

Investing in Our Future:

The Argument for Early Childhood Intervention

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Introduction

The importance of early childhood intervention in the form of childcare and education is becoming increasingly apparent in the United States today. Early childcare and education play key roles in the development of children, seeking to promote the “acquisition of skills, knowledge, and behaviors that are associated with success in elementary school” (Gormley et al., 2005). While there has been an influx of public funding of such programs in recent decades through tax credits and subsidies, “low-income families typically do not benefit from these tax credits... and child care subsidies reach only about 15 percent of eligible families...” (Waldfogel, 2009). For this reason, there is a discrepancy between the school readiness of children from higher socioeconomic backgrounds and those from low socioeconomic backgrounds when they begin school around age five, resulting in the achievement gap.

A number of studies on various early childhood education programs have shown evidence of positive short-, medium- and long-term effects in terms of “cognitive skills, school readiness, and social and emotional development,” especially for disadvantaged children whose homes are less likely to be conducive to cognitive, physical, and socioemotional development (Currie, 2001). Nobel Prize-winning economist James Heckman has done a number of cost-benefit analyses that support his argument for investing in young children through early childhood interventions. He also found that preschool programs gave the greatest rate of return to investment in human capital followed by schooling and job training (Heckman & Masterov, 2007). While the need for quality early childhood interventions is clear, questions remain surrounding the strategies of intervention including age, outcomes, and effectiveness. This paper will review the Yale

Child Welfare Research Program, HighScope Perry Preschool Project, Carolina Abecedarian, and Head Start; assess the outcomes, costs, and benefits associated with each; and conclude with a recommendation for future investment in early childhood intervention.

Program Overviews

Yale Child Welfare Research Program

The Yale Child Welfare Research Program was a model project in operation from 1968 to 1974 that involved intervention prenatally through 30 months of age of first-born children. It was found that early intervention offset the marked negative effects of socioeconomic deprivation with positive influences on parenting skills. Because intervention was at such a young age, it provided substantial support for the family through four interdependent and integrated components: home visits, full-day childcare, pediatric care, and developmental screenings (Barnett, 1995). Participants included 17 mothers: 12 African Americans, four whites, and one Puerto Rican. They were registered for obstetrical care at the Women's Clinic at the Yale-New Haven Medical Center and chosen based on the following criteria: having lived in the inner-city, having been in poverty as determined by the federal government, having had no serious complications during pregnancy, and showing no signs of retardation or psychosis (Rescorla et al., 1979). The setting of the project was a renovated building in an inner-city neighborhood of New Haven that was plagued with low levels of education and income and high unemployment (Rescorla et al., 1979). Compared to the other model early childhood programs examined in this paper, the Yale Program had the smallest control group of only 18 children from 17 families, and it was more intensive with the various integrated components of the intervention. Furthermore, mothers with first-born children were targeted in order to

intervene at the earliest possible time to positively influence their parenting skills. An oral contract was made by which the mother agreed to participate in return for the intervention services, establishing a partnership and holding parents accountable for their child's development.

According to Rescorla et al. (1979), the project's three main goals were: to "diminish the erosion of human potential" associated with impoverished conditions, to provide services that would lead to the development of more effective parenting methods in order to "[prevent] and [alleviate] the intellectual impairment and personality damage" as a result of poverty, and to examine the theory of child development and the relationship between parent and child (Rescorla et al., 1979). Each family was served by "experienced clinicians," as well as a team consisting of a "home visitor, pediatrician, developmental examiner, and...teacher" (Rescorla et al., 1979). Weekly home visits that included interviews with parents were scheduled for the first year followed by monthly visits thereafter. Routine pediatric care was scheduled monthly for the first year followed by every three months thereafter. Parents were encouraged to pay close attention to their child's development in order to bring forth any concerns and develop confidence in their parenting. Developmental examinations during the second and third months of infancy were followed at three- or six-month intervals after that. These examinations helped parents understand their child's distinctive characteristics. Finally, full-day childcare "enhance[d] physical, intellectual, and emotional development" throughout the children's growth (Rescorla et al., 1979). The 18 children received childcare for differing lengths of time, ranging from fewer than five months to more than 20 months.

