GETTING AHEAD: THE STATISTICAL RELATIONSHIP BETWEEN HEAD START AND COLLEGE ATTENDANCE

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By

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GETTING AHEAD:  
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ABSTRACT  
In 1965, Head Start was founded under President Johnson’s War on Poverty to help provide low-income families with free early childhood education. While it began as a summer program, it has evolved into a preschool program. Now run by the Administration for Children and Families in the Department of Health and Human Services, since its inception Head Start has served nearly 30 million children. Research on the Head Start program has found significant gains in school readiness and educational abilities, however those gains tend to wear off in the early elementary years. Some have used this as an argument against the government program. Research also shows the importance of having a college education in today’s modern workforce. This study therefore explores the relationship between participation in Head Start and college attendance. Without controlling properly for family background, we would be led to believe that Head Start has a significant and negative effect on the likelihood of college attendance. However, when we properly control for family background characteristics using a household level fixed effects model, we find that Head Start does not have a significant positive or negative effect on the likelihood of college attendance. The effects of Head Start coupled with rigorous and ongoing academic intervention programs should be explored in future research.
Infinite thanks to my thesis classmates for their ongoing support and input. Additional thanks to Adam Thomas and Mike Barker for their statistical and analytic guidance. Thank you to my mentors on the Domestic Policy Council’s Urban Affairs and Economic Mobility team for further inspiring my interest in helping disadvantaged communities. And thank you to my thesis Advisor Chris Toppe for leading me through this process.

The research and writing of this thesis is dedicated to my family for inspiring me to live a compassionate and inquisitive life.

Many thanks,
Molly Danielle Dillon
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Children who are victims of class and race prejudice, the poor children of today, will become the poor adults of tomorrow, because our educational system ensures that they will be unable to compete with the better-educated children of the wealthy.

Jonathan Kozol
Writer, Educator, Civil Rights Activist
INTRODUCTION

On a cold winter’s night in early 2010, *The Wire* co-creator Ed Burns told a packed auditorium at Goucher College, “If we don’t get to kids by the time they’re three years old, it’s too late. We’ve lost them.” Burns was screening an episode from the fourth season of the popular series, which focuses on the public education system, and talking about his experience as a former Baltimore homicide and narcotics police detective. On that night, he stood in front of a room full of hopeful young people and told them that once kids have aged past three, the achievement gap is irreversible. He told them that the damage is permanent and there’s really nothing we can do. An air of disappointment came over the crowd. Some vocally disagreed with him, while others silently and sadly accepted what they had perhaps always suspected.

Burns is not alone in his assertion. Many in the policy world agree and it was even part of the motivation in founding the Head Start Program in 1965. Head Start began as a pre-kindergarten summer program to help low-income children “catch up” and prepare to enter the classroom for the first time in the fall. However, it didn’t take long for policymakers to realize that a few weeks of prep over the summer could hardly undo the detrimental effects of living in poverty their entire young lives. Scholars and policymakers alike began to explore what could be done to reduce the risks poverty presents to the development of young children. Consequently, in 1981, Head Start was expanded under the Head Start Act and most recently reauthorized in 2007. The 2007 reauthorization states that the purpose of Head Start is “to promote the school readiness of low-income children by enhancing their cognitive, social, and emotional development” (HHS, 2007, p. 2). The 2011 federal budget allocated $8.1 billion to Head Start, 85% of which must be spent on direct services, with the other 15% allocated to administrative costs. Eligibility for Head Start is largely income based, so as to target the neediest students.
(HHS, 2007). While it may have started as summer school, Head Start has become a preschool program meant to help alleviate the effects of poverty on educational achievement.

Preschool in the United States is not required by law and as a consequence is mostly run by private institutions. Even though parents may want to send their children to preschool, private-run programs are often cost prohibitive for low-income families. Head Start has attempted to help, but we still do not have universal preschool attendance. However, some policymakers wonder what a society would look like in which all students got free, comprehensive early childhood education. Would it be worth the cost? At this point, the idea of mandatory preschool for all is merely a policy pipedream, but it’s an interesting thought experiment. Many studies have shown the benefits of preschool. For example, “preschool education for at-risk three and four-year olds is an effective [strategy for preventing involvement with the juvenile justice system], particularly when it includes home visits or work with parents in some other way” (Greenwood, 2009, p. 196-197). The effects of early childhood education most likely go beyond just the traditional educational achievement metrics.

President Obama has endorsed expanding access to high quality early childhood education, especially for low-income children. He calls it “among the smartest investments that we can make” (The White House, 2012, np). In his 2013 State of the Union Address, the President brought the idea to the top of his policy agenda, saying, education “has to start at the earliest possible age. […] Study after study shows that the sooner a child begins learning, the better he or she does down the road. But today, fewer than three in ten 4-year-olds are enrolled in a high-quality preschool program. Most middle-class parents can’t afford a few hundred bucks a week for private preschool. And for poor kids who need help the most, this lack of access to preschool education can shadow them for the rest of their lives. So, tonight, I propose working
with states to make high-quality preschool available to every single child in America. That’s something we should be able to do” (The Washington Post, 2013, np). While President Obama wants to expand access, he also wants to hold programs like Head Start accountable. In November of 2011, the President announced stricter financing standards that would, “for the first time, require Head Start programs to meet certain standards to qualify for renewal of federal grants” (Landler, 2011, np). Each year nearly a million children are enrolled in Head Start programs and yet some groups, such as the Heritage Foundation, claim that Head Start is a “pet project,” a “sinkhole for taxpayer dollars,” and “an ineffective education program for children” (Burke, 2010, np). The federal government continues to give funds to Head Start, but because Head Start in its current form is relatively young, research on its effects on the life outcomes of disadvantaged students is still in its early stages. In 1995, Janet Currie and Duncan Thomas released a study entitled Does Head Start Make a Difference? They found, “Head Start is associated with large and significant gains in test scores among both whites and African Americans” (Currie and Thomas, 1995, p. 341). However, while the educational advancements wore off for some groups, there are perhaps more benefits to Head Start that cannot be measured with standardized testing. This paper revisits the question: is Head Start effective in helping poor children reach the pathway to opportunity?

