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The Benefits and Options of Early Childhood Education

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Abstract

Early childhood education is a crucial step in a child's educational journey. This paper begins with a history of early childhood education programs in the United States, from the Head Start program to public and private programs. A child's participation in a quality early education program is essential to mental, social and academic development, as is evident in the research of several successful model programs. The Abecedarian Project, Perry Preschool Program, Chicago Child-Parent Center, and Abbot Preschool Program provide an excellent evidence base for the benefits of early childhood education. Research of these projects show improvement in several areas, some of which are literacy, grade retention, cognitive skills, self-esteem, and high school graduation rates. There are currently several options for early childhood education ranging from the Head Start program to public school programs, to private options. The cost and benefits associated with each program differ widely across the range of available options. This paper concludes with recommendations for making early childhood education available for more children by making improvements to current programs and increasing funding.

Introduction

The idea of early childhood education is a relatively new idea, as the first publicly funded program, Head Start, did not begin until 1965. Since then, there have been several successful privately funded model programs in which their accompanying research has shown the benefits of participating in such programs. Reduction in grade retention and special education enrollment and increases in cognitive skills and high school graduation rates are among the many benefits to those children who attend a program for early childhood education. The options for preschool provide some difficulty, as the cost and quality vary greatly from public to private programs. The key, however, is to find a high-quality program as children will get the most benefit from a structured classroom environment that focuses on developing skills for future success in school.

History of Early Childhood Education

Early childhood education received its start with the Head Start program. Head Start began in 1965, created by President Johnson, to provide early childhood education to children of poverty beginning at the age of four (Barnett & Hustedt, 2005). This was the beginning of the initiative to make public preschool an option, as the only options prior to Head Start were costly private preschool programs. The goal of the Head Start Program was to provide preschool to those who would not otherwise receive early childhood education. In 1994, Early Head Start was added to the initiative to provide services to a wider range of children, adding age groups from birth to three years of age (Barnett & Hustedt, 2005). According to Barnett and Hustedt's article, as of 2002, more than 910,000 children have reportedly been served by the program with a budget of \$6.5 billion (2005).

With the addition of Head Start, public and private preschool program enrollment is growing nationwide. More parents are looking for affordable options for preschool programs,

varying from daycare programs that offer an educational component to early education programs offered at the public school level. However, with the variety of options, problems with quality, availability, and cost become an issue. To better serve the children of our country, and ensure brighter futures for them, it is important to address the concerns and find solutions to the problems. Early childhood education is essential to building a strong foundation for the mental, social, and academic development of children, and should be more accessible to all children.

There are several model early education programs that have been successful at providing a good foundation for the children they served. Programs such as the Abecedarian Project, the High/Scope Perry Preschool Program, the Chicago Child-Parent Center Program, and the Abbott Preschool Program are great examples of success stories, with the research and results to support that success.

The Carolina Abecedarian Project

The Carolina Abecedarian Project was conducted in Chapel Hill, North Carolina and is one of the most well-known and most often cited early childhood education programs (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002). The program randomly assigned children born from 1972 to 1977 to two different groups, experimental or control (Campbell, et al., 2002). These children came from economically disadvantaged backgrounds and would have otherwise not had the opportunity to attend preschool (Campbell & Ramey, 2007). The children that were placed in the experimental group received high-quality education-centered care from infancy until age five (Campbell, et al., 2002). Each of the groups, experimental and control, received access to adequate nutrition, supportive social services, and free or low-cost primary health care (The Abecedarian Project, 2016). The difference in treatment came in the experimental group receiving intensive preschool education including a LearningGames curriculum and

individualized pace (The Abecedarian Project, 2016). The goal was to help in the children’s cognitive, social, and emotional development during this crucial period (Campbell, et al., 2002). After the early educational period ended at age five, the children were then interviewed and tested for follow-up research multiple times throughout their lifetime (Campbell & Ramey, 2007).

The Abecedarian preschool program	
Treatment group	Control group
Adequate nutrition	Adequate nutrition
Supportive social services	Supportive social services
Free primary health care	low-cost or free primary health care
Preschool treatment:	
<ul style="list-style-type: none"> • Intensive (full day, 5 days/week, 50 weeks/year, 5 years) • LearningGames Curriculum <ul style="list-style-type: none"> Social/Emotional Early Literacy Oral Language Cognitive Motor • Individualized Pace 	

Figure 1. Description of program for treatment and control group, Abecedarian Project. From “The Abecedarian Project: How FPG Demonstrated the Power of High-Quality Early Education,” 2016, Retrieved from <https://fpg.unc.edu/node/8524>.

Because this was such a groundbreaking project in the early childhood education field, there is an abundance of research and articles focusing on the outcomes on the Abecedarian Project. In the 2000 article by Ramey, Campbell, Burchinal, Skinner, Gardner, and Ramey, long-term effects were measured and reported. One significant and important effect was that the

children's participation in the early preschool program showed reductions to the "incidence of delayed cognitive development during the preschool years" (Ramey, et al., 2000). According to their research, Ramey and his colleagues found that there was a developmental delay present in the control group of children by age two that continued into preschool (2000). Using IQ scores in calculations, there is a clear advantage to those children who participated in early education intervention in the experimental group, supporting that children who participate in a quality early education program are less likely to have developmental delays which could lead to enrollment in special education programs (Ramey, et al., 2000).

Another effect reported is that the children from the most disadvantaged backgrounds received the most benefit from participating in the preschool program (Ramey, et al., 2000). When calculating this specific effect children in the experimental group from homes with maternal retardation, with mothers who had IQs under 70, measured with IQs anywhere from 8 to 20 point higher than those children from the control group (Ramey, et al., 2000). Again, this is important when considering that a quality early education program reduces the later occurrence of enrollment in special education programs, especially for children who present the highest risk for such action.

Not only did participation in the Abecedarian Project benefit the children who were in the treatment group, but the mothers of these children, particularly the teen mothers, showed "an increased likelihood of completing high school and obtaining postsecondary training" (Ramey, et al., 2000). According to Ramey, et al., "by the time their children had entered kindergarten, 46% of teen mothers in the preschool treatment group had graduated from high school and obtained postsecondary training compared to only 13% in the control group" (2000).

At the end of the time children participated in the early intervention education program for the project, educational support services were made available to follow one group of children throughout the rest of the school career (Ramey, et al., 2000). “These educational support services were provided by master teachers with extensive, successful backgrounds in primary education, and successful experience in working with at-risk children and families” (Ramey, et al., 2000). The article reports the participating children’s academic achievements at ages eight, twelve, and fifteen (Ramey, et al., 2000). Ramey and his colleagues found that there is clear evidence that participation in the preschool program along with the added educational support services lead to better score in mathematics as well as reading (2000). Although those who received the full support of the Abecedarian program showed the high scores, the group that only participated in the preschool programming also showed considerably higher scores than those who were in the control group (Ramey, et al., 2000).

Long-term intellectual outcomes of the Abecedarian Project support the findings that children whose mothers had very low IQs showed the most benefit from participation in the early education program, where testing showed that treatment improved IQ an average of 10 points (Ramey, et al., 2000). At age 15, children who were part of the treatment group had a reduction in grade retention from 55 percent to 30 percent (Ramey, et al., 2000). Through age 15, children from the preschool group tested higher on IQ tests than those children from the control group (The Abecedarian Project, 2016). In the area of academic achievement, children from the Abecedarian intervention had higher scores on tests measuring math and reading skills throughout their school careers (The Abecedarian Project, 2016). Also, one of the most impressive effects of the Abecedarian Project was the reduction special education placement. When the control group is compared with the treatment group, there is a substantial difference in

which the control group had 48 percent placed in a special education program and the treatment group only had 12 percent (Ramey, et al., 2000).

When a follow-up was performed at age 21, the treatment group continued to have the advantage over the control group in IQ tests and achievement tests in mathematics and reading (The Abecedarian Project, 2016). In addition to this benefit, program participants were also more likely to attend a post-secondary education institution or to be working in a profession that required skilled employment as shown in Figure 2 (The Abecedarian Project, 2016). “They were also less likely to be teen parents, less likely to smoke marijuana, and less likely to report depressive symptoms, when compared to the control group (Figure 3)” (The Abecedarian Project, 2016).