A later group study for 18 30-month old children from the same Women's Clinic was used for comparison and employed the same criteria as the model project. Based on an interview with each child's mother, a narrative report describing the child's home life, development, and family history was developed. A psychologist, independent of the original model project, then conducted a developmental evaluation of the child based on the Yale Developmental Schedules (Rescorla et al., 1979).

HighScope Perry Preschool Study

The HighScope Perry Preschool Study is an ongoing longitudinal study of preschool effectiveness that ran from 1962 to 1967, with similar control and experimental group sizes as the Carolina Abecedarian project. It included two randomly assigned groups of African American children from families of low socioeconomic status who were considered at risk of school failure because of their environment. Furthermore, participants "had low IQ scores (between 70 and 85, the range for borderline mental impairment) with no organic deficiencies" (Wilson, 2000). The program was implemented in response to widespread school failure and resulting high rates of grade retention in Ypsanti, Michigan public school districts (Schweinhart, 2002). While the preschool no longer exists, follow-ups on participants continue well into their adulthood, most recently at age 40 in the early 2000s.

The intervention group of 58 children included a quality, active-learning preschool program based on the HighScope model beginning when children were age three or four and continuing to age five. The HighScope approach focuses on facilitating parent-child interaction, creating an educational environment, and promoting initiative in children. Like other early childhood interventions, the curriculum seeks to promote development in

“social-emotional, physical, and creative areas” (HighScope Curriculum). Furthermore, it includes “teachers [helping] children plan, carry out, and review their own educational activities,” emphasizing the importance of intellectual and social development (Schweinhart, 2002). Similar to the Montessori model, this model encourages children to be independent, creative thinkers, initiating their own educational activities. It is still in practice in the United States today and is discussed further in the recommendations section.

Perry Preschool’s intervention involved parents through home visits, like the Yale project, and group meetings (Barnett, 2005). Children in the program group attended a half-day preschool every weekday for eight months a year for two years. Every preschool teacher was highly qualified with a master’s degree and training in child development, and teacher to student ratios were low (one to five or six), like those in Carolina Abecedarian, allowing for individualized instruction (Currie, 2001). Home visits by teachers occurred on a weekly basis for 90 minutes, and program staff facilitated monthly group meetings with parents of participants (Currie, 2001). Sixty-five children in the control group did not have any preschool program.

Carolina Abecedarian

Carolina Abecedarian was a longitudinal, experimental study that was conducted by the University of North Carolina’s Frank Graham Porter (FPG) Child Development Institute from 1972 to 1985. This model program with four groups served children who were below the poverty line and considered high-risk who entered at six weeks to three months of age and exited when they were five to eight years old. Children were deemed “high-risk” following interviews with mothers that were based on the following indices: parent’s education attainment; earned income; maternal IQ; evidence of past social, emotional, or

cognitive problems; family cohesion; and need for public assistance through welfare programs. Campbell et al. (2002) found that of the population evaluated, the majority of mothers were single, African American women with an average IQ of 85, living in a multigenerational household and reporting no earned income (Campbell et al., 2002). Each mother-child pair was matched with another based on similar high-risk indices, then randomly assigned to either the treatment or control group, unlike the Yale project that chose a comparison group *after* the experiment and based on different selection criteria. The group of 54 controls did not receive any preschool services; however, all study participants received nutritional and basic health support (Campbell et al., 2002).

Over the course of the program, the intervention morphed from daycare in focus to preschool and finally to school. A slightly larger intervention group consisting of 57 children received transportation to and from full-day childcare: eight hours per day, five days a week, 50 weeks per year, totaling 250 hours of “enriched center-based child care services” (Currie, 2001). According to the FPG Child Development Institute, the primary goal of the intervention was language development through individualized educational activities, while “social, emotional, and cognitive” development were secondary goals (The Carolina Abecedarian Project, 2011). The daycare and preschool program staffed three administrative staff members in addition to 12 teachers and assistants (Campbell, 2002). Throughout the program, the teacher to child ratio for those in the treatment group was never more than one to six (Currie, 2001).

