

Early Childhood Programs as Interventions: How They Work, and Options for State Policy

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In the last decade, research studies from several fields --from neuroscience to lifespan psychology to economics-- have produced a body of knowledge with a surprising conclusion: that high quality early childhood programs, delivered to children from low income families, are one of the most *effective* and *cost-effective* public investments anyone has tested.

Before describing how these programs can have such life-changing impacts on children, and listing some of the options available to state policy makers, I will start with a more fundamental, and possibly unexpected question: since child care in America is primarily a service purchased by consumers, how can government justify intervening in that private marketplace?

I. What is the public interest in child care?

Insuring an adequate supply of child care is crucial for state economic development. By making employed parenthood possible, child care expands the labor pool. For business development, child care is in the same category as having TIF District or a 24-inch force-main sewer in a light industrial park: they are basic infra-structural supports for commerce. If you shut down all the child care facilities in the state for a day, the people who would complain loudest would not be the parents, but the employers.

Regulating quality helps insure the basic safety and health of children in child care settings. New Mexico has licensing standards for this purpose already, just as it has health and safety standards for restaurants, hotels, and nursing homes.

Higher quality child care also promotes tangible social goods such as increased school readiness, and lowered future crime rates, particularly for children from low income families (as shown in Dr. Reynold's paper). In fact, the evidence from several large experiments is so strong and consistent that economists now argue that these programs, when operated correctly, save the taxpayer more than they cost.

II. The evidence that early childhood programs are effective.

Prof. Reynolds described to us the lifespan impacts (so far) from his evaluation of the Chicago Child-Parent Center program. I consider this experiment to be the most important study in this field, in part because they used existing school funding (not special or additional funds) and they took the experiment up to scale, operating in 21 elementary schools and serving over 100,000 children since 1967. This experiment tests a practical and affordable program.

The evidence comes from other studies as well. Let me describe some of the results from two other true experiments, in which children were randomly assigned to programs of

differing quality, and then researchers followed them into their school years and adulthood to see how they turned out.

The Perry Preschool program in Michigan began by randomly assigning toddlers from low income families to either the Perry Preschool program or to the comparison group, so the two groups had identical characteristics –identical potential—at the start. These same children have now been followed up to age 40, so we can look at their school records, their work careers, their criminal records, and so forth, comparing the two groups. The findings are remarkable (see Figures 1-3 at the end). The children in the Perry Preschool program:

- Experienced an immediate improvement in IQ scores.
- Completed high school far more often.
- Avoided crime and drug use far more than their peers.
- Were much more likely to have a job, a savings account, and own a home at age 40.
- The girls were 5 times more likely to be married during their prime child-bearing years.

You don't need fancy statistics to know that these results represent lives made better, whole families made better in this and the next generation.

The Carolina Abecedarian Project was another of these long-term experiments. As in the High/Scope and Chicago experiments, the children were all from low income households, and were randomly assigned to either the program or comparison group. The program was a high quality early childhood program, with a focus on early learning, and also a parent education and support component. Figure 4 (at the end) shows that, by age 21, the children who had been in the early childhood program:

- Succeeded more in their educations, even attending college.
- Were more likely to be employed.
- Were delaying childbearing by about 1.5 years, getting themselves out of school and into jobs before starting their families.

III. The evidence that early childhood programs are COST-effective.

Because they were true experiments, these three studies allow us to say with some confidence that the early childhood programs caused these differences in life outcomes. That is why many economists have become so excited, including Dr. Art Rolnick and Dr. Rob Grunewald at the Federal Reserve Bank of Minneapolis. They discovered (quite unexpectedly) that high quality early childhood programs, when delivered to children from low-income households:

- Create a higher return on investment than any other public investment they could find.
- Create savings (or investment income) to the public of 16% annually, primarily from reduced costs in the criminal justice system, the social services system, and

- greater tax revenues from the children's eventual work careers.
- “You get the 16% rate of return whether you like kids or not,” says Rob Gruenewald of the Federal Reserve Bank.

The Nobel-winning economist James Heckman, of the University of Chicago, came to the same conclusion after his research on human capital investments. He was studying the effect of many kinds of job training programs on economic development. He was startled to see the results for early childhood programs, and immediately began to view them as job training programs.

“On productivity grounds alone, it appears to make sound business sense to invest in young children from disadvantaged environments.... America under-invests in the early years of its disadvantaged children. Redirecting additional funds toward the early years, before the start of traditional schooling, is a sound investment in the productivity and safety of our society.” --Dr. James Heckman--

IV. HOW do early childhood programs have those startling impacts?

The earlier we intervene with children, the more effective and cost-effective the results we can expect. It is easiest to change people when they are young, the changes can become lasting structures in the brain, and even small deflections in a life can add up to big differences over time.