Using the National Longitudinal Survey of Youth (NLSY) to examine the impact of Head Start on life outcomes, I update the work begun by Currie and Thomas nearly twenty years ago. The original NLSY surveyed 12,686 men and women who were all 14 to 21 years of age on December 31st, 1978 and then began interviewing the children of those original women in 1986. This data is used to examine the long-term effects of participating in a Head Start program on a child’s life outcomes. I will take the same group of respondents who were used in Currie and
Thomas’s research and look at more recent data to see how their lives have progressed. Specifically, I explore if participating in Head Start has any relationship with eventually attending college.

Many policy makers and developmental psychologists agree that early learning is essential to setting children on the path towards success. Increased levels of evidence-based early childhood education programs could very well be cost effective. Currie and Thomas’s study asserted “by improving performance in early grades, Head Start participation could translate into a significant increase in the probability of graduating from high school with attendant improvements in future wages and employment probabilities” (Currie and Thomas, 1995, p. 346). The gains of graduating high school and going to college are enormous and such gains are only intensifying as society progresses and demands a more educated workforce. According to the Georgetown Center on Education and the Workforce, “a college degree is key to economic opportunity, conferring substantially higher earnings on those with credentials than those without” (Carnevale, Rose, and Cheah, 2011, p. 1). More specifically, a person with a college degree earns, on average, $1 million more over the course of their lifetime than someone with only a high school diploma (Carnevale, Rose, and Cheah, 2011). By directing young people on a path toward success, the federal government could actually create a more cost-effective method of minimizing future expenses, such as the number of welfare recipients and those who become involved in the criminal justice system. Furthermore, increased access to preschool could create pathways to opportunity for those born into disadvantaged households. If policymakers intervene at a young age, as Ed Burns suggested they should, they may be changing the child’s entire life course. This study investigates that potential.
Impact of Head Start

The inspiration for this topic was a paper published by Janet Currie and Duncan Thomas in 1995. Currie and Thomas were interested in the impact of Head Start on school performance and health. The authors used the National Longitudinal Survey of Youth (NLSY) and the National Longitudinal Survey’s Child-Mother file (NLSCM) to examine a national sample of children. The authors were worried about potential omitted variable bias in their model. Currie and Thomas wrote, “In addition to being poor, Head Start children may also be disadvantaged in other… ways. Estimates that do not take account of these differences are likely to underestimate the beneficial effects of the program” (343). To control for the anticipated significant and large effect of family background on a child’s educational and health outcomes, Currie and Thomas “[estimated] models with fixed effects for each household. These models control for constant characteristics of households, including permanent household income, maternal education, and other measures of (unobserved) family background and tastes” (343). By using a “household fixed effect” (using Mother’s ID number as the fixed effect) the study is able to control for family background—the effect of parentage and household characteristics that are fixed over time or within households (children with the same mother ID are siblings and are thought to have the same family experience). Without using the fixed-effects model, a regular OLS regression would have shown that Head Start reduces test scores and increases grade repetition. However, when they control for family background with the fixed effects model, the researchers found that Head Start did have significant effects, but it affected white children and African American children differently. Specifically, compared to other types of preschool or no preschool at all, “when we focus… on young African American children, we find clear benefits of Head Start…
however…the benefits die out very quickly. In contrast, white children experience the same initial gains from Head Start, but they retain these benefits for a much longer period” (358). While Head Start may have longer-term effects on white children, Currie and Thomas demonstrate that perhaps it is not strong enough to alleviate the social and educational disadvantages minority children face. Furthermore, for both white and African American children, participation in either Head Start or other types of preschool increased utilization of preventative medical care (immunization rates was used as a proxy for “preventative medical care”).

In 2000, Janet Currie and Duncan Thomas teamed up with Eliana Garces to look at some of the long-term effects of Head Start on social and economic life outcomes. Using non-experimental data from the Panel Survey of Income Dynamics, they again found different effects for whites and African Americans. Whites who participated in Head Start not only saw an increase in likelihood of graduating from high school, but also in attending college. They were also found to have somewhat higher earnings in their early 20’s. While they did not find the same results for African Americans, the researchers did find that they “were significantly less likely to have been charged or convicted of a crime than siblings who did not” participate in Head Start (Currie, Thomas, & Garces, 2000, p. 19).

Six years later, Jens Ludwig and Douglas L. Miller (2006) used a regression discontinuity design to examine the question “Does Head Start Improve Children’s Life Chances?” They argue against contemporaries who had claimed that Head Start had been a failure from the beginning (Olsen and Olsen, 1999). Instead of Currie & Thomas’s approach comparing siblings, Ludwig and Miller use discontinuity in Head Start funding across different counties to compare outcomes in health and educational achievement. They found a large drop in mortality rates for children.
aged five to nine “due to cases addressed as part of Head Start’s health program” (Ludwig & Miller, 2006, p. 3). Moreover, mortality rates did not decrease for causes-of-death that shouldn’t have been affected by Head Start. Additionally, the authors found evidence for long-term “positive effect on educational attainment” (Ludwig & Miller, 2006, p. 1) and on years of schooling completed. Two years after that study was released, Jens Ludwig and Deborah A. Phillips (2008) also supported the Head Start program in their paper *Long-Term Effects of Head Start on Low-Income Children*, arguing the likely benefits of Head Start to both participants and society outweigh and thus justify the cost of the program. They found that with a cost of $9,000 per child, the Head Start program as it currently operates “probably passes a benefit–cost test” (Ludwig & Phillips, 2008, p. 267). However, they do acknowledge the fact that because “Head Start and the counterfactual developmental environments poor children would otherwise experience are both changing over time,” estimating long-term effects can be challenging and more research needs to be done (Ludwig & Phillips, 2008, p. 258).