Once children were of school age, they were again randomly assigned to one of two groups: a second treatment group that had a “Home-School Resource Teacher” who facilitated interactions between a student’s parents and the school for the first three years,

and a second control group that received no further services of the intervention. At this point, students could be in one of the following four groups: treatment/treatment, treatment/control, control/treatment, or control/control, based on their random assignments during infancy and at school age (initial random assignment/secondary random assignment) (Campbell et al., 2002). Studies have shown that the preschool treatment was far more effective than the school-age treatment, evidenced by the outcomes discussed later in this paper.

Head Start

Head Start is the most widely recognized large-scale, public early childhood program and the closest example of a universal program. This experiment in child development was implemented in 1965 as part of President Lyndon B. Johnson's "War on Poverty" and continues on a larger scale today, serving nearly 1 million children nationwide (Currie, 2001). To participate in the program, children must be from families who are at or below the official poverty line (\$22,350 for a family of four in 2011) or who are receiving welfare assistance; however, Head Start programs may except up to 10 percent of participants whose families are above the poverty line (Head Start Overview, 2003). Additionally, 10 percent of the enrollment must be open to children with disabilities (Head Start Overview, 2003). In 2009-2010 program year, Head Start served 983,908 children, of which 40 percent were white and 39 percent were African American (nhsa.org). Through educational, health, nutrition, and social services, Head Start aims to reduce the gap between these at-risk children and their more advantaged peers when they begin school. So, not only does the program target children, but it also focuses on family support intervention through social services like the Yale and Perry Preschool projects.

In 1998, new legislation reauthorizing Head Start was passed under the Clinton Administration in response to criticisms of the quality of services and long-term effectiveness of the program. It enacted the Community Opportunities, Accountability, and Training and Educational Services (COATES) Act of 1998. The COATES Act increased the quality standards for teachers, requiring them to have at the very least an associate's degree in early childhood education or development, and it increased the salaries for those teachers with higher levels of education and training. Furthermore, it implemented "education performance standards" that required children to complete the Head Start program having developed "phonemic, print, and numeracy awareness...and [a] varied vocabulary" to ensure school readiness (U.S. Code—Section 9843A).

Family and community involvement is important in ensuring that each Head Start program is "responsive to the unique needs of each community," and programs have a number of staff members or volunteers who are parents (Head Start Overview, 2003). Although it is run at the local level, allowing for great variation across communities, it is subject to federal guidelines regarding quality since it is federally funded through the U.S. Department of Health and Human Services. Since its inception, federal funding has increased from \$96 million in 1965, according to Currie (2001), to \$7.2 billion in 2010. However, recent threats to Head Start's budget show the challenge of fiscal restraint. According to the National Head Start Association (NHSA), the federal government provides 80 percent of the annual costs that are required to operate the program, while the other 20 percent comes from contributions from the community in the form of in-kind donations such as educational resources and the aforementioned volunteer services.

It is important to note another important component of Head Start, Early Head Start, which was implemented in 1994 in order to serve children from infancy to age three, prior to beginning the regular Head Start program. This program has the most similarities with the Yale project based on the nature of intervention, the age of the children, and the participation of mothers. Early Head Start includes home visits to families with infants, parent schooling on various parent-child activities, and pre- and postnatal health services (Head Start Overview, 2003). For the purpose of this paper, I will focus only on Head Start, rather than Early Head Start, though it is important to note the positive effects that earlier intervention during infancy can have on child development.

Program Outcomes, Costs, and Benefits

Yale Child Welfare Research Program

The intervention and comparison groups of the Yale project were compared in a composite test consisting of “gross motor, fine-motor, adaptive, language, and personal-social developmental” categories.¹ Based on these five categories, intervention children were found to have higher adaptive and language development at 30 months of age; and within both groups, girls had higher development than boys. Children from the intervention group were more advanced in their “language function” as evidenced by superior “vocabulary and syntactic development” gained during time spent in the daycare program (Rescorla et al., 1979). However, results regarding “attention span, drive for mastery, relatedness to examiner, and presence of emotional problems” were indiscernible between the two groups (Rescorla et al., 1979). At the end of the program and at the five-

¹ Child effects were measured using developmental quotients and a Child Assessment Scale (CAS). The total developmental, adaptive developmental, and language developmental quotients were derived from developmental test scores based on the five categories.

year follow-up, the overall better development and higher IQs of intervention children were significantly associated with cognitive stimulation and access to play materials within the home. Children gained the most from the program when their parents actively involved themselves by effectively using the services offered by the intervention and maintaining positive relationships with caregivers at the daycare. Five years after the program ended, continued effects of the intervention were observed through child performance on achievement tests.