- Brain development. Research of the last 2 decades has found that, because babies' brains are not fully developed at birth, early experiences can change the way the brain actually grows. Important structures in the brain continue to develop for the first several years. This is the most opportune time to change lives for the better.
- Opportunities. Research following children from birth into adulthood has demonstrated how a child's early capacities tend to change the opportunities they get later. For example, children who fail to learn impulse control are likely to be excluded from helpful friendship groups and the experiences of school success. Their poor early development leads to unhelpful experiences which lead to more poor development.

Great programs for young children: What they DO that makes such a difference.

Example: Early Literacy.

- Children differ greatly in their literacy-related abilities when they first enter public school (for example in vocabulary size and complexity of grammar), and those who are behind tend to fall further behind with each year thereafter.
- Some things don't predict that preschoolers will become better readers: for example memorizing the alphabet.
- Other things DO predict future reading success by 2, 3, and 4 year olds. One of the keys: phonemic awareness skills (e.g. ability to identify rhyme, alliteration, syllable segmentation).
- How do we teach those phonemic awareness skills? Some very old-fashioned

ways: nursery rhymes, Dr. Seuss books. You should sing songs with children and have them clap on the beat, since syllables break on the beat and the physical action of clapping will teach children to notice syllable segmentation.

Conclusion: the foundations of reading are laid very early, and the foundations are not a dumbed-down version of the first grade curriculum. The foundation is oral language competence, which comes before written language competence. A great early childhood program, with songs and clapping and story books, may not look educational to the untrained eye. It may look like just fun, but this is just the stuff that will cause a school district's reading performance scores to shoot up in the years ahead.

Example: Self Regulation.

- Self-regulation is the ability of children to control their impulses, to plan their actions, to delay gratification by working toward a long range goal, to tolerate frustration without falling apart, and a host of other abilities to self-control themselves.
- Researchers find that these abilities are learned, and they are one of the keys to predicting which children will succeed in school and life, and which children will not.
- How do great early childhood programs help children learn to be more self-regulating in the years before formal schooling? Once again, many of the most effective activities look, to the naïve eye, like they are just play. Games like “Red light – Green light” and “Red rover, red rover, let blue come over” teach self-control (behavioral impulse control). When early childhood teachers have children dance with scarves, slowly to slow music and fast to faster music, they are again teaching behavioral self-control.

You might observe all these activities in an early childhood program, without ever realizing how systematic they are, or how sophisticated the teachers’ skills are, and without ever thinking what a huge difference the teachers are making in those children’s lives. Once again, a great early childhood program can have a huge impact on children’s futures, but does so using methods and working on skills that are different from what a great first-grade classroom does.

V. What might the state do to increase the quality of child care?

You can't expect a well-tested program to deliver the promised results if you change it in key ways. What are the key features that all the highly effective early childhood programs have in common?

Characteristics of effective early childhood programs.

- High quality staff and program. Excellent staff, well trained, with a clear sense of their objectives and methods, and monitored for performance.
- Earlier is better. The most effective interventions start very early. For the

children most at risk, starting to intervene at age 3 might be too late.

- Targeting programs to at-risk children (usually defined in terms of household poverty) returns the most on investment.
- Parent program too. All the programs demonstrating these strong impacts have been programs not just for the children, but for parents too. If you think about it, the child is in the program for 2 or 3 years, but continues to be influenced by the parent for many years to come, so helping the parent learn and grow is one of the keys.

Promising initiatives for state policy.

1. The well-tested Chicago Child-Parent Centers program (describe by Dr. Reynolds in this Briefing Booklet) is the only program that has been shown to be highly cost-effective when delivered by a public agency across many sites. It is based in Title I schools, so it uses an existing infrastructure. It also used existing funds, although this means that some other programs (i.e. existing Title 1 programs) were reduced to make this program possible. It is our one well-tested model of a realistic, do-able early care and education program that has a spectacular return-on-investment for taxpayers.

2. Quality Rating System for Consumers. According to economists, one of the reasons the private marketplace doesn't supply higher quality child care, even though parents want it, is the lack of consumer knowledge about quality. Parents are unsure how to judge the quality of child care, and so considerations of cost and convenience dominate their purchase decisions. Their lack of ability to distinguish quality then tends to drive quality out of the market.

