HB

52

<TARGET><BILL>HB 52</BILL><SUBJECT>HB
52</SUBJECT><COMM>HEDC30</COMM></TARGET>

Why Business Should
Support Early Childhood Education

Ready, Set, GO!

THE SPIRIT OF ENTERPRISE
U.S. CHAMBER OF COMMERCE

ICW
INSTITUTE FOR A COMPETITIVE WORKFORCE

MISSION

The Institute for a Competitive Workforce (ICW) is the non-profit, non-partisan, 501(c)3 affiliate of the U.S. Chamber of Commerce. ICW promotes the rigorous educational standards and effective job training systems needed to preserve the strength of America's greatest economic resource, its workforce. Through its events, publications, and policy initiatives—and drawing upon the Chamber's extensive network of 3 million members—ICW connects the best minds in American business with the most innovative thinkers in American education, helping them work together to ensure the nation's continued prosperity.

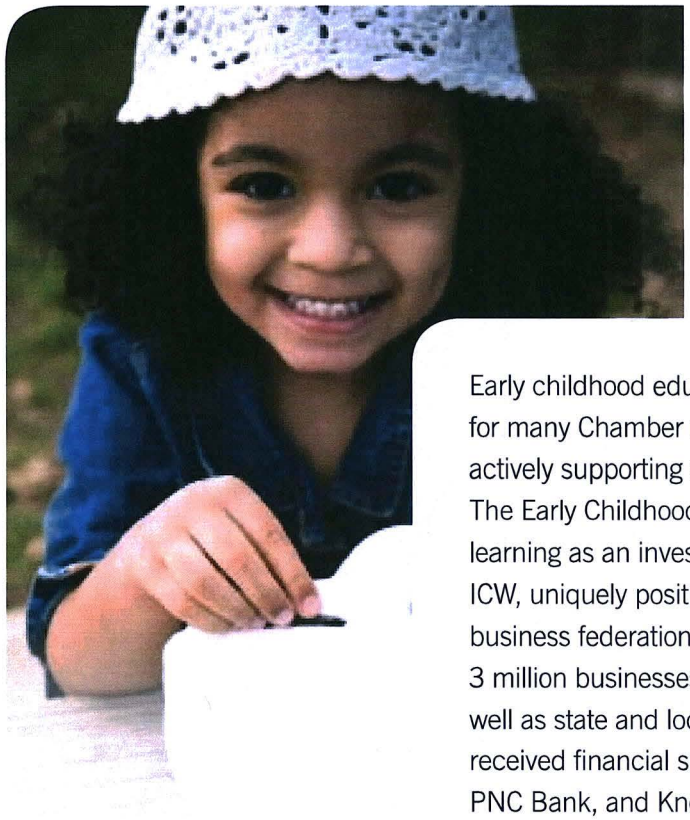
The U.S. Chamber of Commerce is the world's largest business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations.

Why Business Should Support Early Childhood Education

Since the end of the Sputnik era, our nation has lacked the urgency to make education a national priority—until now. Global competition for human talent and innovation, long-standing educational achievement gaps, low high school graduation rates, and the pending retirement of 77 million baby boomers have placed tremendous workforce pressures on American business. These pressures, if not checked, will jeopardize our national economic security and the viability of the American dream.

Because the business community understands the importance of having a world-class education system, the mission of the U.S. Chamber of Commerce's Institute for a Competitive Workforce (ICW) is to promote high educational standards and effective workforce training. Achieving a world-class system, however, begins with high-quality early learning opportunities for children from birth to age five. As a result, ICW has expanded its agenda with the launch of the Early Childhood Education Initiative.

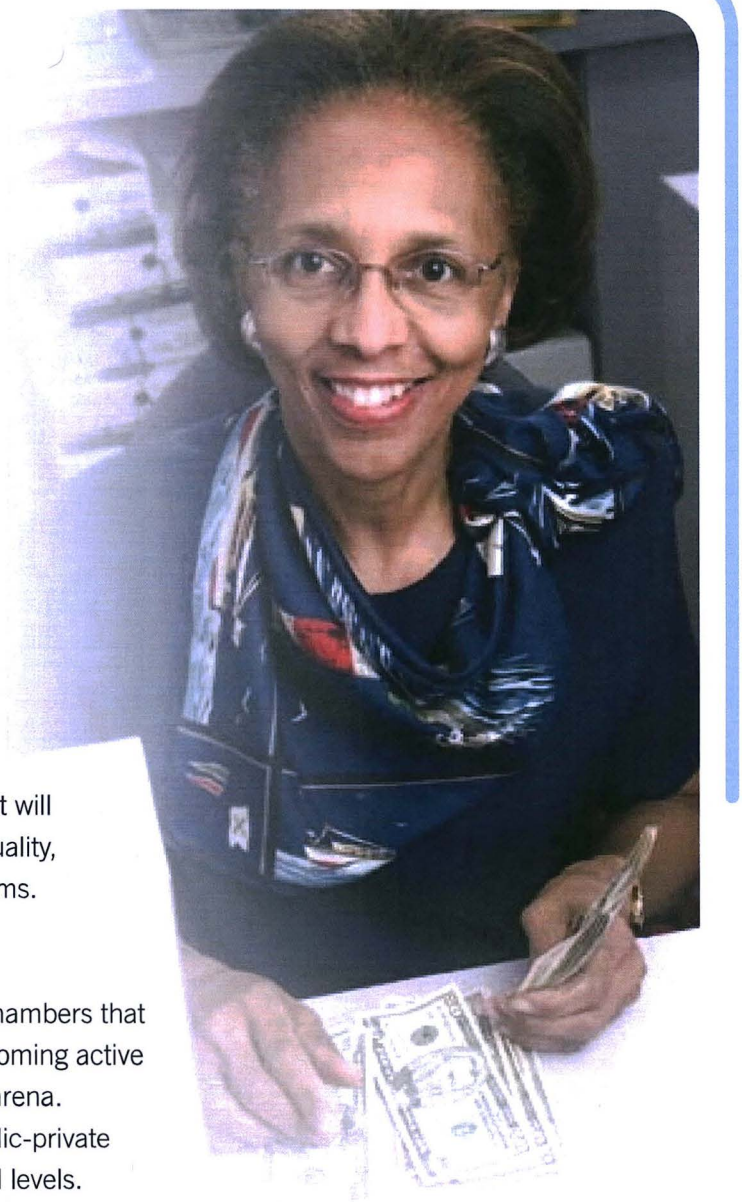
The Early Childhood Education Initiative



Early childhood education has emerged as a critical issue for many Chamber members, with a growing number actively supporting early learning initiatives in their states. The Early Childhood Education Initiative will focus on early learning as an investment in workforce development. ICW, uniquely positioned to leverage the U.S. Chamber's business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations, received financial support from The Pew Charitable Trusts, PNC Bank, and Knowledge Universe for this initiative.

The Early Childhood Education Initiative focuses on early learning as an investment in workforce development by:

- Helping drive the national debate about early childhood education policies and programs.
- Providing information to the business community at the local, state, and national levels so that it can actively engage in advancing policies that support high-quality early childhood education programs.
- Developing an early childhood education business network to exchange best practices on policies, programs, and partnerships.



To initiate change, this multiyear effort will focus on policies that support high-quality, evidence-based early learning programs. Specifically, the initiative will:

- Collaborate with state and local chambers that are active or are interested in becoming active in the early childhood education arena.
- Identify model programs and public-private partnerships at the state and local levels.
- Develop an early learning tool kit for business leaders to help guide activities and communication.
- Identify and train business leaders that want to become active in the early childhood education arena.

Defining Early Childhood Education

Early childhood education is the healthy development and education of children from birth to age five. Environments and experiences in these early years are the most influential in the development of a child's brain. High-quality early childhood education programs should promote the whole child, paying equal attention to his or her cognitive (academic), social, and emotional development. According to Harvard University's Center on the Developing Child, effective programs employ highly skilled staff, maintain small class sizes and high adult-to-child ratios, utilize a language-rich environment, provide age-appropriate curricula and stimulating materials, provide a safe physical setting for children, nurture positive and warm staff-to-child interactions and relationships, and experience high and consistent levels of child participation.[1]

Early childhood education also recognizes that a child's first teachers are his or her parents. Comprehensive programs typically designed for low-income children often encompass strategies and family supports that

seek to maximize early learning, including a parent-as-partner philosophy, home visits, parent education programs, and health and developmental screenings. High-quality programs also work collaboratively with community organizations and social service agencies, as well as other service providers, to promote the healthy development of young children.

For the purposes of this report, "early childhood education" and "early learning" are synonymous and refer to programs serving children age five and younger. The term "early care" refers to programs for infants and toddlers, from birth to age two.

Prekindergarten (pre–K) programs are one component of the early learning spectrum that has received significant policy attention in recent years, with a number of states expanding access to state-funded pre–K programs. State-funded pre–K programs typically invest public funds in programs that provide three- and four-year-old children with the academic, social, and emotional skills necessary to succeed in kindergarten and beyond. While some organizations and state policies use the term "preschool" as a synonym for pre–K programs, others use preschool as a generic term to describe a variety of programs for children before they begin kindergarten regardless of their age.

Early childhood education programs vary widely. Questions about how these programs are funded and who is eligible for them are explored in the Early Childhood Education Landscape section on page 12.

The Rationale

ICW firmly believes that investments in high-quality early learning programs for children from birth to age five yield high returns. In fact, research shows that for every dollar invested today, savings range from $2.50 to as much as $17 in the years ahead.

Arthur J. Rolnick, then-senior vice president of the Federal Reserve Bank of Minneapolis, and Robert Grunewald, associate economist, calculated an annual, inflation-adjusted rate of return of 16% for high-quality prekindergarten for disadvantaged three- and four- year olds.[2] These returns are based on long-term educational, social, and economic benefits, including increased earnings and tax revenues and decreased use of welfare and other social services, resulting in lower expenses for states and communities.

James Heckman is the Henry Schultz distinguished service professor of economics at the University of Chicago, a winner of the Nobel Prize in Economic Sciences, and an expert in the economics of human development. His groundbreaking work with a consortium of economists, developmental psychologists, sociologists, statisticians, and neuroscientists has proved that the quality of early childhood development heavily influences health, economic, and social outcomes for individuals and society at large. Heckman has proved that great economic gains can be had by investing in early childhood development for disadvantaged children. As a result of his research, he has developed a formula known as the Heckman Equation.

INVEST: Invest in educational and development resources for disadvantaged families to provide equal access to successful early human development.

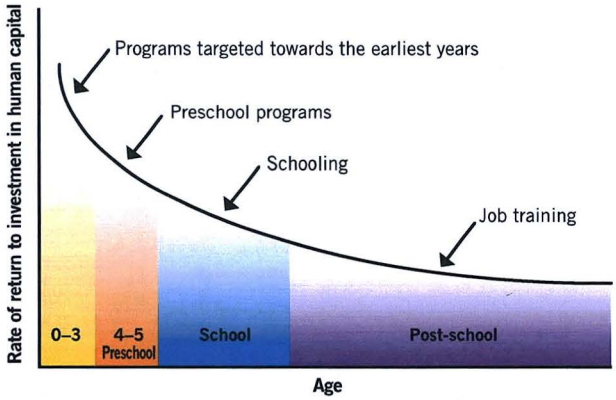
DEVELOP: Nurture early development of cognitive and social skills in children from birth to age five.

SUSTAIN: Sustain early development with effective education through to adulthood.