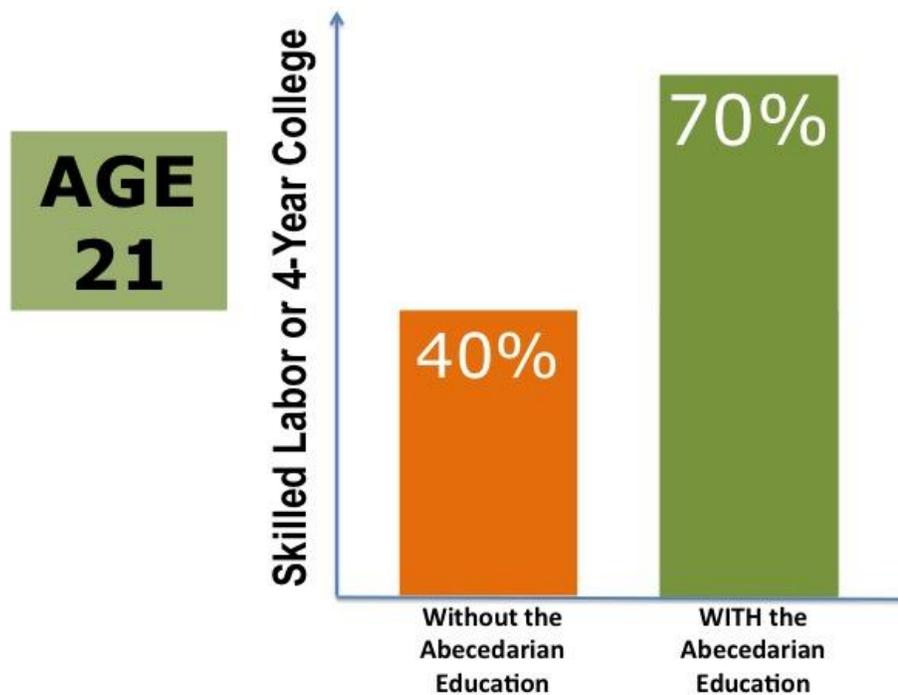


Figure 2. Comparison between Abecedarian Project participants and control group in being in college or a profession requiring skilled labor. From “The Abecedarian Project: How FPG Demonstrated the Power of High-Quality Early Education,” 2016, Retrieved from <https://fpg.unc.edu/node/8524>.

	Preschool	Control
IQ test, age 21	89.7	85.2
Special education, age 9	25%	48%
Grade retention, age 15	31%	55%
High school graduation, by age 19	67%	51%
Years of education, age 21	12.2	11.6
Employed in high skill jobs, age 21	47%	27%
Enrolled in four-year colleges, age 21	36%	14%
Marijuana use in last 30 days, age 21	18%	39%
Smoked marijuana regularly, age 21	39%	55%
Mother’s education, in years	11.9	10.3
Mother additional births	23%	40%
Teenage parents	26%	45%

Source: Masse and Barnett (2002), Campbell et al. (2002)

Figure 3. Results from the Abecedarian Project. From “The Abecedarian Intervention Project,” 2014, Retrieved from <http://centerforeducation.rice.edu/slc/LS/Abecedarian.html>.

Although the Carolina Abecedarian Project took place almost five decades ago, the results, research, and subsequent information gained from the program is vital in the research to improve early childhood education programs. Researchers have studied this project extensively

to find causality in preschool education and academic success later in life with the results showing that there are numerous benefits to participation in high-quality early childhood education. This model program is unique as it was small enough in scope to follow the participants into adulthood to measure rates of success of the Abecedarian project beyond their educational career. It lends significant support to the argument that early childhood education should be of more focus for funding, research, and growth.

The High/Scope Perry Preschool Program

Located in Michigan, the High/Scope Perry Preschool Program was a program that offered high quality preschool education to 123 children born in poverty and had a high risk of being unsuccessful in their school careers. The children were chosen based on their families' financial status and their parents' years of education (Schweinhart, 2003). The group of at-risk children were randomly divided into two groups, one of which received a high-quality preschool education at ages three and four, while the other group did not (Schweinhart, 2003). This longitudinal study followed the group of 123 children throughout their school years and collected follow-up information well into adulthood.

As Schweinhart (2003) states in his paper presented at the Meeting of the Society for Research in Child Development in Tampa, FL:

From October through May each program year, program teachers conducted daily 2 ½-hour classes for children on weekday mornings and made weekly 1 ½-hour home visits to each mother and child on weekday afternoons. The program's four teachers served 20 to 25 children each school year, a ratio set to accommodate the weekly home visit. The High/Scope preschool education model used in the classroom and home visits was an open framework of educational ideas and practices based on the natural development of

young children (Hohman & Wekart, 2002; Weikart, Rogers, Adcock, & McClelland, 1971). Drawing on the child development ideas of Jean Piaget, it emphasized the idea that children are intentional learners, who learn best from activities that they themselves plan, carry out, and review afterwards. Teachers observe, support, and extend the children's play as appropriate. They arrange interest areas in the learning environment; maintain a daily routine that permits children to plan, carry out, and review their own activities; and join in children's activities, asking appropriate questions that extend their plans and help them think about their activities. Using key experiences derived from child development theory as a framework, adults encourage children to engage in play activities through which they learn to make choices, solve problems, and otherwise engage in activities that contribute to their intellectual, social, and physical development. (pp. 3)

Through developing such a detailed method of instruction, as well as collecting a wealth of information on the participants of the program from birth, throughout childhood, and well into adulthood, the High/Scope Perry Preschool Study was able to compile a comprehensive set of data in the study of the effects of high-quality preschool education (Schweinhart, 2003). The study was able to factor in many aspects including "demographic characteristics, test performance throughout childhood and adolescence, school success, crime, socioeconomic success, and personal development" (Schweinhart, 2003). According to Schweinhart (2003), the fact that attrition in the study has been remarkably low is one of the study's particular strengths. There is a very low occurrence of missing data for the study.

The results of the study "shows that a high-quality program for young children living in poverty, improves their educational performance, contributes to their economic development,

helps prevent them from committing crimes, and provides a high return on taxpayer investment” (Schweinhart, 2003). In terms of academic achievement, results from the Perry Preschool study show that being enrolled in high quality early childhood educational program makes significant improvements in high school completion, as 71 percent of those who were in the treatment group, but only 54 percent of those who did not receive preschool education services, graduated high school or received a General Education Development (GED) certification (Schweinhart, 2003). Members from the group that participated in the preschool programming also had a lower incidence of being enrolled in special education programs (Schweinhart, 2003). There were also notable gains in literacy, language skills, and mathematics, but these gains did seem to fade with time (Schweinhart, 2003). However, there were several extraordinary long-term benefits outside of academic achievement.

Economically, the benefits proved to be vast, shown in Figure 4 (Schweinhart, 2003). Information gathered about program participants showed large differences in earnings, considerably higher than those who were in the control group (Schweinhart, 2003). The males that received quality preschool education generally had better paying jobs, while the females reporting lower unemployment rates than those who did not receive treatment (Schweinhart, 2003). There was an estimated 20 percent difference in the amount of those interviewed that owned their own homes and cars, showing the treatment group was more financially stable (Schweinhart, 2003). Also, social services records were obtained and the incidence of receiving welfare as an adult was a dramatic difference between the two groups. Only 59 percent of the program group had been on some type of government assistance in adulthood compared to 80 percent of the nonprogram group (Schweinhart, 2003).

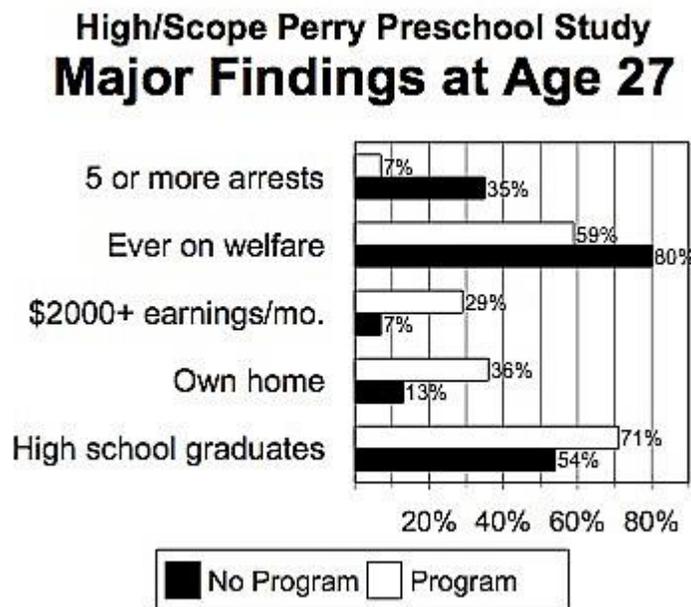


Figure 4. High/Scope Perry Preschool Study Major Findings at Age 27. From “Benefits, Costs, and Explanations of the High/Scope Perry Preschool Program” by L. J. Schweinhart, 2003, Paper presented at the meeting of the Society for Research in Child Development Tampa, Florida.