At least 16 states have implemented a quality rating system with more than 2 levels of quality, most often on the model of the 5-star rating systems for hotels and restaurants. One goal of an objective rating system is to unleash the forces of marketplace choice. In other words, if parents could see the ratings, they would want to leave their children in the better programs, and would be willing to pay a premium for this. This should drive the market to provide higher quality care, and in fact that is what other states have found when they tested these systems: rapid, year-to-year improvements in objective indicators of quality.

In states that provide a child care subsidy to low income, working parents, this system can also be used to pay more for higher quality services, and less to lower quality programs. This can be a revenue-neutral policy in which the state's existing, yearly investment (in subsidized child care) is used to create a better functioning marketplace for care and education, in which quality is rewarded.

3. Public supplement to the private marketplace: a mixed economic model. Most states currently invest about \$8,000 to \$10,000 per 6-year-old in a year of elementary school. That is roughly twice what our society invests (through parents' fees) in the average 4-year-old. Of course, this makes no rational sense, because the teacher of a 4-year-old has at least as large an impact on the child's future, and very probably a larger impact (since earlier influences tend to have larger impacts). Economists point out that families at the beginning

of their work lives make too little to pay more for early childhood programs, so a system based only on parent fees will never have sufficient investment for the kind of quality programs that can make a big difference for children and for our society.

A public supplement to the private marketplace could spread the burden of cost, and make a big difference in child outcomes (in ways that benefit society at large). Actually, we conducted an experiment in my state of Wisconsin a few years ago that showed the promise of this idea. Our then-Governor Tommy Thompson initiated a series of reforms to welfare policy, including the provision of child care to low-income working parents. Hoping that high quality care and education would reduce welfare in the following generation, Governor Thompson proposed and funded an experiment called the Early Childhood Excellence Initiative. It provided grants to 32 childcare programs in the state, each serving primarily children whose families were at or near the poverty line. The programs had to seek national accreditation, emphasize early literacy activities, add parenting programs, and improve in other ways, but the grants encouraged them to seek excellence in ways that were consistent with the local cultures they served. So the Menominee Tribal Child Care, and the Montessori School in Eau Claire, and Escuela La Causa child care each created their own paths to excellence. Their state grants increased their budgets by about 16% (over \$1,000 per child per year), a modest public supplement. That was enough, however, so our research team observed significant increases in quality over just a one or two year span. The programs improved over time until they were significantly higher quality than the comparison group programs that received no grants. This state policy, and the program improvements it caused, have not been tested for long term impacts on children.

The 16% public supplement might be thought of the same way we think of public university education. In most states, the public provides around 20% to 30% of the cost of higher education, a public supplement to university budgets that makes a critical difference in the quality of those programs.

4. 4-Year-Old Kindergarten and/or state support for Project Head Start (to reduce waiting lists of un-served families). Each of these programs has some evidence for positive impacts, although not the strong impacts of the Chicago Child-Parent Centers and other flagship programs. These programs probably start too late in the child's life, and lack the emphasis on parent development. One of the advantages of investing in them is that the public schools and Head Start are existing programs.

5. Teacher Development Programs. The quality of the teaching staff is the kernel of the issue, and many states have experimented with ways to deliver training to those teachers. In the short run, these programs work. The problem is that wages and benefits are so low for early childhood teachers that programs suffer from a staff turnover rate of approximately 35-40% per year. Under these conditions, the benefits of these staff development programs erode over time as trained staff quit to take better paying jobs.

Let me now summarize and close.

Quality matters in child care, and it matters in ways that are important to the public good,

such as preparing children to succeed in their later schooling, to avoid criminal careers, and to become self-sufficient as adults who pay taxes back into the system. Quality of early care and education matters in terms of lives made better, and future public spending averted.

The private marketplace does not currently produce nearly enough child care of high enough quality. Furthermore, the best economists in the country tell us that government will save much more than it spends if it spends more on early childhood programs (particularly for children from low-income households). These programs will shrink the size of future government, largely by reducing crime, decreasing social services, and increasing income tax revenues.

We know several programs which have been tested and shown to be effective. In particular, we have 3 large, lifespan experiments that have produced very consistent and powerful findings. This gives us some confidence that these programs really work, if delivered with care.