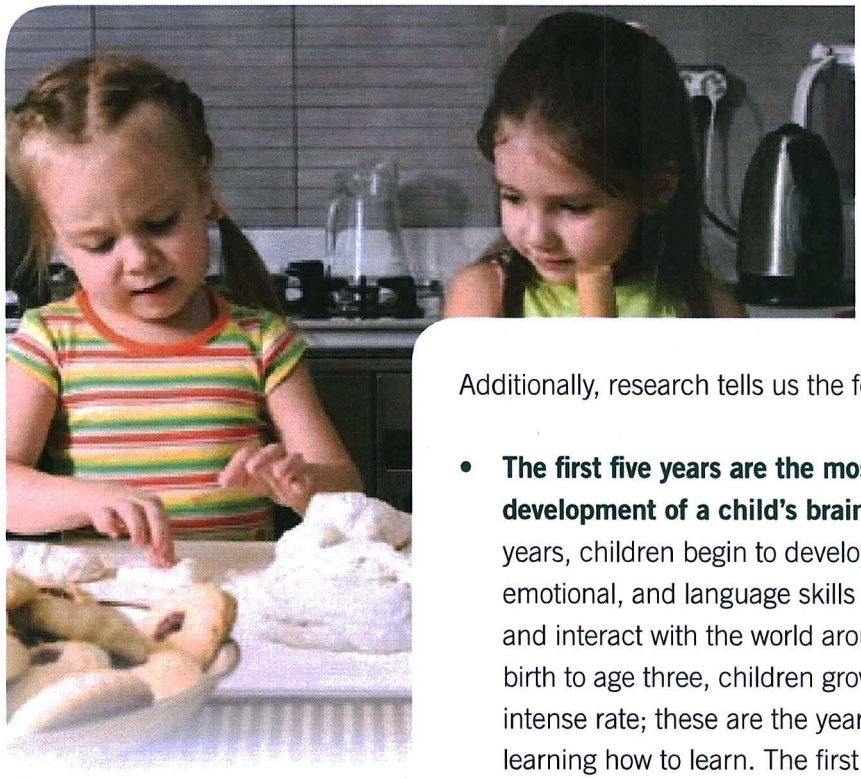
GAIN: Gain a more capable, productive, and valuable workforce that pays dividends to America for generations to come.

Dr. Heckman's research on the rates of return to human capital investment at different ages clearly shows that the earlier the intervention occurs, the greater its payoff. Investments made from birth to age five yield the highest return. The later the investments are made, the lower the return on investment.

Rates of Return to Human Capital Investment at Different Ages: Return to an Extra Dollar at Various Ages



The Rationale

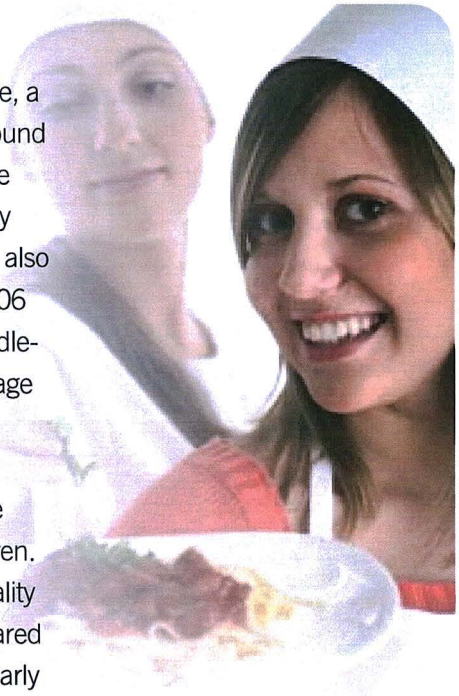


Additionally, research tells us the following:

- **The first five years are the most critical in the development of a child's brain.** During these early years, children begin to develop their cognitive, social, emotional, and language skills and start to relate to and interact with the world around them. In fact, from birth to age three, children grow and learn at the most intense rate; these are the years when children are learning how to learn. The first five years represent the pivotal juncture of nurture and nature and how they shape the development of young minds. Heckman's research demonstrates that investments made in these early years yield the highest rates of return to society.

- **Achievement gaps develop well before children begin kindergarten.** Because school readiness and language development are key predictors of a child's academic success, they are the focus of early childhood education programs. Unfortunately, many children who do not participate in high-quality pre–K or early childhood programs are in general not fully prepared to begin school. In the United States, those most likely to begin kindergarten at an academic disadvantage are low-income and minority children. Research also tells us that students who begin school behind have a tendency to remain behind throughout their academic careers.

- **High-quality pre–K programs for three- and four-year-olds can have a significant impact on all children, but especially those from low-income families.** Research shows that quality early education programs have positive impacts on all children's cognitive and language development,



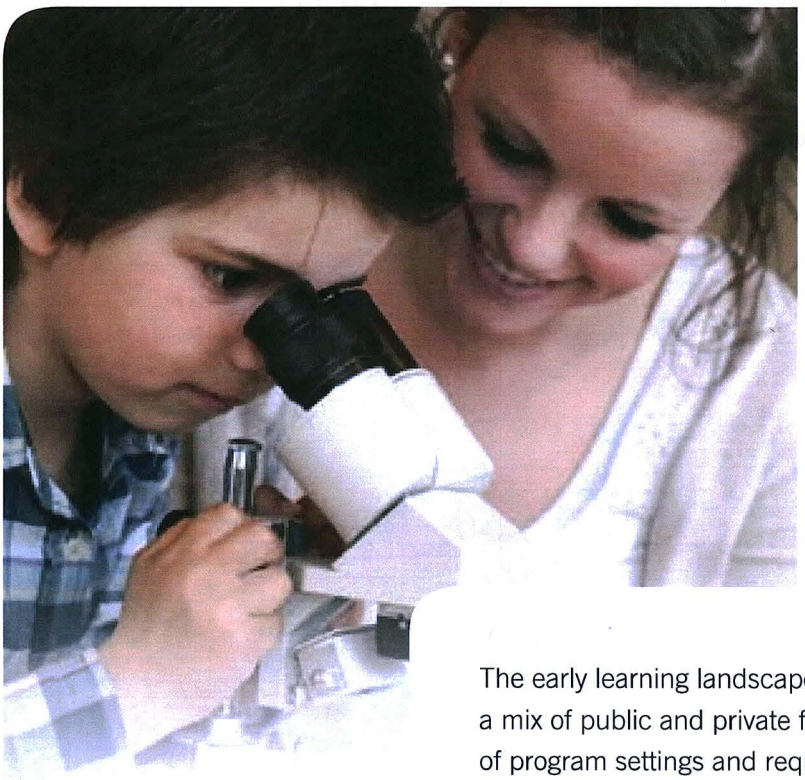
regardless of income level or program setting. For example, a study of the current pre–K program in Tulsa, Oklahoma found that children from families earning more than 185% of the federal poverty level made significant gains in early literacy skills.[3] This is important because middle-income children also experience educational challenges—during the 2005–2006 school year, more than half of all dropouts were from middle-income families, and 10% of all middle-income children age 16 to 19 have been retained in grade at least once.[4]

While pre–K for all may have the greatest total impact, the largest per-child impact is clearly on disadvantaged children. Longitudinal research on low-income children in high-quality pre–K programs also indicates that these children, compared with their peers who did not participate, exhibit stronger early reading and math skills and show significant gains in social and emotional skills, reduced grade retention, reduced placement in special education, increased likelihood of being in school at age 21, and increased likelihood of attending a four-year university.

- **Meaningful investments in quality early learning programs for younger children have lasting effects that can reduce costs later in life while enhancing economic growth.** Interventions early in life have a higher rate of return than later interventions. Longitudinal research has shown gains among program participants so significant that they have resulted in positive outcomes through adulthood. Specifically, program participants were less likely to be involved in criminal activity or be arrested; less likely to rely on social services such as welfare; less likely to have children out of wedlock; and more likely than nonparticipants to earn more, own a home, or own a second car.

- **A high-quality early childhood education can help break the cycle of poverty.** Early environments (i.e., cognitive and noncognitive stimulation) are a powerful predictor of success in adulthood. A wealth of brain research concludes that early experiences have a profound impact on cognitive, social, and emotional development. Providing young children with a strong start early on can help counteract disadvantaged environments.

The Early Childhood Education Landscape



The early learning landscape is complex. It involves a mix of public and private funding streams, a variety of program settings and requirements, and different eligible populations. In addition, it has grown more important as the proportion of children in families with both parents working has increased.

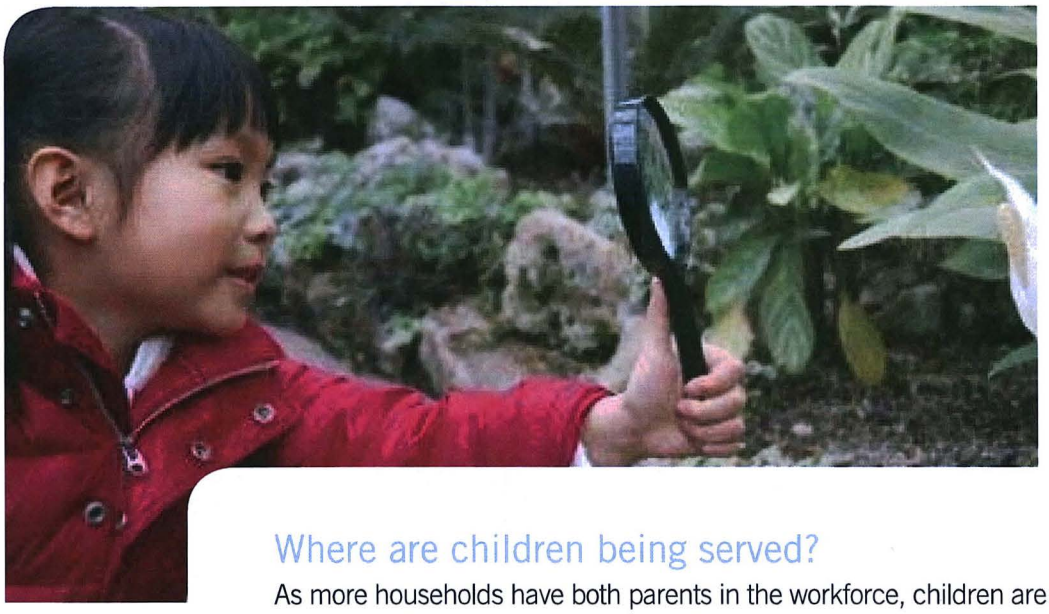
Participation in Out-of-Home Programs

The Shriver report[5] shed new light on the composition of the current workforce. The percentage of women in the workforce is nearing 50% and continues to grow. As women's labor force participation rates have increased, so has children's participation in out-of-home programs. Despite this trend, parental access to full-day, full-year programs is often a challenge, and not all programs provide a high-quality child development and early learning experience. Program quality and availability varies widely within each type of setting as well as across settings.

Today, there are approximately 20.3 million[6] children under age five across America, 45% of whom are minorities[7] and 21% of whom live below the poverty line.[8] Nearly 12 million are in some form of out-of-home care while their parents are at work, spending on average 36 hours per week in the care of someone other than a parent.[9] More than 1 million of these children are three- or four-year-olds who are enrolled in state-funded pre–K programs, or federal Head Start or special education programs.

Among families with children age six or younger, 77% have a parent who is in the labor force.[10] Nationally, about three-quarters of children from upper income families—but only half of children from low-income families—are enrolled in public or private pre–K.[11] Middle-income families are increasingly being squeezed by the cost of early education; the average family of four with two young children spends 29% of its monthly income on early education and care.[12]

The Early Childhood Education Landscape



Where are children being served?

As more households have both parents in the workforce, children are in out-of-home settings in large numbers. Programs are offered in a variety of settings, such as family child care homes, child care and early learning centers, and public schools. Children are often in multiple settings, depending on their ages and the needs of their parents, especially those who work and need safe, reliable, and stimulating experiences for their young children throughout the workday and work year. For example, a four-year-old may go to a pre–K program at a public school for 2.5 hours and spend the remainder of the day at home or in a program offered at a child care center. The combination of ages, schedules, public and private programs, and individual family needs can make the possibilities appear endless.

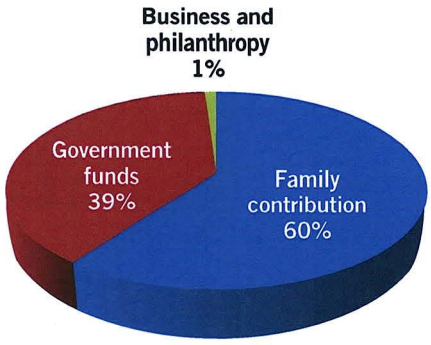
How are these programs funded?

For early childhood education as a whole, parents pay the bulk of the costs; however, a mix of federal and state funding is available to provide additional support for some eligible families. Programs that provide services are often supported through multiple funding streams that can include federal, state, and local public funds as well as private funds. Federal funds come primarily through the U.S. Department of Health and Human Services and include the Child Care Development Block Grant (CCDBG), Temporary Assistance for Needy Families (TANF), Head Start, and Early Head Start. Other funds

are provided through the U.S. Department of Education, including Title I of the Elementary and Secondary Education Act and the Individuals with Disabilities Education Act. Children enrolled in programs may be supported by multiple sources of funding, depending on their parents' income and employment status.

