



**National Urban League**  
Policy Institute

## **EARLY INTERVENTIONS FOR THE ACHIEVEMENT GAP: THE IMPORTANCE OF FAMILY IN EARLY LEARNING**

A Research Report by the National Urban League Policy Institute  
April 2008

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*The National Urban League thanks the Ford Foundation and the William and Flora Hewlett Foundation for their generous support.*



## Executive Summary

Early childhood education is an important aspect of any child's life. Birth to three years old represent critical years when children begin to communicate and build other positive developments that are shaped through the preschool experience. However, while the benefits of early childhood education have received positive attention in recent years, disparities in the *quality* of early learning continue to persist. In response to these disparities, the National Urban League and other policymakers have proposed universal application of a high-quality early learning curriculum. Additionally, parental involvement has been found to be a key element of better learning for young children.

This report examines the role of family background and parental involvement in determining early learning outcomes of children in kindergarten and reveals that students who attended more structured preschool settings, like Head Start or other center-based programs, performed better on early reading and math tests. The study also suggests that to a large extent, a child's language and literacy development are shaped within the home as opposed to in a formal school setting and are strongly influenced by the parent's level of education and the number of siblings in the household. Finally, this report shows that among children who attended Head Start before entering kindergarten, those whose parents did not read to them at all scored significantly lower on reading tests than students whose parents did read to them.

Consistent with the findings of this report, the National Urban League's policy recommendations for improving education in America include mandatory early childhood education beginning at age 3; the creation and implementation of policies that encourage, rather than penalize, additional education and skills attainment for adults; and increased support for parental engagement in student learning at home and in schools.



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## **Introduction**

Early childhood education is an important aspect of any child's life. Birth to three years old represent critical years when children begin to communicate and build other positive developments that are shaped through the preschool experience. Early childhood education can also produce long term effects on academic achievement and social adjustment. According to a recent report by the National Center for Children in Poverty (NCCP), the data show that low-income young children attending high-quality programs are more likely to stay in school, go to college, and become successful, independent adults. They are also less likely to need remediation, be arrested, or commit violent crimes.<sup>1</sup>

The primary goal of early childhood education programs is to create a solid start to school readiness. "School readiness is described as a combination of experiences and care that a child has received from birth to school entry. There are five dimensions included in a child's school readiness. They are 1) physical health and well-being and motor development; 2) social and emotional development; 3) approaches to learning; 4) language and literacy development; and 5) cognition and general knowledge" (Copple, 1997; Kagan, Moore and Bredekamp, 1995). According to the National Education Goals Panel, school readiness can also mean, "children's readiness to enter school; schools' readiness for children; and family and community supports that contribute to the readiness of children" (Child Trends, 2001; Kagan, Moore and Bredekamp, 1995).

A high quality learning environment is an essential part of maximizing a child's readiness. High quality early childhood learning is described as an environment with

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<sup>1</sup> These statistics are based on more than 20 years of data on small and large-scale early intervention programs.



small classes taught by teachers with a bachelors degree and training in early childhood education who implement an intensive, cognitively stimulating curriculum-teacher. While some early childhood education programs have been successful in implementing an intensive curriculum that prepares young children with a solid start to school readiness before they enter elementary school, not all of our nation's children are receiving the same kind of high quality early learning. In many cases, there is a direct relationship between socioeconomic status and access to high quality early learning programs. In fact, the achievement gap that exists between economically disadvantaged children of color and their white peers is believed to begin as early as pre-kindergarten (pre-K) and continue throughout their academic development. In *The Black-White Test Score Gap* (Jencks and Phillips, 1998), researchers estimate that about half of the black –white test score gap at twelfth grade may be attributable to gaps that existed in first grade. A number of scholars and policy experts have noted that improving pre-kindergarten curricula can better prepare all children for school readiness.

Parents also play an important role in children's early learning and school readiness through nurturance and cultivation of other socio-emotional developments. According to a study by Paley (2004), parent participation in child-centered activities, specifically play, is important for children's social and emotional development. Nord, et al. (1999) report that, "parent participation with their children in activities such as arts and crafts is associated with children's literacy development." Therefore, parental involvement in early childhood programs through play, arts and crafts or child-parent reading activities represent other steps that can be taken to help close the 'achievement gap' often faced by low-income children.



Although the benefits of early childhood education have received positive attention in recent years, disparities in the *quality* of early learning continue to persist. In response to these disparities, the National Urban League and other policymakers have proposed universal application of a high-quality early learning curriculum. In addition to a high-quality curriculum, parental involvement has also been found to be a key element of better learning for young children. This report will examine how family background and parental involvement impact early learning outcomes of children in kindergarten. Through the combined efforts of teachers and parents, perhaps greater equity in academic development can be fostered and contribute to closing the ‘achievement gap’ for low-income children.

Section two presents an analysis of the role of family background and parental involvement through reading in strengthening early learning using data from the Early Childhood Longitudinal Study: Kindergarten Class of 1998-1999 (ECLS-K). Section three provides a synopsis of past successful early childhood education programs for low-income minority children. Section four concludes with policy prescriptions and implications of the results of this study.

### **The Impact of Family Background and Parental Involvement on Children’s Learning in Early Childhood Education**

This report uses data from the Early Childhood Longitudinal Study (ECLS-K): Kindergarten Class of 1998-1999 to examine how children’s skills and knowledge in kindergarten may be affected by family background, preschool learning experiences and parental involvement. The sample used in this study includes 5,249 kindergarten students



enrolled in public schools throughout the United States during the fall of 1998. This sample is used to address the following questions:

1. How do school readiness and early academic achievement vary by race and socioeconomic status?
2. To what extent do differences in family background alone account for differences in school readiness and early academic achievement?
3. Does a child's preschool setting have a significant effect on school readiness and early learning?
4. To what extent does parental involvement, specifically parents reading to their children, improve early academic achievement?

### **Patterns in Early Childhood Learning**

Twelve variables that measure school readiness were taken from teacher evaluations to show how teacher-evaluated proficiency levels vary by race and socioeconomic status. The twelve skills being evaluated were: (1) predicts what happens in stories (T1PRDCT); (2) uses sense to explore/observe (T1OBSRV); (3) solves problems with numbers and objects (T1SOLVE); (4) child names upper and lower case letters (T1LETTER); (5) reads simple books independently (T1READS); (6) understands conventions of print (T1PRINT); (7) bases explanation on observation (T1EXPLN); (8) reading of a story (T1STORY); (9) groups living and non-living things (T1CLSSFY); (10) orders object groups by criteria (T1ORDER); (11) sorts math materials by criteria (T1SORTS); (12) and signs of early writing (T1WRITE). For each of the twelve skills, the teacher identified the child's level of proficiency as "beginning", "in progress", "intermediate", or "proficient".

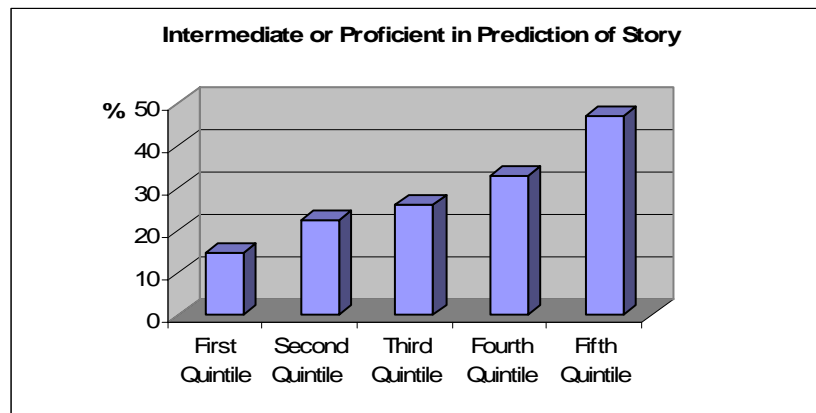




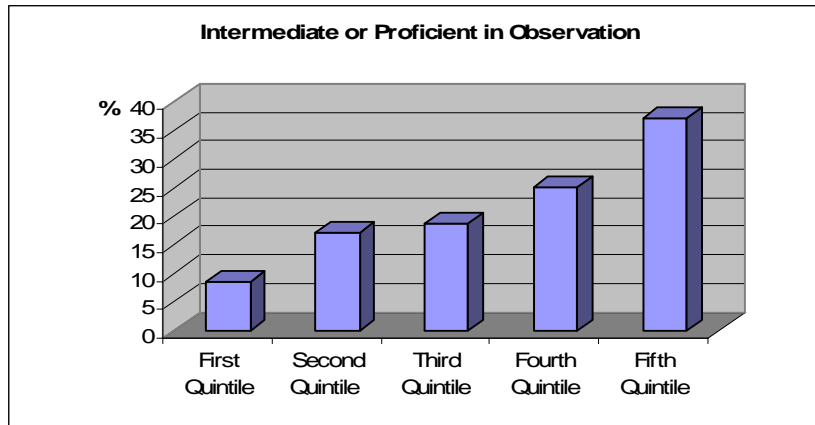
## Socioeconomic Status

Figures 1-12 represent how children’s teacher-evaluated proficiency levels vary by socioeconomic status. The children in the sample were divided into five income quintiles. Quintile one represents the lowest 20 percent of the income distribution and quintile five represents the highest 20 percent. According to the data, children in higher quintiles are more likely to be considered intermediate or proficient in all the skill areas compared to those in the lower income quintiles. In many of the skill areas, the percentage of children in the fourth and fifth income quintiles who were identified as being “intermediate” or “proficient” was about three to four times higher than the percentage of children in the first and second quintiles.