Looking at the most recent research on the effects of Head Start, Ludwig & Phillips feel that Currie, Thomas, and Garces’ study might have some issues underestimating Head Start’s effects because of sibling spillover—having an older child participate in Head Start and a younger child not participate, the parents should still have the knowledge they gained the first time around. Their belief is that child outcomes for the younger siblings of Head Start participants who did not in fact participate would be artificially high—they would experience some of the positive gains of Head Start, without ever actually participating, and thus would still be “partially treated” (Ludwig & Phillips, 2008, p. 259). This would in turn underestimate the difference between children who did and did not participate in Head Start, when those who did participate should have relatively higher educational and health outcomes.
The most recent and arguably most controversial study on the effects of Head Start is one released by the U.S. Department of Health and Human Services in January of 2010. Only a year into the Obama presidency, the study found that Head Start does have positive impacts on several measures of school readiness while in the program. For example, for three-year-olds at the end of their Head Start year, compared to the control group, there was “strong evidence that the Head Start group demonstrated better skills on the following five child outcomes related to children’s language and literacy development: (1) PPVT (vocabulary), (2) WJ III Letter-Word, (3) Preschool Comprehensive Test of Phonological and Print Processing (CTOPPP) Elision, (4) Letter Naming, and (5) WJ III Pre-Academic Skills.” (Puma et al, 2010, p. xiii). Researchers also found a “statistically significant impact on the measure of children’s pre-writing skills” and that the Head Start children had “more advanced math skills than their counterparts at the end of the Head Start year on the WJ III test of Applied Problems” (Puma et al, 2010, p. xiii). There were also observed changes in parental behavior as the result of having a child participate in Head Start. Parents of children in the three-year-old cohort of the Head Start group were less likely than the control group parents to have spanked their children, more likely to have read to their children in the last week (at the time of the study) and more likely to involve their child in “cultural enrichment activities” (Puma et al, 2010, p. xx). However, this may also give better evidence to the claims that there is a spillover effect from older siblings to younger siblings as Ludwig and Phillips (2008) suggested and as Puma et al and the U.S. Department of Health and Human Services found that having a child participate in Head Start did in fact change parental behavior.

While Puma et al did find significant gains while in the program, by 1st grade, most of those advantages had disappeared for the sample as a whole and there were few significant

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1 The control group could enroll in other early childhood programs or non-Head Start services selected by their parents.
differences between the Head Start group and the control group (Puma et al, 2010). After the report’s publication, many conservative commentators, including the Heritage Foundation, have used the findings to argue against the program, calling Head Start a “pet project,” a “sinkhole for taxpayer dollars,” and “an ineffective education program for children” (Burke, 2010, np).

The Impact of Preschool

President Obama called attention to the evidenced-based case for early childhood education in his 2013 State of the Union Address, saying “Every dollar we invest in high-quality early childhood education can save more than seven dollars later on, by boosting graduation rates, reducing teen pregnancy, even reducing violent crime. In states that make it a priority to educate our youngest children -- like Georgia or Oklahoma -- studies show students grow up more likely to read and do math at grade level, graduate high school, hold a job, form more stable families of their own” (The Washington Post, 2013, np).

In the last few decades, participation in center-based preschool programs has become much more common. This has afforded many scholars the opportunity to study the long-term effects of participation in such programs. W. Steven Barnett from the National Institute for Early Education Research at Rutgers University studied exactly that: preschool education and its lasting effects. He found that “well-designed preschool education programs produce long-term improvements in school success, including higher achievement test scores, lower rates of grade repetition and special education, and higher educational attainment. Some preschool programs are also associated with reduced delinquency and crime in childhood and adulthood” (Barnett, 2008, p. 1). Especially compelling is his finding that poor children do reap long-term benefits from preschool (as well as children from all other socioeconomic backgrounds). However, Barnett warns that current public policy on both the federal and state level do not ensure that
most American children will attend “highly effective” preschool programs and simply increasing access without increasing quality could possibly have negative consequences as we expose more children to subpar early childhood education. In the end though, Barnett does advocate for increasing public investment in preschool programs, arguing that such an investment “can produce substantial educational, social, and economic benefits” (Barnett, 2008, p. 2).

As referenced by Barnett, much of the long-term research on preschool effect uses criminal activity as a dependent variable. A 2009 study by Peter Greenwood found that “preschool education for at-risk three and four-year olds is an effective [strategy for preventing involvement with the juvenile justice system], particularly when it includes home visits or work with parents in some other way” (Greenwood, 2009, p. 196-197). Greenwood points to the Perry Preschool in Ypsilanti, Michigan as the best evaluated model. A 2005 study of that school followed the lives of 123 African American children born into poverty with a high risk of failing or dropping out of school. The research started in 1962 with children aged 3 and 4 who were “randomly divided into a program group that received a high-quality preschool program based on the HighScope (a research-based early childhood education research foundation) participatory learning approach and a comparison group who received no preschool program” (Schweinhart et al, 2005, np). Researchers were able to keep attrition rates at a low 3% and in the study’s most recent wave, 97% of the original participants still living were interviewed at age 40. They found that those who had been in the preschool program, compared to those without the preschool program, “had higher earnings, were more likely to hold a job, had committed fewer crimes, and were more likely to have graduated from high school” (Schweinhart et al, 2005, np).

Recently, The Abecedarian Project in North Carolina has received national attention for its preschool model. A study of the Abecedarian preschool program, a comprehensive early
education program for young children at risk for developmental delays and school failure, saw gains for its participants. The project’s creators believed that the higher a child is on their Risk Index, which included “thirteen socio-demographic factors associated with poor intellectual and scholastic progress,” the more likely the child was to have negative outcomes in adulthood. Their goal, which many feel they accomplished, was to weaken the risks of poverty. The project consisted of not only a preschool component, but also a school-aged intervention. Participants either had all eight years of intervention, five years of intervention in preschool, three years of intervention in primary school, or no intervention at all. After “treatment,” program participants not only scored significantly higher than the control group on various academic evaluations, but preschool intervention participants were significantly more likely to attend a four-year college or university than the control group (35.9% versus 13.7%). Furthermore, Abecedarian participants at ages 21 and 30 showed enhanced cognitive development and were more likely to be enrolled in college at age 21. The Abecedarian Project showed that high quality early education is not only effective in general; it is especially effective in the cases of an at-risk home environment (Promising Practices, np).