Besides academic benefits and economic benefits reaped by the participants of the High/Scope Perry Preschool program, there were also benefits to the general public. Participants in the treatment group were less likely to commit crimes and had fewer arrests (Schweinhart, 2003). This is a substantial benefit to society, especially in terms of investing in a program where there is a direct return. There was also a benefit-cost analysis performed on the program which put actual numbers to the economic benefits to those who participated in the program as well as to the public. The specific figures are discussed later, in the benefit section of this paper, but the numbers are impressive. It would be impossible to argue that the High/Scope Perry Preschool Program was not of financial benefit to the public based on these calculations.

The implications of the Perry Preschool Project are that given the tremendous amount of valuable information it provided, it is a study that can serve as an example for further research in the field of early childhood education (Barnett, 1985). Because of its comprehensive design, the results and research into long-term benefits of participation in preschool education and the characteristics of a successful program have been reviewed and used extensively in the argument to support funding of such programs.

Chicago Child-Parent Center Program

The Child-Parent Center (CPC) is a federally funded program that began in 1967 and was implemented in the Chicago public school system and is still a currently functioning early childhood education program (Reynolds, Temple, Ou, Arteaga, & White, 2011). The mission of the program is aimed at providing high quality early education services to children from economically challenged backgrounds, as well as their families (Orr, 2014). Like the Carolina Abecedarian Project and the High/Scope Perry Preschool Project, the goal of the Child-Parent Center is to provide an educational experience that has lasting benefits to the children and families enrolled in the program (Orr, 2014).

According to the program's founder Lorraine Sullivan, the centers "are designed to reach the child and parent early, develop language skills and self-confidence, and to demonstrate that these children, if given a chance, can meet successfully all the demands of today's technological, urban society" (Reynolds, et al., 2011). The design of the Child-Parent Center is that of a program that stresses the importance of basic skills such as language, literacy, and mathematics (Reynolds, et al., 2011). Certification and bachelor's degrees are required of the program's teachers and the centers offer small class sized that also have the help of teacher's aides (Reynolds, et al., 2011). Each of these centers are designed to not only address the needs of the

children of the community struggling with poverty, but also help the families of those children. Therefore, the program also offers a parent resource room with its own well-qualified teacher and a heavy outreach staff to help with reaching families who need the assistance the most (Reynolds, et al., 2011).

In researching the success of the Chicago Child-Parent Center Education Program, Reynolds, et al. (2011) report the effects on the over 1,400 participants of the program and their well-being at the age of 28, compared to the control group that did not participate in the program. The idea of “well-being” was described as the five difference measurable areas of educational attainment, socioeconomic status, health, criminal activity, and family outcomes, Figure 5 (Reynolds, et al., 2011).

As for the area of educational attainment, participants of the Child-Parent Center had much higher levels where the highest grade completed on average was 12.2 compared to 11.9 for the control group (Reynolds, et al., 2011). There was also a significant difference in those who attended a four-year college as program participants reported 14.7 percent attendance and non-participants only 11.2 percent attendance (Reynolds., et al., 2011).

Due to these higher achievements in education, those who attended the preschool program at the Child- Parent Center had a higher socioeconomic status, in which their annual income was reportedly higher than those in the control group (Reynolds, et al., 2011). Research also shows that participation in the program was also linked to higher likelihood of on-schedule high school graduation (Reynolds, et al., 2011).

In the area of health, those who attended preschool were reported to have a higher rate of health insurance coverage, 75.9 percent compared to the control group’s health coverage percentage of 63.9 percent (Reynolds, et al., 2011). To continue with reports on health of

	Preschool ¹				School-Age ²				Extended-1 ³			
	Unadj diff.	Interv	Comp	Adj. diff.	Unadj diff.	Interv	Comp	Adj. diff.	Unadj diff.	Interv	Comp	Diff.
Any adult arrest, %	-6.2 ^z	47.9	54.3	-6.4 ^z	4.9 ^t	52.4	47.5	4.9 ^t	-1.5	51.1	49.7	1.4
Any felony charge, %	-6.4 ^{**}	19.3	24.6	-5.3 ^z	1.2	21.6	20.4	1.2	-3.2	19.5	21.2	-1.7

Note.

¹Adjusted for school-age participation, 8 indicators of pre-program risk status, sex of child, race/ethnicity, child welfare history by age 4, neighborhood poverty at 1980, a dummy-coded variable for missing data on risk status, and home environment at ages 0–5.

²Adjusted for preschool participation, 8 indicators of pre-program risk status, sex of child, race/ethnicity, child welfare history by age 4, neighborhood poverty at 1980, a dummy-coded variable for missing data on risk status, and home environment at ages 0–5.

³Adjusted for 8 indicators of pre-program risk status, sex of child, race/ethnicity, child welfare history by age 4, neighborhood poverty at 1980, a dummy-coded variable for missing data on risk status, and home environment at ages 0–5.

⁴All adjusted models used robust standard errors, and attrition was adjusted through including inverse probability weighting (IPW) of being in the study sample as a sampling weight in the model. Sample sizes vary by measures.

** $p < .01$

* $p < .05$, and $t < .10$

Figure 5. Means and Group Differences for Selected Adult Outcomes Adjusted for Attrition by Inverse Probability Weighting (IPW) and Preprogram Characteristics. From “School-Based Early Childhood Education and Age-28 Well-Being: Effects by Timing, Dosage, and Subgroups” by Reynolds, Temple, Ou, Arteaga, and White (2011), *Science*, 333(6040), 360-364.

New Jersey’s Abbott Preschool Program

According to The History of Abbott v. Burke, found on edlawcenter.org, Abbott v. Burke was a landmark educational case that began in 1981 and spanned across two decades. The case was aimed at making quality education available for “poor and minority schoolchildren” (The History of Abbot v. Burke, n.d.). One of the results of the case was the establishment of the Abbott Preschool Program (Frede, 2005). The program was founded in 1999 with the purpose of serving 3- and 4-year old children from the most impoverished areas in the state of New Jersey with a high-quality early education program (Frede, 2005).

The Abbott Preschool Program is still in function today and Frede (2005) states that the program’s enrollment has expanded drastically from it’s beginning. As of the 2004-2005 academic year, more than 39,000 preschool age children were enrolled in the Abbott Preschool Program, accounting for 75 percent of the eligible population of children in New Jersey (Frede, 2005). The program encompasses several options for early childhood education, setting a universal standard for each type of program ranging from public preschool, to Head Start, to

private preschool programs (Frede, 2005). To maintain a high-quality educational environment, the Abbott Preschool Program runs operates from the following idea (Figure 6):

High-quality education requires a cycle of continuous improvement. This cycle begins with setting standards and defining outcomes and then proceeds to an iterative process of gathering evidence about progress, analyzing this evidence and making plans for improvement as well as implementing those plans. This process then begins anew with another assessment of progress. (Frede, 2005)



Figure 6. The continuous improvement cycle. From “Assessment in a continuous improvement cycle: New Jersey’s Abbott preschool program” by E. Frede, 2005, Invited paper for the National Early Childhood Accountability Task Force with support from The Pew Charitable Trusts, the Foundation for Child Development, and the Joyce Foundation.

Some standards of the program include a class enrollment with a maximum limit of fifteen children, teachers who are trained and certified with a concentration in early childhood education, assistant teachers as an added measure in each classroom, and a specifically designed curriculum designed to address the needs of preschool aged children (Frede, 2005). As many programs spanning from the private to public sector vary significantly in quality of education and qualifications of instructors, it is important and notable that New Jersey has used their system to

create a universal set of standards to which each type of early childhood education program must adhere.

One of the many methods used to measure classroom quality was the Early Childhood Environment Rating Scale – Revised (ECERS-R; Harms, Clifford, & Cryer, 1998), which is a commonly used tool used nationwide (Frede, 2005). ECERS-R uses a division of subcategories, on a scale from one to seven, to measure growth in school programs which are divided into space and functioning, personal care, language, activities, interactions, program structure, and parents and staff (Frede, 2005). In Figure 7, results of the ECERS-R from a sample of schools from 14 districts from school years 2000, 2003, 2004, and 2005 are shown for the Abbott Preschool Program.