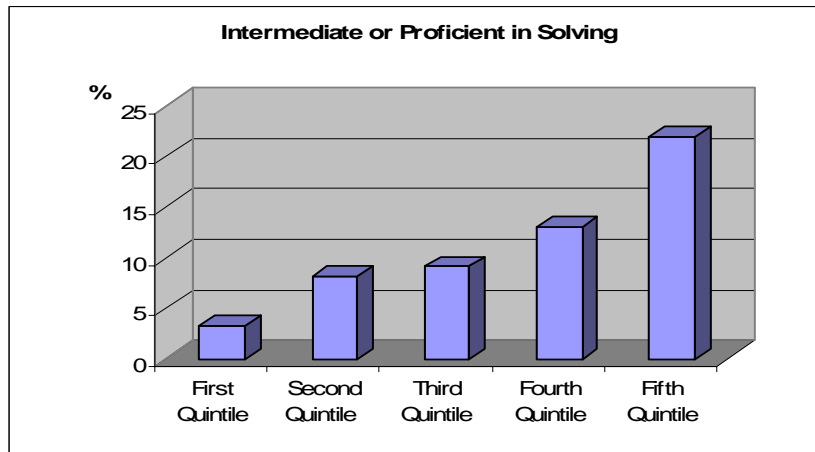
**Figure 1**



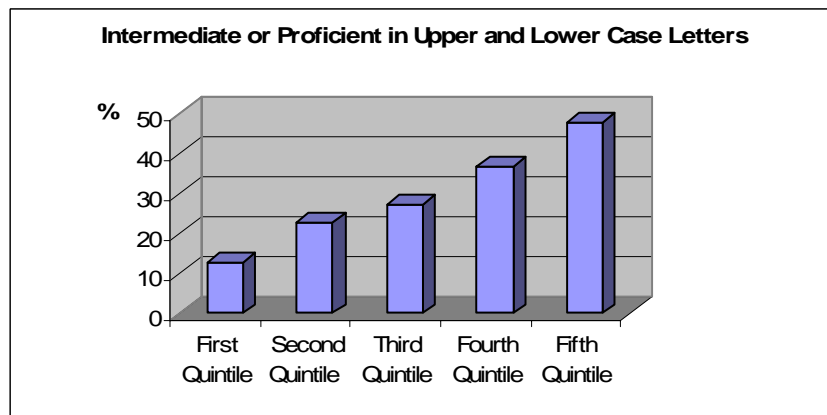
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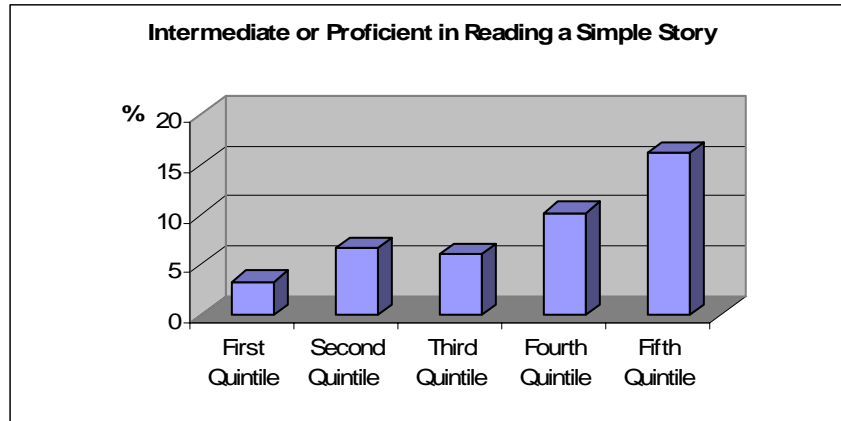
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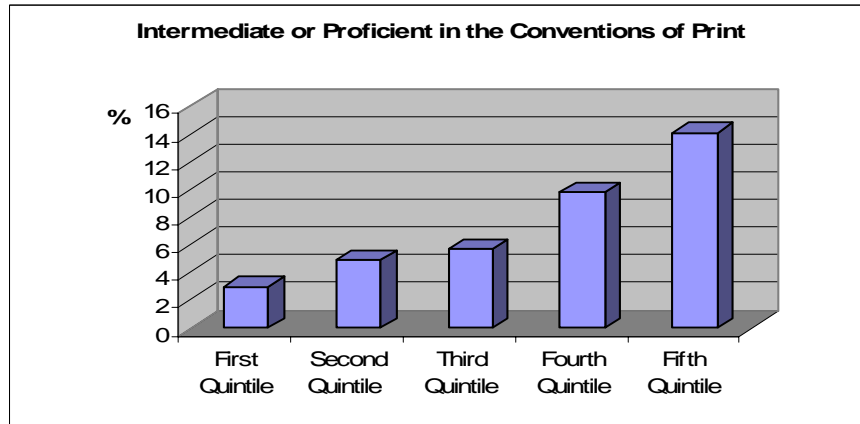
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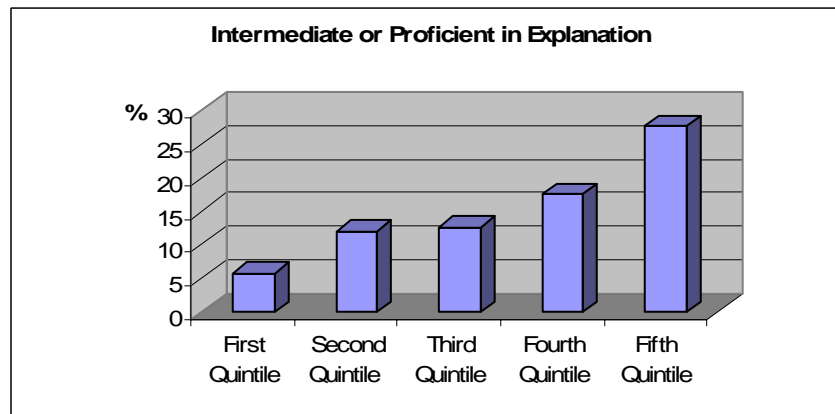
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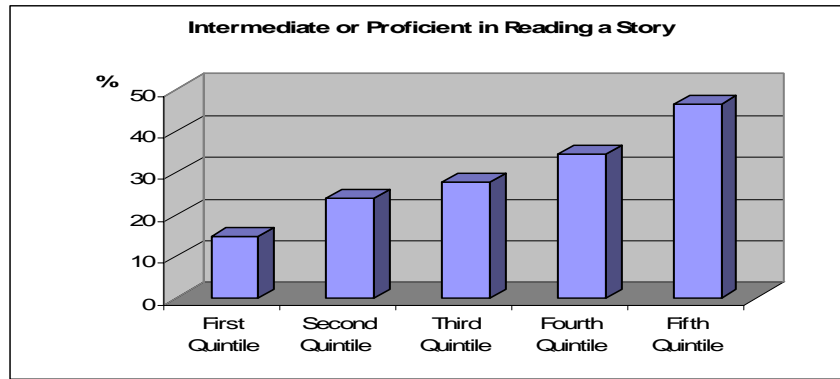
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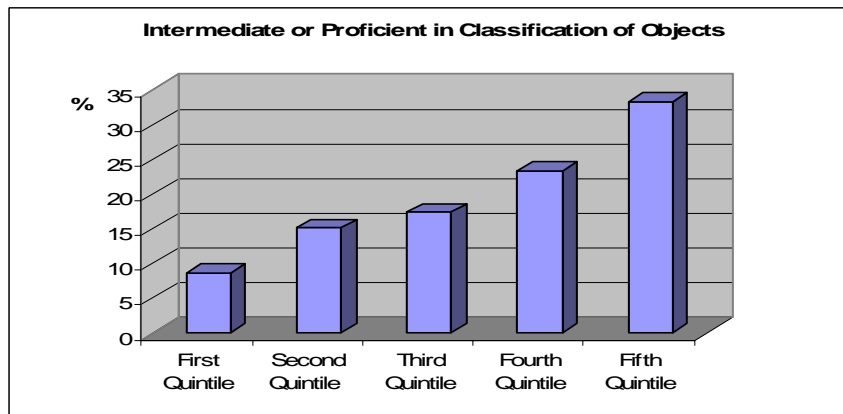
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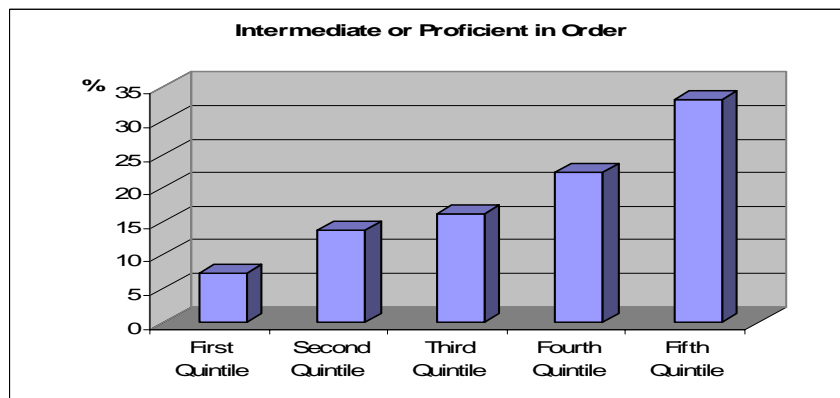
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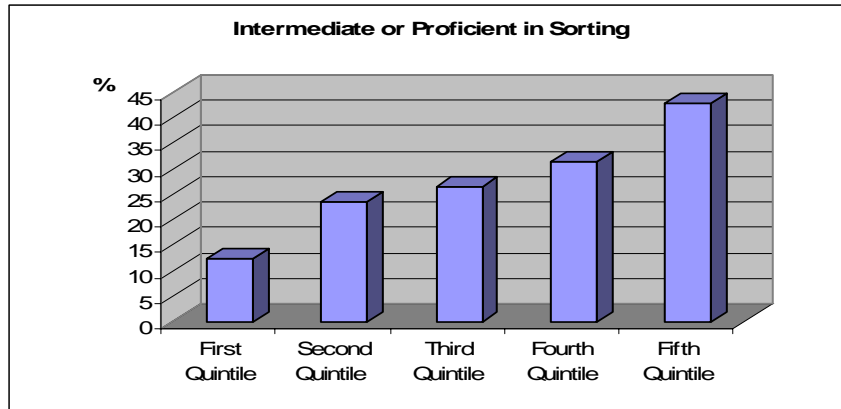
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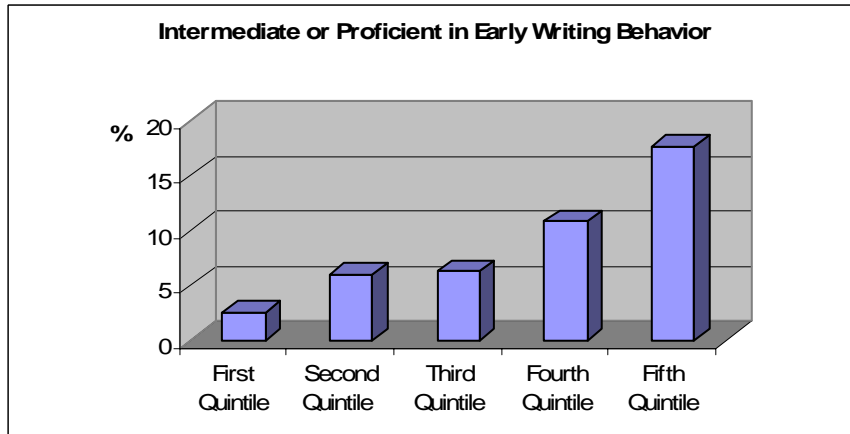
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**Figure 11**