Another notable early childhood study focuses on Tulsa, Oklahoma. Since 1998, Oklahoma has offered voluntary universal pre-kindergarten with 74% of all four-year olds enrolled—the highest participation rate in the country (The Washington Post, 2013, np). Oklahoma’s pre-K program “has relatively high standards” compared to other states with pre-K programs and offers “relatively high pay and benefits to well-qualified teachers. Every lead teacher must have a B.A. degree and must be certified in early-childhood education” (Gormley, Phillips, & Gayer 2008, p. 1723). In 2005, William T. Gormley, Deborah Phillips, and Ted Gayer published a report entitled “Preschool Programs Can Boost School Readiness” in Science.
The authors looked at the short-term test score gains in Tulsa, Oklahoma’s pre-K and Head Start programs. They found that the Tulsa Public Schools pre-K program “sharply improved students' cognitive development: […] 0.985 for letter-word identification, 0.743 for spelling, and 0.355 for applied problems. These effect sizes substantially exceed those reported for pre-K programs generally and are somewhat greater than those reported for five states with relatively high quality pre-K programs. The effects of the Tulsa Head Start program, though less spectacular, are also impressive: 0.514 for letter-word identification, 0.334 for spelling, and 0.369 for applied problems. These effect sizes exceed those reported for a national study of Head Start with random assignment of children” (Gormley, Phillips, & Gayer, 2008, p. 1724). The authors suggest the difference in Head Start and TPS Pre-K gains could perhaps be to differences in how the programs function or the types of children enrolled in the two programs. Overall, Gormley told the Washington Post, “Oklahoma decided that it was a waste of time and money to have a low quality program, so it decided to have high quality programs…which can produce really big improvements in school readiness for a wide range of children” (The Washington Post, 2013, np).

Studies on the long-term effects of a strong preschool program, however, are still limited. One 2012 working paper by Georgetown Public Policy Institute professors Carolyn Hill, Shirley Adelstein, and a researcher from the 2008 report, Will Gormley uses the state of Oklahoma to explore whether or not the short-term effects of a strong preschool program persist over time. Their work was built upon the previous research that had shown the short-term effects of Oklahoma’s preschool program. Using administrative data and parent survey data from the Tulsa Public Schools and administrative data from the Oklahoma Department of Education, the authors looked at two cohorts of children—those in kindergarten during the 2001-2002 school year and
those in kindergarten during the 2006-2007 school year. Within those two cohorts, students were separated into three different groups: those who attended the TPS pre-K program, those who attended Tulsa’s Head Start program, and those who attended neither (although they may have experienced other preschool or childcare). Using boosted regression and a propensity score matching technique, the researchers found “no persistence of early gains” from TPS’s pre-K in the first cohort for either reading or math scores and “early gains persist through third grade in math but not reading, and for boys but not for girls” in the second cohort” (Hill, Gormley, Adelstein, 2012, np).

The Relationship between Poverty and Education

Head Start is a program first developed as part of President Johnson’s Great Society campaign to help low-income children prepare for kindergarten. Even back in 1965, policymakers understood that poor children were lacking the opportunities afforded to their higher income peers. In that time since the Great Society era, a great deal of research has been conducted on the impact of poverty on educational achievement. Fifteen years ago, Jeanne Brooks-Gunn and Greg J. Duncan (1997) examined the effects of poverty on children, focusing on the effects of the timing, depth, and duration of poverty. They found that children who live in extreme poverty or who live below the poverty line for multiple years, everything else held constant, face the worst outcomes. Particularly, children who face poverty during their preschool years have lower rates of school completion than their peers who experience poverty later on in their childhood. Research continues to affirm this fact as Misty Lacour and Laura D. Tissington’s 2011 paper on the effects of poverty on academic achievement found that poverty directly affects academic achievement through access to resources; “due to this lack of resources, many students struggle to reach the same academic achievement levels of students not living in poverty (Lacour
and Tissington, 2011, p. 460). Often this achievement gap between socioeconomic classes manifests itself as a racial gap. On November 6, 2011, the U.S. federal government released a new poverty threshold and with that, a startling new statistic: 49.1 million Americans (16% of the population) lived in poverty in 2010 (Sparks, 2011). The rising poverty rate means serious consequences for American youth, especially those already living in poverty, or living on the edge of poverty. In 2010, nearly 1 in 3 children lived in poverty (15.7 million—1 million more than the previous year). Poverty rates are still highest overall among Black and Hispanic children; 39.1% for Black children, 39% for Hispanic children with immigrant parents, and 35% for Hispanic children, compared to 12.4% for white children (Reuters, 2011).

Over the last two decades, researchers have started to investigate the effects of being born to a teenage mother. The Urban Institute’s study Kids Having Kids reports that children born to teenage mothers, compared to the children of mothers who waited just a few more years to begin childbearing (ages 20-21), are “more likely to grow up in a poor and mother-only family [and] to live in a poor or underclass neighborhood.” Those children also “performed more poorly on tests of cognitive ability, were more likely to be retained a grade, and were less likely to be perceived by their teachers as performing favorably by the time they reached high school.” Furthermore, the children of teenaged mothers are also more likely to drop out of high school than the comparison group—77% of children born to teen moms finished high school by early adulthood compared to 89% of the children whose mothers waited a few more years. (Hoffman & Maynard, 1997, p. 257-284).
The Impact of a College Degree

While college is often assumed to be the goal of many of the government’s education programs—the Obama administration’s Promise Neighborhoods program is described as a “continuum of cradle-through-college-and-career solutions” (U.S. Department of Education, 2012, np)—recent research has proven just how useful a college degree is in our modern labor market. According to the Georgetown Center on Education and the Workforce, “a college degree is key to economic opportunity, conferring substantially higher earnings on those with credentials than those without” (Carnevale, Rose, and Cheah, 2011, p. 1). A 2002 Census Bureau study found that in 1999, the median lifetime earnings of an individual with a bachelor’s degree was approximately $2.3 million (in 2009 dollars) compared to approximately $1.3 million for those with only a high school diploma and approximately $973,000 for those with less than a high school degree. This means that a person with a college degree earns, on average, $1 million more over the course of their lifetime than someone with only a high school diploma (Carnevale, Rose, and Cheah, 2011). But earning a college degree doesn’t just mean expected higher lifetime earnings. The Pew Charitable Trust argued in a 2009 report that college attendance is the key to economic mobility. While there may be differences in the types of people who complete more education (for example, higher intellectual skills, having parents with more education and more income, and having attended better schools), controlling for that bias did not reduce the rate of return to educations and that rate remained strong (Haskins, Holzer, & Lerman, 2009). As part of their policy recommendations, the authors suggest that the government increase the quality and coverage of pre-kindergarten. They write, “cognitive and socio-emotional differences between middle-class children and poor and minority children appear by age three and are even more apparent at age five, when students enter school. Given these substantial differences in
intellectual skills that are present when poor children enter the school years, it is entirely possible that high-quality early education programs would do as much to prepare poor and low-income children for the academic rigors of college as programs during the school years” (Haskins, Holzer, & Lerman, 2009, p. 37).