Info on programs cited in this paper:

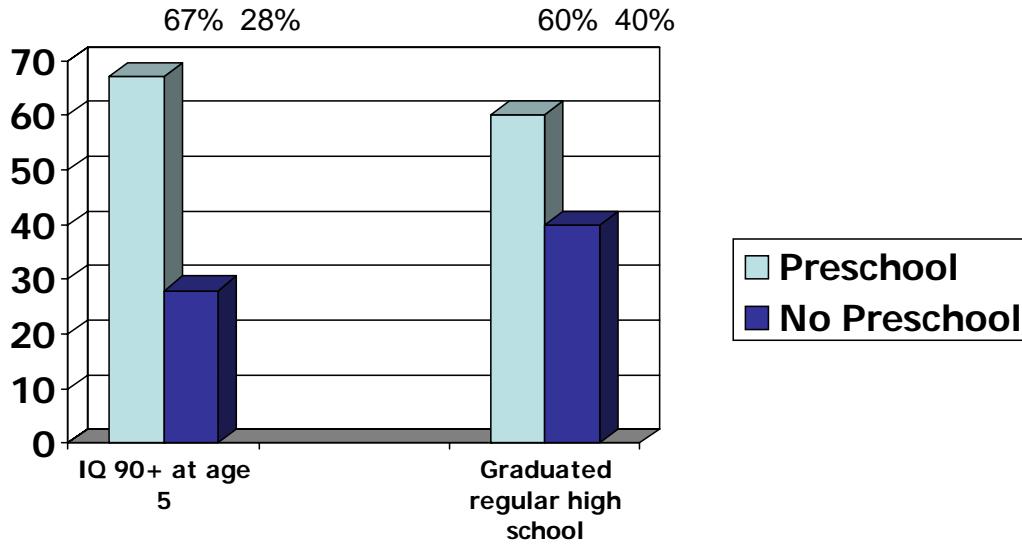
- *Perry Preschool Program:* <http://www.highscope.org>
- *Abecedarian Project:* <http://www.fpg.unc.edu/~abc>
- *Chicago Child-Parent Centers Program:*
 - Reynolds, A.J., & Temple, J.A. Priorities for a new century of early childhood programs. *Infants & Young Children*, 18, 104-118.
 - Reynolds, A.J., Temple, J.A., Robertson, D.L., & Mann, E.A. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest. *Journal of the American Medical Association*, Vol 285, No. 18 (May 9, 2001), 2339-2346. Available at: <http://jama.ama-assn.org/content/vol285/issue18/index.dtl>
- *Reports of the Federal Reserve Bank of Minneapolis:*
<http://www.minneapolisfed.org/research/studies/earlychild>
- *Reports of Nobel -winning economist James Heckman:*
http://jenni.uchicago.edu/Invest/FILES/dugger_2004-12-02_dvm.pdf
- *Why the marketplace doesn't supply higher quality early education & care:*
<http://www.aspe.hhs.gov/hsp/ccquality00>
- *The Wisconsin test of a public supplement to the private marketplace:*
 - Roach, M.R., Riley, D., Adams, D., & Edie, D. (2005). Evaluation of a state initiative to increase the child care quality. *Early Education & Development*, 16, 69-84.
 - Roach, M.R., Kim, Y.B., & Riley, D. (2006). Once attained, can quality child care be maintained? *Early Education & Development*, 17, 553-570.

Access to Resources:

- National Conference of State Legislatures, web site of state initiatives on child care and early education: <http://www.ncsl.org/programs/cyf/cc.htm>
- National Association for Early Education Research: <http://nieer.org>
- National Task Force on Early Childhood Education for Hispanics: www.ecehispanic.org
- Policy-related studies of early care and education by Prof. Riley in Wisconsin data: <http://www.uwex.edu/ces/flp/wccrp/publications.html>

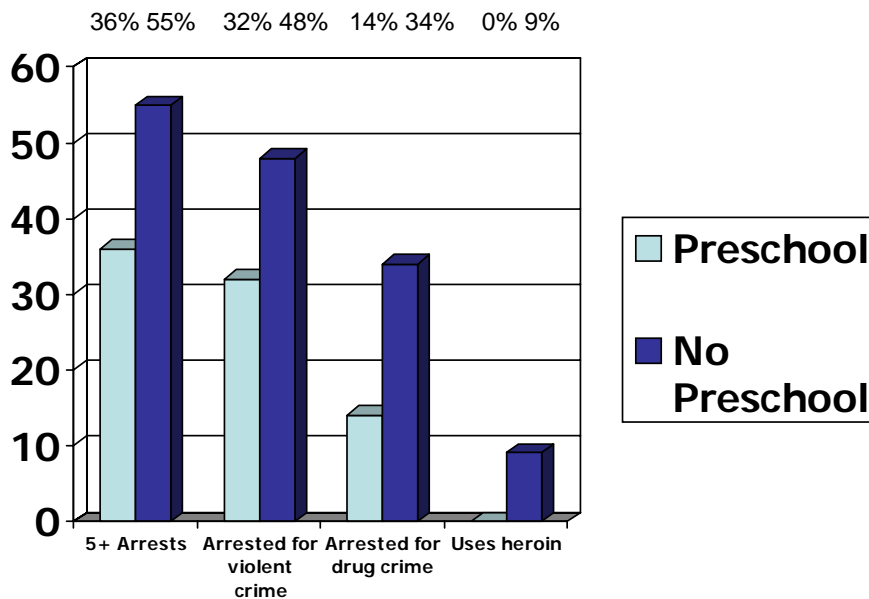
Educational Benefits of the Perry Preschool Program at age 40