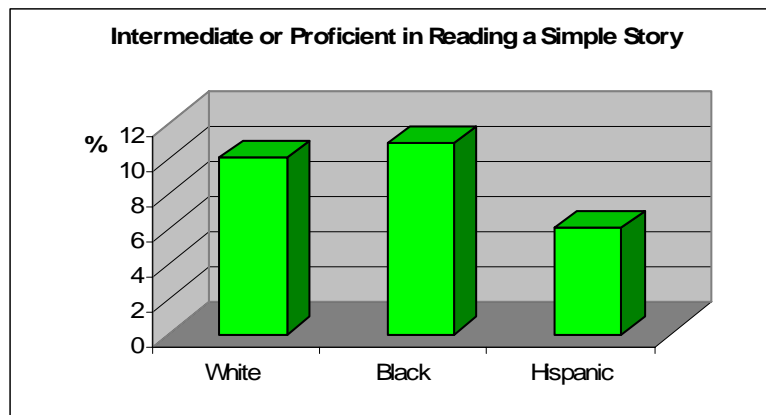
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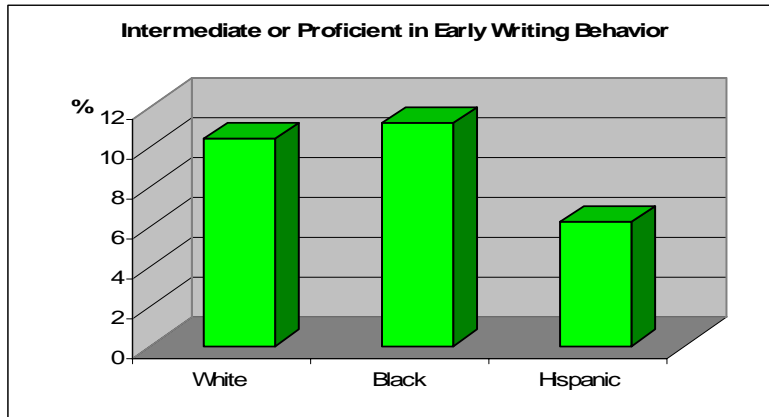
## Race and Ethnicity

Teacher-evaluated proficiency was also analyzed by race. The racial groups used in this study were white, African American, and Hispanic. Black children were more likely than the other racial groups to be identified by their teachers as proficient or intermediate in three areas: reading a simple story (Figure 13), early writing behavior (Figure 14), and understanding conventions of print (Figure 15). However, white children were more likely to be considered intermediate or proficient in key areas of early reading, math and science skills (Figures 16-24). Hispanic children's proficiency levels were lower than those of both white and black children in all areas being evaluated. Hispanic children's low proficiency levels may be attributed to a language barrier/ESL.