Interestingly, the effects of attending college aren’t just monetary. New research out of the Wharton School of Business at the University of Pennsylvania found that college-educated women today are more likely to marry later [and] have fewer children.” They are also “less likely to view marriage as “financial security,” are happier in their marriages and with their family life, and are not only less likely to divorce, but have had the biggest decrease in divorce since the 1970s compared to women without a college degree” (Isen & Stevenson, 2010, np). If policymakers are interested in quality of life in addition to the quantities of life, better preparing children to attend college, and helping them get there, may be a worthwhile goal.

Summary

As the research shows above, Head Start can and often is an effective method to boost academic performance in early childhood. However, as some research has shown, the effects of Head Start and other types of preschool can wear off, as measured by traditional means. If an end goal of our public education system is to prepare students for college, as a college degree has proven to raise lifetime earnings and increase opportunities, it may be useful to see what kinds of policies have long-term effects. Furthermore, if research indicates that Head Start does have an effect, but it wears off, it may be worthwhile to explore policies that extend the services of Head Start to children as they go through the entire education system.
**Research Question and Hypothesis**

Research Question

In light of the previous research cited above, I examine the relationship between participating in Head Start (compared to no early childhood education) and attending college later in life. For my analysis, I have designated college attendance as a dummy dependent variable and participation in Head Start as the key independent variable of interest. I use a fixed effects model, controlling for household fixed effects so as to be able to compare siblings who did and did not attend Head Start. Other control variables include non-fixed characteristics of the respondents.

Hypothesis

Previous research, as detailed in the literature review, has found long-term positive benefits of attending preschool, some of which include higher rates of college attendance. Most of the research on Head Start specific programs has only detailed elementary school outcomes for children. Although much of that research suggests that the effects of Head Start wear off by the early elementary school grades, I hypothesize that children who attend Head Start are more likely to eventually go to college compared to students who had no early childhood education whatsoever. I use individual and family background data to test my null and alternative hypotheses:

\[ H_0: \text{Participation in Head Start does not increase the likelihood of going to college (compared to no early education).} \]

\[ H_a: \text{Participation in Head Start increases the likelihood of going to college (compared to no early education).} \]

2 This is a one-tailed test.
DATA

In this study, I use data from the National Longitudinal Survey of Youth (NLSY) Child/Young Adult sample. The original NLSY surveyed 12,686 men and women who were all 14 to 21 years old in 1979. In 1986, researchers started a separate survey of all children born to NLSY79 female respondents. “In addition to all the mother's information from the NLSY79, the child survey includes assessments of each child as well as additional demographic and development information collected from either the mother or child. For children aged 10 and older, information has been collected from the children biennially since 1988 on a variety of factors including child-parent interaction, attitudes toward schooling, dating and friendship patterns, religious attendance, health, substance use, and home responsibilities. Biennially (since 1994), children ages 15 and older complete a lengthy child interview modeled on the NLSY79 questionnaire. Information collected includes their schooling, training, work experiences and expectations, health, dating, fertility and marital histories, and household composition” (Bureau of Labor Statistics, 2011, np). The last year for which data is currently available is 2010. I use the data collected through the NLSY Child and Young Adults surveys from 1988 to 2010 to test whether or not Head Start has an effect on attending college. Because the NLSY is a national study and because of the fixed effects model (detailed in the methods section), I use the NLSY79 2010 weights on the data set.

Key Variables

Table 1: Key Variable Definitions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>Dummy variable equaling 1 if in 2010 respondent is enrolled in college or is not enrolled but has completed at least one year of college.</td>
</tr>
<tr>
<td>Head Start</td>
<td>Dummy variable equaling 1 if respondent has ever been enrolled in Head Start.</td>
</tr>
</tbody>
</table>
My dependent variable is a dummy variable equal to 1 if in 2010 the respondent is attending or has completed at least one year of college. This variable was created using two different NLSY survey questions: grade if currently enrolled and highest grade completed if not currently enrolled. Since this analysis focuses on college attendance (and not college graduation), by combining these two survey questions, I am able to capture both those enrolled and those not enrolled in school. While the literature suggests that those with a college degree are expected to earn more than those with lesser qualifications, due to the nature of the survey, I am unable to tell if a student has graduated from college, only the highest grade ever attended (some students take more than 4 years to graduate and some students go to 2 year community colleges). Therefore, I have made my focus students who have made it to post secondary education (so as not to discount students who are currently enrolled and have not yet graduated) because in the end, students cannot graduate from college if they never attend. To do this, I turned the highest level of education into a dummy variable, where 1 equals “has attended college” and 0 equals “has not attended college.” Unfortunately, due to the nature of the survey, there is no way to include students who attended at least some of their first year of college prior to 2010, but dropped out before finishing one year, so they are included in the “has not attended college” group. Lastly, after combining the two variables to cover all of the NLSY children (both enrolled and not enrolled) I removed from the dataset any respondent born after 1991. This year was chosen because it would make the sample only those students who turned at least 19 years by the end of 2010. In the US, students usually finish their first year of college by age 19 at the youngest. This cut was meant to eliminate respondents who were too young to be college-eligible. Because the model I will use is a fixed effects model controlled at the household level (explained further in the methods section), only households that had at least one child attend
Head Start and one not attend Head Start will be included in the final regression. Below are the basic summary statistics for the dependent variable and key independent variable in the data set used in the regression.

**Graph 1: Has the respondent ever attended college?**

![Bar chart showing frequency of respondents who attended at least some college and those who did not.]

Graph 1 above shows the portions of the sample used in my analysis that have and have not made it to college. 1,656 (approximately 48%) of the respondents have attended at least some college, while 1,807 (approximately 52%) of the respondents have not attended any college.

The key independent variable of interest is enrollment in Head Start. While the ideal data set would indicate whether the respondent completed Head Start, I used the NLSY’s “Has the respondent ever been enrolled in Head Start?” question. Combining background information on the children from their NLSY files from 1988 to 2010, I created a dummy Head Start variable equal to 1 if the respondent had ever been enrolled in Head Start and equal to 0 if they had not.
Graph 2 above shows that 800 respondents in the sample used for analysis have been enrolled in Head Start (approximately 23%) whereas 2,663 had not ever been enrolled in Head Start (approximately 77%).