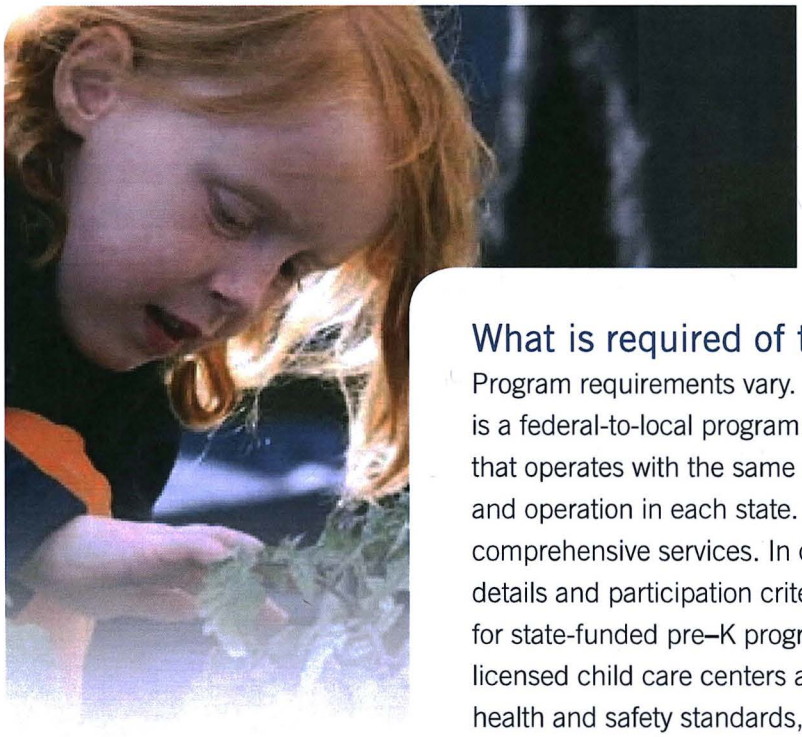
States provide matching amounts for federal child care funding, and 40 states have invested in state-funded pre–K programs. Financing for state pre–K initiatives can come from various sources, including the state's K–12 funding formula, general revenue, lottery or gaming funds, or tobacco or other "sin" tax dollars.[13] In recent years, states have significantly increased pre–K funding and the number of children being served.[14]

Nationally, families pay 60% of early care and learning costs for children under age five. Local, state, and federal governments pay 39% of the costs, while the private sector (businesses and philanthropies) pays the remaining 1%.[15]



Sources of early care and learning costs as percentages

The Early Childhood Education Landscape



What is required of the programs?

Program requirements vary. For instance, Head Start is a federal-to-local program for low-income children that operates with the same criteria for participation and operation in each state. It offers a variety of comprehensive services. In contrast, programmatic details and participation criteria vary from state to state for state-funded pre–K programs. States also require licensed child care centers and homes to meet minimum health and safety standards, which typically are not required of schools providing state-funded pre–K in their classrooms, which have their own regulations.

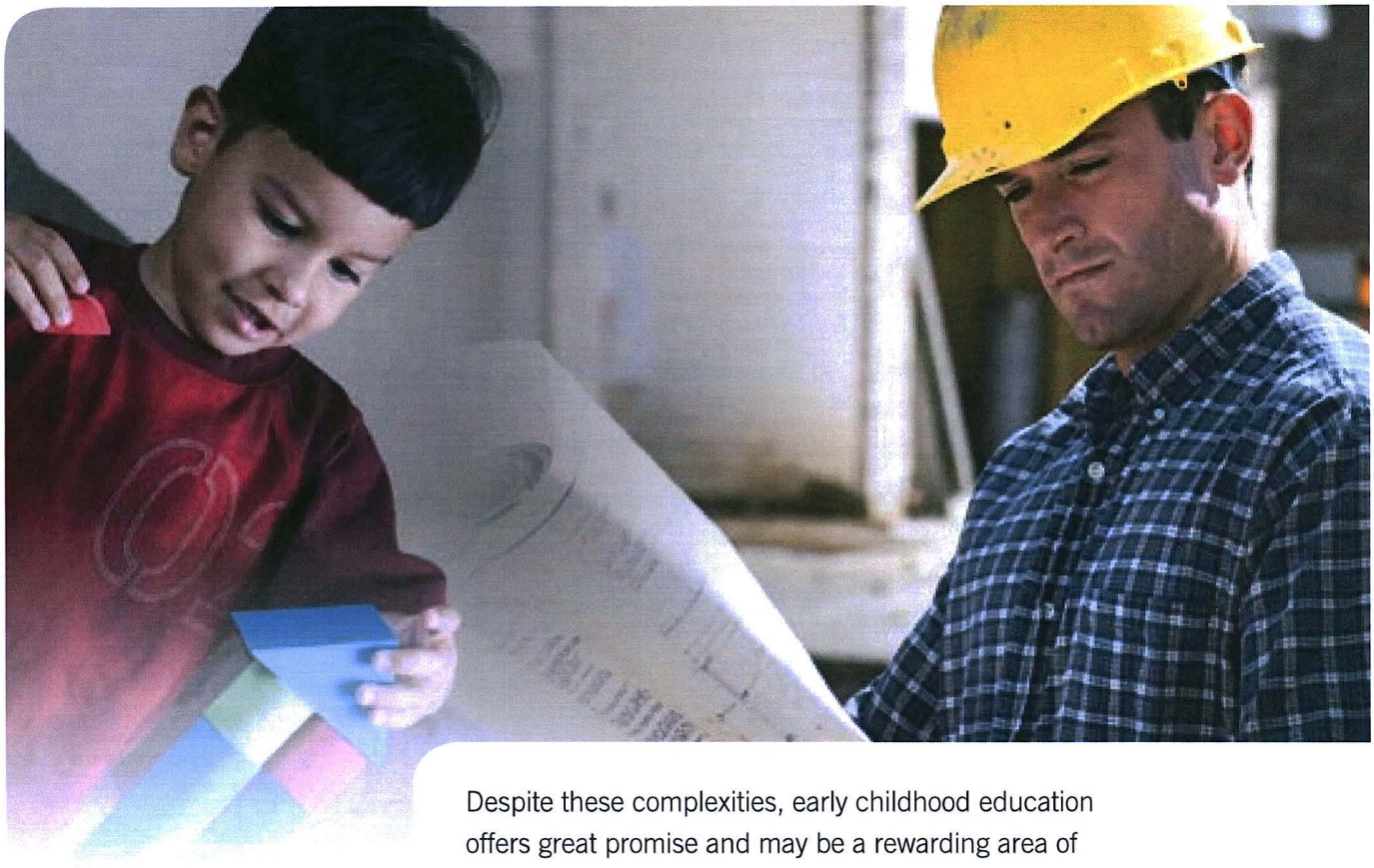
Program quality can vary widely across these sectors. High-quality early childhood education can be found in child care centers, family child care homes, Head Start programs, and public pre–K classrooms. Sadly, poor quality education exists in each of the programs as well. To encourage providers to offer the highest quality programs, nearly half of the states have begun to develop or implement Quality Rating and Improvement Systems (QRIS) that distinguish between providers who have met different quality standards, communicate these ratings to parents, and in the best cases provide supports for programs to reach and maintain high-quality levels. However, not all QRIS includes family child care, and most do not rate public school pre–K programs or Head Start grantees.

Who is eligible for these programs?

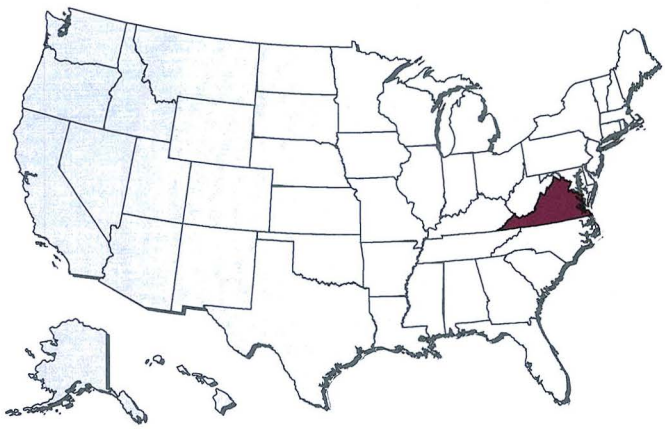
All programs are voluntary. Eight states (Florida, Georgia, Illinois, Iowa, Louisiana, Oklahoma, New York, and West Virginia) plus Washington, D.C., have committed to pre–K for all children. Some of the states have not yet put full funding in place, and initial resources generally target at-risk children. Thirty-two states offer pre–K only to at-risk children, using eligibility criteria such as parental income, homelessness or being an English language learner. Ten states do not provide state funding for pre–K.

All of the federal programs have eligibility requirements tied to income. Other programs may have additional requirements; for example, CCDBG and TANF require parents to be working or in an approved school or training program in order for their children to be eligible. Other factors may be taken into consideration for eligibility, such as a child's welfare status (e.g., foster care) or a parent's employment in the military or a first responder occupation (e.g., police or fire) for state-funded pre–K programs.

Promising Practices



Despite these complexities, early childhood education offers great promise and may be a rewarding area of influence for the business community. Every sector of society has a stake in the future of children and should be active partners in their success. To make critical improvements to our educational infrastructure, business must lend its experience and expertise—not just its money and goodwill. Several states, in collaboration with local and state chambers of commerce and businesses, have made great accomplishments.



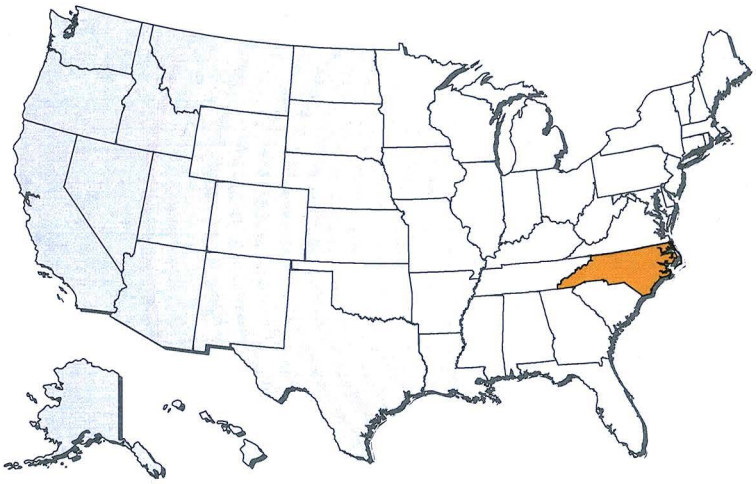
Virginia

The Greater Richmond Chamber of Commerce is a pre–K leader. Businesses, policymakers, health and human services agencies, communities at large, and child advocates have been working together to promote quality early childhood development programs, both public and private. Regarding early childhood education as an economic security and workforce development issue, business leaders from Chesterfield, Hanover, Henrico, and Richmond work in partnership with Success By 6, a United Way early learning initiative, to achieve five goals:

- Increase Virginia's financial investments in the Virginia Preschool Initiative, Healthy Families, and the Children's Health Involving Parents of Virginia program.
- Invest in early childhood education programs by influencing policy, promoting the benefits of participation in preschool programs, or contributing money.
- Invest in the child care industry and provide incentives to create and improve quality child care programs.
- Support child care workforce development by investing in scholarships and provide incentives for child care workers to upgrade their education and reduce turnover through salary increases.
- Understand the child care needs of employees, including the availability and affordability of child care and how child care affects employees and the workplace.[16]

The success of the partnership among these entities has culminated in the development of a rigorous regional plan outlining a comprehensive, high-quality early childhood education system built on best practices and public-private partnerships. This plan provides a template for other chambers interested in mobilizing the business community around preschool.