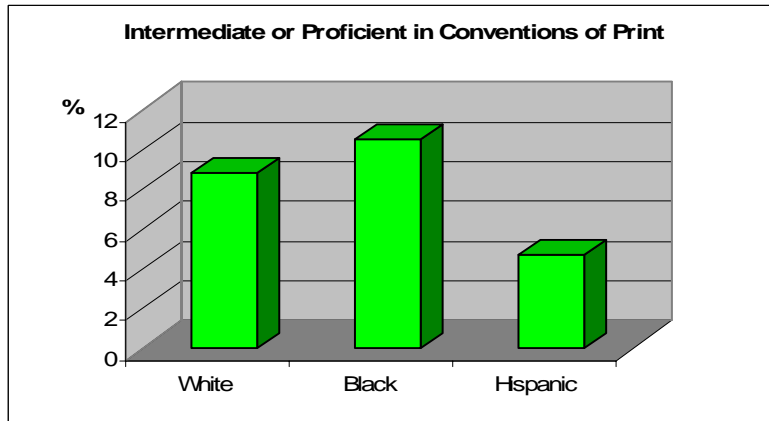
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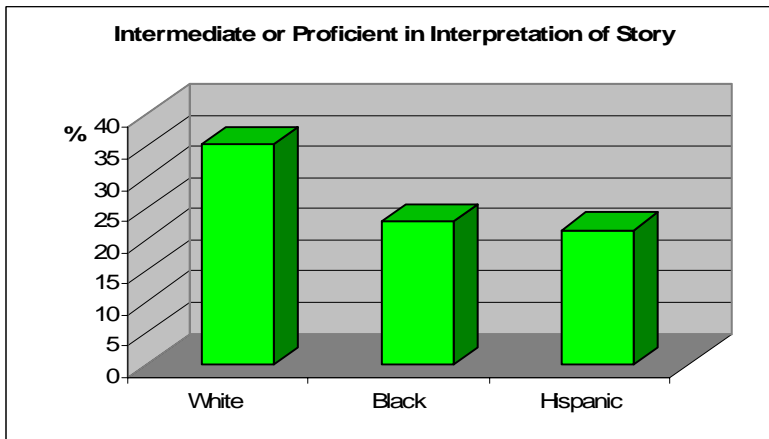
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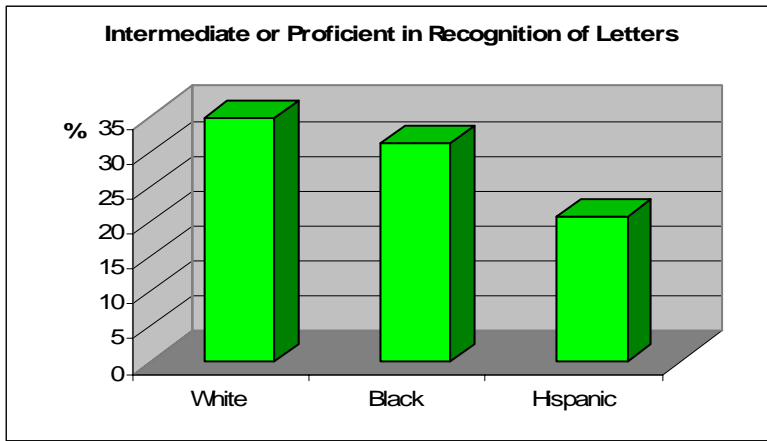
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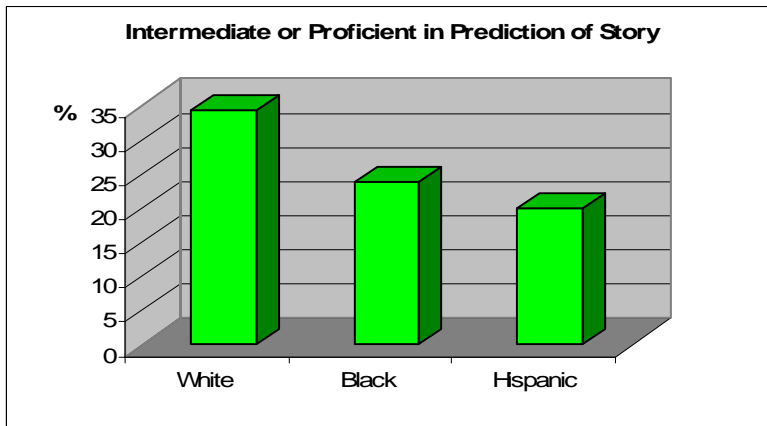
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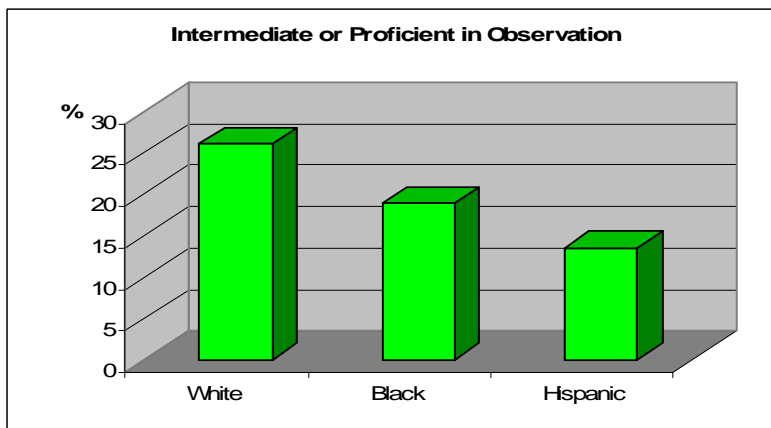
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**Figure 18**

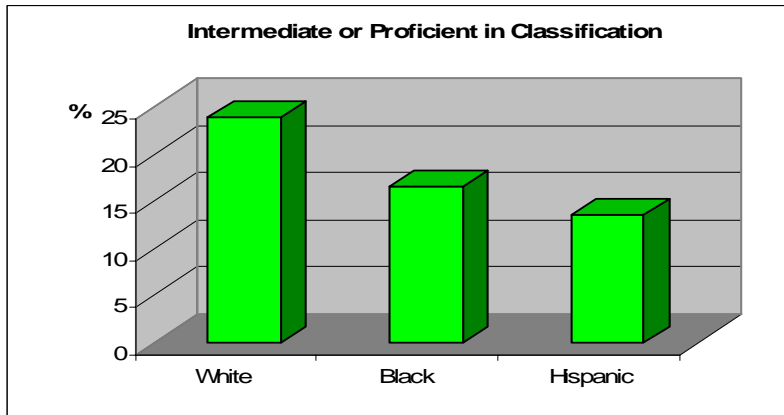


**Figure 19**

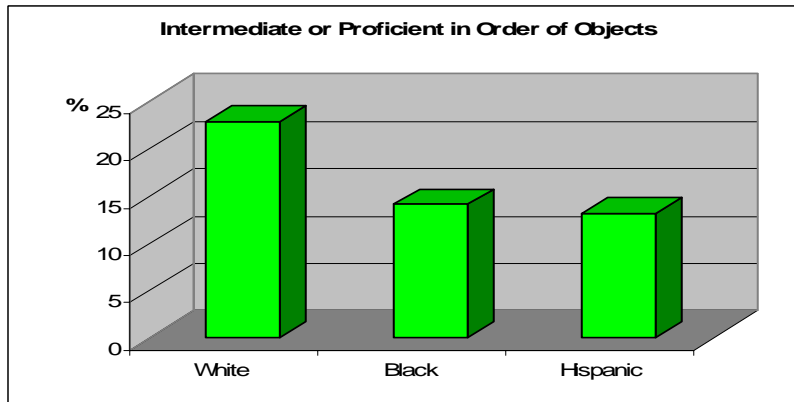




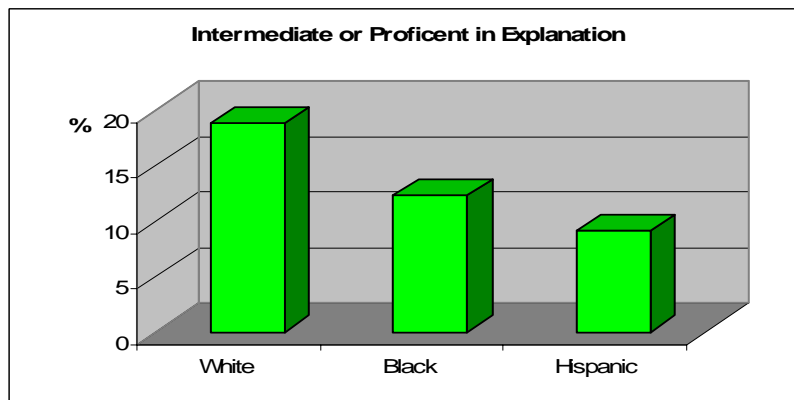
**Figure 20**



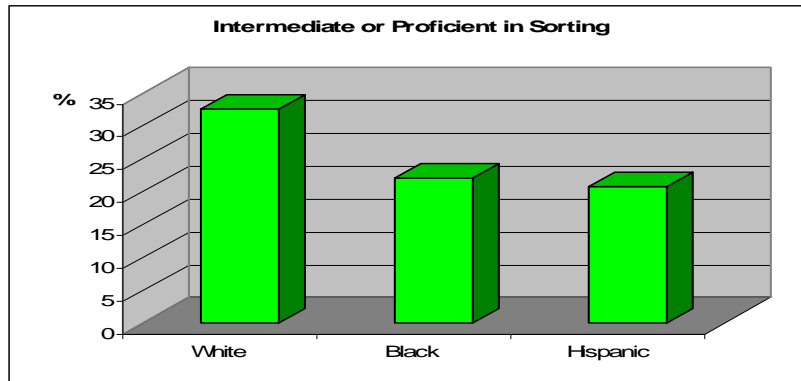
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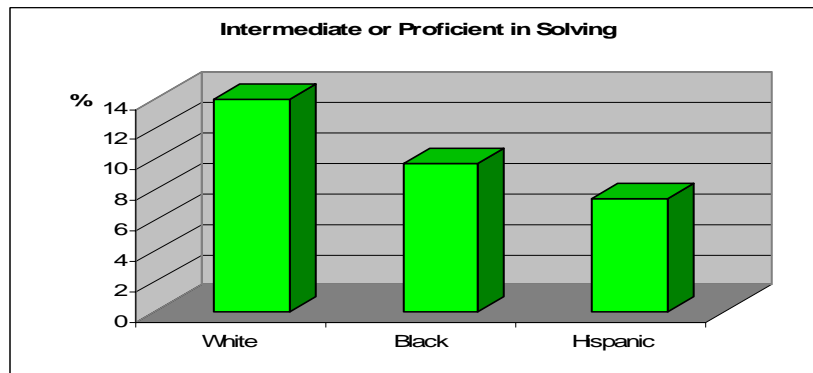
**Figure 22**



**Figure 23**



**Figure 24**



Type of Preschool

In addition to teacher-evaluated proficiency, reading and math skills were assessed during one-on-one testing sessions in the fall of the kindergarten year. The reading test assessed knowledge of letters and word recognition, beginning and ending sounds, vocabulary and passage comprehension. The math test assessed understanding of numbers, geometry and spatial relations. The scores on these tests have been transformed into standardized t-scores with a mean of 50 and standard deviation of 10 (based on the full sample distribution). T-scores provide estimates of achievement level relative to the population as a whole and not mastery of a particular set of skills. Therefore, those with



scores above 50 are above the average relative to their peers and vice versa for those with scores below 50.