Currie and Thomas’s research on the effect of Head Start found that the “probability of attending Head Start declines with income, whereas the probability of attending other preschools rises with permanent income.” (Currie & Thomas, 1995, p. 348) Additionally, Head Start children are disadvantaged in most other observable ways. “Relative to children who attended other preschools, children who attended Head Start have mothers and grandmothers who are less educated, and who had lower scores on the Armed Forces Qualification Test (AFQT), a measure of human capital. These differences between Head Start and other preschool children are all statistically significant for both whites and African Americans” (Currie & Thomas, 1995, p. 348-349)
Control Variables

Table 2: Control Variable Definitions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>Dummy variable equaling 1 if respondent was ever enrolled in preschool and was not ever enrolled in Head Start.</td>
</tr>
<tr>
<td>No Early Education</td>
<td>Dummy variable equaling 1 if respondent was never enrolled in Head Start or preschool.</td>
</tr>
<tr>
<td>Age</td>
<td>The age that the respondent turned in the year 2010.</td>
</tr>
<tr>
<td>Male</td>
<td>Dummy variable equaling 1 if respondent is male.</td>
</tr>
<tr>
<td>First Born</td>
<td>Dummy variable equaling 1 if respondent is the first born child in their household.</td>
</tr>
<tr>
<td>Household Income at Age 3</td>
<td>Household yearly income for the respondent when respondent was 3 years old.</td>
</tr>
<tr>
<td>Teen mom</td>
<td>Dummy variable equaling 1 if respondent’s mother was 18 years old or younger at the time of respondent’s birth.</td>
</tr>
</tbody>
</table>

While Head Start is the variable I am most interested in, it is not the only form of early childhood education. Preschool attendance of NLSY children was also recorded as part of the survey. Using the same method that I used to compile Head Start enrollment, I combined preschool background data for 1988 to 2010 to create a dummy variable where 1 equals “has been enrolled in preschool” and 0 equals “never enrolled in preschool.” I also made sure that any students who answered “yes” to preschool and Head Start were only counted under the Head Start category, as some respondents may have considered Head Start as a preschool program.³ Lastly, a “no early education” dummy variable was created, equaling 1 if the respondent had never enrolled in Head Start or preschool and equaling 0 if the respondent had ever enrolled in either Head Start or preschool.

Thomas and Currie’s 1995 study also controlled for age, gender, whether the respondent was the first born child, and household income at age 3, so those have been included in this model as well since they are thought to influence both academic achievement and participation in Head Start. Because 2010 is the year I am analyzing, the age variable was created by subtracting

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³ It is possible that some students may have done some early education in a regular preschool and some education in a Head Start Program. In my regression section, I have run sensitivity tests to make sure that this recoding does not change my results.
the respondent’s birth year from 2010. This gives the age the respondent turned in the year 2010. To control for gender, I transformed the gender variable into a male dummy variable where 1 equals male and 0 equals female. The NLSY contains a “birth order” variable and from this I created a dummy variable where first born equals 1 if the respondent was the first child born in their family and equals 0 if the child was not. In order to control for household income at age, I first created a “year in which age is equal to 3 years old” variable in my dataset (equal to the birth year plus 3), then used the original NLSY79 data to find household income for each year, reshape it so that the variables were now ID, year, and income, then merge it with the Child & Young Adult survey’s “year in which age is equal to 3 years old,” and finally matched total net household income (using the mother ID numbers) to the years where the respondent was 3 years old.\(^4\) Lastly, I took the log of that variable to make it easier to manage in my regression and easier to interpret.

The last variable I am using as a control variable is a variable that did not appear in Currie and Thomas’s paper. Due to developments in the academic literature on the topic over the last 20 years, I have decided to control for whether or not the respondent was born to a teenage mother. To create this variable, I created a mother’s age at birth variable by subtracting the year the mother was born from the year the child was born. I then created a dummy variable equaling 1 if the mother was 18 years or younger and equaling 0 if the mother was 19 years or older. While 19 is technically still in the teens, I chose 18 as the cutoff as 18 is usually the age at which a student finishes their last year of high school and teen moms are usually talked about in the context of still being high school aged. This variable would not necessarily be controlled for in a fixed effects model on a household level because one sibling could have been born to a

\(^4\) The “total net family income” variable asks for the income for the previous calendar year; data taken in 1979 details income for 1978, data taken in 1980 details income for 1979, and so on. Therefore, each survey year had one year subtracted from it in order to reflect the year for which it was actually describing.
teenage mother and another sibling may have been born at a later stage in their mother’s life. Therefore it is necessary to include it in the regression.

No other control variables have been added as I do not believe that there are any other factors (in the data set) that would be correlated with both the likelihood of attending Head Start and the likelihood of attending college that won’t be captured in the fixed effects model (detailed in the Methods section below).

Race is not included in the regression because while we would imagine a child’s race would be correlated with both attending Head Start and attending college, in the NLSY Child & Young Adult Survey, a child’s race is copied from their mother’s race, so it is controlled for under the household fixed effects model, further detailed in the methods section. For descriptive purposes, below is a table of the proportions for black, Hispanic, and non-black, non-Hispanic respondents.

As detailed in the graph above, approximately 33% (1136) of respondents in the sample used for analysis are identified as black, 22% (748) of respondents are identified as Hispanic, and 46% (1579) of respondents are identified as non-black, non-Hispanic (which is considered by the Bureau of Labor Statistics to be “white”).

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5 In scholarly works using the NLSY, many researchers use non-Black, non-Hispanic as “white” because the respondents are mostly white, although it does contain a very small percentage of Asian respondents.
Below is a table of all of the descriptive statistics used in this analysis, using just the observations that will be used in my model’s regression.