Seitz et al. (1985) conducted a 10-year follow-up study in 1982 on family dynamics and child performance, finding a number of encouraging results. Outcomes were based on child achievement and IQ tests and interviews with teachers, counselors, and parents of children from both the intervention and later groups. There was no significant difference between the two groups on the IQ tests, but the intervention group had higher school achievement based on the achievement tests. Based on interviews with teachers, none of the intervention children were characterized as having serious absenteeism and more were rated as having good current school adjustment compared to the control group. There was no indication of significant personality or behavior differences between girls in either group, but later boys had significantly more negative personality and behavior ratings. In particular teachers and parents rated children in the project as being less aggressive and predelinquent at age 12 ½ (Heckman & Masterov, 2007). Intervention boys were less likely to require additional and costly school services as other boys, who also tended to require services unrelated to school achievement, such as court hearings and psychological screenings (Seitz et al., 1985). Given this data, the Yale project had dramatic effects on parents and was effective in positively influencing socioeconomic development of

intervention children over the long run, but there were no significant gains in cognitive ability (based on IQ scores) over the control group.

Experimenters could assess the effect of the Yale project on mothers utilizing interviews with them.² Interestingly, this measure had some findings in favor of the later group without the intervention. Families of the later group may have been “more intact and better functioning” at the start of the program as compared to intervention families (Rescorla et al., 1979). Mothers in the comparison group also seemed to experience better psychological adjustment and coping than did those in the intervention group. It is important to recall that these two groups were not randomly assigned.

Of some concern is the observation that mothers of the intervention tended to hold their children to higher standards of maturity and express more concern about their children’s behavior than did mothers in the comparison (Rescorla et al., 1979). It is unclear whether experimental mothers were predisposed to such concerns or if their heightened awareness was a result of the intervention during which they were trained to engage in close observation of their children’s development. It is possible that mothers perceived their children as having failed somewhat if they developed unrealistic expectations or too high of standards, which the children cannot meet.

The following data illustrates the general upward mobility of mothers in the intervention program, in terms of educational attainment and self-support, relative to where they were at the beginning of the program. Although there is no information on mothers in the later group for comparison, another study by Zigler and Trickett (1978)

² A Mother Interview Scale (MIS) that utilized factors “covering demographic information, aspects of parental history, assessments of current parental functioning, child’s health history, and child rearing practices (Rescorla et al., 1979) determined effects on mothers.

found that intervention families were of higher socioeconomic status than comparison families with children of the same age living in the same neighborhood (Zigler & Trickett, 1978). Given the outcomes of mothers at the conclusion of the intervention and at the five-year follow-up, the program increased the likelihood that mothers would attain higher educational levels (e.g. graduating from high school or taking training or college courses) and move in the direction of self-support (Rescorla et al., 1979).

The outcomes after 10 years indicated even further upward mobility by mothers in terms of education attainment and self-sustainment. Based on interviews with parents at the 10-year follow-up, on average, intervention mothers had fewer children longer interpregnancy intervals than later mothers. It is possible that the early intervention of the Yale project that provided family support changed the intervention mothers' childbearing decisions and allowed them the opportunity to further their education and seek employment. At the later follow-up, 10 mothers from the project had completed some education beyond high school versus only six control mothers. Furthermore, nearly all of the intervention mothers were self-supporting compared to only half of the control mothers, illustrating continued upward mobility that was initially observed at the end of the program and the five-year follow-up. Seitz and Apfel (1994) also found diffusion effects within intervention families. Siblings of the control children were more likely to experience grade retention and require special education services than siblings in the intervention families, suggesting the project's services had a positive effect on overall parenting practices.

