



Committee for Economic Development

**A New Framework for
Assessing the Benefits of
Early Education**

A Working Paper by
the Committee for Economic Development

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inside front cover

SUMMARY

Assessing the value of early childhood education requires an analytical framework that accurately depicts the benefits of investing in our nation's children. In this monograph, CED proposes that future preschool valuations devote appropriate attention to the related potential long-term social and economic benefits by utilizing a more comprehensive analytical framework. Such an approach will provide a clearer picture of the long-term social and economic benefits of early education that can help facilitate smart, targeted investments in preschool.

If "skill begets skill" as Pedro Carneiro and James J. Heckman assert, focusing on skill development at an early age can be particularly valuable.¹ And because early childhood education contributes both to children's educational attainment as well as social and behavioral development, the benefits of investing in early childhood education are likely to be broad and lasting.

The framework for evaluating investments in early childhood education should include the human capital benefits accruing directly to individuals, and the additional benefits these investments provide to families, communities, and society at large. Using a broad analytical framework to value prekindergarten enumerates the different ways that individual and societal benefits may be assessed, and can be benchmarked against existing cost-benefit studies on early education. Though current cost-benefit analyses are a necessary starting point for evaluating early education programs, some of the possible longer-run benefits that are more difficult to quantify are excluded by the typical cost-benefit analysis. Without a comprehensive look at the benefits of early education, its value will remain underestimated.

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Ev Ehrlich, former CED Research Director, and Tracy Kornblatt, a former CED Research Associate, prepared the text. As a "Working Paper," this publication is intended as an interim report which summarizes current research on the economic benefits of early education. As such, it will set the stage for the next CED policy statement on early childhood education planned for 2006.

THE VALUE OF EARLY CHILDHOOD EDUCATION

Assessments of the "returns" from early childhood education are still in the early stages of study and understanding. The earliest rigorous experiments of preschool programs began in the 1960s, and now that those participants are adults, the long-term benefits of early education are just being evaluated. The most promising findings to emerge from these early education programs are that the real benefits of early education come from nurturing children's noncognitive skills—giving them social, emotional, and behavioral skills that lead to success later in life—rather than developing the cognitive abilities associated with smarter children.² Early education programs have proven to raise temporarily the participants' IQ levels, but those effects tend to dissipate early in elementary school while the effects on children's behavior and self-discipline are lasting.³ Early education is linked to higher educational attainment,⁴ but the positive effects are thought to result from noncognitive skills, such as persistence and motivation, rather than preschool-induced higher IQs.

Evidence indicates that positive developmental effects are stronger when a program is preventative, intensive, and starts at a very early age.⁵ Pedro Carneiro and James J. Heckman suggest that *skill begets skill in a dynamic process*, meaning that skills gained early in life help students gain additional skills in the next stage of development.⁶ As a corollary, missing out on developing skills early in life is hard to compensate for later.

The evidence that early education contributes to human capital development is compelling.⁷ Furthermore, constant improvement to human capital has proven to be a critical part of economic development—both for underdeveloped economies and more sophisticated ones.⁸ Although raising human capital is an easily agreed-upon goal, finding cost-effective programs that lead to long-term increases in human capital is difficult. The possibility of early education as a potent economic development tool presents a fresh opportunity.

In short, preschool investments are thought to affect broad, long-term human capital development through the enhancement of fundamental noncognitive skills. As a result, the value of early education can only be understood by examining a program's human capital effects on individuals, in conjunction with the full range of external benefits accruing to other members of society. The framework for describing such an analysis follows.

BUILDING HUMAN CAPITAL IN THE INDIVIDUAL

The anticipated effects of early education on human capital building can be divided into two categories: productivity effects and socialization effects.

Productivity Effects. The effects of early education on the future productivity of program participants are

perhaps the most straightforward of the anticipated effects of early education. Those who participate in prekindergarten programs are expected to gain two important benefits: the academic jump-start to learn new skills, solve cognitive problems, and absorb knowledge, as well as the self-discipline and behavioral skills that help them perform better in the classroom and complete more schooling than they would have without early education.

Higher educational attainment produces more capable and productive workers, and provides access to better and higher-paying jobs.⁹ As a result, former preschool participants are likely to earn higher wages once they enter the workforce.¹⁰ The economy also benefits from an increase in educated workers because they contribute more to federal and state tax bases, are less likely to need help from income assistance programs, and provide employers with a larger pool of skilled workers from which to draw. In addition, businesses reap cost-savings by employing more skilled labor, which contributes to higher levels of productivity and competitiveness in the international marketplace, and spurs reinvestment and economic growth.