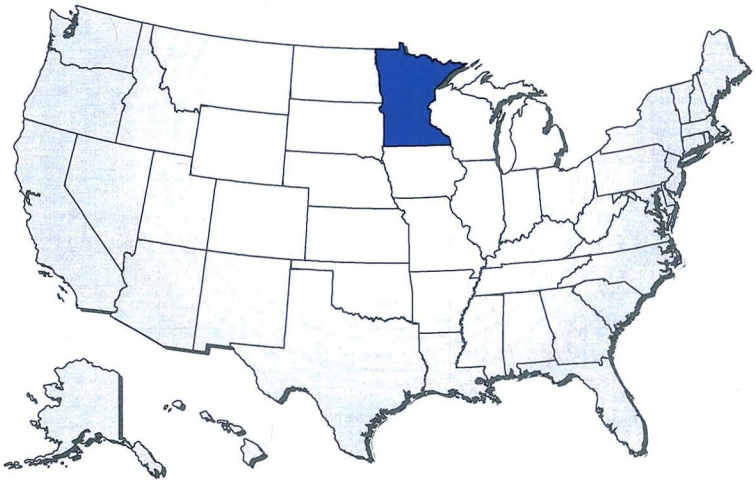
Promising Practices



North Carolina

North Carolina and its business community have a history of strong support for pre–K programs. In 1993, Gov. Jim Hunt created the Division of Child Development to manage and coordinate North Carolina's early childhood education and child care services. Smart Start, a public-private early childhood education initiative begun in 1993, provides early childhood funding to programs in each of the state's counties. With significant annual state and private contributions, the initiative has grown into a nationally recognized model noted for its sustainability, quality, structure, and breadth.[17] Smart Start funds are distributed through local partnerships and are used to improve quality and expand access and services for children from birth to age five and their families.

Hunt's successor, Gov. Mike Easley, initiated More at Four in 2001, a pre–K program funded by the state's lottery. Together, More at Four and Smart Start serve a large number of the state's disadvantaged four-year-olds. Because early childhood education is such a critical issue for the state, local chambers have joined the effort to promote it and garner additional public support. The Durham Chamber of Commerce, for example, has incorporated early childhood education into its economic development agenda.

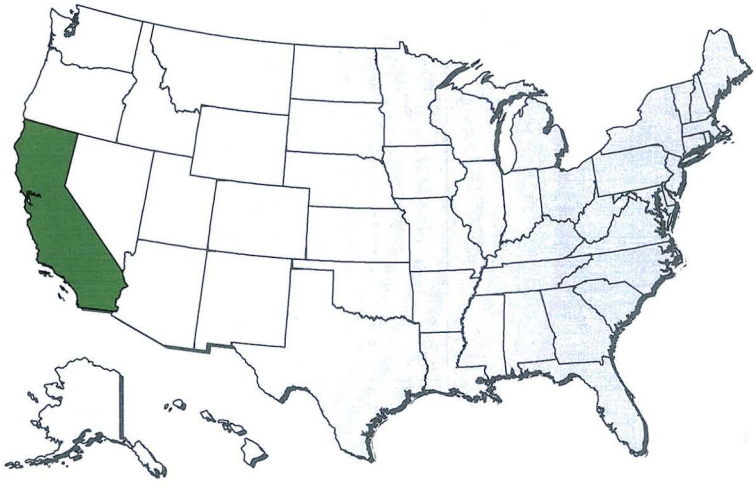


Minnesota

Minnesota's business community has taken an active lead in the state's investments in early learning. In 2003, business leaders launched Minnesota Business for Early Learning (MnBEL) to raise awareness about early childhood education, to identify and promote best practices in the workplace, and to impact public policy.[18] Today, MnBEL is a 200-member organization composed of high-level business executives from more than 100 companies and organizations across the state. MnBEL also works collaboratively with other business organizations, including the Minnesota Chamber of Commerce and a number of local chambers throughout the greater Minnesota area.

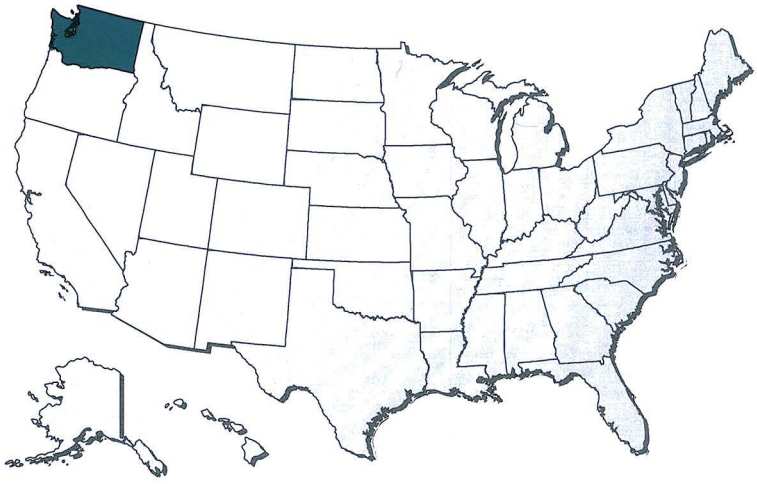
In 2005, MnBEL established the Minnesota Early Learning Foundation (MELF) to explore effective and cost-efficient ways to provide quality early learning services to children and engage families in the process. Based on research findings,[19] MELF launched two initiatives: Innovation Projects and Comprehensive Scalable Community Projects. MELF's standout project is the St. Paul Early Childhood Scholarship Program. This initiative pilots the market-based scholarship model developed by Art Rolnick and Rob Grunewald of the Federal Reserve Bank of Minneapolis in collaboration with the office of the mayor of the city of Saint Paul, the Federal Reserve Bank, and the Minnesota departments of Human Services and Education.[20] The Scholarship Program mentors parents and assists them in selecting high-quality programs for their children and provides two-year scholarships to low-income families of three- to five-year-olds to pay for these programs. As the first pilot of this model, the St. Paul Childhood Scholarship Program has gained national attention.

Promising Practices



California

In 2005, the Los Angeles Area Chamber of Commerce became the first organization to endorse a state ballot initiative to make pre–K programs available to every four-year-old in the state. Although the chamber had previously opposed similar measures and funding mechanisms to support voluntary pre–K programs, its board of directors decided that pre–K programs are a necessary investment in children, the workforce, and the state's education system overall. Although voters failed to pass the 2006 initiative, the Los Angeles chamber's position represented a shift in the business community's support for early learning public policy.



Washington State

The Greater Seattle Chamber of Commerce, with a major commitment to educational excellence, supports the Business Partnership for Early Learning (BPEL). BPEL is a coalition of area business leaders dedicated to closing the school readiness gap by investing in early learning for two- and three-year-olds. The Parent-Child Home Program works with low-income and minority parents and families who do not speak English as their primary language to address school readiness.

The program provides two years of home visits (two visits each week for 23 weeks), provides mentoring and coaching to parents, gives gifts of educational toys and books, and focuses on preliteracy skill development. Plan and Learn Groups, the second component of the BPEL program, offer families the opportunity to participate in informal weekly play-and-learn groups to enhance the development of children's noncognitive skills. Assessment data reveal that families who participate for the full two-year period show positive and significant gains in behaviors that are consistent with long-term outcomes.[21]

Conclusion

Early childhood education is not only a smart investment with positive returns, but it is the right thing to do. Our nation cannot afford the cost of inaction. In decades past, the United States proudly claimed premier international status as home to the best and brightest. Today's U.S. rankings, however, prove that we have a long way to go to reach the top of the list again.

With current early childhood education resource levels, too many kindergarteners will continue to begin school ill-prepared, language skills and achievement scores in math and reading will likely remain at mediocre levels, costs for interventions during the K–12 years and after will continue to rise, high school graduation rates and postsecondary degree completion rates will likely remain unchanged, and businesses will lack the necessary workforce to fill the jobs of the future.

The research is clear. Early learning opportunities for children from birth to age five have great impact on a child's development and build a strong foundation for learning and success later in life. Other countries know what we are just figuring out. High-quality pre–K programs can have a significant short- and long-term impact on children and society. Early learning interventions, followed by other high-quality learning experiences, maximize the benefits of early childhood programs. ICW believes that all children can benefit from early learning. This is why ICW recommends the following:

- Supporting and directing the expansion of high-quality programs to serve young children's development and learning, including state-funded pre–K delivered in a variety of settings such as schools, child care centers and homes, and Head Start agencies, with public funding targeted to low-income children first.
- Hiring qualified and effective early childhood educators with the knowledge and skills necessary to teach young children.
- Developing mixed provider delivery systems that support parental choice and take advantage of public, private, and nonprofit providers and their various settings.

- Integrating early learning and care systems for children from birth to age five.
- Making best use of existing resources by coordinating local, state, and federal efforts.
- Developing seamless transitions from the early childhood education system to the K–12 system to create a continuum of lifelong learning.
- Increasing the availability of high-quality, full-day, and/or year-round programs that support working parents where needed.
- Collecting data and conducting the research needed to identify best practices, assess system performance, and report these results to the general public.

In addition to these eight recommendations, ICW has compiled a list of action items to encourage greater business involvement in early childhood education. These actions outline state- and business-level activities in which business leaders may choose to engage. More information on action items, as well as a summary of the economic evidence behind investments in early childhood education can be found at **www.uschamber.com/icw** or **www.PartnershipforSuccess.org**.

Education in America: The Straight Facts

- There is not a single state where 50% or more of the children are proficient in reading or math. Only one-fifth of low-income and minority fourth and eighth graders are proficient in reading and math.[22]
- Only 70% of ninth graders graduate from high school within four years. Among blacks and Hispanics, this number decreases to just half.[23]
- Out of 30 industrialized nations, U.S. 15-year-olds rank 25th in math and 21st in science.[24]
- Seventy percent of U.S. eighth graders read below a proficient level.[25]
- Twenty percent of U.S. workers are functionally illiterate and innumerate.[26]

For more national statistics and international comparisons, see Appendix B.

Take Action

Six Actions a Businessperson Can Take

1. **Connect with your state early childhood advisory council.** The more you know about the goals and programs in your state, the easier it is for you to be a good partner.
2. **Familiarize yourself with the benefits of high-quality early learning programs.** Understanding the benefits of these programs and telling others about them will help create communities of children who are ready for school.
3. **Visit a high-quality early learning site.** Knowing what a high-quality program looks like and how it runs can help you be a better advocate and understand what it means to give young children a strong start.
4. **Adopt policies in your business that supports working parents.** When possible, implement programs and policies that help your employees become better informed and more engaged in their children's learning and development.
5. **Educate employees on the value of early childhood education.** Whether or not children from birth to age five are at home, they need the social, emotional, cognitive, and physical preparation that will help them be ready for kindergarten.
6. **Convey to policymakers your support for public investment in early education.** As someone who does not have a vested interest in the early childhood education field, business leaders make powerful messengers in support of public investment for effective programs. Communicate the evidence behind early education in a variety of forums—public meetings, personal communications, and through the media.

Six Actions the Business Community Can Take

1. **Support a mixed provider delivery system.** Whether early childhood programs are delivered by public, private, or nonprofit providers, communities should ensure that quality programs are available and convenient for the families who need them.
2. **Encourage early learning system and K–12 alignment.** Too often, children are in programs that do not adequately prepare them for success in kindergarten. Encouraging better alignment between early learning programs and kindergarten will help children learn to the best of their ability.
3. **Promote early learning policies as part of the economic development agenda.** Several studies have shown the return on investment that early learning programs can bring to communities. From the number of people employed to the supports provided to working parents to the long-term benefits for children who attend high-quality programs, early learning policies should be considered with the economic development plans.
4. **Encourage the inclusion of early childhood data in the statewide longitudinal data system.** As a nation, we need more information about which programs work, who benefits, and where we need new and better solutions. Tying early childhood data to statewide longitudinal data systems will help provide the information that policymakers and parents need.
5. **Encourage your state to adopt a Quality Rating Information System (QRIS).** Many states have worked to implement QRIS to distinguish between high-quality programs and programs that need improvement. Rating systems are one way to achieve transparency and accountability so that parents and policymakers know which programs meet quality standards.
6. **Encourage business organizations and networks to adopt a policy position in support of public investments for effective, high quality early education programs.** Many chambers have included such a statement in their public policy agenda. Ensure that your chamber, as well as other business networks such as Rotary, Kiwanis, and others, adopts this priority and follow up with policy makers.