The approximate cost for the Yale Child Welfare Research Program's 30-month intervention was \$40,530 (in 2010 dollars, adjusted for inflation), or \$16,860 per family

per year (Seitz et al., 1985). The data on cost-benefit analysis is very limited, but Seitz et al. (1985) provide some insight into the benefits of participating in the program during the 10-year follow-up. As noted before, non-intervention boys were likely to require services in addition to normal school services throughout the year, which amounted to \$9,835, while intervention boys only required \$2,529 in additional services. Seitz et al. (1985) approximated public returns in terms of welfare assistance to be \$81,100 per child, suggesting the Yale project “appears to be paying itself off at the rate of at least two families per year.” Unfortunately, beyond this, little data on financial benefits are available to determine a societal return on investment or for comparison with the other model programs or Head Start. One can deduce that because the follow-ups on the Yale project were limited to age 10, the societal return would be great when considering the positive effects on intervention children, demonstrated through cognitive, social, and emotional development; their mothers, demonstrated through upward mobility; and their siblings, demonstrated through diffusion effects.

HighScope Perry Preschool Project

Based on follow-ups conducted on participants post high school at ages 19, 27, and 40, studies have determined that the high quality HighScope Perry Preschool Project had positive, lasting effects on its low-income, at-risk participants. At age 19, researchers found positive outcomes in three main categories: social responsibility, educational achievement, and socioeconomic status. According to the U.S. Department of Justice, juvenile delinquency, determined by police and court records and self-reports, was much lower for the treatment group. Based on reports by participants and teachers, those in the treatment

group exhibited less misconduct, less violent behavior, and less contact with police than their peers (Wilson, 2000).

The program also had marked effects on the scholastic success of the treatment group. Participants' average achievement test scores were significantly (29 percent) higher, their mean GPA was higher, fewer had been placed in special education for mental impairment (15 percent versus 34 percent of the control group), and they had higher high school graduation rates than the control group (71 percent versus 54 percent, respectively). At age 19, members of the treatment group were more likely to be employed and self-supporting than members of the control group, suggesting the program had positive socioeconomic effects on its participants (Wilson, 2000).

A subsequent follow-up at age 27 indicated that Perry Preschool participants were more likely to have higher monthly earnings and less likely to be on public assistance (Wilson, 2000). Later data on self-support at age 27 included monthly earnings, household earnings, and whether participants were receiving welfare assistance. Four times as many program participants as control members reported monthly earnings of at least \$2,000; including spousal income, nearly three times as many participants as control members reported monthly household earnings of at least \$3,000; and half as many participants were on public welfare assistance (Wilson, 2000). Compared to the control group, the treatment also reported fewer of the following: adult arrests, frequent offenses, drug-related offenses, and time spent on probation (Wilson, 2000). The most recent follow-up of Perry Preschool found at age 40, those in the program group were less likely to have been arrested more than five times (36 percent versus 55 percent) and were more likely to have earned more than \$20,000 (60 percent versus 40 percent) (Schweinhart et al., 2005).

The positive outcomes of this program give way to benefits that largely outweigh the costs. In Heckman et al.'s (2010) cost-benefit analysis of various preschool curriculums, they found the cost of the Perry Preschool intervention to be \$15,166 per child, or approximately \$8,540 per child per year.³ The public return amounted to \$195,621, yielding a return of \$12.90 per dollar invested. The social return was even greater, totaling \$244,812, or approximately \$16.14 per dollar invested. The U.S. Department of Justice attributes these benefits to: savings in welfare, savings in special education, taxes on earnings, savings to the justice system, and savings to crime victims (Wilson, 2000).

Carolina Abecedarian

Follow-ups on 104 of the original 111 participants of Carolina Abecedarian occurred at ages eight, 12, 15, and 21 and measured cognitive development, scholastic achievement, self-sufficiency, and social adaptation (Campbell et al., 2002). An analysis by the FPG Child Development Institute, found a number of long-term benefits to participants. Children in the program were more likely to have pronounced language development and higher levels of educational attainment, as well as demonstrate higher academic achievement in literacy and math (The Carolina Abecedarian Project, 2011). At every age of follow-up, the treatment group scored higher on achievement tests than the control group. At age 15, treatment children were also less likely to require special education and to experience grade retention (Currie, 2001).