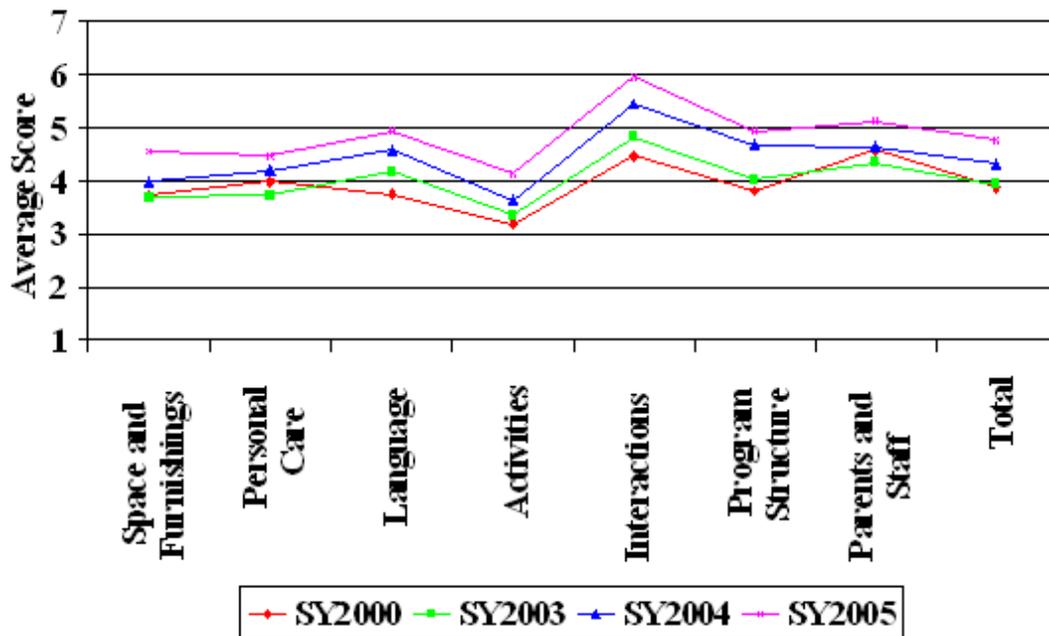


Figure 7. Change in ECERS-R scores, SY2000 – SY2005. From “Assessment in a continuous improvement cycle: New Jersey’s Abbott preschool program” by E. Frede, 2005, Invited paper

for the National Early Childhood Accountability Task Force with support from The Pew Charitable Trusts, the Foundation for Child Development, and the Joyce Foundation.

Because this only represents a small sample of the schools in the Abbott Preschool Program, Frede continues with results of all 30 districts from 2003 to 2005 to show the significant change with the progression of the program (2005). Results reported from the entire program, represented in Figure 8, showed impressive growth as Frede (2005) points out in the following:

The percentage of classrooms scoring in the inadequate to minimal range has dropped from over 17 percent in 2003 to 205 percent in 2005, while the percentage of classrooms scoring in the good to excellent range has increased from about 13 percent in 2003 to nearly 40 percent in 2005. In 2002-2003, more than 50 percent of the classrooms scored below the midpoint on the seven-point scale. In the current school year 85 percent of the classrooms scored above the midpoint. (pp. 6-7))

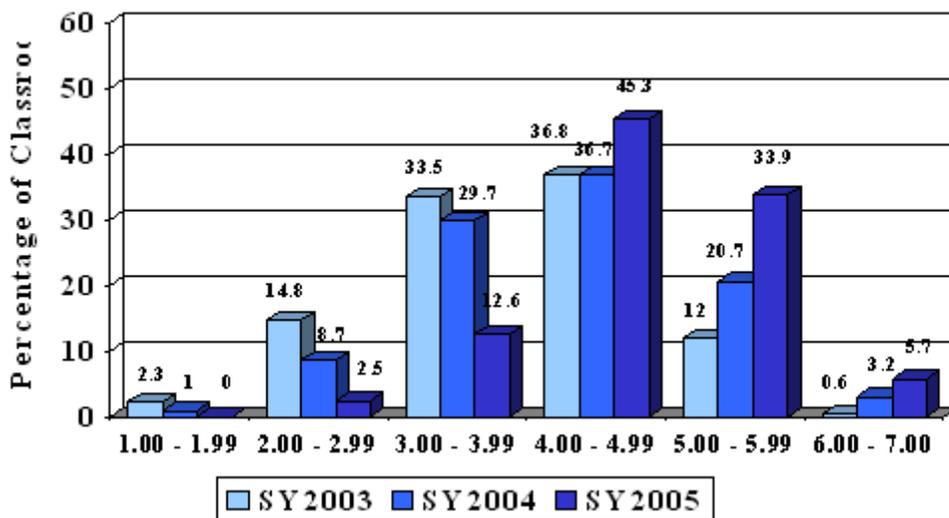


Figure 8. Percentage of classrooms scoring 1-7, SY2003 – SY2005. From “Assessment in a continuous improvement cycle: New Jersey’s Abbott preschool program” by E. Frede, 2005,

Invited paper for the National Early Childhood Accountability Task Force with support from The Pew Charitable Trusts, the Foundation for Child Development, and the Joyce Foundation.

Another measure of success for the Abbott Preschool Program is evident in the results from the scores measured by the Peabody Picture Vocabulary Test III (PPVT-3) (Dunn & Dunn, 1997) and the Test de Vocabulario en Imágenes Peabody (TVIP) (Dunn, Padilla, Lugo, & Dunn, 1997), which is the same test for students who are Spanish-speaking (Frede, 2005). Figure 9 shows the results of these testing tools to report the effect of preschool program participation on vocabulary (Frede, 2005). According to Frede (2005) “this four-point difference represents a difference of nearly four months in vocabulary development.”

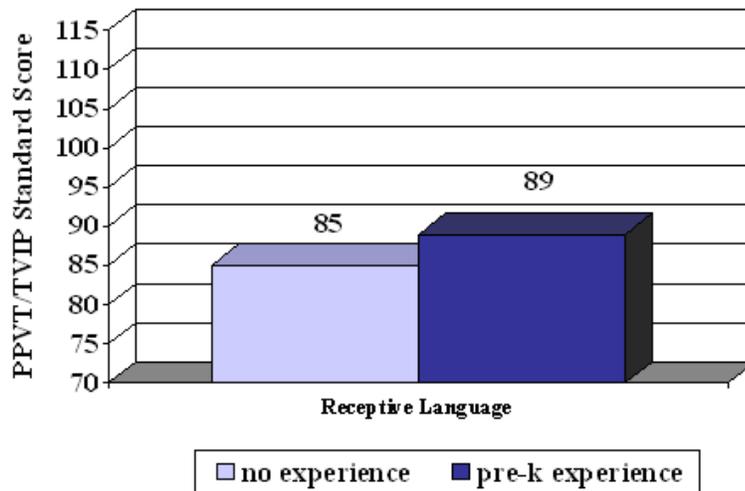


Figure 9. Effects of Abbott Preschool on Oral Language Skills. From “Assessment in a continuous improvement cycle: New Jersey’s Abbott preschool program” by E. Frede, 2005, Invited paper for the National Early Childhood Accountability Task Force with support from The Pew Charitable Trusts, the Foundation for Child Development, and the Joyce Foundation.

Frede (2005) reports measurements of gains in literacy skills is yet another area of success for the Abbott Preschool Program which is presented in the results of the Print

Awareness subtest of the Preschool – Comprehensive Test of Phonological and Print Processing (Pre-CTOPPP) (Lonigan, Wagner, Torgeson, & Rashotte, n.p.). The Pre-CTOPPP is not yet published but has been copyrighted and used extensively in measures of literacy (Frede, 2005).

As literacy is difficult to test in children ranging from ages three to five, this test “measures children’s ability to distinguish words and letters from pictures, and measures the extent to which children know that letters have distinct names, shapes and sound associations” (Frede, 2005).

Figure 10 reports the results of the test on children entering kindergarten who had attended Abbott Preschool Program compared to those who had not attended preschool, showing that those who had attended preschool answered 76 percent of the questions on the test correctly (Frede, 2005). Compared to the 44 percent score for the children who did not attend preschool, this is a significant advantage in literacy skills (Frede, 2005).