Appendix A

The Critical Research on Early Learning

Over the past four decades, a tremendous library of scientific research on early learning has been assembled. Rigorous longitudinal studies have assessed the effects of high-quality pre–K programs on program participants. These studies identify the short- and long-term individual and societal benefits of quality pre–K programs and have been instrumental in calculating early childhood education return on investments. Additionally, brain research on the development of young children has documented the vast capacity for learning during the early years and underscores the importance of early learning opportunities for school readiness. Following is a review of pertinent brain research, as well as synopses of the three most highly regarded scientific research studies conducted on early learning programs.

Brain Research

Research in neuroscience, molecular biology, genetics, developmental psychology, and child development has taught scientists a great deal about neural circuitry, genetics, and the effects of early experiences on brain architecture. This research also documents the interdependence of cognitive, social, and emotional capacities. James Heckman, Nobel Laureate in Economic Sciences from the University of Chicago, has analyzed and synthesized research findings from well-documented studies conducted on both humans and animals. He concluded that "early learning begets later learning, and skill begets skill." In other words, knowledge and skill build upon themselves; the stronger the foundation, the greater the later attainment. Heckman explained the science behind his conclusions as follows.

Neural circuits, which influence our cognitive capacities, exist in a hierarchy and have sensitive periods during which they are most elastic and responsive to experiences. Lower level circuits, which perform more basic functions, close before higher level circuits and are most sensitive during the early (juvenile) years. Higher level circuits depend on quality information from lower level circuits to perform their tasks. Consequently, there is a progression or ordering of the sensitive periods. As a result, research suggests a causal relationship between early environments and experiences and both cognitive and noncognitive outcomes.

It is through these sensitive periods that neural circuits mature. Experiences during the sensitive periods activate the circuits and have the ability to change their architecture, chemistry, and gene expression and can impact the behaviors they influence. These changes then affect the ways that neural circuits process and respond to information. "Early mastery of a range of cognitive, social, and emotional competencies makes learning at later ages more efficient and therefore easier and more likely to continue."[27]

According to Dr. Jack Shonkoff, professor of child health and development and director of Harvard University's Center on the Developing Child, "Nurturing and responsive interactions build healthy brain architecture that provides a strong foundation for later learning, behavior, and health."[28] Shonkoff further explains that toxic stress, defined as extreme poverty in conjunction with continuous family chaos, physical or emotional abuse, chronic neglect, severe maternal depression, substance abuse, or family or community violence, interferes with the maturation of healthy neural circuits and affects the brain's architecture.[29] This, in turn, affects the brain's stress management systems. Both Heckman and Shonkoff conclude that these "impoverished early environments" have a negative influence on susceptible neural circuits during their sensitive periods and therefore reduce capacity.

Based on scientific research on the formation and development of the brain, Heckman, Shonkoff, and others firmly agree that early childhood education is likely more efficient and less costly than interventions later in life.

Rigorous Research Studies of Prekindergarten Participants

The High/Scope Perry Preschool Program, in operation from 1962 to 1967, provided high-quality pre–K programs to low-income three- and four-year olds in Ypsilanti, Michigan. The program offered 2.5 hours of prekindergarten each weekday for two academic school years, 1.5 hours of weekly home visits, meetings with parents, a small student-to-teacher ratio of 7:1, and high-quality teachers with training in early childhood development and special education.[30] Program participants have been tracked for more than 40 years, and the longitudinal data indicate that the program contributed significantly to their educational performance, economic productivity, and social responsibility.

Appendix A

Compared with a similar group of nonparticipating children who were randomly assigned into the control group, High/Scope Perry participants exhibited these characteristics:

- Higher scores on intelligence and language tests through age seven[31]
- Higher academic achievement scores at age 14[32]
- Fewer overall arrests and fewer drug-related arrests
- Higher monthly earnings
- Greater home ownership
- Greater ownership of a second car
- Less use of welfare assistance or other social services
- Higher graduation or GED attainment rates
- Longer marriages
- Fewer births out of wedlock[33]

The average program cost per participant was $15,166 (in year 2000 dollars), while the individual net benefits have been calculated at $243,722, a benefit-cost ratio of 17:1. The net benefits break down as follows:[34]

- Participants: 25% (primarily in the form of increased earnings)
- General public: 75%
  - Crime savings: 66%
  - Increased tax revenue: 5%
  - Education savings: 3%
  - Welfare savings: 1%

The Chicago Child-Parent Centers (CPC) are federally funded interventions for low-income minority children from high-poverty neighborhoods in Chicago. Created in 1967 and still in existence today, CPC offers a pre–K program, a kindergarten program, and at select sites an early elementary school program up to grade three. The pre–K program provides part-day services to three- and four-year olds for the academic school calendar, focuses on early reading and math skills, maintains a child-teacher ratio of 17:2, employs teachers with a bachelor's degree and certification in early childhood

education, pays teachers the equivalent of K–12 salaries, and makes a parent-resource teacher and school-community representative available at each location to provide referral services to families and conduct home visits.

The Chicago Longitudinal Study, which followed program participants through age 24, found that participants in the pre–K program for three- and four- year olds accomplished the following:

- Achieved higher reading and math scores through grade nine
- Academically outperformed nonparticipants
- Were less likely to be held back in school
- Were less likely to be placed in special education
- Experienced lower rates of official juvenile arrests

The longer a child participated in a CPC program, the greater his or her academic achievement. Children who participated for more than four years "yielded significantly higher math achievement, life skills competence, and lower rates of grade retention and special education placement."[35] The study also shows that male participants benefited in the areas of achievement and educational attainment, while female participants benefited more from participation in follow-on programs in reading and math. Additionally, children in the highest poverty neighborhoods benefited more than children in lower poverty neighborhoods in school achievement and educational attainment.

The benefit-cost ratio of this program was determined to be 7.14:1. The average program cost per participant is $6,692, while the average net benefit to participants is calculated at $41,067 (in 1998 dollars). The net benefits break down as follows:[36]

- Participants: 46% (primarily in the form of increased earnings)
- General public: 54%
  - Crime savings: 28%
  - Increased tax revenue: 15%
  - Education savings: 9%
  - Welfare savings: 1.6%

Appendix A

The Carolina Abecedarian Project[37] in Chapel Hill, North Carolina, offered high-quality child care and pre–K programs to low-income children from birth to age five. The program provided full-day (10-hour) services each weekday for 50 weeks a year, instituted a child-teacher ratio of 3:1 for infants and toddlers and 6:1 for pre–K and kindergarten-aged children, focused on language development, and offered medical and nutrition services to participants.[38] The study found that students in the program age 18 months through program completion scored significantly higher on intelligence tests than children who did not receive this care. Program participants were followed through age 21. Major findings include higher reading and math scores, higher intelligence test scores, enhanced language skills, lower grade retention rates, lower special education rates, and higher postsecondary education enrollment rates. Further, program participants were significantly more likely than nonparticipants to still be in school at age 21 (40% and 20%, respectively) and significantly more likely to have ever attended a four-year college (35% and 14%, respectively).[39]

The benefit-cost ratio of this program is calculated to be 2.5:1. The average cost per participant over a five-year period is $65,476, while the average net benefits are calculated at $94,802 (in 2002 dollars). The net benefits break down as follows:[40]

- Participants: 94%
- General public and the government: 6%

Current Studies In addition to these long-term studies, a variety of new reports have found that current state-funded pre–K programs are having an impact. For example, an evaluation of the New Mexico program from 2006 to 2008 found significant benefits in the areas of early language literacy, and math, with an estimated $5 return in New Mexico for every dollar invested by the state—an 18% return.[41] A study of New Jersey's Abbott Preschool Program found significant academic gains, as well as a 30% less grade retention in first grade among children who attended one year and up to 50% less for those who attended at both ages 3 and 4.[42]

Addressing the Critics

Although the research on these long-term studies is thorough, some critics question its applicability to current publicly funded programs or the ability to replicate results given current levels of funding. The Perry, Abecedarian, and CPC programs are known for being programs of the highest quality. They were well funded, employed highly credentialed and well-compensated teachers, maintained small student-teacher ratios, established meaningful relationships with parents, and provided health services and other supports to families.

While today's high-quality programs may not have the resources afforded to the Perry, Abecedarian, and CPC programs, many highly effective pre–K programs are positively impacting students today. Many serve as models and are being replicated or scaled up. There is growing evidence that state-funded programs are producing results. Although it will take time to ensure that every program is of the highest quality, there is no reason to lower our pre–K program expectations.

Some critics are also skeptical of the benefits of pre–K because of a misconception that some academic gains fade-out by third grade. What is actually happening in these studies is not that children are losing their skills, but that some children who didn't go to pre–K appear to catch up in terms of knowledge that can be measured. This may be due to those children receiving intensive (and expensive) remedial programs. On the other hand, the comparison children may have been different from the children in pre–K programs in terms of family income, education, or other factors that help them catch up. Also, while the IQ advantage that pre–K participants have over their peers can fade, the advantage they gain in specific academic skills in reading and math and in social and emotional development do not. Those skills are an even greater determinant of final outcomes, such as graduation, employment, and lawful behavior, than academic knowledge.[43] Another study in the United Kingdom, which offers pre–K to all children, found that benefits of high-quality programs last beyond kindergarten.[44]

There is some evidence that children who do not participate in pre–K programs can catch up, but it is unclear why. Research is under way to discover whether intensive (and expensive) remedial programs or family income and education are the reason. Additionally, the concept of fade-out neglects to take into account the quality of elementary schools that pre–K program participants attend. It is highly possible that fade-out is more closely associated with elementary school quality than with early childhood education quality, thus making the case for elementary school improvement and the alignment of early childhood education with the early elementary grades.

Appendix B

The Straight Facts

To put the early childhood education debate into perspective, the following statistics give an idea of where the country stands on measures of school readiness, academic and personal success, well-being, and workforce readiness and participation. These statistics provide the big picture of education in America and highlight the skills gap among students. While the K–12 and postsecondary education systems need significant improvement to better serve all students, starting with high-quality early learning and pre–K programs can help build a strong foundation for learning and long-term success. However, great strides in program expansion and quality improvements are necessary if we are to ensure that every child has the opportunity to participate in highly effective early learning programs.

National Employer Statistics

- Ninety percent of the fastest-growing jobs in America require some postsecondary education.
- Forty percent of high school graduates cannot read at an eighth grade level.[45]
- Twenty percent of U.S. workers are functionally illiterate and innumerate.[46]

International Comparisons

- U.S. 15-year-olds rank 25th out of 30 industrialized nations in math.[47]
- U.S. 15-year-olds rank 21st out of 30 industrialized nations in science.[48]
- The United States ranks 20th out of 28 Organisation for Economic Co-operation and Development (OECD) countries in high school graduation rates.[49]
- The United States ranks 15th of 27 OECD countries in college graduation.[50]
- The United States ranks 2nd out of 27 countries in the percentage of students (more than 40%) who enter college and leave without earning a degree. Fewer than 60% of U.S. students complete their undergraduate education.[51]

K–12 Academic Proficiency

- There is not a single state where 50% or more of the children are proficient in reading or math.
- Only 20%, of low-income and minority fourth and eighth graders are proficient in reading and math.
- Only 32% of fourth graders and 29% of eighth graders are proficient in reading.[52]
- Only 39% of fourth graders and 31% of eighth graders are proficient in math.[53]
- Average per pupil spending for K–12 education is $8,973 (adjusted for regional cost differences).[54]

High School Graduation, College Readiness, and College Completion

- Only 70% of ninth graders graduate from high school within four years.[55]
- Only half of Hispanic and black ninth graders graduate from high school within four years.[56]
- An estimated 53% of all college students take at least one remedial English or math course during their college experience.[57]
- More than half (54%) of college freshman graduate with a bachelor's degree in six years.[58]

Child Well-being

- A total of 4.2 million children under age five, or 21% of all children in the United States, live below the poverty line.[59]
- Low-income children hear 3 million words a year, middle-income children hear 6 million, and upper income children hear 11 million.[60]
- Thirty-five percent of children in single-parent homes have a mother who is a high school dropout.[61]
- A 2007 UNICEF report found that the United States is in the bottom third of rankings in many of the six dimensions of child well-being (i.e. material well-being, health and safety, educational well-being, family and peer relationships, behaviors and risks, and subjective well-being).[62]
- For children who move three or more times between the ages of four and seven, the probability of their high school graduation decreases 13% below the baseline average of 82%.[63]
- Mothers with less schooling provide less cognitive and emotional stimulation to their children.[64]

