from full funding and direct sponsorship of programs to a more modest role of regulating programs provided by the private sector and paid for by parents. In Canada, social welfare programs are more inclusive of and generous than those of the US though they are less so than most European countries. Children who attended childcare centers in Canada tended to have higher levels of language development and more highly developed play and activity patterns than children in family child care homes. In France, nursery school is now attended by close to 100 percent of all three- to five- year olds. Teachers have the same training as, civil services status and salaries as primary school teachers. In a national sample of 20,000 French sixth graders, every year of preschool attended reduced the likelihood of school failure, especially from the most disadvantaged homes. In Australia and New Zealand, studies confirmed that attending preschool yields benefits, but the particular character of the preschool program matters less. (Boocock, 1995).

Previous research has argued that there are many benefits to preschool for all children. Joel Klein, NYC School Chancellor, had pointed out how one level of education builds on another. Specifically he stated, "The better job we do of educating

our children in the lower grades, the more prepared they'll be in the higher grades." (Maeroff, 2006, 15) As Hillary Clinton's famous mantra, "It takes a village to raise a child." The evidence points to educational success as a product of family, neighborhood, and economic and social circumstances (Maeroff, 2006, 19). Head Start understands this concept.

Maeroff argues that children enjoy an edge when they have a sense of order and understand certain school day routines that are often crucial to learning and can be taught in a preschool setting. Those children who begin Kindergarten with the ability to recognize letters, basic numbers and shapes, and understand the concept of relative size have a considerable advantage and are able to advance more quickly through the Kindergarten curriculum. In addition, they remain ahead of others in their achievement in reading and mathematics by the spring of their Kindergarten year and remain ahead into the spring of their first grade year. The gap continues to grow wider by the end of third grade. This is when an achievement gap is evident between Black and Hispanic students on the lower performance end and White and Asian students on the higher achieving end (Maeroff, 2006, 35). There is significant evidence that early education can assist in the efforts to overcome these disadvantages by making early learning part of the national public school program.

Previous research has focused on longitudinal studies of the effects of preschool: One of the most widely known of these studies is the Perry Preschool Study. The Perry

Preschool Study followed students from pre-school into grade school and post-graduation to measure the positive effects pre-school programs have.

David Kirp lays out the main and most important findings of the Perry Preschool Study. The goal of the study was to explore the impact of preschool, not the IQ score, of seven-year olds on their lives, outside as well as inside the school environment. The answer was that a superb preschool experience could make a lifelong difference in a child's life. As the Perry children progressed through elementary and high school, differences began to emerge between the study group and the control group. For example, Perry children has higher high school grade point averages, were significantly less likely to skip school, less likely to be assigned to special education, and less likely to repeat a grade than the control group. Also, Perry children's attitude toward school was better and their parents were more enthusiastic about the education their children were receiving than the control group. By age 19, two-thirds of Perry children had graduated from high school compared to 45 percent of those children who did not attend the Perry Preschool (Kirp, 2007, 53).

In fact, by 2004, when the Perry children were in their 40s, compared to the control group, nearly twice as many had earned college degrees, more of them had jobs, they were more likely to be homeowners, own a car, have a savings account and less likely to be on welfare or have gone to jail or prison. Moreover they earned 25 percent

more than the control group: $20,800 compared to $15,300 a year, which pushed them above the poverty line (Kirp, 2007, 53).

These findings are crucial for advocates of Head Start programs. This study introduces a new variable, "hypothetical need being met by Head Start," and correlates this with NAEP results and party affiliation to determine success and use of Head Start across states.

Chapter 5: Theory

The theory for this papers draws upon the research on the academic achievement gap. The concept of the educational achievement gap represents the idea that, on average, poor and minority students do not perform as well academically as whites and more affluent students. The typical black student scores, on average, below 75 percent of white students on most standardized tests (Jencks & Phillips, 1998, 1). Jencks and Phillips's (1998, p.23) research using data from the National Longitudinal Survey of Youth reports that whites declare 73 percent more income than their black counterparts. When black students are compared to white students with the same average annual income, the test score gap (as measured by the Peabody Picture Vocabulary Test) narrows by 2.4 points (Jencks & Phillips, 1998, 23). So, interestingly, the racial achievement gap still exists, even when controlling for income.