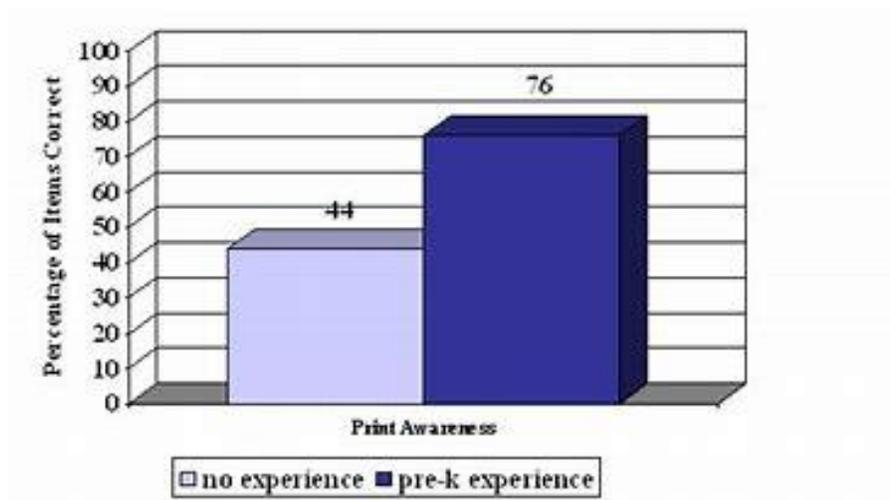


Figure 10. Effects of About Preschool on Oral Language Skills. From “Assessment in a continuous improvement cycle: New Jersey’s Abbott preschool program” by E. Frede, 2005, Invited paper for the National Early Childhood Accountability Task Force with support from The Pew Charitable Trusts, the Foundation for Child Development, and the Joyce Foundation.

With the depth of research reported in Frede's paper, it is clear that the Abbott Preschool Program is successfully preparing children to enter kindergarten at an advantage to those children who do not take part in an early childhood education program. In relation to past programs like the Abecedarian Study and the High/Scope Perry Preschool Program, the Abbott Preschool Program is a much more current example of success in early childhood education. Also, it is noteworthy that this program is still in existence today, leading by example and setting a standard for school systems who implement a preschool program with universal quality standards.

To further assess New Jersey's Abbott Preschool Program, the Abbott Preschool Program Longitudinal Effects Study (APPLES) measured the effect of the program on the children attending as 4-year-olds in 2004-2005. In the paper by Barnett, Jung, Youn, and Frede (2013), the authors report that in previous research of preschool participating students upon entering kindergarten, with a follow-up in second grade, there were substantial impacts in the areas of language, literacy, and mathematics. There was also evidence to support the fact that participation in the high-quality preschool program produced reduction in grade retention (Barnett, et al., 2013). The authors of this paper also noted that there may be an underestimation of effects due to methodology used in APPLES (Barnett, et al., 2013).

When a follow-up study was performed several years later when the children were in fourth and fifth grade, APPLES found that participation in the Abbott Preschool Program gave children an advantage of increased academic achievement in areas such as Language Arts and Literacy, Math, and Science (Barnett, et al., 2013). Barnett and his colleagues report that children who attended two years of preschool demonstrated larger effects than those children who only attended one year prior to kindergarten (2013).

As was reported in the previous follow-up of the children in kindergarten and second grade, the Abbott Preschool Program was still found to reduce incidences of grade retention and placement in special education programs during the follow-up of fourth and fifth grades as well (Barnett, et al., 2013). Although there was a significant difference in academic gains between the children who had attended two years of preschool versus those who had only attended for one year, in terms of grade retention and special education placement, there does not seem to be any difference from longer exposure to the preschool program (Barnett, et al., 2013). These findings are important not only for the academic futures of the children in attendance of the Abbott Program, but they also show the economic benefit to society as reductions in grade retention and special education enrollment can notably decrease education costs throughout a child's educational career (Barnett, et al., 2013).

In terms of recent research of early childhood education programs, the Abbott Preschool Program is a prime example of a high-quality program that is currently underway. The data gathered from research on this project is crucial in the argument for more focus on developing more easily accessible preschool program for children in the United States. Unfortunately, programs of this high-quality nature are rare, and there is an urgent need for more states to follow New Jersey's lead in early childhood education.

Benefits of Early Childhood Education

Along with the Abecedarian Project, the High/Scope Perry Preschool Program, the Chicago Child-Parent Center Program, and the most recent Abbott Preschool Program, there are numerous examples of how participation in a high-quality early childhood education program can be of benefit to children. Benefits to children range from increases in academic

achievement, reduction in grade retention, reduction in enrollment in special education programs, reduction in crime rates, to increases in high-school graduation rates.

In an article in the *American Journal of Preventative Medicine*, Anderson, Shinn, Fullilove, Scrimshaw, Fielding, Normand, and Carande-Kulis (2003) review the effectiveness and benefits of early childhood education based on a review of several publicly funded programs that provide service to economically disadvantaged children. The programs reviewed included Head Start, as well as other “center-based” programs such as those in public school systems and child development centers (Anderson, et al., 2003). Through studying the results and research of previous programs, benefits were found to be numerous including increases in academic achievement, reduction in grade retention, and decreases in placement in special education programs (Anderson, et al., 2003).

Information available reinforces the idea that the benefits of early childhood education are too copious to ignore. Participation in quality preschool programming is essential to a child’s development and enhances their preparedness for a successful school career. Figure 11 shows a framework of the benefits and how they lead to the end goal of significant improvements in the lives of the children who participate in early childhood education (Anderson, et al., 2003). For the child, early childhood development programs lead to cognitive, social, and health improvements (Anderson, et al., 2003). Cognitive gains for a child can lead to a subsequent increase in the child’s motivational drive for better performance throughout their school career (Anderson, et al., 2003). This in turn fuels “readiness to learn” directing the child down the path of achieving higher education goal such as graduation from high school, and even later enrollment in post-secondary education (Anderson, et al., 2003).

Not only of benefit to the child participating in early childhood education, the changes in the family setting are beneficial as well. Effective early childhood development programs also direct help to the families of the children enrolled in the program by encouraging parent participation in their child’s educational journey (Anderson, et al., 2003). With the added help from a supportive family environment, this further increases the chances for a child’s success at academic success (Anderson, et al., 2003).

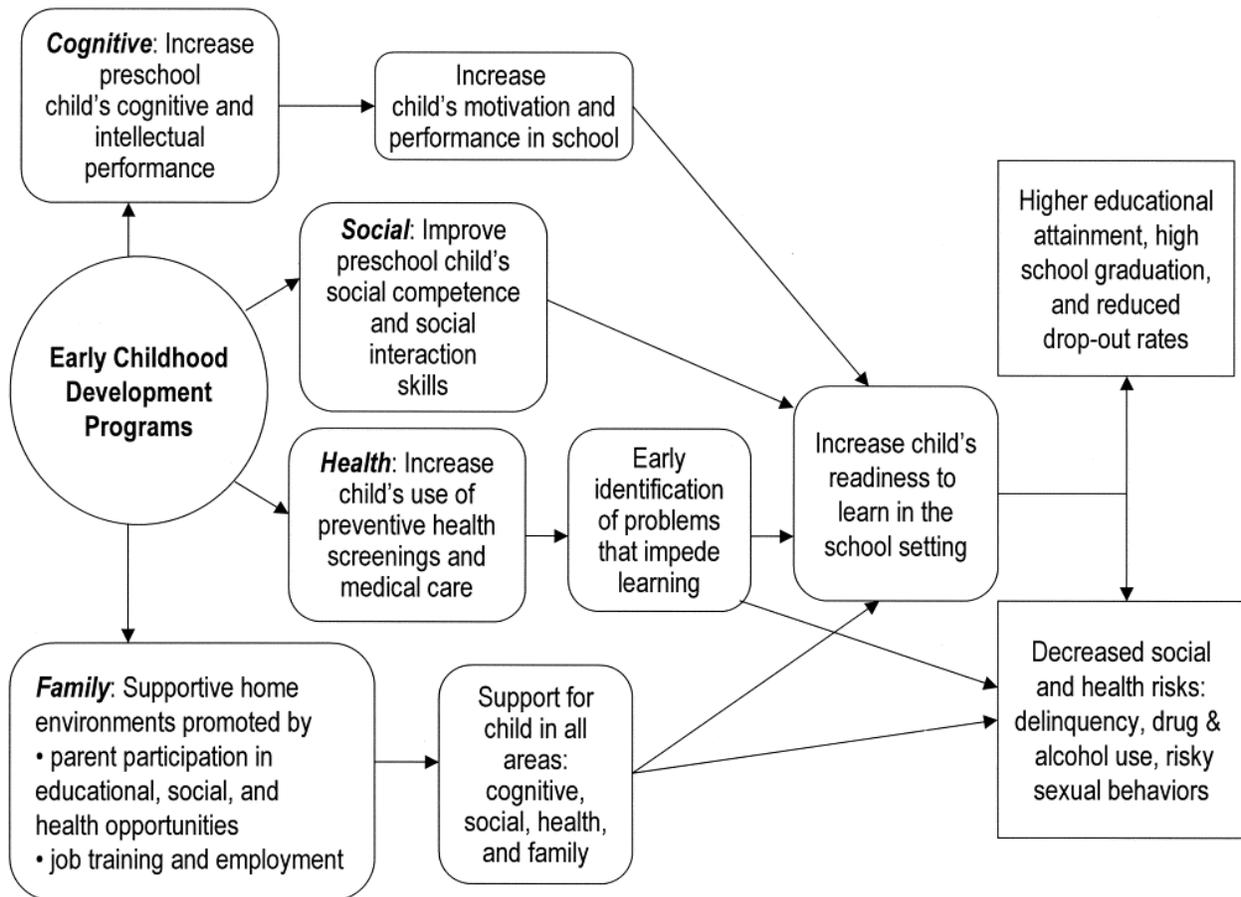


Figure 11. Analytic framework used to evaluate the effectiveness of programs for improving children’s readiness to learn and preventing developmental delay. From “The effectiveness of early childhood development programs” by Anderson, et al., 2003. *American Journal of Preventative Medicine*, 24(3), 32-46.