Socialization Effects. Human capital development entails more than just educational attainment. Using early education to reduce behaviors with adverse personal and social consequences also contributes to human capital development. The “socialization effects” of preschool fall under a large umbrella. Participants are more likely to pursue healthy, socially positive behaviors, and to avoid self- and socially-destructive ones because of the social, behavioral, and emotional benefits of early education.¹¹ If participants in early education programs are more likely to make better decisions for themselves and their communities, the benefits could be quite broad and long lasting. Personal and community responsiveness and responsibility seem a natural, lasting result (and substantial benefit) of the socialization effects of early education.

Participants in early education programs are also thought to be more knowledgeable and conscientious about decisions concerning their own health. For example, participants may be less likely to smoke or become pregnant as teenagers.¹² Better personal health care delivers benefits because fewer government services are required, and because better health offers personal happiness and productivity benefits.

Participants in early education programs are also less likely to be victims of child mistreatment. A study of early intervention in the Chicago Child-Parent Center program showed that preschool participants had significantly lower rates of court petitions for maltreatment by age 17 than children of the same age in alternative situations.¹³

Early education participants also tend to be less involved in criminal activity.¹⁴ Even very small reductions in crime can produce substantial social benefits through savings to the criminal justice system. Reducing crime can also avert the tremendous emotional cost to friends and family of would-be crime victims, and lessen the toll on communities by reducing fear about crime.

EXTERNAL BENEFITS FROM EARLY EDUCATION

Apart from the direct effect on program participants, early education can provide benefits to those not directly participating in preschool programs. Beneficiaries of these external effects include the parents of preschool recipients, the siblings of preschool recipients, entire communities, and future generations of children.

Benefits accruing to **parents** whose children are enrolled in early education programs will vary depending on the program treatment administered. Some prekindergarten programs include home visits, allowing parents the opportunity to learn and observe teaching and developmental techniques that improve their parenting skills.¹⁵ The home presence is likely to motivate parents to maintain a quality environment at home, and in addition, allows a home observer to help remove home-based obstacles to a child’s learning and well-being. Parents may also benefit if the length and frequency of a program’s classroom instruction allow them to work, or a higher quality of care makes them more willing to work.¹⁶ Family members would benefit from more earned income and less dependence on welfare,¹⁷ while government would benefit from higher tax bases.

Siblings of early education recipients could benefit in a variety of ways. Both younger and older siblings may respond positively to the presence of an immediate role model sibling with self-control, behavioral, and social development skills. The education of one sibling is likely to rub off on another, and siblings can also benefit directly from the parental and home interventions previously described.¹⁸

In addition, the lasting social and behavioral effects of early education may impact the **community at large**. Some of these benefits are follow-on benefits from the direct actions of recipients, such as those related to crime and health. Other benefits to the community may be less direct but equally valuable. For example, children that receive proper social, mental, and behavioral skills have the tools to make good choices and are more likely to succeed as adults. It seems logical that these adults would become better citizens and residents, especially in less-advantaged communities. Dedicated citizens with the means and desire to promote change and stimulate community development are valuable assets. Measuring the value of these civic externalities is likely to be difficult, but a lasting, dynamic effect is possible when a disadvantaged community becomes home to a generation of children with increased social and behavioral development, and higher levels of educational attainment. As a result, both early education programs and the participants themselves become resources of hope and development for the community.

In addition to the value of early education programs to families and communities, the broad benefits of prekindergarten could also impact **future generations**, both through community development and by breaking the cycle of poverty. The children of parents who participated in early education programs are likely to be secondary beneficiaries

of the programs' effects.¹⁹ For example, these children are more likely to have parents that are healthier, happier, more financially and emotionally stable, better educated, and less violent.²⁰ Again, these benefits are difficult to quantify, but children of participants would likely share in the healthier (physical, social, emotional) habits of their parents as well as their parents' higher educational attainments.

COMPARING EXISTING BENEFIT ESTIMATIONS

Though early childhood education programs are still in the early stages of rigorous cost-benefit analyses, two benchmark studies in the field make a good first attempt at quantifying the benefits of early education. These two analyses are based on the High/Scope Perry Preschool Program in Ypsilanti, Michigan, and the Abecedarian Early Childhood Intervention project in Chapel Hill, North Carolina, two programs that have been held to the highest level of experimental standards and longitudinal evaluation. Estimations of the costs and benefits of these programs, which include follow-up data collected through participants' adulthood, provide a first look at the estimated long-term benefits and costs of early education (see Tables 1 and 2). Analysts estimated significant net social benefits resulting from both the Perry and Abecedarian experiments, and these results yield significant reasons for expanding early childhood education programs.