This is evidence that there is an academic need for black and low-income students, I believe that this will have an effect on NAEP results by state. If a student is at risk for starting kindergarten already behind their peers, enrolling in a targeted program would seem most likely to help that child improve his or her academic performance. Therefore, we would be more likely to see higher percentages of the new variable "hypothesized need being met by head start" in states that have better performance outcomes on the NAEP in reading and mathematics.

Chapter 6: Data and Methods

To explore this hypothesis, I gathered several sets of information: the number of students enrolled in Head Start programs in each state (National Center for Education Statistics, 2001), the percentage of children under 5 living below the poverty level in each state (U.S. Census Bureau, 2009), the NAEP score in reading and mathematics for each state (National Center for Education Statistics, 2009), and the party affiliation of each state (www.stateline.org, 2011).

Party affiliation is measured by The Pew Center on the States' website: www.stateline.org. To determine which states are Democratically controlled in 2011they use data from the National Conference of State Legislatures and the Rose Institute of State and Local Government's analyses on redistricting.

Next, I create a new variable "hypothesized need being met by Head Start by state": I use a ratio of Head Start Enrollment to the percentage of eligible students (children under the age of 5 who are living in poverty). This variable represents percentage of a hypothetical need for Head Start being met in each state.

*****Table 1 about here*****

These descriptive statistics tell an interesting story. The most noteworthy would be to consider the variable "Percentage of Hypothetical Need Being Met." The average percentage of the hypothetical need being met by Head Start enrollment is 0.04%, a

very small number. This illustrates that those states that have a population of children under 5 living at or below the poverty line (6.7%) are not taking advantage of Head Start programs. The next question is to ask if this is finding is due to the fact that the NAEP results determine that in that particular state students are, on average, meeting or exceeding the average NAEP scores in reading and mathematics.

Next, I use regression analysis to test my hypothesis. I expect to find that those states with a higher percentage of "hypothetical need being met" by Head Start enrollment will have a higher likelihood of meeting or exceeding the NAEP average in reading and mathematics. Alternatively, I expect the regression analysis to explain that states with a lower percentage of "hypothetical need being met" by Head Start enrollment will have a lower likelihood of meeting or exceeding the NAEP average test scores in reading and mathematics.

*****Table 2 about here*****

From this regression analysis we can see that there are strong statistical results that illustrate when the population of children under 5 in a state are living in poverty, those states are -4.41 percent and -3.54 percent less likely to perform well on their grade 4 NAEP exams in reading and mathematics, respectively. This is in agreement with my hypothesis.

In addition, this regression table indicates that the higher the percentage of hypothetical need being met by Head Start, students are -185.53 percent and -230.46 percent less likely to achieve high NAEP scores in reading and mathematics, respectively. This finding could indicate that states that are utilizing Head Start programs are enrolling high levels of students because they are low performing states and perhaps suggests a need for increasing enrollment in Head Start in those states.

Chapter 7: Predicting the Percentage of Hypothetical Need Being Met by Head Start

Here I examine whether the variables collected have an effect on the new variable of hypothetical need being met by Head Start by state. I use the percentage of children under the age of 5 living in poverty by state, NAEP reading scores by state, and NAEP mathematics scores by state to predict the hypothesized need being met by Head Start by state. I expect to find that those states with a higher percentages of children under the age of 5 living in poverty by state, and states with lower reading and mathematical NAEP scores would predict a lower percentage of hypothesized need being met by Head Star

*****Table 3 about here*****

According to the results from the regression analysis it seems the variables used (percentage of children under 5 living in poverty by state, and NAEP results in reading and mathematics by state) are not good predictors of the percentage of hypothetical need being met by Head Start. I find statistically significant results that there is a near zero effect that the percentage of children under 5 living in poverty has little effect on the percentage of the hypothetical need being met by Head Start. Also, I find strong statistically significant results that using NAEP mathematical scores by state has a near zero effect on predicting the percentage of hypothetical need being met by Head Start. Here, it seems necessary to find stronger variables that would predict the hypothetical

need being met by Head Start. Perhaps, future research could look at percentages of race across state, overall percentages of families living below the poverty line and the quality and quantity of Head Start programs across states.

Chapter 8: Party Affiliation

Next, I explore whether there is a relationship between NAEP scores and whether the state is considered a Democratic controlled state or a Republican controlled state. I use the latest assessment from Stateline.org, to determine if a state is Democrat or Republican. I expect to find states that are controlled by Democrats to be more likely to have higher grade 4 NAEP results because typically Democratic states would be more likely to support targeted educational programs like Head Start.