To add further support to the benefit of early childhood education, Barnett's analysis of 36 studies of model preschool programs as well as public preschool education programs, show short-term benefits are evident in increases in IQ (1995). Along with this cognitive improvement, long term benefits proved to again be evident in the fact that participating children had lowered rates of grade retention, were less likely to be placed in special education programs, and had better social adjustment, as well as achievement, throughout their school careers (Barnett, 1995).

As previously cited in the information about the Abecedarian Project, the Perry Preschool Program, the Chicago Child-Parent Center Program, and the Abbott Preschool Program, benefits are evident in many cognitive areas. Children who participate in high quality preschool education show significant increases in literacy upon entering kindergarten and throughout their school careers (Melhuish, Phan, Sylva, Sammons, Siraj-Blatchford, & Taggart, 2008). The most success in the area of literacy comes from instances where there is a high-plan for education in place (Melhuish, et al., 2008). And, although the effects of preschool education fade somewhat with time, they are still present several years later (Melhuish, et al., 2008). Using information in a longitudinal method in which children from 140 preschool centers were followed, data was collected from families and children at three, five, and seven years of age and Melhuish, et al.'s study shows an apparent link from early childhood education to advances in literacy (2008).

Along with literacy improvements, model programs have shown notable results in decreases in grade retention and reduction in special education program enrollment, as noted previously. Beneficial as well to participants in preschool education is the reduction of crime rates and increase in high school graduation rates that was evident in research on both the Perry Preschool Project and the Chicago Child-Parent Center Program.

With the current economic climate in the United States, the sad truth is that many children come from a disadvantaged background and these children typically start their school career with fewer academic skills than children who come from economically stable families. Children who come from families facing financial hardships are less likely to have options for quality learning experiences and may have less opportunity for learning at home (Magnuson, Meyers, & Waldfogel, 2004). In a study by Hart and Risley in 1995, research indicated that by three years old, children from welfare receiving families had vocabularies that were only half as large as those children coming from financially advantaged families (Magnuson, et al., 2004). These disadvantaged children are also less likely to be enrolled in early education programs. To address these problems, school districts have begun funding prekindergarten programs.

Magnuson, et al.'s 2004 article used research from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 to measure the effects of early childhood education programs on math and reading skills for children entering kindergarten and first grade. In general, Magnuson and his colleagues found that children who had attended center-based care in the year prior to kindergarten performed better than those who only had home care (2004). Their study also showed, that when considering family financial information, children from disadvantaged families showed the larger effects on cognitive gains (Magnuson, et al., 2004). However, the results did not show any gains for children who attended to Head Start, once again supporting the idea that quality in early childcare education is of utmost importance.

In the argument to support early childhood education, there are many benefits to the children who participate. However, there is also an economic benefit to the society that supports and funds the programs to help children be better prepared for their school careers. When governments are looking for opportunities for economic development, early childhood education

programs are not often considered for such initiatives. Instead, state and local governments predominantly choose to fund initiatives to help the creation of new private business which rarely yields much of a public return (Rolnick, 2003). Although there is also economic benefit for intervention programs later in life, the best investment lies in early childhood education as it produces long term benefits (Heckman, 2006). By focusing on disadvantaged children, data supports that funding of early childhood education programs benefit society most and the focus should shift to this area (Heckman, 2006). With investments in programs for early childhood education, governments could not only gain substantial economic returns, but the public benefits would also be an asset (Rolnick, 2003). In Rolnick's 2003 article, he makes an argument to support funding for early childhood education from a financial benefit perspective. Although the article is directed towards the Minnesota government specifically, it has also been used throughout the country to support research on the economic benefit of early childhood education.

At the time of Rolnick's 2003 article, Minnesota was facing problems that many were contributing to a loss of corporate headquarters, the absence in funds for new "high tech and biotech" startup companies, the decline of professional sports teams, and the lack of business involvement by the University of Minnesota. To address the issues with the economy, Minnesota had a history of providing subsidies for private sectors. But, the Rolnick points out that this does not create new jobs, just provides a means for relocation (2003). There must be a better way to improve the economy.

As an answer to the problems facing Minnesota, Rolnick addresses a better way to promote the economy through supporting public education, specifically efforts for early childhood education programs. Rolnick identifies early childhood development as a "grossly underfunded" area that should be brought to the attention of the government (2003). To support

the success of investing in education, he points out with several examples that the most successful economies in the United States owes that success to an educated workforce (Rolnick, 2003).

In support of public funding of early childhood education, it is important to point out that there is an extraordinary amount of changes that happen to a child from birth to five years old (Rolnick, 2003). During this period, if the child has access to an environment that support growth in such areas as cognition and language and social skills, he/she is more likely to have future success (Rolnick, 2003). This type of environment can be provided with the help of an early childhood development program. However, the funding for this integral part of a child's education is not sufficient.

There have been multiple studies, as previously mentioned, of the benefits of early childhood education programs. Rolnick sites the High/Scope Perry Preschool Program as an example of research that supports the claim that the financial returns of early childhood education far outnumber the investment in such programs. Although the research finds that initial gains in IQ may fade with time, there were not only other benefits in social-emotional functioning. Also, when the participants in the Perry Preschool program were tracked, at the age of 27, a large majority of program participants were receiving better pay, and the amount of criminal activity among the participants was far less than nonparticipants (Rolnick, 2003).

Along with the Perry Preschool, the Syracuse Preschool Program is another example of the financial benefit of quality early childhood education. Those children who participated in the Syracuse Preschool Program were found to be less likely to have problems with probation and criminal activity, thus reducing money spent by taxpayers (Rolnick, 2003).

To put actual numbers to the financial gains achieved by investing in early childhood education is a bit more difficult as most research available only uses estimates in many areas. It is not an easy task to estimate monetary amounts on such areas as gains from less criminal activity. However, Rolnick's 2003 article uses the internal rate of return as a measure to present an estimate of future financial implications for investing in early childhood development programs. By using this calculation, Rolnick estimated that the Perry Preschool program yielded a 16% rate of return. And, although participants were able to benefit from the success of the program., the public received even more benefit as the students proved to be better behaved in classroom settings and had fewer incidences of criminal offenses.

Obviously, there can be an argument that there are problems with these number and the finding on such projects. The internal rate of return calculations are estimates, and there is always room for error and adjustment (Rolnick, 2003). The problems children face today are far different than when many of these model programs were in operation. But, the widespread benefit of such programs could be underestimated. The knowledge gained by parents of participants in the mentioned programs as well as the benefit to other children born to participant families were not considered (Rolnick, 2003). Even with such considerations, Rolnick argues that the investment in early childhood education programs makes better sense financially than subsidies for private business (2003). And as Rolnick (2003) points out, "the cost of not making such an investment are just too great to ignore."

To continue with the argument for the economic benefits of investing in early childhood education, the following information was presented in a previously mentioned paper about the High/Scope Perry Preschool Project presented at the Meeting of the Society for Research in Child Development in Tampa, Florida in April of 2003 by Lawrence Schweinhart:

Although the analysis included economic benefits to program participants, we present here only the economic benefits to the public, as taxpayers and as potential crime victims. In 2001 dollars per study participant, the average annual cost of the program was \$8,287; 45 of the program participants attended for two years and 13 attended for one year. This, the discounted average cost of the program, used in the cost-benefit analysis, was \$14,716 per participant.