Table 1 displays both reading and math scores of children from the four types of preschool programs being evaluated. There was less variation in the math scores than the reading scores<sup>2</sup>; however, the average math score for children who came from Head Start or some other type of center-based care was slightly higher than the average for all students in the sample. The reading scores were lower than the math scores with means between 47 and 49. The lowest average reading scores were for those children coming from relative care and non-relative care. Again students from Head Start scored slightly higher in reading than those from other types of preschool<sup>3</sup>.

The effectiveness of Head Start programs at preparing children for school has been well-documented. Abbott-Shim, et al. (2003) report that Head Start children performed better in cognitive, language, and health measures than their comparison group counterparts. According to Zill and Sorongon (2004), recent Head Start Family and Children Experience Survey (FACES) data show that Head Start graduates, by spring of their kindergarten year, were essentially at national norms in early reading and writing and were close to meeting national norms in early math and vocabulary knowledge.

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<sup>2</sup> The differences in average scores between types of preschool were all less than the standard deviation of 10.

<sup>3</sup> The effectiveness of Head Start programs at preparing children for school has been well-documented. Abbott-Shim, et al. (2003) report that Head Start children performed better in cognitive, language, and health measures than their comparison group counterparts. According to Zill and Sorongon (2004), recent Head Start Family and Children Experience Survey (FACES) data show that Head Start graduates, by spring of their kindergarten year, were essentially at national norms in early reading and writing and were close to meeting national norms in early math and vocabulary knowledge.



**Table 1. Average Reading and Math Test Scores by Type of Preschool Program**

Types of Preschool	Math Scores	Reading Scores
All Types	50.78 (10.57)	48.37 (14.27)
Relative Care	50.53 (10.24)	47.86 (15.04)
Non-Relative Care	50.65 (10.56)	47.87 (14.11)
Head Start	50.92 (10.91)	49.16 (13.64)
Center-based	50.83 (10.73)	48.43 (14.34)

### **Effects of Child and Family Background Characteristics on School Readiness**

Multiple regression analysis was performed to examine the effect of the child's background on school readiness in kindergarten. The family background variables included were race, gender, number of siblings in household, child's age and mother's age, child's birth weight<sup>4</sup>, mother's education, father's education, and family type (one parent, two parents or other). School readiness was measured using a count of the number of skills the teacher identified the child to be intermediate or proficient in.

In the school readiness and family background model, background characteristics of the child and his/her family explained 3.1 percent of the variance in teacher-evaluated proficiency levels (school readiness). The positive relationship between income and teacher-evaluated proficiency, as illustrated in Figures 1-12, was consistent with the regression results as well. Family structure was also found to have significant effects on

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<sup>4</sup> Child's age and mother's age were included as controls for level of maturity both of the parent and child. The child's birth weight was included to account for potential developmental issues that tend to be more likely among premature or low birth-weight children. Coefficient estimates for child's age, mother's age and, child's birth weight are not included in the tables, but can be made available upon request.



school readiness. For example, children from larger families (more siblings) as well as those who did not live with a parent on average had lower teacher-evaluated proficiency levels. Regression estimates are presented in Table A.1 found in the appendix.

### **Effects of Background and Parental Involvement on Early Academic Proficiency**

Next, we test the relationship between child and family background characteristics and early academic proficiency. Four separate regressions were conducted for each type of preschool – relative care (parent), non-relative care (babysitter, nanny), Head Start, or center-based care – in order to examine whether background characteristics affect school readiness differently for children who come from different preschool settings<sup>5</sup>. These specifications also include a measurement of early parental involvement based upon the number of days per week the parent spends reading to the child.<sup>6</sup> Kindergarten academic proficiency was measured using reading and math test t-scores.

Controlling for family background characteristics and the type of preschool care, the average reading scores of black children were not statistically different from those of white children from similar backgrounds. However, black children in center-based, relative and non-relative care scored lower on the kindergarten math assessment than their white counterparts (-3.7 points, -2.2 and -5.0 points respectively). On the other hand, regardless of the type of preschool care the child received, Hispanic children

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<sup>5</sup> Since the type of preschool a parent chooses to send their child to may be determined by factors that could also affect school performance, separate regressions were run for each type of care in order to eliminate this potential source of estimation bias. As a result, comparisons are made between students in the same type of preschool setting.

<sup>6</sup> Child-parent reading is also likely related to the parents' level of education and /or time spent working or caring for other children. Caution should be taken in interpreting coefficient estimates.



consistently scored lower on the reading test than their white and black counterparts. This difference was particularly striking for children in relative care where the reading scores of Hispanic children were 12 points lower than those of white children. Consistent with this finding was the fact that having English as a first language was the largest single determinant of reading test scores. For example, all other things being equal, the reading scores of children from English speaking households were 15 to 22 points higher than those of children from non-English speaking households. With the exception of those who came from the care of a relative, Hispanic students' math scores were similar to those of white students.

Both reading and math scores were also found to decrease as family size (number of siblings in the household) increased. Across each of the different types of care, the reading score decreased by 0.91 - 1.4 points and the math score decreased by 0.65 – 0.77 point per each additional child in the family. This may be explained by the idea that larger families have less time and resources to invest per individual child. The smallest effect was for children in Head Start while the largest effect was for those in relative care. Regression estimates are presented in Tables A.2 and A.3 located in the appendix.

Parent's education also significantly affected the child's performance on the reading and math tests. Generally speaking, children of parents with higher levels of education (those with more than a high school diploma) scored higher on these tests. For example, compared to those whose mothers had at least two years of college or vocational training, the children of high school dropouts scored 6 – 8 points lower on the reading test and 4 – 7 points lower on the math test. The largest reading test gap attributable to mothers without a high school diploma (-8 points) was found among



children who attended Head Start while the largest math test gap (-7.2 points) was found among those who attended non-relative care. On the other hand, the children of college-educated mothers scored 3 – 5 points higher on the reading test and 2 – 4 points higher on the math test than those with vocational training or some college (less than a bachelor's degree). Similar patterns were found for fathers although the magnitude of the effects was generally smaller.

The rest of this section will explore how various factors affected reading and math scores differently for children in the four types of preschool care examined in this study. Out of the sample size of 5,249 kindergarten students, 947 children were in relative child care prior to entering kindergarten. For this group of children, family background and parental reading explains 44 percent of the variance in reading scores and 20 percent of the variance in math scores. For the group of children who were in the care of a relative prior to entering kindergarten, differences in the frequency of parental reading did not have a statistically significant effect on kindergarten reading scores. Only 1 percent of parents in this group reported not reading to their children at all. Forty-eight percent reported that they read to their child everyday.

The number of children who received non-relative care was 663. For this group of children the model explains 43 percent of the variance in reading scores and 24 percent of the variance in math scores. Again for this group, the frequency of parental reading did not have a statistically significant effect on the child's performance on the reading test. Five percent of these parents reported not reading to their children at all. Fifty-six percent reported that they read to their child everyday.



Head Start programs included 705 children. For children who attended a Head Start program prior to entering kindergarten, family background and parental reading activity accounts for 32 percent of the variance in reading scores and 15 percent of the variance in math scores. In this sub-sample of kindergarten students, boys who came from Head Start scored 2.3 points lower on the reading test than females who came from Head Start. Also in this sample of students, children whose parents did not read to them at all scored 18 points lower on reading tests compared to children whose parents read to them once or twice a week.

Center-based care (other than Head Start) was the most common type of preschool child care (n=2,934). Family background and parental reading activity explained 43 percent of the variance in reading scores and 20 percent of the variance in math scores. Again boys from center-based care scored lower than girls from center-based care on reading (-2.3 points) and math (-0.79 point) tests. Also children in the first and second quintiles of the income distribution scored slightly higher on reading and math tests than those in the highest income quintile. Finally, the number of times parents of children from center-based care read to their children during the week did not significantly affect reading scores.