Early Learning Workforce

- It is estimated that only 30% of the nearly 400,000 early learning teachers and administrators in the United States have a bachelor's degree in any field. And few teachers have a teaching credential, expertise, or specialized training in early care and education[66]
- The Child Development Associate (CDA) National Credentialing Program supports training and professional development for the early childhood workforce and produces 15,000 new CDA credentialed teachers annually. The Council for Professional Recognition administers the CDA credentialing program. More information is available at http://www.cdacouncil.org/ab_his.htm.
- One-third (1,349) of the institutions of higher education that offer an associate's, bachelor's, master's, or doctoral degree in any field offer an early childhood teacher preparation degree.[67]
- Pre–K teachers earn an average of $21,000 annually, compared with elementary school teachers who earn an average of $42,000 annually.[68]

Appendix B

Pre–K Funding[69]

- Nationally, states spend an average of $4,061 per child enrolled in pre–K programs.
- State spending on pre–K programs ranges from $1,686 per pupil in Maine to $10,989 per pupil in New Jersey (these amounts exclude local spending).
- Nationally, Head Start expenditures (which cover comprehensive services for participants) average $7,909 per pupil.
- Nationally, families pay 60% of early care and learning costs for children under age five; local, state, and federal governments pay 39% of the costs; the private sector (businesses and philanthropies) pays the remaining 1%.[70]

Early Learning Return on Investment

- Disadvantaged children are associated with a higher pre–K program rate of return than their more advantaged peers.
- Pre–K program benefit-cost ratios have been calculated to range from 2.5:1 to the best case scenario of 17:1.[71]
- Arthur J. Rolnick, then-senior vice president, and Robert Grunewald, associate economist, of the Federal Reserve Bank of Minneapolis calculated an annual, inflation-adjusted rate of return of 16% for pre–K programs.[72]
- James Heckman, Nobel Laureate in Economic Sciences, finds that "the returns to human capital investments are greatest for the young for two reasons:(1) skill begets skill, and (2) younger persons have a longer horizon over which to recoup the fruits of their investments."[73]
- Interventions later in life, including job training, adult literacy, prisoner rehabilitation, and education programs for disadvantaged adults (although beneficial), yield low economic returns compared to early interventions, such as pre–K programs.[74]
- The performance of children benefiting from early interventions is better than that of children who benefited from later interventions, according to multiple studies.[75]

Acknowledgments

The Institute for a Competitive Workforce would like to thank the following people who made this paper possible: primary researcher and writer Elena Rocha; advisors Sara Watson, Elanna Yalow, and Nina Rees; and reviewers Cornelia Grumman, Eric Karolak, Craig Pascal, and Joan Walters.

The Institute for a Competitive Workforce would like to thank The Pew Charitable Trusts, Knowledge Universe, and PNC Bank for their generous support of the Early Childhood Education Initiative. The opinions expressed are those of the authors and do not necessarily reflect those of the funders.

Endnotes

1 "Summary of Essential Findings: A Science-Based Framework for Early Childhood Policy," Harvard University Center on the Developing Child, 2007.

2 Rob Grunewald and Arthur J. Rolnick, "Early Childhood Development: Economic Development with a High Public Return," FedGazette (March 2003). Accessed April 12, 2010 at http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=3832.

3 The Effects of Oklahoma's University Pre-K Program on School Readiness: An Executive Summary, 2004, by William Gormley, Jr., et al, Center for Research on Children in the United States, Georgetown University.

4 Albert Wat, "The Pre-K Pinch: Early Education and the Middle Class," Pre-K Now, November 2008.

5 Maria Shriver, Heather Boushey, and Ann O'Leary, The Shriver Report: A Woman's Nation Changes Everything, Center for American Progress, 2009.

6 U.S. Census Bureau, 2005–2007 American Community Survey. Available at: http://factfinder.census.gov/servlet/ACSSAFFFacts?_submenuId=factsheet_1&_sse=on.

7 U.S. Census Bureau, "Population Estimates," May 2006. Estimates are based on the 2005 U.S. population. See also http://www.washingtonpost.com/wp-dyn/content/article/2006/05/09/AR2006050901841.html.

8 U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2007. See table POV01 at http://pubdb3.census.gov/macro/032008/pov/new01_100_01.htm.

9 "Child Care in America," National Association of Child Care Resource & Referral Agencies. Available at http://www.kaccrra.org/PDFs/EMPpdfs/CCinAmericaReport_Naccrra.pdf.

10 "Working Mothers Need Child Care," National Association of Child Care Resources & Referral Agencies. Available at http://www.naccrra.org/policy/background_issues/working_mothers.php.

11 Karen Schulman and W. Steven Barnett, "The Benefits of Prekindergarten for Middle-Income Children," National Institute for Early Education Research, March 2005. Available at http://nieer.org/resources/policyreports/report3.pdf.

12 Albert Wat, "The Pre-K Pinch: Early Education and the Middle Class," Pre-K Now, November 2008.

13 Diana Stone, "Funding the Future: States' Approaches to Pre-K Finance," Pre-K Now, February 2006.

14 Since 2005, there has been a $2.3 billion increase in state pre-K program spending and the percentage of four-year-old children served has increased from 14% in the 2001–02 school year to 24% in the 2007–08 school year. Currently, 40 states have state-funded pre-K programs, and Arkansas and Rhode Island have pilot pre-K programs. Florida, Georgia,

and Oklahoma have universal access subject to funding for all four-year-olds; these state programs now serve more than one million children. A number of other states, including Illinois, Iowa, Louisiana, New York, and West Virginia, are working toward statewide voluntary access programs. The remaining 10 states (Hawaii, Idaho, Indiana, Mississippi, Montana, New Hampshire, North Dakota, South Dakota, Utah, and Wyoming) do not offer state-funded pre-K programs. Of these states, several have created early learning councils or commissions, planned pilot programs, or support Head Start and other early care and learning programs.

15 Anne Mitchell, Louise Stoney, and Harriet Dichter, Financing Child Care in the United States: An Expanded Catalog of Current Strategies, 2001 Edition, 2001.

16 "Early Childhood Development Directly Affects Economic Vitality," Greater Richmond Chamber of Commerce.

17 Stone, "Funding the Future."

18 Minnesota Business for Early Learning Web site, http://www.mnbel.org.

19 "Early Childhood Development: Economic Development with a High Public Return," Federal Reserve Bank of Minneapolis, March 2003; and "Winning Start: A Plan for Investing Wisely in Early Childhood Development," Minnesota School Readiness Business Advisory Council Policy Task Force, December 2004.

20 "Minnesota Early Learning Foundation Annual Report," Minnesota Early Learning Foundations, April 2008.

21 Organizational Research Services, "Parent-Child Home Program/Play & Learn Group Demonstration Project, Summary of Evaluation Findings," The Seattle Foundation, October 2008. Available at http://www.seattlefoundation.org/newsarticle.cfm?articleID=10022624&PTSidebarOptID=19793&returnTo=page28211.cfm&returnToname=Foundation%20Materials&SiteID=1851&pageid=28211&SIDEPAGEID=28211. See also the "2009 Business Partnership for Early Learning Annual Report," The Seattle Foundation, 2009, at http://www.seattlefoundation.org/newsarticle.cfm?articleID=10022623&PTSidebarOptID=19793&returnTo=page28211.cfm&returnToname=Foundation%20Materials&SiteID=1851&pageid=28211&SIDEPAGEID=28211.

22 Based on 2007 National Assessment of Educational Progress (NAEP) data from the U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, and NAEP Data Explorer.

23 Jay P. Greene and Marcus Winters, "Public High School Graduation and College-Readiness Rates: 1991–2002," The Manhattan Institute, February 2005.

24 Organisation for Economic Co-operation and Development (OECD). PISA 2006: Science Competencies for Tomorrow's World, Executive Summary (Paris, France: OECD Publications, 2007), Tables 2 and 5. Available at http://www.oecd.org/dataoecd/15/13/39725224.pdf.

Endnotes

25 Eighth-grade NAEP reading test results.

26 James J. Heckman and Kimitriy V. Masterov, "The Productivity Argument for Investing in Young Children, Executive Summary," University of Chicago, October 2004.

27 James Heckman, "The Technology and Neuroscience of Skill Formation," PowerPoint presentation, Invest in Kids Working Group, Center for Economic Development, Partnership for America's Economic Success (July 17, 2006).

28 Jack P. Shonkoff, "The Science of Early Childhood Development, Closing the Gap Between What We Know and What We Do," PowerPoint presentation, Harvard University (November 30, 2005).

29 National Scientific Council on the Developing Child, "The Science of Early Childhood Development, Closing the Gap Between What We Know and What We Do," Center on the Developing Child, Harvard University, January 2007. Available at http://www.developingchild.net/pubs/persp/pdf/Science_Early_Childhood_Development.pdf.

30 Albert Wat, "Dollars and Sense: A Review of Economic Analysis of Pre-K," Pre-K Now, May 2007.

31 Ibid.

32 Ibid.

33 Significant Benefits: The High/Scope Perry Preschool Project, High/Scope Educational Research Foundation 2005. Available at www.highscope.org/Research/PerryProject/perrymain.htm.

34 Schweinhart, "The High/Scope Perry Preschool Study Through Age 40, Ypsilanti, MI." For more information, see Wat, "Dollars and Sense."

35 Chicago Longitudinal Study Newsletter, Waisman Center, University of Wisconsin-Madison, August 2000. Available at http://www.waisman.wisc.edu/cls/NEWSLETN.PDF.

36 Reynolds, Temple, Robertson, and Mann, "Age 21 Cost-Benefit Analysis of the Title I Chicago Child-Parent Centers." For more information, see Wat, "Dollars and Sense."

37 Early Learning, Later Successes: The Abecedarian Study, Executive Summary, The Frank Porter Graham Child Development Institute, The University of North Carolina at Chapel Hill. Available at http://www.fpg.unc.edu/~abc/summary.cfm.

38 Wat, "Dollars and Sense."

39 The Carolina Abecedarian Project, "Age 21 Follow-up, Executive Summary, Early Learning, Later Success: The Abecedarian Study," FPG Child Development Institute, University of North Carolina at Chapel Hill [[date?]]. Available at http://www.fpg.unc.edu/~abc/#summary_follow_up.

40 Barnett and Masse, "Comparative Benefit-Cost Analysis of the Abecedarian Program and Its Policy Implications." For more, see Wat, "Dollars and Sense."

41 The New Mexico Pre-k Evaluation, 2009, by Jason Hustedt et al, National Institute for Early Education Research at Rutgers University. http://nieer.org/pdf/new-mexico-initial-4-years.pdf.

42 Ellen Frede et al., "The Apples Blossom: Abbott Preschool Program Longitudinal Effects Study (APPLES) Preliminary Results Through 2nd Grade Interim Report," (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2009).

43 Personal communication, Prof. Steve Barnett, 4/25/2010.

44 Preschool Influences on Mathematics Achievement, Science, 321, 2008, by Edward C. Melhuish et al.

45 Heckman and Masterov, "The Productivity Argument for Investing in Young Children: Executive Summary." .

46 Ibid.

47 OECD, PISA 2006: Science Competencies for Tomorrow's World, Executive Summary, Tables 2 and 5.

48 Ibid.

49 OECD, Education at Glance 2008 (Paris: OECD Publications, 2008), 52. Rates are below the average for the 19 European Union countries and the OECD average, and represent a rate that has been stagnant over the last decade.

50 OECD, Education at Glance 2008, 75.

51 Ibid., pp. 92 and 94.

52 "The Nation's Report Card, Reading 2007, National Assessment of Educational Progress at Grades 4 and 8," U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2007.

53 "The Nation's Report Card, Mathematics 2007, National Assessment of Educational Progress at Grades 4 and 8," U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2007.

54 "Quality Counts 2008," Editorial Projects in Education, January 2008.

55 Jay P. Greene and Marcus Winters, "Public High School Graduation and College-Readiness Rates: 1991–2002," The Manhattan Institute, February 2005.

56 Greene and Winters, "Public High School Graduation and College-Readiness Rates."

57 American Diploma Project, "Ready or Not: Creating a High School Diploma That Counts," Achieve Inc., 2004. Available at http://www.achieve.org/node/552.