A more detailed follow-up at age 21 by Campbell et al. (2002) measured "intellectual level and academic skills, educational attainment, skilled employment, self-sufficiency, and

³ Heckman values the program cost at \$15,166 per child; however, the cost is more likely to be even greater than the estimated \$15,200 per child for Head Start. Wilson (2000) values the cost per child of Perry Preschool to be \$18,958 (in 2010 dollars), however there is no basis for comparison of public and social returns with this estimate.

social adjustment.” The authors used two standard tests to measure academic skills. Of the preschool group, those who were in the treatment group demonstrated higher cognitive functioning based on significantly higher Full Scale IQs and Verbal IQs; however, there were no significant group effects on Verbal IQ or Performance IQ for the school-age treatment. The treatment group had better outcomes on the Letter-Word Identification, or pronunciation, and Calculation than on Passage Comprehension and Applied Problems within the general Broad Reading and Broad Mathematics categories (Campbell et al., 2002). Overall, the preschool treatment had stronger effects than the school-age treatment, supporting the arguments in favor of early childhood intervention to encourage school readiness. By age 21, those in the preschool treatment had more years of education than did the preschool group receiving no treatment (12.2 versus 11.6 years, respectively). Moreover, a higher percentage of preschool treatment group were high school graduates, enrolled in a four-year college or university (36 percent versus 41 percent) (Garces & Currie, 2002).

While both groups were equally as likely to be employed at age 21, the treatment group was significantly more likely to have skilled employment, as determined by self-reports and descriptions of current and past employment (67 percent versus 41).⁴ Levels of self-sufficiency, based on summaries of “self-sufficiency in economic support, living arrangements, transportation, and medical care,” did not differ significantly between groups (Campbell et al., 2002). However, by age 21, those in the preschool control were slightly more likely to live on their own and have medical coverage (Campbell et al., 2002).

⁴ The Hollingshead Index of Social Status contains four factors: education, occupation, sex, and marital status. An occupation score of four or higher constitutes “skilled” employment in this case.

Furthermore, on average, fewer women in the preschool treatment group than the control group reported being a teenage parent (26 percent versus 45 percent, respectively), and fewer reported having second or third births (Currie, 2001).

Measures of social adjustment included self-reports of law-breaking, substance abuse, and illness or injury. A smaller percentage of the preschool treatment reported a misdemeanor conviction, a felony conviction, incarceration, using marijuana in the past month, or regularly smoking than the control group. But interestingly, preschool treatment had no effect on use of cocaine or other illegal drugs, binge drinking, or engaging in violent behavior (Campbell et al., 2002). Similar to those in the Yale study, mothers of the treatment group demonstrated better social adjustment having completed more years of education and having been more likely to be employed at the time of each the later follow-ups at ages 15 and 21 (Campbell et al., 2002).

The cost-benefit analysis of Carolina Abecedarian by Heckman et al. (2010) estimates the total program cost per child of Carolina Abecedarian to be \$34,476, or \$13,362 per child per year. The social return totaled \$130,300, or \$3.78 per dollar invested, comparatively smaller than the return on investment of both the Perry Preschool and Head Start programs, despite the aforementioned benefits, including higher educational attainment and better social adjustment. The lower social return may be attributed to fewer effects on a child's home environment due to the lack of home visits and parent involvement apart from the Home-School Resource Teacher during the school-age treatment.

Head Start

Studies on Head Start have shown positive short- and medium-run outcomes on cognitive and socioemotional outcomes of participants; however, there is disagreement over its long-term effectiveness, since studies have indicated a “fade-out” effect, whereby the short-term cognitive differences tend to fade between participants and non-participants. The Family and Child Experiences Survey (FACES) concluded that although participants in Head Start experienced “relatively modest gains in early writing skills, vocabulary, letter recognition, and book knowledge,” it was difficult for them to overcome other characteristics of being poor (Gormley, 2007). Examples include family characteristics such as the lack of support in single parent families or lack of educational resources in the home; and neighborhood characteristics such as violence, overcrowding, and housing quality.

Another federally funded study called the Head Start Impact Study concluded that the program had positive cognitive outcomes, especially for younger children, based on positive impacts on pre-reading, pre-writing, and vocabulary tests. Based on reports by parents, there were also positive impacts on children’s health (e.g. due to immunizations), as well as decreases in problem behavior (Gormley, 2007). Such reports should be interpreted critically because there is the likelihood of reporter’s bias.

Although little is known about the long-term program impacts of Head Start, Garces and Currie (2002) compared the educational attainment, earnings, and delinquent behavior of siblings who attended to those who did not over the long-term. They found that there were positive effects on the school achievement, including graduating from college and attending college, and earnings of whites, but not of African Americans.