*****Table 4 about here*****

In this regression, I find that, controlling for the percentage of hypothetical need being met by Head Start, that state party affiliation does make a difference when it comes to predicting NAEP scores. Here, I find statistically significant results that states that are controlled by democrats are 2.92 percent and 2.50 percent more likely to produce higher NAEP scores in reading and mathematics, respectively. This is in agreement with my hypothesis that democratic states are more willing to invest in targeted programs like Head Start which could explain why these states have higher achievement results among grade 4 students.

Chapter 9: Conclusions and Future Research

These findings suggest that it is clear that there are variables that can pretty accurately predict the NAEP achievement scores across states. Perhaps there are other variables such as wealth of the state, average teacher salary, and quality and quantity of traditional preschool programs that could also predict NAEP achievement. This study concludes that the lower percentage of the hypothetical need being met by Head Start the more likely the state is to achieve higher results on the grade 4 NAEP. A possible explanation for this finding could be that the states that are in need of Head Start programs are currently underperforming states and are in need of these Head Start programs and should continue to utilize these programs.

Also, the study find statistically significant results that states that are democratically controlled are more likely to achieve higher NAEP results in both reading and mathematics. This could be explained by the fact that the it makes intuitive sense that the likelihood of a democratic state to invest in targeted programs like Head Start to help prepare students for school may also be investing in programs like welfare and Medicaid which may also contribute to a child's achievement in school.

Future research in this field could be longitudinal. I would suggest a study that looks more carefully at the quantity and quality of Head Start programs across states and then compares these findings with NAEP results in reading and mathematics over

time (past grade 4). Also, I would suggest looking carefully at the state budget and investments in resources for disadvantaged students.

The limitation of using NAEP results is that, although it is the closest measurement the United States has for a national exam, the NAEP is only administered at a random sampling of schools. Therefore, in future research, I would recommend considering a different variable, such as graduation rates, dropout rates, or college matriculation to determine state achievement in addition to NAEP.

This study has implications for policy at the state level concerning disadvantaged students and state test results. Particularly, if there should be a national test administered to students who have attended a Head Start program to gauge the success of Head Start across the states. The other important policy implication would be to look at the differences between party affiliation of a state and test results. This type of analysis would be comparing budget priorities as well as governors agendas.

Table 1: Descriptive Statistics by State

Variable	Mean	Standard Deviation	Minimum	Maximum
Head Start Enrollment	14,938.12	17,287.90	1,297	95.280
Percentage of Children Under 5 in Poverty	6.70%	0.65%	5.50%	9.40%
NAEP Score Mathematics	239.53	6.43	219	252
NAEP Score Reading	220.20	6.66	202	234
Percentage of Hypothetical Need Being Met	0.04%	0.02%	0.01%	0.12%
Democratic State? Dummy Variable	0.41	.50	0	1

Table 2: Predicting NAEP Results Using Percentage of Hypothetical Need Being Met By Head Start

	NAEP Reading	NAEP Mathematics
Variables by State		
Population Under 5 in Poverty	-4.4122*** (1.2181)	-3.5383** (1.0644)
Percentage of Hypothetical Need Being Met	-185.526*** (42.0331)	-230.4649*** (36.7388)
Constant	257.6587*** (8.7744)	273.0548*** (7.6671)
Adjusted R^2	0.33	0.45

**$p \leq 0.05$ ***$p \leq 0.001$

Standard Errors in Parentheses

Table 3: Predicting Percentage of Hypothetical Need Being Met by Head Start by State.

	Percentage of Hypothetical Need Being Met
Variables by State	
% Population Under 5 in Poverty	-0.0096**
	(0.0032)
NAEP Scores Reading	0.0007
	(0.0006)
NAEP Score Mathematics	-0.0026***
	(0.0006)
Constant	0.5694***
	(0.0821)
Adjusted R^2	0.46

**p ≤ 0.05 ***p ≤ 0.001

Standard Errors in Parentheses

Table 4: Predicting NAEP Results Using Party Affiliation

	NAEP Reading	NAEP Mathematics
Variables by State		
Percentage of Hypothetical Need Being Met	-101.2086** (50.2636)	-156.8724*** (43.0120)
Democratic Controlled State	2.9153* (1.7273)	2.5024* (1.4812)
Constant	223.5035*** (2.4286)	245.4217*** (2.0826)
Adjusted R^2	0.11	0.25

*p ≤ .1 **p ≤ 0.05 ***p ≤ 0.001

Standard Errors in Parentheses

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