Table 3: Descriptive Statistics for Independent and Dependent Variables in Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Enrollment*</td>
<td>0.478</td>
<td>0.500</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Head Start Enrollment*</td>
<td>0.231</td>
<td>0.422</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Preschool Enrollment*</td>
<td>0.441</td>
<td>0.497</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>No Early Education*</td>
<td>0.328</td>
<td>0.470</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td>25.389</td>
<td>3.571</td>
<td>20</td>
<td>34</td>
</tr>
<tr>
<td>Male*</td>
<td>0.483</td>
<td>0.500</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>First Born*</td>
<td>0.432</td>
<td>0.495</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Household Income at Age 3</td>
<td>$29,390.73</td>
<td>$38,998.78</td>
<td>0</td>
<td>$1,057,448</td>
</tr>
<tr>
<td>Teen Mom</td>
<td>0.064</td>
<td>0.245</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*denotes dummy variable where 1 = yes
METHODS

Building on the work began by Janet Currie and Duncan Thomas, I also use a fixed effects model. Using mother ID as the fixed effect, as Currie and Thomas did, I am able to control for all constants within households. This is done so as to most accurately control for family background characteristics, which literature suggests is a major factor in determining educational and life outcomes for children. By using this model, my final sample only consists of households where at least one child has been enrolled in Head Start and at least one child has not been enrolled in Head Start. Another option I considered was using a propensity score matching model. However, because I do not believe that I would be able to control for the important family background characteristics that are unobserved but constant in a household and because I do not believe that I would be able to make better matches than siblings for who is equally likely to go to Head Start and college, I chose not to use propensity score matching. The regression I am using is a linear regression with fixed effects for my analysis. I use a linear model rather than probit or logit because after running the model, the predicted probability of attending college remains between 0 and 1 (.347 to .736), making it unnecessary to use probit or logit. Dropping out the variable “no early education” so as to avoid perfect multicollinearity, and using mother ID as the fixed effect, the model looks like this:

\[
\text{College} = b_0 + b_1(\text{Head Start}) + b_2(\text{Preschool}) + b_3(\text{Age}) + b_4(\text{Male}) + b_5(\text{First Born}) + b_6(\text{Log of Household Income at Age 3}) + b_7(\text{Teen Mom}) + e
\]
## Results and Analysis

### Table 4: College Attendance Regressions

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS 1</td>
<td>OLS 2</td>
<td>Fixed Effects</td>
</tr>
<tr>
<td>Head Start</td>
<td>-0.122*** (0.028)</td>
<td>-0.048* (0.029)</td>
<td>-0.028 (0.058)</td>
</tr>
<tr>
<td>Preschool</td>
<td>0.148*** (0.023)</td>
<td>0.114*** (0.023)</td>
<td>-0.053 (0.052)</td>
</tr>
<tr>
<td>Age</td>
<td>0.0080** (0.003)</td>
<td>0.008 (0.009)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>-0.108*** (0.019)</td>
<td>-0.122*** (0.032)</td>
<td></td>
</tr>
<tr>
<td>First Born Child</td>
<td>0.067*** (0.021)</td>
<td>0.036 (0.041)</td>
<td></td>
</tr>
<tr>
<td>Log of Household Income at Age 3</td>
<td>0.116*** (0.0146)</td>
<td>0.011 (0.023)</td>
<td></td>
</tr>
<tr>
<td>Born to Teen Mom</td>
<td>-0.00658 (0.0469)</td>
<td>0.062 (0.083)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.469*** (0.018)</td>
<td>-0.872*** (0.199)</td>
<td>0.278 (0.327)</td>
</tr>
<tr>
<td>Observations</td>
<td>3,463</td>
<td>3,463</td>
<td>3,463</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.041</td>
<td>0.097</td>
<td>0.044</td>
</tr>
<tr>
<td>Number of Households</td>
<td></td>
<td></td>
<td>2,153</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The first regression is a basic OLS regression only controlling for the type of early education—Head Start, preschool, or no early education at all. In this model, the coefficient on Head Start is -0.0871 and statistically significant at the .01 level. The coefficient on preschool is 0.136 and also statistically significant at the .01 level. From this model, we might believe that attending Head Start makes an individual approximately 12 percentage points less likely to attend college than someone with no early childhood education, and that attending preschool makes an individual approximately 15 percentage points more likely to attend college than someone with no early childhood education. However, this model does not control for any of the
characteristics that literature suggests affect both participation in Head Start and enrollment in college—thus the coefficients in the first model are biased.

The second model controls for more observable characteristics that literature suggests affect both Head Start participation and college attendance. All of the coefficients are still significant (all at the .10 level and most at the .01 level). However, both of the coefficients on the two variables from the first regression (Head Start and preschool) have decreased in magnitude. In particular, the Head Start variable is now -0.048 and is only statistically significant at the .10 level, suggesting that the new control variables have accounted for some of the omitted variable bias present in the first regression. Still, much of the literature also suggests that family characteristics and background have a great effect on both of the key variables of interest and should be included in the regression. Because many of these family variables would be unobserved and/or unable to be measured (how good parents are at being parents, for example), I used a fixed effects model to control for the effect of parentage and household characteristics that are fixed over time and/or within households.

When using all of the control variables used in regression #2 (the variables used by Janet Currie and Duncan Thomas in *Does Head Start Make A Difference?* plus the teen mom variable) and the household fixed effects, the Head Start coefficient is no longer significant at any traditional level (p=0.630). Additionally, none of the other control variables are significant at any traditional levels except the coefficient on male—according to this model, males are approximately 12 percentage points less likely than females to attend college, which is not entirely surprising as college attendance has become increasingly female dominated over the past few decades.
<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) Black</th>
<th>(2) Hispanic</th>
<th>(3) White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Start</td>
<td>-0.191**</td>
<td>-0.061</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>(0.085)</td>
<td>(0.092)</td>
<td>(0.097)</td>
</tr>
<tr>
<td>Preschool</td>
<td>-0.077</td>
<td>-0.157</td>
<td>-0.034</td>
</tr>
<tr>
<td></td>
<td>(0.067)</td>
<td>(0.101)</td>
<td>(0.067)</td>
</tr>
<tr>
<td>Age</td>
<td>0.014</td>
<td>-0.010</td>
<td>0.014</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
<td>(0.012)</td>
<td>(0.012)</td>
</tr>
<tr>
<td>Male</td>
<td>-0.142***</td>
<td>-0.175***</td>
<td>-0.109***</td>
</tr>
<tr>
<td></td>
<td>(0.049)</td>
<td>(0.054)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>First Born Child</td>
<td>0.036</td>
<td>0.069</td>
<td>0.022</td>
</tr>
<tr>
<td></td>
<td>(0.069)</td>
<td>(0.083)</td>
<td>(0.053)</td>
</tr>
<tr>
<td>Household Income at Age 3</td>
<td>0.080*</td>
<td>-0.012</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>(0.0458)</td>
<td>(0.042)</td>
<td>(0.030)</td>
</tr>
<tr>
<td>Born to Teen Mom</td>
<td>0.011</td>
<td>0.099</td>
<td>0.072</td>
</tr>
<tr>
<td></td>
<td>(0.145)</td>
<td>(0.114)</td>
<td>(0.120)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.571</td>
<td>0.929*</td>
<td>0.121</td>
</tr>
<tr>
<td></td>
<td>(0.557)</td>
<td>(0.517)</td>
<td>(0.440)</td>
</tr>
<tr>
<td>Observations</td>
<td>748</td>
<td>1,136</td>
<td>1,579</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.094</td>
<td>0.055</td>
<td>0.046</td>
</tr>
<tr>
<td>Number of Households</td>
<td>436</td>
<td>708</td>
<td>1,009</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses  
*** p<0.01, ** p<0.05, * p<0.1