For this cost, the program yielded public benefits of \$105,324 per participant, a cost benefit ratio of 7.16 to 1. Sources of benefits per participant were, in order of magnitude:

- \$68,584 saved by the potential victims of crimes never committed, based on the typical in-court and out-of-court settlements for such crimes
- \$15,240 in reduced justice system costs
- \$10,357 brought in by increased taxes paid by preschool-program participants because they had higher earnings
- \$7,488 saved in schooling, due primarily to reduced need for special education services, and despite increased college costs for preschool-program participants
- \$3,475 in reduced welfare costs

The program was an extremely good economic investment, comparing favorably with alternative uses of public resources and even with private-sector investments. (pp. 5)

Figure 12 shows this convincing argument in chart form. The economic benefits are evident:

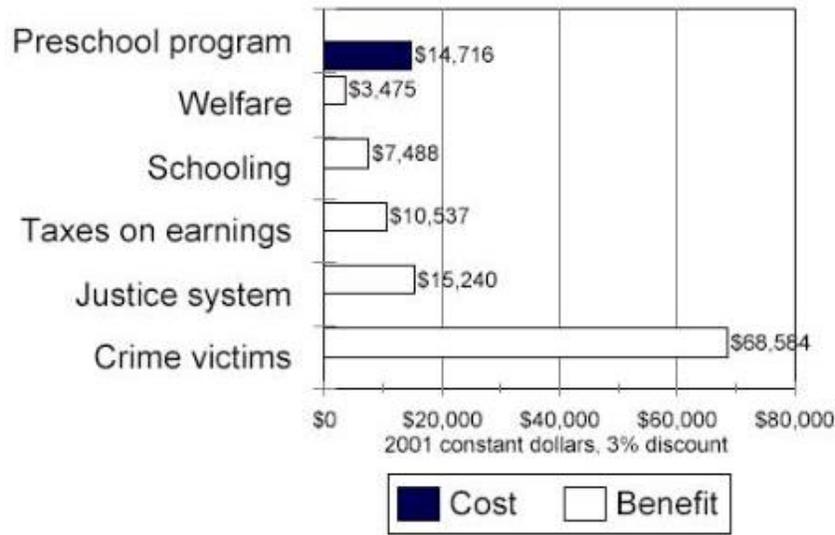


Figure 12. The public costs and benefits per participant of the High/Scope Perry Preschool Study. From “Benefits, Costs, and Explanations of the High/Scope Perry Preschool Program” by L. J. Schweinhart, 2003, Paper presented at the meeting of the Society for Research in Child Development Tampa, Florida.

Current Early Childhood Education Programs

Today’s options for early childhood education are limited to public and private preschool options. Head Start is one of the most well-known public early education programs available, but many school districts also offer half- or full-day preschool options. But, these programs, similar to Head Start are based on income and need. The final preschool option is in the private sector. There are many privately owned and operated early childhood education centers, but costs can be exorbitant, and quality varies between programs.

Head Start is a current option today for those children coming from economically disadvantaged backgrounds. However, the reviews of this program are still mixed. In Barnett and Hustedt’s (2005) article, the benefits of Head Start are examined. The study performed by

the Westinghouse Learning Corporation and Ohio University in 1969 was the first significant study aimed at finding any lasting benefits of Head Start (Barnett & Hustedt, 2005). Children in first, second, and third grades who had attended Head Start were compared with others in the same grades who had not participated in the program. The results concluded that there is no lasting benefit for children in poverty who attended Head Start (Barnett & Hustedt, 2005). The study, however, has been criticized, mainly for its method use because there were not considerations made for age difference within grades (Barnett & Hustedt, 2005). Therefore, there was a large discrepancy between many of the comparisons made.

Long-term longitudinal studies, which were those studies that performed outcome measures on students in third grade or later, focused on in Barnett & Hustedt's (2005) article provided mixed results for whether there is benefit to participating in Head Start. In studying Head Start's long-term cognitive effects, there have been 39 studies performed that include model program as well as large-scale public programs (Barnett & Hustedt, 2005). Generally, results from research for both programs found that there was insufficient information to support an increase in IQ. Even small increases faded over time. However, there does seem to be some other positive benefits found in the research. Results show achievement effects and decreases in grade retention, as well as special education placement (Barnett & Hustedt, 2005). Model programs did seem to fair better than the public program like Head Start in the previously mentioned areas and this can be contributed to the fact that the model programs received better funding.

The more recent research into long-term effects of Head Start was performed in two communities, one in Florida and the other in Colorado (Barnett & Hustedt, 2005). Former participants of Head Start were located and compared to others from similar backgrounds that

did not participate in the Head Start program (Barnett & Hustedt, 2005). There was not much significant evidence found to support Head Start's benefits besides from the Florida sample where female participants were shown to have been more likely to have completed high school and less likely to have been arrested than the comparison group that had not attended Head Start (Barnett & Hustedt, 2005). Another researcher, Janet Currie, along with her colleagues, has performed some statistical research on the Head Start program using national data, (Barnett & Hustedt, 2005). However, the results are mixed and do not show any substantial trend as more data would be required to paint an accurate picture (Barnett & Hustedt, 2005).

Also, more recently, the federal government has begun funding scientific research into the benefits of Head Start (Barnett & Hustedt, 2005). The Family and Child Experiences Survey collects data on those who participated in Head Start, but with a lack of information on a non-participating group, the data is insufficient to measure any benefit of the program (Barnett & Hustedt, 2005). The Early Head Start Research and Evaluation project found positive results on participants as they were less aggressive and measured better on cognitive and language development (Barnett & Hustedt, 2005). In 2002, Congress mandated another study on the effects of Head Start, but at the date of Barnett and Hustedt's article, the results were not yet available.

The conclusion to the available information is that there is still not enough research to determine any consistent benefit to participation in Head Start. Although the program has been in practice since the 1960s, there has been very little research performed on the program. And, what research has been performed has had methodological issues that has not produced viable and useful information (Barnett & Hustedt, 2005). The most useful research, according to Barnett and Hustedt (2005), is the research performed on other preschool programs with better

funding and higher quality characteristics. Any benefit of the Head Start program seems to be small, and almost immeasurable. In order to successfully research Head Start, larger studies need to be performed which take into account areas besides IQ. Research should be performed in specific subject areas for cognitive development, social and emotional development, and even physical development (Barnett & Hustedt, 2005).

Besides Head Start, another option for public early education programs are state funded programs that are available through the public school system. These programs are typically of higher-quality as they are operated in elementary schools alongside already established school programming. However, these programs are not widely accessible as budgeting restraints force school districts to limit the amount of enrollment. More research is needed to assess the level of education in these programs, as there is not an abundant amount of information on the benefits attained from attending public preschool. Enrollment is usually based on income and need, where programs are filled first with children with various forms of special needs and the remaining spots are filled based on financial status.

With the first two options being for families from low-income backgrounds, currently the final options for early childhood education are privately funded early education programs offered in a childcare setting. There are numerous choices in the private preschool arena. But, as there are not universal standards in place, the quality of educational experience varies from poor to high-quality. Costs of such programs vary tremendously, and when considering quality, the adage “you get what you pay for” is applicable to the preschool education area. Finding financially feasible options for the average middle-class family is difficult to nearly impossible. An article on the *U. S. News and World Report* website states that the average cost of preschool in the United States is around \$10,000 per year (Street, 2006). Costs of even part-time early

childhood education programs can be comparable to tuition at a four-year public college.

Although many model programs previously mentioned have had copious amounts of research to support the benefit from attending high-quality preschool, there is a lack of research on privately funded early education programs.

Recommendations

The key to early childhood education success is making it available for more children in the United States. For families where childcare is a necessity, access to affordable, high-quality early education programs is of utmost importance. However, according to a 2005 article in *Pediatrics*, by the American Academy of Pediatrics, “most child care centers in the United States are rated poor to mediocre in quality, with almost half meeting less than minimal standards.” Without proper funding for programs, like Head Start, one area that encounters issues is teacher preparation. Many programs do not have teachers with education degrees. And, without proper training, a well-meaning early childhood education program could fall short of its goal of preparing children for successful school careers simply from lack of knowledge.

As teacher education and training is one area of focus in improving early childhood education programs, it is important to look at the implications of requiring preschool teachers to hold a minimum of a four-year degree to create better quality education. By looking at the connection between teachers’ education and classroom quality, Early, Maxwell, Burchinal, Alva, Bender, et al. (2007) researched findings of seven studies aimed at addressing this link. The results show that it is unlikely to have significant gains in quality of education and academic skills simply through requiring preschool teachers to hold a bachelor’s degree (Early, et al., 2007). Instead, to improve the quality of education in early childhood education settings, there should be a broader range of training for preschool teachers to better serve children (Early, et al.,

2007). Although it would seem plausible for college degrees to make a difference in the quality of an educational staff, degrees alone do not make a successful, efficient, and effective teacher. To improve the quality of programs, teachers not only need education, but continuing education and training in multiple areas over the course of their careers in an early childhood education classroom.