### **Race, Income and Early Childhood Education**

This report helps to shed light on existing racial and socioeconomic differences in academic proficiency and school readiness in kindergarten among white, black and Hispanic children. It also shows how family background and parental reading involvement affect kindergarten reading and math performance for children from





different preschool settings. In general, the data used in this analysis suggests that students who attended more structured preschool settings, like Head Start or other center-based programs, performed better on early reading and math tests.

Even though aggressive efforts have been implemented in current early childhood policies, problems of equal access to quality preschool education programs still exist for low-income, African-American and Latino children as opposed to more advantaged and white children. As a result, poor and minority children are more likely to find themselves at the lower end of the achievement gap. According to the U.S. Department of Education (1998), low-income status is one of the strongest predictors of low skills at school entry. Cognitive scores of children in the highest socioeconomic group were 60 percent higher than those of the lowest group.

During the 1960s and 70s, several early education programs were launched in the U.S. to address the issue of unequal access and improve academic outcomes for ‘at risk’ children. Results from three of these programs -- the Chicago Child-Parent Center program (1967- Present), the Perry Preschool Project (1962-1967), and the Abecedarian Early Childhood Intervention (1972-1985) -- identify both short- and long-term effects of high-quality, preschool education for young children from poor families. Positive results from programs like these have also helped to fuel the push toward universal early education programs like the one that has shown some early promise in Oklahoma.



### *The Chicago Child-Parent Center Program*

High incidences of poverty in the North Lawndale community of Chicago sparked the development of the Chicago Parent–Child Centers (CPC)<sup>7</sup>, the second oldest (after Head Start) extended early childhood intervention program. Dr. Lorraine M. Sullivan, Superintendent of District 8 and the program’s founder, outlined four concepts for building academic success which became the basis of the federally-funded program in 1967: 1) parental involvement in the early years of school, 2) curriculum instructions tailored to children’s learning styles and designed to develop their speaking and listening skills, 3) small class sizes to provide for individual attention, and 4) attention to health and nutritional services. The CPC has become a center–based early intervention that provides comprehensive educational and family-support services to economically disadvantaged children from preschool to early elementary school.

Chicago's Child-Parent Centers have functioned for 40 years and within those years, a number of reports have been completed by Dr. Arthur J. Reynolds, current director of the CPC, and his colleagues. These reports involve results from a large-scale longitudinal study on Chicago Child-Parent centers. The researchers assessed the effects of the programs using data on 1,539 participants (low-income, minority children - 93% black and 7% Latino children) born in 1979 or 1980. A follow-up study was conducted on most of the original cohort at the average age of 24. Approximately 90.3% of the

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<sup>7</sup> The CPC program operates in 24 centers throughout the Chicago Public Schools. The centers provide services in preschool (ages 3 or 4) and/or kindergarten and 13 centers implement the primary-grade program from first to third grade. The preschool and kindergarten components of the program are funded through Title I of the Improving America School Act (or Elementary and Secondary Education Act). Since 1977, the primary-grade program (also called the Expansion program) has been funded by Title I through the State of Illinois (Department of Early Childhood Education, Chicago Public Schools).



original sample participated in the follow-up, resulting in valid data on educational attainment and employment for 1,389 of the program participants.

In an April 2007 report entitled, “Effects of a Preschool and School-Age Intervention on Adult Health and Well Being: Evidence from the Chicago Longitudinal Study”, Reynolds and his colleagues conclude that the center participants school completion rates (college and beyond) were higher than the comparison group (71.4% vs. 63.7%); both the participant group and school-age intervention group had higher rates of full-time employment than the comparison group (42.7% vs. 36.4%); about 70 percent of the center participants were more likely to have health insurance coverage compared to 61 percent of the comparison group; and, CPC participants were less likely to have a felony arrest (16.5% vs. the comparison group at 21%). The research of Reynolds and his colleagues provides evidence that children’s participation in early school-based intervention coupled with intensive parental involvement was associated with a wide range of long-term positive effects.

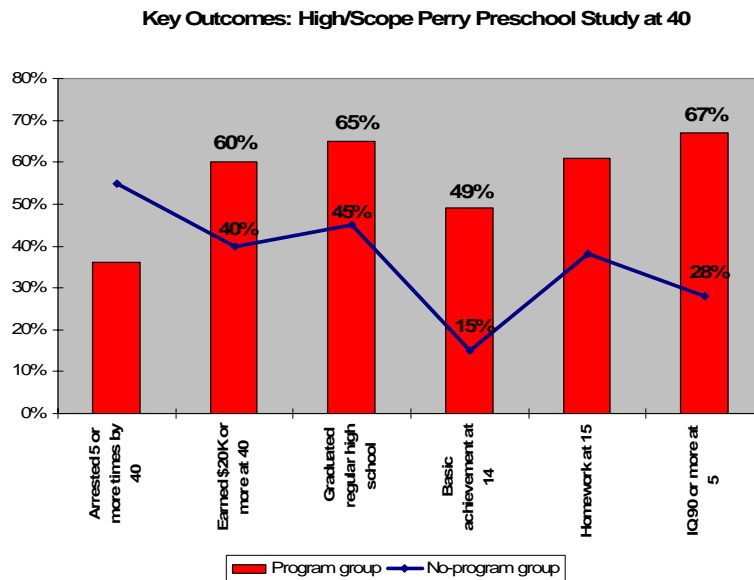
### ***The Perry Preschool Program***

The High-Scope Perry Preschool program was initiated in the Ypsilanti, Michigan School District in order to help young children avoid academic failure and other problems. Out of a sample of 123 low-income African American children who were assessed to be at high risk of school failure, 58 were randomly assigned to a treatment group that received high-quality preschool programs at ages three and four and the other 65 (the control group) received no preschool program. Data were collected annually on both groups from ages 3 through 11 and again at ages 14, 15, 19, 27 and 40. The findings



reveal that the program group outperformed the control group in education and economic outcomes. According to Figure 25, 65 percent of the program group graduated from regular high school compared to 45 percent of the no-program group. The data also indicate that the program group performed significantly better than the no-program group on many intellectual and language tests from their preschool years up to age 7; on school achievement tests at ages 9, 10, and 14; and on literacy tests at ages 19 and 27.

Figure 25:



Source: Dr. Lawrence Schweinhart, “The High/Scope Perry Preschool Study through Age 40”

In terms of economic performance, 76 percent of the program group were employed at age 40 compared to 62 percent of the no-program group. Furthermore, higher median annual earnings were observed for the program group than for the no-program group at ages 27 and 40 (\$12,000 compared to \$10,000 at age 27 and \$20,800 compared to \$15,300 at age 40).



### *The Abecedarian Project*

The Abecedarian<sup>8</sup> Project is one of the best-known longitudinal child care intervention studies in the U.S. Launched by a group of researchers from the Frank Porter Graham (FPG) Child Development Center at the University of North Carolina at Chapel Hill, the carefully controlled project was an ongoing scientific study to examine possible benefits of early childhood education for economically disadvantaged (low-income) children born between 1972 and 1977.

Four cohorts of children accepted random assignments to a full-time child care setting at FPG with emphasis on high quality educational intervention from infancy to five years. The study design stressed language development coupled with social, emotional, cognitive and physical areas of development and each child was given an individualized prescription of educational activities. Many positive outcomes came from the experiment including, higher cognitive test scores from the toddler years through age 21, higher scores on achievement tests in mathematics and reading during their elementary and secondary school years, and lower levels of grade retention and placement in special education classes. The project also turned out to be the only early childhood program with statistically significant cognitive benefits extending into adulthood.

Each of the above described programs demonstrate the importance of high quality preschool programs in the intellectual and social development of young children from

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<sup>8</sup> Abecedarian means “one who teaches or studies the alphabet or one who is just learning, a beginner” (Early Developments, 2006).



low-income households, as well as the impact these programs can have well into adulthood as evidenced by school success, economic performance and crime prevention. However, in recent years educators and business leaders have come to recognize that underachievement and school readiness are not only problems for poor children. Middle-income children lag behind their higher income peers in social and cognitive skills also. According to a 2004 National Institute of Early Education Research (NIEER) report, universal programs are likely to be more effective at identifying and reaching all children and may have larger effects than targeted programs for the most disadvantaged children. The state of Oklahoma has already begun implementing some of these universal concepts.

### *Oklahoma's Universal Appeal*

Oklahoma's Early Childhood Four-Year-Old program began as a pilot program in 1980. In 1990, the program expanded to include all four-year olds eligible for Head Start and in 1998 Oklahoma became the second state-funded program in the United States to offer universal access to pre-kindergarten. This means the services are free to all four-year olds in the state and enrollment is voluntary. According to NIEER, Oklahoma leads the nation in providing preschool education to 4-year olds, enrolling about 70 percent of the state's children. Teachers must have a bachelor's degree with certification in early childhood education and are paid the same state salary as public school teachers.