However, African Americans who attended Head Start were much less likely to have been delinquent and had positive effects on their health (Garces & Currie, 2002).

Currie (2001) argues, “a simple cost-benefit analysis suggests that Head Start would pay for itself in terms of cost-savings to the government if it produced even a quarter of the long-term gains of model programs.” According to the U.S. Department of Health and Human Services’ Administration for Children and Families, Head Start costs approximately \$7,600 per child per year, or \$15,200 for the full program for children ages three and four. Based on an average return on investment of \$8.00, the total return to society for every child that attends Head Start for two years is \$121,600 (nhsa.org).⁵

Policy Recommendations

As Benjamin Franklin famously said, “An ounce of prevention is worth a pound of cure.” The United States’ approach to early childhood education can be thought of in a similar sense whereby investing in an intervention program such as universal preschool will result in decreased costs and increased returns to society in the future. Based on an analysis of the Yale Child Welfare, Carolina Abecedarian, HighScope Perry Preschool, and Head Start programs, it is clear that investments in early childhood interventions are worthwhile given the positive cognitive, socioemotional, and behavioral effects on children. Furthermore, social benefits include reduced costs related to health care, social welfare, criminal justice, and special education as evidenced by a number of outcomes of the programs reviewed in this paper (Karloly, 2010). Access to these types of programs is especially crucial for low-income children who are already more likely to enter kindergarten at a disadvantage compared to their peers of higher socioeconomic status.

⁵ The NHSA estimates the program’s return on investment to be between \$7.00 and \$9.00, so I chose to average the return on investment at \$8.00 for this cost-benefit analysis.

Evidenced by the above cost-benefit analyses of the various programs, HighScope Perry Preschool had the highest social return of \$16.14 per dollar invested. Head Start, with a return on investment of approximately \$8.00, can most conceivably be implemented on a universal level whereby all children can attend if their families so choose to send them (Gormley et al., 2005). Furthermore, it is possible that the benefits in any of these effective interventions will be transmitted from generation to generation, attempting to break the poverty cycle, similar to the diffusion effects of the Yale project.

The first step toward universal intervention requires Head Start services to reach more than just half of children who are eligible, as it does currently (Waldfogel, 2009). Funds need to be focused towards increasing the enrollment of those who are eligible and thus staff requirements, rather than concentrating as much on the administrative aspects of the program. Given instances of fraud in the past year discovered by the Government Accountability Office, Head Start also needs to screen families more carefully (Steinhauer, 2011).

Positive effects of the HighScope approach demonstrated through Perry Preschool give reason for Head Start to reconsider its curriculum. According to the HighScope Educational Research Foundation, approximately 37 percent of today's Head Start programs nationwide use its curriculum of "active participatory learning" that was the basis for the Perry Preschool project nearly four decades ago (HighScope Curriculum, 2011). Given the positive outcomes of Perry Preschool, the HighScope curriculum should be expanded to every Head Start program, emphasizing parent-child interactions and cognitive development, in addition to increasing enrollment. In order to universalize Head

Start, a more top-down approach may be considered rather than continuing to run the programs at the local level.

Analyses of the model programs described the negative impact that family characteristics can have on a child's academic and socioemotional progress. Because Head Start's effectiveness is in question, it should further address factors outside of the program, specifically the child's home environment. To increase interest in and awareness of their children's development, as the Yale project was successful in doing, parents should be an instrumental part of the early intervention. Jencks and Phillips (1998) argue, "Changing the way parents deal with their children may be the single most important thing we can do to improve children's cognitive skills." However, they note the difficulty in getting parents to fundamentally change their behavior, especially if they perceive the interventions as invasive and "unsolicited" (Jencks & Phillips, 1998). Regardless, Head Start should make concerted efforts to address children's home environments. This may be through more frequent home visits or monthly meetings at the program site (Kristi Forren). Even if parents lack education or are low skilled, they can encourage prosocial behavior and creativity in their children as the HighScope model does. Given the obvious budget constraints, these recommendations will be especially difficult to implement. However, the positive outcomes associated with early childhood interventions, well beyond just cognitive development, should be reason enough to invest in universal preschool to serve low-income, at-risk children.

Resources

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