When the regressions are separated by race, Head Start remains insignificant, except for black students. At the 10% significance level, Head Start is associated with a 19 percentage point decrease in likelihood of attending college, compared to children with no early education whatsoever. However, the preschool coefficient is also negative (although not significant at any traditional levels) suggesting there might be further unobserved characteristics affecting families and in particular black families.
To determine if there is a difference in impact of Head Start on college attendance for males and females, I created a new variable, interacting Head Start and Male. We can see from the table above (from both the insignificance of the interaction term and the F test) that there is no statistically significant difference in the effect for men and women.
CONCLUSION

This analysis shows that Head Start has no statistically significant measurable effect on college attendance. According to this study, Head Start does not make students more likely to attend college (compared to no early childhood education), although it does not make students less likely either (and this effect is the same for both males and females). This study controls for both observable characteristics that change over time and/or vary within households (early childhood education, age, gender, being the first born child, household income at preschool age, and having a teen mom) as well as all observable and non-observable characteristics that are the same within households. These results are consistent with the broader literature on the topic—although there appear to be near-term impacts, the effects of Head Start, and possibly preschool in general, fade over time. For example, a report released by the U.S. Department of Health and Human Services in 2010 found significant gains for students while in Head Start, but by 1st grade, most of those advantages had disappeared for the sample as a whole and there were few significant differences between the Head Start group and the control group (Puma et al, 2010). Currie and Thomas’s 1993 study, on which this report was based, found that compared to other types of preschool or no preschool at all, “when we focus… on young African American children, we find clear benefits of Head Start… however… the benefits die out very quickly. In contrast, white children experience the same initial gains from Head Start, but they retain these benefits for a much longer period” (358). We see that while Head Start may have longer-term effects on white children, even those effects fade. However, it is also important to look at the bigger story that the series of regressions in this analysis shows: when I control for more and more relevant factors, the Head Start coefficient becomes smaller and less statistically significant. When I use fixed effects, controlling for parentage, the Head Start coefficient is no
longer statistically significant at any traditional measure (p=0.630). This is also consistent with the literature—in the Currie and Thomas study, without using the fixed-effects model, a regular OLS regression would have shown that Head Start reduces test scores and increases grade repetition. Taking those omitted variables affecting both Head Start and college attendance out of the error term reduced the magnitude of the coefficient and substantially lowered the statistical significance. While this study controls for all the factors possible given the data set and the limits of social science, it is likely that there are more omitted variables that are correlated with Head Start, correlated with college attendance, and vary within families—simply put, we can’t control for everything. For example, while it is possible that Head Start makes black children 20 percentage points less likely to attend college (compared to black children who had no early childhood education), it is probably more likely that there are omitted variables affecting this coefficient. Perhaps black families are more vulnerable to economic shocks that affect one child in the family but not another. Future research may want to explore this topic.

The findings of this study do not necessarily mean that Head Start is a waste of taxpayer dollars. As the literature shows, preschool can still boost school readiness, but this study, and others, shows that those gains can wear off. Literature also tells us that truly great preschool programs can have serious and lasting effects, although these programs are often costly and hard to scale up. While more financial investment in great early childhood education programs could also be beneficial, perhaps more of life course approach could also be useful. Lisa Guernsey, director of the Early Education Initiative at the New America Foundation, and Laura Bornfreund, a senior policy analyst there, suggest that preschool is a “must,” but it’s not enough. They point to the fact that preschool’s “ability to help disadvantaged children” seems to fade overtime—and does not seem to last past kindergarten or first grade. What does this mean for policymakers?
According to the New America Foundation, we “have to acknowledge that fade-out does exist -- and it's telling us something. The low achievement of disadvantaged children can't be simply fixed in one or two years of good preschool. Instead, we have to build on what children learn in those preschools and match it with challenging but playful instruction in kindergarten and the early grades.” (Guernsey & Bornfreund, 2013, np). Most education policy analysts would agree that only intervening in the lives of disadvantaged children when they are in high school is far too late, but when we intervene only at a young age, the effect wears off. Perhaps a booster shot approach that takes the entire life course into consideration would be more useful, like the Abecedarian Project has explored. With high quality early childhood education coupled with repeated interventions throughout the childhood and adolescence, and even into young adulthood and beyond, Head Start in conjunction with those later interventions could produce the positive and lasting effects policymakers are looking for. Conducing future research on the subject would be useful.

It is true that the gains of Head Start fade over time—both broader literature and my analysis show this. If the gains of Head Start are gone by early to mid-elementary school, it makes sense that they don’t last through high school and affect the likelihood that a child goes to college. However, it is also important to remember that using the right model completely changes the results of this study. A simple OLS with no other controls would lead us to believe that Head Start decreases the likelihood of college attendance, as would an OLS with observable household and/or time varying controls. But when I use a fixed effects regression, controlling for family background, we see that Head Start does not make a child less likely to attend college. Currently, accountability in Head Start is tied to inputs not outputs—following the rules attached to the grants. However, the Obama administration has recently begun to change this by issuing
stricter financing standards that strive to bring about increases in student achievement. Because of this, we may in the future see changes in the lasting effects of early childhood education programs like Head Start. Research should continue to study the lasting effects, especially as the standards for Head Start change. Furthermore, if policymakers are interested in creating pathways to opportunity, particularly for children from disadvantaged backgrounds, the “booster shot” approach may hold some of the answers they are looking for. Future research should investigate this potential.
BIBLIOGRAPHY