In response to the need to serve more children from infancy to three-years-old and the demand for more family-oriented involvement, Oklahoma appropriated funds to develop an Early Childhood Pilot Program for children from birth to age 3 beginning in



the 2006-2007 academic year. The initiative will provide comprehensive services to at-risk children and their families, and will require local programs to employ a family support worker and teachers with a bachelor's degree and early childhood certification.

Gormley, et al. (November 2004) provide significant evidence of the positive impact of Oklahoma's school-based universal pre-K program on test scores of young children from different ethnic and racial groups and socioeconomic backgrounds. NIEER also conducted a 2005 study on Oklahoma which showed similar positive academic outcomes.

### **Conclusion & Policy Implications**

Using regression analysis to understand the extent to which family background contributes to differences in scores on reading and math tests that were administered during the fall of the kindergarten year, this report also shows that differences in family background explain a larger portion of the variance in reading scores (32 – 44 percent depending upon the type of preschool program attended) than the math scores (15 – 24 percent). This suggests that to a large extent, a child's language and literacy development tends to be developed within the home as opposed to in a formal school setting. Aside from whether the child was from an English-speaking household, the most significant family background determinants of academic performance on these tests were family size and parental education. Children from larger families tended to score lower as did those whose parents had lower levels of education. Parental reading was found to be important especially among Head Start participants. For example, among Head Start participants, children whose parents did not read to them at all scored significantly lower on reading



tests than children whose parents did read to them (-17 points). Overall, the frequency of reading tended not to be as important as the fact that parents read to their children at all. Less than one percent of all families reported that they did not read to their children at all, indicating that the majority of parents are aware of the benefits of reading to their children and have chosen to take this simple step toward preparing their child for school. Children from non-relative care (i.e. a nanny or babysitter) were the least likely to be read to by a parent.

A few racial and gender differences in test performance were also identified. On average, black children scored lower than their white counterparts on math tests, and Hispanic students scored lower on reading tests. The performance gap between boys and girls was identified among those students who attended Head Start or other center-based programs. Boys in Head Start scored lower on reading tests than their female counterparts while boys in other types of center-based programs scored lower than girls on both reading and math tests.

The results of this study provide support for a number of the National Urban League's policy recommendations for improving education. In *The Opportunity Compact: Blueprint for Economic Equality*, NUL's 2007 comprehensive policy document, the League advocates for "mandatory early childhood education beginning at age 3" as a means of providing children with an opportunity to thrive. According to the League's recommendations for reauthorization of No Child Left Behind (NCLB), "it is critical that ALL children enter school ready to take advantage of teaching and learning in order to be successful in their schooling."





In addition to early childhood education, this report also shows the significance of improving opportunities for educational attainment among parents since so much of a child's literacy development is determined by the parent's level of education. Along these lines, NUL urges the creation and implementation of policies that include quality child care and transportation assistance along with education and training programs that encourage, rather than penalize, additional education and skills attainment.

The League has also promoted increased support for parental engagement in student learning at home and in schools. Family engagement initiatives have already been implemented in Head Start programs, several of which are operated by Urban League affiliates, where family literacy services were mandated by the Head Start Act of 1998. "Head Start and Early Head Start programs are committed to helping parents, including fathers, contribute to their children's learning....By focusing on the literacy of moms, dads, and their children at the same time, family literacy services are an effective way to help parents get involved in their children's development" (Head Start Bulletin, 2004).

Although the focus of this study was how the family affects early academic achievement, there are undoubtedly a number of other factors also influencing performance including variation in the quality and curriculum of early education programs and teacher effectiveness. Effective policies must also take account of how these variables interact with the influence of the family to produce positive academic outcomes for all children. While a thorough analysis of these factors was beyond the scope of this study, in order to provide a more comprehensive examination of early childhood education and its effects, these variables are to be explored in future research.





## References

- Abbott-Shim, M., Lambert, R., and McCarty, F. (2003) "A Comparison of School Readiness Outcomes for Children Randomly Assigned to a Head Start Program and the Program's Wait List" *Journal of Education for Students Placed at Risk* 8(2), pp.210-211
- Barnett, W.S. and Belfield, C.R. (Fall 2006) "Early Childhood Development and Social Mobility" *The Future of Children* Vol. 16, No. 2
- Barnett, W.S., Hustedt, J.T, and et al. (2006) "The State of Preschool 2006" *The National Institute for Early Education Research*
- Bredenkamp, S., & Copple, C. (1997) *Developmentally appropriate practice in early childhood programs*. Washington, DC: NAEYC
- Brooks-Gunn and Markman, L.B. (Spring 2005) "The Contribution of Parenting to Ethnic and Racial Gaps in School Readiness" *The Future of Children*, Vol. 15, No. 1 School Readiness: Closing Racial and Ethnic Gaps, pp. 139-168
- Gormley, W.T., Gayer, T., and et al., (November 2004) "The Effects of Universal Pre-K on Cognitive Development", *National Institute for Early Education Research*
- Jencks, C. and Phillips, M. (1998) *The Black-White Test Score Gap*, Brookings Institution Press
- "National Urban League Recommendation for the Reauthorization of No Child Left Behind (NCLB)" (2007, August 9) *National Urban League*
- Nord, C.W., Lennon, J., Liu, B., and Chandler, K., (1999) "Home Literacy Activities and Signs of Children's Emerging Literacy: 1993 and 1999", *Education Statistics Quarterly*, Vol. 2, Issue 1, Topic: Early Childhood Education, [http://nces.ed.gov/programs/quarterly/vol\\_2/2\\_1/q3-1.asp](http://nces.ed.gov/programs/quarterly/vol_2/2_1/q3-1.asp)
- Kagan, S. Lynn; Moore, Evelyn; & Bredenkamp, S. (Eds.). (1995). *Reconsidering children's early learning and development: Toward common views and vocabulary*. Washington, DC: *National Education Goals Panel*. [http://eric.ed.gov/ERICDocs/data/ericdocs2/content\\_storage\\_01/0000000b/80/24/e8/8d.pdf](http://eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/24/e8/8d.pdf)
- Klein, L.G. and Knitzer, J. (January 2007) "Promoting Effective Early Learning: What Every Policymaker and Educator Should Know", *National Center for Children in Poverty*
- Lee, V.E. and Burkham, D.T (2002) "Inequality at the Starting Gate: Social background differences in achievement as children begin school", *Economic Policy Institute*, Washington, DC



Madrick, J. (2007, June 22) "Breaking the Stronghold: Why Policies Promoting Demand Offer a Better Way for the U.S. Economy" *EPI Briefing Paper #192*

Paley, V.G. (2004) *A Child's Work: The Importance of Fantasy Play*, Chicago, IL: University of Chicago Press

Reynolds, A.J., Temple, J. and et al., (April 2007) "Effects of a Preschool and School-Age Intervention on Adult Health and Well Being: Evidence from the Chicago Longitudinal Study", *Foundation for Child Development*

Schumacher, R, Hamm, K., and Ewen, D. (June 2007) "Making Pre-Kindergarten Work for Low-Income Working Families", *Center for Law and Social Policy*, Policy Paper: Paper No.1

Strickland, D.S, and Riley-Ayers, S. (April 2006) "Early Literacy: Policy and Practice in the Preschool Years", Issue 10

Zill, N. and Sorongon, A, (2004, June 28-30) "Children's Cognitive Gains during Head Start and Kindergarten" Presentation at the National Head Start Research Conference, Washington, DC

"Family Involvement in Early Childhood Education", *Harvard Family Research Project*, No.1 in a Series, (Spring 2006)

"Father Involvement: Building Strong Programs for Strong Families", *Head Start*, Head Start Bulletin #77, (June 2004)

"School Readiness: Helping Communities Get Children Ready for School and Schools Ready for Children", *Child Trends: Research Brief*, Washington, D.C.,(October 2001)

"The Carolina Abecedarian Project" *University of North Carolina, Chapel Hill FPG Child Development Institute*, website: [www.fpg.unc.edu/~abc/](http://www.fpg.unc.edu/~abc/)