Even with the multitude research and information supporting the fact that investments in quality early childhood education can be a substantial benefit to the public, funding for such programs is still lacking. With an increase in funding from federal, state and local governments, ensuring proper training of the early childhood education workforce would be more feasible (Quality Early Education, 2005). According to the Pediatrics article, “Head start serves only approximately 60% of all eligible 3- to 4-year old children, Early Head Start serves less than 5% of all eligible infants and families, and less than one fifth of all eligible families are receiving federal child care subsidies” (Quality Early Education, 2005).

Some new and inventive strategies to improve access to quality preschool programs include state initiatives to encourage formal education and improved pay scales (Quality Early Education, 2005). The problem with both public and private programs is the lack of universal standards to ensure quality early childhood education. If there were a set of standards that preschool programs, both public and private sector, had to abide by, the availability of high-quality options would increase giving more children the opportunity of having such an advantageous jumpstart on their school careers.

Pianta, Barnett, Burchinal, and Thornburg’s 2009 journal article focuses not only on the benefits of quality early childhood education, but also recommendations on how to achieve high-quality programming. According to the National Institute for Early Education Research

(NIEER), a nonprofit organization whose goal is to set nationwide standards for quality preschool education, there are ten structural benchmarks that should be the “minimum standards for educationally effective preschool programs” (Pianta, et al., 2009). Pianta, et al. (2009) report the following:

These ten benchmarks for program structure, advanced by the NIEER and based on their synthesis of the available scientific evidence suggest programs should have the following.

1. Teacher’s with bachelor’s degrees;
2. Teachers who have received specialized training in early childhood education, such as licensure or endorsement in the pre-K area or a degree or credential, such as a CDA (Child Development Associate), in early childhood;
3. At least 15 hour/year in-service training for teachers;
4. Assistant teachers with a CDA or equivalent;
5. A comprehensive curriculum that covers domains of language and literacy, math, science, social-emotional skills, cognitive development, health, physical development, and social studies;
6. A maximum class size that is less than or equal to 20 children;
7. A child teacher ratio of 10:1 or better;
8. At least one meal served each day;
9. Vision, hearing, and health screening and referral for children; and
10. At least one family support service, which may include parent conferences, home visits, parenting support or training, referral to social services, and information relating to nutrition. (pp. 19)

By taking these recommendations into consideration, and applying them to early childhood education programs, the quality of programming available would greatly improve.

To provide further information about recommendations for quality preschool programs, Pianta, Howes, Burchinal, Bryant, Clifford, Early, and Barbarin (2005) investigated data obtained from the National Center for Early Development and Learning's Multi-State Pre-Kindergarten Study and explored how specific programs, classroom settings, and teacher characteristics effect the quality of early childhood education. The results of the investigation "indicate that individually and collectively program and teacher attributes are statistically significant, albeit quite modest, predictors of observed quality in pre-kindergarten classrooms" (Pianta, et al., 2005). The study of data also found that there was a lower quality of education provided in programs that serviced children from low-income families, in which the staff lacked formal training such as a degree (Pianta, et al., 2003). The study concluded that importance should be placed on providing a school setting that models elementary schools to provide quality educational opportunities (Pianta, et al., 2003).

Another recommendation for the future of early childhood education is a universal approach (Barnett, 2010). This type of approach would at the minimum offer an educational opportunity reaching not only low-income children but branching out to serve children of middle-class families as well (Barnett, 2010). For funding, a universal program could be designed to be similar to the policy design that currently serves children with disabilities in which the federal government provides incentives to states in return for providing high-quality early childhood special education for the entire population of special needs children (Barnett, 2010).

With a universal approach, quality of programming could be more easily monitored while high-quality is reached and maintained with a well-researched set of standards adopted by all programs, instead of the wide array of standards and quality that is currently available (Barnett, 2010). Not only would the benefit fall to children from low-income families, as is the current target, but children from the middle- and higher-income families would also receive the benefit of a quality education (Barnett, 2010). Children from such families are reported to either not be enrolled in an early childhood education program or be enrolled in a low-quality program, due to financial restraints and affordability (Barnett, 2010). Parents from a higher income group could be more involved in demanding higher quality standards, which would lead to a higher quality educational experience that has been shown to produce better results and more long-term benefits (Barnett, 2010). To conclude, although the universal approach would undoubtedly cost more, the benefits received from such a cost increase would far surpass the additional funding costs of a universal public early childhood education program not only to the children who are a product of the programming, but to the public who would receive the economic benefits as well.

Conclusion

The idea of early childhood education is a relatively new idea, as the first publicly funded program, Head Start, did not begin until 1965. Since then, there have been several successful privately funded model programs in which their accompanying research has shown the benefits of participating in such programs.

Beginning with the Carolina Abecedarian Project, the research began in early childhood education. This model program was aimed at serving children who were genetically and environmentally prone to need special education services. But with early intervention and an intensive preschool program, these children excelled in school and showed multiple benefits to

participating in the well-designed program. The participants of the program were monitored, and follow-ups were performed well into adulthood. As pioneers in the field of early education, Frances Campbell, Craig Ramey, Joseph Sparling, and Isabelle Lewis led this program and subsequent research. It is a prime example of success in early childhood education intervention.

The High/Scope Perry Preschool Program is one of the most well-known early education programs with the research to add to the evidence of the benefits received from participating in high-quality early education programming. This program provided preschool service to children from low-income families located in Michigan. With a specifically designed curriculum, including weekly home-visits from the preschool teachers, the Perry Preschool Program was successful in providing convincing evidence to support the fact that high-quality early childhood education contributes to multiple academic, social, and economic benefits to the participants as well as to society.

The Chicago Child-Parent Center study was a longitudinal study that followed the progress of over 950 children enrolled in over 20 preschools in low-income sections of Chicago in the early 1980s. The study was designed to provide family support services including parent workshops, along with comprehensive educational services, health care, and free meals for the students enrolled in the program. The research following the study has provided a large evidence base supportive of the important role early childhood education plays in the development of young children and their preparedness to enter kindergarten. The Chicago Child-Parent Center is still operational today, serving the youth of Chicago's inner city.

The most recent early childhood educational program, the New Jersey Abbott Preschool Program, is a relatively new project that with current research shows benefits to children's cognitive skills. As a result of a groundbreaking educational court case, the Abbott Preschool

Program provides preschool education to every child in the district it serves, regardless of income or need. This is the first program of its kind to be of a universal nature and the research surrounding the project is providing a framework for other states to follow to achieve a high-quality preschool program.

Reduction in grade retention and special education enrollment and increases in cognitive skills and high school graduation rates are among the many benefits to those children who attend a program for early childhood education. As is evident in the research surrounding previous model programs, benefits from participating in high-quality preschool programming far outweigh the cost of investing in such programs. Not only is there benefit to the children who have the opportunity to participate in preschool education, but the economic and social benefits to the general public can be seen in the research surrounding successful projects.

The options for preschool provide some difficulty, as the cost and quality vary greatly from public to private programs. Public programs are income and need based, serving mainly the low-income families and their children. The options for private options are numerous, but because there are no standards in place to ensure quality levels, types of quality vary across the spectrum of available preschool programs. Along with the issue of quality, there is also a problem with costs. Private preschool programs tend to be expensive, and oftentimes are out of budgetary reach for the average American household forcing parents to enroll children in subpar educational programs. The key, however, is to find a high-quality program as children will get the most benefit from a structured classroom environment that focuses on developing skills for future success in school.

If there is to be success in future early childhood education endeavors, several recommendations need to be considered. Improvements in Head Start and public programs

would include more qualified teachers, better child to teacher ratios and smaller class sizes.

Even though there is more than sufficient evidence supporting the economic benefit to investing in early childhood education programs, state and federal funding is lacking in this important area. Government funding should be increased to better serve the children in the United States, and the investment in early childhood education would be well-recovered in the financial and social returns receive from making such an investment. One way of dealing with quality and availability of high-quality programming is through the universal approach. By creating a nationwide universal early childhood education system, all public and private sectors would have to be upheld to the same standards to ensure a quality educational experience for preschool age children. Although costly, investing in our youth is an opportunity that should not be ignored.

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