Percentages of Each Group



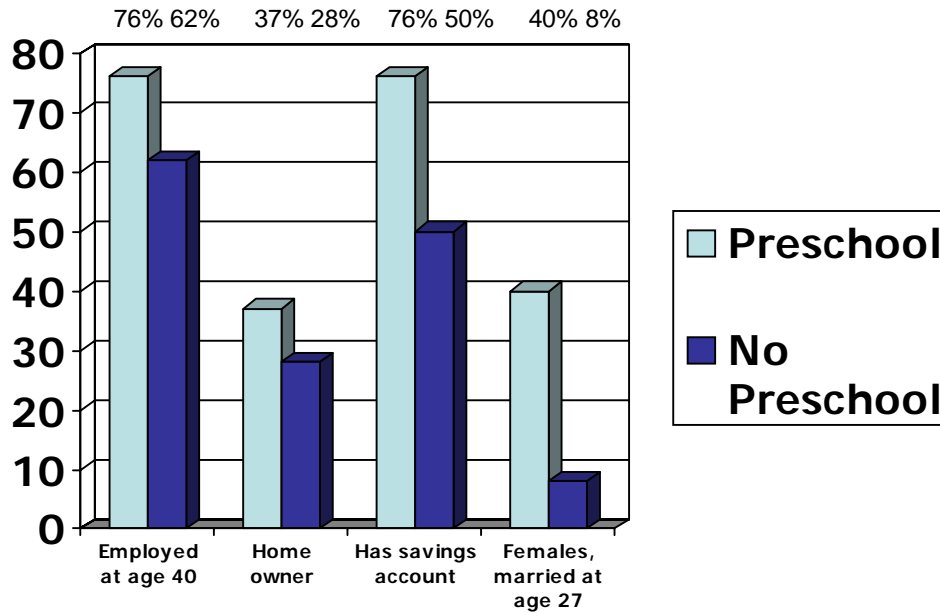
Crime Reduction Benefits of the Perry Preschool Program at age 40

Percentages of Each Group

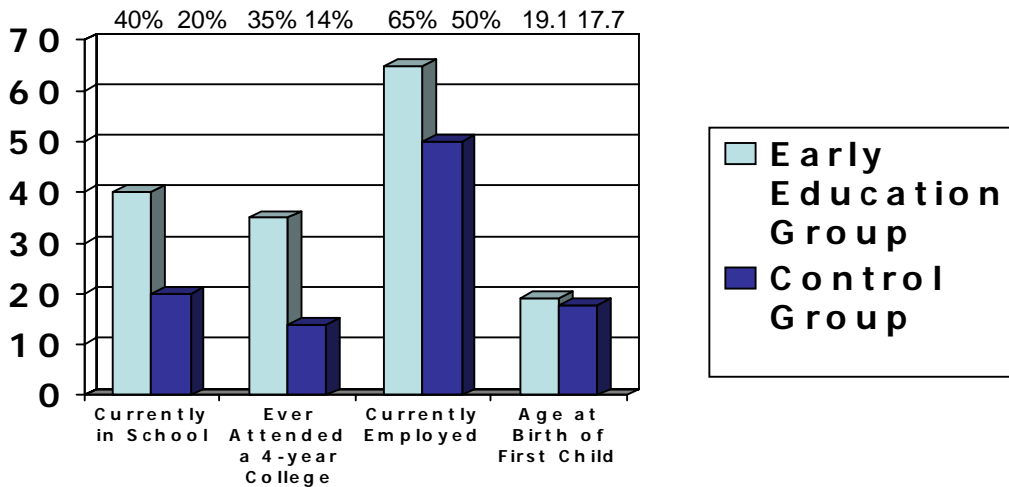


Work / Income Impacts of the Perry Preschool Program at age 40

Percentages of Each Group



Benefits of the Carolina Abecedarian Project at Age 21



Benefits of the Chicago Child-Parent Center Program at Age 20