## **Appendix**



**Table A.1**  
**OLS Regression Estimates of Teacher Evaluated Proficiency**  
*(Standard Error in Parentheses)*

	<b><u>All Proficiency</u></b>
Black	0.002 (0.098)
Hispanic	-0.020 (0.117)
Male	0.049 (0.062)
English speaking	0.153 (0.153)
Mother has no HS diploma	-0.123 (0.121)
Mother has a HS diploma	0.024 (0.080)
Mother has a bachelor's degree	-0.155 (0.102)
Mother has post baccalaureate degree	-0.171 (0.137)
Father has no HS diploma	0.195 (0.118)
Father has a HS diploma	0.092 (0.082)
Father has a bachelor's degree	-0.031 (0.104)
Father has a post baccalaureate degree	-0.019 (0.129)
Two parent household	0.351 (0.179)
Other household	-0.422 (0.321)
Number of siblings	-0.255 (0.029)
First Quintile	-0.679 (0.118)
Second Quintile	-0.565 (0.095)
Third Quintile	-0.512 (0.090)
Fourth Quintile	-0.282 (0.086)
Parent does not read to child	-0.353 (0.387)
Parent reads once and twice a week	-0.228 (0.101)
Parent reads everyday	0.356 (0.067)
R-squared	0.04
N	5249





**Table A.2****OLS Regression Estimates of Kindergarten Reading Test Scores***(Standard Error in Parentheses)*

	<u>Relative</u>	<u>Non-relative</u>	<u>Head Start</u>	<u>Center-based</u>
Black	-1.226 (1.177)	-1.851 (1.235)	-0.510 (1.692)	-1.601 (0.617)
Hispanic	-12.031 (1.469)	-8.329 (1.573)	-4.044 (1.491)	-6.163 (0.761)
Male	-0.056 (0.745)	-1.437 (0.846)	-2.268 (0.862)	-2.333 (0.400)
English speaking	15.758 (1.735)	20.549 (2.102)	22.138 (2.382)	21.432 (0.983)
Mother has no HS diploma	-6.235 (1.408)	-5.876 (1.642)	-8.048 (1.875)	-5.982 (0.775)
Mother has a HS diploma	-1.925 (0.975)	-1.920 (1.060)	-1.572 (1.091)	-1.402 (0.520)
Mother has a bachelor's degree	1.449 (1.206)	3.295 (1.478)	4.758 (1.401)	1.490 (0.658)
Mother has post baccalaureate degree	1.470 (1.654)	5.286 (1.985)	3.489 (1.946)	3.195 (0.866)
Father has no HS diploma	-5.325 (1.404)	-5.229 (1.581)	-2.259 (1.822)	-5.525 (0.759)
Father has a HS diploma	-0.523 (1.019)	-1.854 (1.095)	-2.139 (1.116)	-2.267 (0.531)
Father has a bachelor's degree	2.537 (1.204)	1.340 (1.464)	1.195 (1.417)	3.057 (0.671)
Father has a post baccalaureate degree	4.299 (1.518)	2.149 (1.813)	2.871 (1.818)	2.961 (0.828)
Two parent household	-0.398 (2.046)	-1.071 (2.303)	1.723 (3.376)	2.229 (1.135)
Other household	0.647 (3.768)	-1.438 (4.279)	-0.414 (5.403)	2.199 (2.023)
Number of siblings	-1.354 (0.357)	-0.785 (0.386)	-0.700 (0.413)	-0.909 (0.184)
First Quintile	3.119 (1.285)	-0.677 (1.697)	0.564 (1.747)	1.687 (0.790)
Second Quintile	3.301 (1.149)	-0.245 (1.313)	2.073 (1.324)	1.463 (0.619)
Third Quintile	2.431 (1.113)	-1.230 (1.164)	1.360 (1.241)	1.212 (0.586)
Fourth Quintile	3.016 (1.155)	0.298 (1.149)	1.262 (1.149)	0.843 (0.544)
Parent does not read to child	-2.129 (3.508)	1.790 (4.450)	-17.976 (8.048)	-0.096 (2.655)
Parent reads once and twice a week	1.426 (1.119)	2.269 (1.403)	1.502 (1.513)	0.724 (0.655)
Parent reads everyday	0.272 (0.813)	1.368 (0.911)	0.297 (0.935)	0.205 (0.435)
R-squared	0.44	0.43	0.32	0.43
N	947	663	705	2934





**Table A.3**  
**OLS Regression Estimates of Kindergarten Math Test Scores**  
*(Standard Error in Parentheses)*

	<u>Relative</u>	<u>Non-relative</u>	<u>Head Start</u>	<u>Center-based</u>
Black	-2.227 (0.958)	-5.015 (1.070)	-2.157 (1.510)	-3.693 (0.547)
Hispanic	-1.829 (1.195)	-2.876 (1.362)	-1.066 (1.331)	-1.426 (0.675)
Male	0.664 (0.606)	-0.356 (0.733)	-0.943 (0.769)	-0.788 (0.355)
English speaking	3.433 (1.412)	3.866 (1.821)	7.729 (2.126)	5.630 (0.871)
Mother has no HS diploma	-4.097 (1.146)	-7.197 (1.422)	-7.067 (1.673)	-4.421 (0.687)
Mother has a HS diploma	-0.691 (0.793)	-2.075 (0.918)	-1.904 (0.973)	-1.517 (0.461)
Mother has a bachelor's degree	2.289 (0.981)	1.170 (1.280)	3.658 (1.251)	1.992 (0.584)
Mother has post baccalaureate degree	1.598 (1.346)	3.261 (1.719)	4.251 (1.736)	3.509 (0.767)
Father has no HS diploma	-4.108 (1.142)	-4.186 (1.369)	-0.675 (1.626)	-2.851 (0.673)
Father has a HS diploma	-1.465 (0.829)	-3.321 (0.948)	-1.367 (0.996)	-2.135 (0.471)
Father has a bachelor's degree	1.775 (0.980)	2.067 (1.268)	0.815 (1.264)	2.098 (0.595)
Father has a post baccalaureate degree	4.311 (1.235)	0.548 (1.570)	1.508 (1.622)	3.009 (0.734)
Two parent household	0.023 (1.665)	-1.264 (1.994)	2.698 (3.012)	3.477 (1.006)
Other household	-0.397 (3.065)	1.543 (3.705)	-0.885 (4.822)	1.943 (1.794)
Number of siblings	-0.769 (0.290)	-0.420 (0.334)	-0.183 (0.369)	-0.650 (0.163)
First Quintile	0.956 (1.046)	-0.145 (1.470)	-0.170 (1.559)	1.875 (0.701)
Second Quintile	1.406 (0.935)	2.129 (1.137)	0.955 (1.182)	1.351 (0.548)
Third Quintile	1.633 (0.906)	0.827 (1.008)	0.079 (1.107)	0.849 (0.520)
Fourth Quintile	1.562 (0.939)	0.614 (0.995)	0.002 (1.025)	0.745 (0.482)
Parent does not read to child	-1.371 (2.854)	5.360 (3.854)	-17.550 (7.182)	-0.327 (2.354)
Parent reads once and twice a week	1.986 (0.910)	-0.865 (1.215)	0.965 (1.351)	0.785 (0.581)
Parent reads everyday	-0.476 (0.661)	0.559 (0.789)	0.742 (0.834)	0.627 (0.386)
R-squared	0.20	0.24	0.15	0.20
N	947	663	705	2934



**Table A.4**  
**Summary Statistics**

<u>Variables</u>	<u>White %</u>	<u>Black %</u>	<u>Hispanic %</u>
Child Composite Gender			
<i>Male</i>	51.8	47.7	48.7
<i>Female</i>	48.2	52.3	51.3
Child Composite Race (count)	4192	677	659
<i>Percentage</i>	0.76	0.12	0.12
No. siblings in household	12.5	14.8	13.4
Avg. number of siblings in household	1.65	2.07	1.95
Mother no HS	7.7	14	36.9
Mother has a HS diploma	31.6	36.2	28.2
Mother has vocational training/some college	33.6	39	26.7
Mother has a bachelors degree	18.1	8.1	6.1
Mother has graduate training and beyond	9	2.7	2.1
Father has no HS	9.6	12.1	35.4
Father has a HS diploma	33.2	45.9	31.7
Father has vocational training/some college	27.8	29.2	21.7
Father has a bachelors degree	17.9	9.7	7.9
Father has graduate training and beyond	11.5	3	3.3
English as main language	98.3	99	5
First quintile	9.1	9.9	10.2
Second quintile	17.7	17.3	15.6
Third quintile	20.9	19.8	56.1
Fourth quintile	24.3	26.9	25.6
Fifth quintile	28	26.1	26.4
Relative child care	17.2	17	17
Non-relative child care	11.6	14	12.4
Head Start program	13.6	7.7	12.3
Center-based program	52.3	56.9	53.9
Two or more programs	5.2	4.4	4.4
Parent does not read to child	0.6	0.7	0.8
Parent reads to child once or twice a week	12.8	12.6	12.4
Parents reads to child three to six times a week	36	36.6	36.9
Parent reads to child everyday	50.6	50.1	49.9