58 "Cracks in the Education Pipeline: A Business Leader's Guide to Higher Education Reform," Committee for Economic Development, May 2005. Available at http://www.ced.org/docs/report/report_highered.pdf.

59 U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement 2007. See table POV01, available at http://pubdb3.census.gov/macro/032008/pov/new01_100_01.htm.

60 B. Hart and T. R. Risely, "Meaningful Differences in the Everyday Experience of Young American Children," Paul H. Brooks Publishing Company 1995.

Endnotes

61 James Heckman and Dmitriy V. Masterov, "The Productivity Argument for Investing in Young Children," PowerPoint presentation, December 3, 2004.

62 "Child Poverty in Perspective: An Overview of Child Well-being in Rich Countries," United Nations Children's Fund, 2007. Available at http://www.unicef-irc.org/presscentre/presskit/reportcard7/rc7_eng.pdf.

63 "The Hidden Cost of the Housing Crisis: The Impact of Housing on Young Children's Odds of Success," Partnership for America's Economic Success, Issue Brief #7, July 2008.

64 Heckman and Masterov, "The Productivity Argument for Investing in Young Children."

65 Stephen Herzenberg, Mark Price, and David Bradley, Losing Ground in Early Childhood Education: Declining Workforce Qualifications in an Expanding Industry, 1979–2004, The Economic Policy Institute, 2005. Available at http://www.earlychildhoodworkforce.com/losingground/ecepdf/losing_ground-full_text.pdf.

66 Valora Washington, "Role, Relevance, Reinvention: Higher Education in the Field of Early Care and Education," Aspire Institute, The CAYL Institute, The Council for Professional Recognition, National Black Child Development Institute, National Head Start Association, National Louis University, Pre-K Now, and Wheelock College, September 2008.

67 Ibid.

68 "Facts and Figures: The Promise of Preschool," The National Institute for Early Education Research. Available at http://nieer.org/docs/?DocID=42. In addition to pay disparities, pre-K program teachers lack the benefits and career ladder opportunities afforded to K–12 teachers.

69 W. Steven Barnett, Dale J. Epstein, Allison H. Friedman, Judi Stevenson Boyd, and Jason T. Hustedt, "The State of Preschool 2008," The National Institute for Early Education Research, 2008.

70 Mitchell, Stoney, and Dichter, Financing Child Care in the United States.

71 Wat, "Dollars and Sense."

72 For low-income children in high-quality preschools.

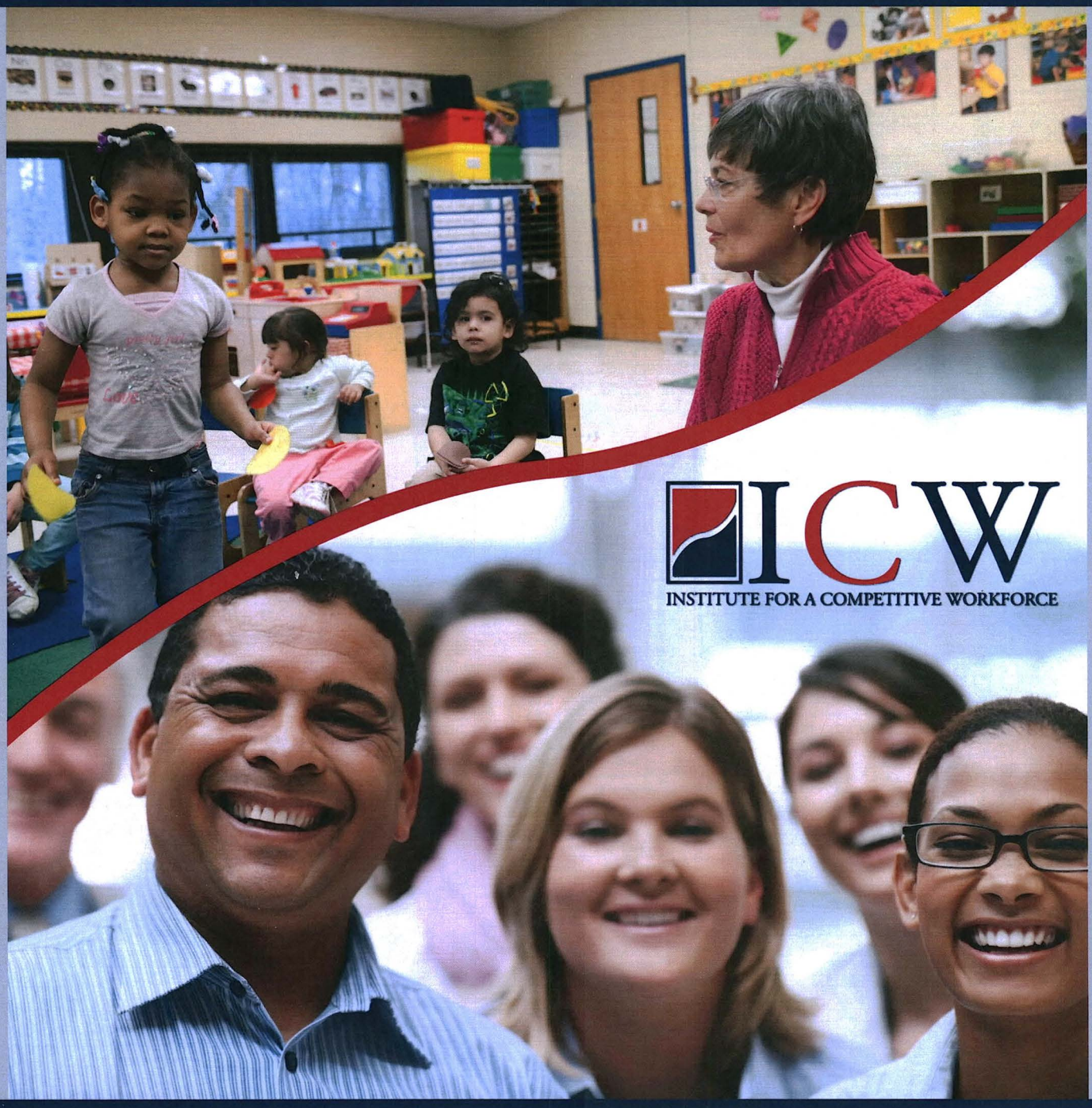
73 J. L. Heckman, Invest in the Very Young (Chicago: Ounce of Prevention Fund, 2000).

74 Heckman, "The Technology and Neuroscience of Skill Formation."

75 Ibid.

U.S. Chamber of Commerce
Institute for a Competitive Workforce
1615 H Street, NW
Washington, DC 20062
Phone: 202-463-5525 Fax: 202-887-3424
www.uschamber.com/icw

Starting Smart & Finishing Strong

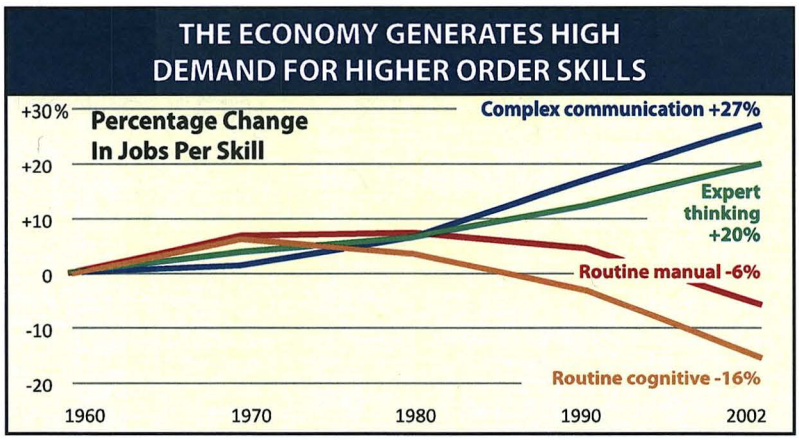


ICW
INSTITUTE FOR A COMPETITIVE WORKFORCE

Fixing the Cracks in America's Workforce Pipeline Through Investments in Early Childhood Development

Business has a clear economic stake in the future of our nation's children and should be an active partner in promoting policies that help young children succeed.

In a survey of U.S. Chamber of Commerce members, nine out of ten agreed that, to ensure the United States remains competitive with other high-achieving countries, we must raise academic expectations and performance.[1] Right now, 80 to 90 million American adults, about half of the workforce, do not have the basic education and communication skills required to acquire and advance in jobs.[2] To compete and win in this economy, we need a well-educated, team-capable and job-ready workforce. Investments in young children set tomorrow's employees on a trajectory to meet these demands.



SOURCE: David Autor, Frank Levy and Richard J. Murnane, "The Skill Content of Recent Technical Change: An Empirical Investigation." *Quarterly Journal of Economics*, 118, 4 (November 2003) pp. 1279-1334. Data updated to 2002 by David Autor.

"Univision believes business should actively promote the value of investing in early education to prepare the country's 21st century workforce. Our education campaign 'Es El Momento' emphasizes the benefits of early education for young children to help them succeed in school and to help strengthen our economy."

Maelia Macin
Vice President & General Manager
Univision Communications, Inc.

Developing a Skilled, High-Performing Workforce

Test scores indicate that U.S. students are not on pace to become the workers we need.

- The majority of 4th or 8th graders are not proficient in both math and reading in any state.[3]
- Most children reading well below grade level at the end of 4th grade will not graduate from high school.[4]
- A 2006 survey of students in 30 developed countries found that U.S. 15-year-olds ranked 25th in math and 21st in science.[5]
- Only 25 percent of 17- to 24-year-olds would qualify to serve in the U.S. military. The rest cannot meet the physical, behavioral or educational standards for service—standards that are similar to those many industries use in hiring.[6]
- 20 percent of U.S. workers are functionally illiterate.[7]

Reversing these trends requires starting early. The foundation of skills required to be successful in school, work and life is built in the youngest years—birth to age five.

Young children's brains develop 700 synapses—neural connections that transmit information and support learning—every second.[8]

Yet, too often we do not give our young children the early educational, health (including dental health) and social support they need.

"Quality pre-k is an important early childhood education and development issue, but it is also a critical workforce issue. That is why our Chamber supports these investments. We know that the return on today's investments in pre-k will be a stronger workforce in the future."

Dave Adkisson
President & CEO
Kentucky Chamber of Commerce

Early Action Pays Off Today and Tomorrow

As in business, investing early in our workforce pipeline ensures the best outcomes.

We can reverse current workforce and education trends. The research is clear: High-quality early childhood programs can have a significant short- and long-term impact on children's lifelong success and on our economy.

The savings start immediately. Giving young children a good start reduces health problems and grade retention and special education costs in the first few years of school.

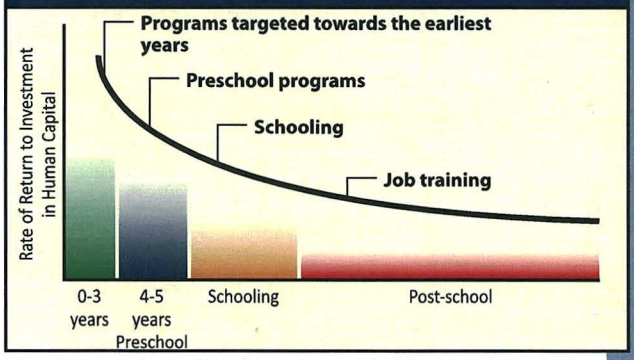
In addition, because early childhood spending tends to be local, and child care and pre-kindergarten professionals generally spend rather than save most of their earnings, states generate roughly $2 in new local spending for each federal child care dollar spent.[9]

And benefits accrue over the long term. One study found that investing just $6,692 in quality pre-k for at-risk children substantially improved outcomes such as **education levels, home ownership and salary** while reducing negative behaviors, including substance abuse and crime. The net result was a lifetime societal benefit of up to $69,937—an ROI of greater than 10:1.[10]

For these reasons the Institute for a Competitive Workforce (ICW), a 501(c)3 nonprofit affiliate of the U.S. Chamber of Commerce, recommends:

- Supporting and directing the expansion of **high-quality programs** to serve young children's development and learning, including state-funded pre-k delivered in a variety of settings such as schools, child care centers and homes and Head Start agencies, with public funding targeted to low-income children first.
- Ensuring that early childhood educators have the **skills and knowledge** necessary to do the job right.
- **Supporting parental choice** by developing a mix of public, private and nonprofit programs that can meet a variety of needs.
- Integrating the delivery of **health and education services** to children from before birth to age five.
- Making the **best use of existing resources** by coordinating local, state and federal efforts.