The benefits estimated for the Perry program (see Table

1) fall into two categories. The measured effects are those that have been observed, as of age twenty-seven, through contact with program participants and the experimental control group. The projected benefits are those that are estimated to accumulate over the remainder of the participants' lives. The most substantial benefits of the program are estimated to come from the reduction of crime, both observed and projected, and increases in earnings, both measured and projected.

The Abecedarian cost-benefit analysis (see Table 2) includes a different set of social benefits. While differences in crime levels between participants and members of the control group were not statistically significant in this particular program, increases in the earnings of mothers whose children were in the program provided substantial social benefits.* Participants' subsequent earnings were the next largest benefit, followed by the social benefit derived from a reduction in smoking and health-related expenditures.²¹

Both the Perry and Abecedarian cost-benefit analyses quantify some of the long-run education, earnings, and health benefits derived from the lasting behavioral and emotional benefits of early education. However, the broader analytical framework previously presented suggests that additional social benefits—such as dynamic family, community, and intergenerational effects, stronger tax bases, and health and happiness of participants—may exist. For example, the Abecedarian cost-benefit analysis includes the earnings of future generations, but does not include any estimates of potential intergenerational non-earnings benefits, such as better health and higher educational attainment among participants' children. The Perry analysis

* Because the Abecedarian program was a full-day program and ran most of the year, mothers often had more opportunities for employment. The Perry program was neither full day, nor full year.

Table 1: Perry Preschool
Projected Program Social Benefits/Costs per Participant

In present value 1992 dollars

Assumed Discount Rate	3%	5%	7%
Measured Effects			
Child Care	738	722	702
K-12 Education	6,872	5,575	4,441
Adult Education	283	188	127
College	-868	-590	-354
Earnings	14,498	9,354	6,098
Crime	49,044	33,516	23,238
Welfare	219	157	117
Total Measured Effects	70,786	48,922	34,369
Projected Effects			
Earnings	15,833	6,394	3,418
Crime	21,337	11,214	6,055
Welfare	46	25	14
Total Projected Effects	37,216	18,173	9,487
Total Measured and Projected	108,002	67,095	43,856
Cost of Preschool Program	-12,356	-12,022	-11,705
NET BENEFIT	\$95,646	\$55,073	\$32,151

Source: W. Steven Barnett, *Lives in the Balance: Age-27 Benefit-Cost Analysis of the High/Scope Perry Preschool Program*, Monographs of the High/Scope Educational Research Foundation: Number Eleven (Ypsilanti, MI: The High/Scope Press, 1996).

Table 2: Abecedarian Early Intervention
Projected Program Social Benefits/Costs per Participant

In present value 2002 dollars

Assumed Discount Rate	3%	5%	7%
Program Benefits			
Participant Earnings	37,531	16,460	6,376
Earnings of Future Generations	5,722	1,586	479
Maternal Earnings	73,608	51,939	38,085
K-12 Education	8,836	7,375	6,205
Smoking/Health	17,781	4,166	1,008
Higher Education Costs	-8,128	-5,621	-3,920
AFDC	196	129	85
Total Benefits	135,546	76,034	48,318
Program Cost	-35,864	-34,599	-33,421
NET BENEFIT	\$99,682	\$41,435	\$14,897

Source: Leonard N. Masse and W. Steven Barnett, *A Benefit-Cost Analysis of the Abecedarian Early Childhood Intervention* (New Brunswick, NJ: National Institute for Early Education Research, 2002).

excludes estimates of any potential intergenerational benefits, as well as other social benefits such as those accruing to siblings and the community-at-large. Thus, the present analysis of benefits from preschool education seems limited and incomplete when compared to the more comprehensive framework previously discussed, as some of the broader and longer-term benefits are omitted.

THE FUTURE OF EARLY EDUCATION BENEFIT ESTIMATION

The current cost-benefit analyses of early education provide a good “first look” at the benefits of preschool programs. But because these analyses exclude some of the conceptually important benefits of early education, a broader framework should be considered as the model for future early education benefit analyses. Improving the educational attainment and lifetime social and emotional well-being of the nation’s children can have a broad and lasting impact on society as well as on the participants. Therefore, the framework for evaluating preschool benefits should include such broad, long-term, and comprehensive measures.

The framework presented is just a starting point, and we understand that it adds to the already difficult estimation of non-quantifiable benefits. But future analyses need to consider the “big picture” of preschool benefits, rather than a more limited snapshot. Evaluating the benefits of early education in an appropriately broad framework is needed for a more comprehensive understanding of the impact of prekindergarten programs and their economic and social value. With more comprehensive valuations of early education programs, arguments for the appropriate investments in preschool can be stronger and substantiated.

Endnotes

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