RATES OF RETURN TO HUMAN CAPITAL INVESTMENT AT DIFFERENT AGES



SOURCE: J.J. Heckman, "Skill formation and the economics of investing in disadvantaged children." *Science*, 312(5782):1900-2, (June 2006).

- **Integrating and aligning** early learning programs with elementary and secondary schools to create a seamless and efficient education system.
- Increasing the availability of **quality child care programs** that cover parents' full work day.
- Building an **evidence-based case** for change by collecting data and conducting the research needed to identify best practices, assess systems performance and report results to the public.

"Investing in the earliest years of life is the first step in preparing a workforce that can meet the demands of the 21st century."

Ann Cramer
Director, Americas
IBM Corporate Citizenship and Corporate Affairs

"Alabama has one of the nation's highest quality pre-k programs. The Business Council has made keeping it that way a top priority. If we want to ensure a bright future for our companies, one of the most important investments the business community can make is in advocating for policies that fix the cracks in our workforce pipeline. That means starting at the very beginning with high-quality early childhood development programs. When children start life off on the right foot, our entire society reaps the rewards."

William J. Canary
President & CEO
Business Council of Alabama

Take Action

Join ICW, the Partnership for America's Economic Success at the Pew Center on the States and national business organizations, such as the Manufacturing Institute and the Society for Human Resource Management, in advocating for policies that maximize returns on investments in early childhood education.

Four Steps Business Leaders Can Take toward a More Productive Workforce and a Stronger Economy

1. **Spread the Word**: Host events, talk to your employees, start a blog, write an article and share information with other business leaders.
2. **Make the Economic Case**: Encourage business organizations to support early learning as part of their policy agendas.
3. **Take a Stand**: Tell policy makers that the future of your business and our communities requires investments in quality early childhood development to fix our failing workforce pipeline now.
4. **Lead by Example**: Adopt policies in your business that support working families.

Institute for a Competitive Workforce
Tel: 202-463-5525
e-mail: ICW@uschamber.com
web: icw.uschamber.com

Partnership for America's Economic Success
Tel: 202-552-2000
e-mail: info@partnershipforsuccess.org
web: www.PartnershipforSuccess.org

1 Education Reform: Insight into the Business Community's Views About the U.S. Education System. (2006). Retrieved from http://ww.uschamber.com/NR/rdonlyres/enau5qwsrn2qsip44krtoyjy4dofbndfxxv4gkubcuivonttrh5wn4tk33qlbldkftqxajsaitnuyojgb6b4dgjih56h/061213nclb_exec_report.pdf

2 Reach Higher, America: Overcoming Crisis in the U.S. Workforce. (2008). Report of the National Commission Adult Literacy. Council for Advancement of Adult Literacy.

3 The National Assessment of Educational Progress. (2009). The nation's report card. Retrieved from http://nces.ed.gov/programs/coe/2010/section2/table-mat-3.asp and http://nces.ed.gov/programs/coe/2010/section2/table-rd2-3.asp.

4 Madden, N. A., Slavin, R. E., Karweit, N. L., Dolan, L. J., & Wasik, B. A. (1993). Success for all: Longitudinal effects of a restructuring program for inner-city elementary schools. American Educational Research Journal, 30, 123-148.

5 Baldi, S., Jin, Y., Skemer, M., Green, P. J., & Herget, D. (2007). Highlights from PISA 2006: Performance of U.S. 15-year-old students in science and mathematics literacy in an international context [NCES 2008–016]. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

6 Mission Readiness: Military Leaders for Kids. (2009). Ready, willing and unable to serve. Retrieved from http://cdn.missionreadiness.org/NATEE1109.pdf

7 Heckman, J. J., & Masterov, D. V. (2004, October). The productivity argument for investing in young children [Partnership for America's Economic Success/Invest in Kids Working Group Paper]. Retrieved from http://jenni.uchicago.edu/Invest/FILES/dugger_2004-12-02_dvm.pdf.

8 Shonkoff, J. (2009, April 27). The science of early childhood development and the foundations of prosperity. PowerPoint presented at the Pennsylvania Business Leader Summit on Early Childhood Investment, Harrisburg, PA.

9 Warner, M. (2009). Child care multipliers: Stimulus for the states. Ithaca, NY: Cornell Cooperative Extension.

10 Reynolds, A., Temple, J., Robertson, D., & Mann, E. (2002). Age 21 cost-benefit analysis of the Title 1 Chicago child-parent centers. Educational Evaluation and Policy Analysis, 24, 267-303.

Policy Analysis

CATO INSTITUTE

October 15, 2014 | Number 760

The Evidence on Universal Preschool

Are Benefits Worth the Cost?

By David J. Armor

EXECUTIVE SUMMARY

Calls for universal preschool programs have become commonplace, reinforced by President Obama's call for "high-quality preschool for all" in 2013. Any program that could cost state and federal taxpayers $50 billion per year warrants a closer look at the evidence on its effectiveness.

This report reviews the major evaluations of preschool programs, including both traditional programs such as Head Start and those designated as "high quality." These evaluations do not paint a generally positive picture. The most methodologically rigorous evaluations find that the academic benefits of preschool programs are quite modest, and these gains fade after children enter elementary school. This is the case for Head Start, Early Head Start, and also for the "high-quality" Tennessee preschool program. Meanwhile, most contemporary "high-quality" preschool programs have been evaluated using a flawed, non-experimental methodology called Regression Discontinuity Design (RDD). Existing RDD studies fail to account for children who drop out of treatment groups, thereby biasing outcomes upwards. Further, by their nature RDD evaluations cannot assess the fadeout problem because all children in the study, both treatment and control, have taken preschool. These problems affect the evaluation of the Tulsa, Oklahoma, program, perhaps the most frequently cited contemporary "high-quality" program.

Two "high-quality" programs have been evaluated using a rigorous experimental design, and have been shown to have significant academic and social benefits, including long-term benefits. These are the Abecedarian and Perry Preschool programs. However, using these two studies as the basis for policy is problematic for several reasons: the groups studied were very small, they came from single communities several decades ago, and both programs were far more intensive than the programs being contemplated today.

Before policymakers consider huge expenditures to expand preschool, especially by making it universal, much more research is needed to demonstrate true effectiveness.

David Armor is professor emeritus of public policy, George Mason University, and author of *Maximizing Intelligence*, Transaction Publishers, 2003.

"The most rigorous studies of contemporary preschool programs show no lasting gains for preschool students after they enter regular grades."

INTRODUCTION

President Obama's 2013 proposal of "high-quality preschool for all," with $75 billion in federal startup money, inspired similar calls for universal preschool by state and local leaders throughout the country. New York City mayor Bill de Blasio ran on a universal pre-K platform, funded by "taxing the rich," while state governor Andrew Cuomo has also endorsed universal pre-K funded from existing tax monies. Preschool has become a major issue in the gubernatorial races in Texas and Ohio, with both Democratic candidates endorsing universal pre-K. The California legislature is considering a proposal spearheaded by Senate president Darrell Steinberg to expand its coverage of "transitional kindergarten" to all four-year-olds, thereby becoming a universal pre-K program.

Expanding public schooling to cover all four-year-olds would require a significant increase in state and federal spending. Even if Congress authorized the full Obama proposal, which covers a 10-year period, total expenditures for the states would be far higher. With U.S. expenditures for public schooling from all sources exceeding $12,000 per student, and with approximately 4 million students enrolled in public kindergartens, states could be spending nearly $50 billion per year to fund universal preschool, assuming that spending levels for preschool are similar to those for higher grades.

With such large proposed expenditures, the benefits of pre-K should be clear and definitive. Yet existing research on preschool programs does not paint a uniformly positive picture, despite what supporters claim. Indeed, the most rigorous studies of contemporary preschool programs, particularly the federal Head Start program and a Tennessee universal program, show no lasting gains for preschool students after they enter regular grades. According to these studies, by the time children reach the early elementary grades, the average preschool student has learned no more than children who were not in preschool.

How are these results reconciled with proclamations, including some from the White House, about the dramatic benefits of preschool? Are universal preschool advocates simply ignoring scientific evidence? There is a body of research that finds educational benefits from preschool programs, but these studies suffer from one of two problems: Either the preschool programs are not comparable with the programs being proposed today, or they use non-experimental designs that suffer from serious limitations, including an inability to track preschool effects into the early grades.

Supporters of preschool programs have been very selective in their research citations. They extol programs with large pre-K effects as "high quality," especially some historical programs and several recent pre-K programs in Tulsa, Oklahoma, and Boston, Massachusetts. Meanwhile they ignore the Head Start findings or imply that it is not a high-quality program.[1]

The goal of this study is to offer a more balanced review of the major studies in this field, making it clear what we do and do not know about preschool programs, including both their short- and long-term effects on learning and other behaviors.

HISTORICAL PROGRAMS ARE NOT COMPARABLE TO CONTEMPORARY STUDIES

There are three historical "high-quality" preschool programs that have received considerable attention. These are the Abecedarian project in North Carolina, the Perry Preschool program in Michigan, and the Chicago Child-Parent preschool program.[2] These historical programs differ markedly from contemporary preschools in ways that make them uncomparable to current and proposed "high-quality" preschool programs. In addition, one of them has some serious methodological limitations.

Abecedarian Program

This program and study was conducted at the University of North Carolina in Chapel Hill during the early 1970s. It was a relatively well-designed randomized experiment involv-

ing 111 low-income infants, nearly all black, 57 of whom were in the treatment group. The program involved interventions from infancy (average of four months) to the start of kindergarten. A Child Development Center provided intensive care and education for up to 40 hours a week for 50 weeks. Follow-up studies, both short- and long-term, found significant gains for the treatment group as compared to the control group on various cognitive and IQ tests up to age 21. However, this very intensive and much longer intervention is not comparable to any contemporary statewide or city preschool program, most of which are designed for a single year of pre-K. It is also worth noting that randomization was done prior to asking mothers' permission to participate, and a higher refusal rate by control group mothers might have produced some bias in results.

Perry Preschool

The Perry Preschool program and research took place in Ypsilanti, Michigan, in the mid-1960s, and involved 123 predominantly black children who attended the Perry Elementary School. It was also a randomized experiment, with 59 students assigned to the preschool program, although the research design was compromised somewhat by switching two working mothers to the control group and by some program dropouts. Many years later this program was the subject of a rigorous cost-benefit study conducted by a group of economists led by James Heckman, who undertook major analyses to compensate for the design flaws. They found that the costs of the Perry Preschool program—which would be about $20,000 per child in current dollars—were more than paid back by higher employment rates, lower rates of crime, and other economic outcomes favoring the preschool group.[3] The Heckman findings generated a great deal of publicity, and they were cited extensively by the White House in support of the Obama proposal.

While the Perry Preschool program is more like a contemporary preschool than the Abecedarian project, the Perry program consisted of two years of preschool coupled with weekly visits with the parent. Because of the home visits, child-teacher ratios were very small, just five or six children per teacher, far lower than contemporary pre-K programs. Given the critical role parents play in child development, home visits were an important feature of Perry Preschool. The very low child-teacher ratios and the home visits make the Perry Preschool experience uncomparable to the type of preschool programs endorsed by President Obama and other political leaders. Therefore, the cost-benefit results for the Perry program cannot be extrapolated to most contemporary preschool programs, even those that are described as "high quality."

Chicago Child-Parent Centers

The Chicago Child Parent Center program, which started in 1967, also differs in several ways from standard preschool programs. Like Perry Preschool, there is mandatory parent involvement during the preschool program. Unlike Perry and other preschool programs, it also has follow-on components that continue into the higher grades. Also unlike Perry, it has never been evaluated by a randomized experimental design. Instead, control group children have been selected from other low-income schools, and statistical adjustments have been used to create equivalence. However, self-selection bias is hard to eliminate in studies of this type, particularly when a program runs over multiple years. There is a very high likelihood that treatment outcomes are biased upward by attrition or dropouts who do not complete all years of the program.

CONTEMPORARY EXPERIMENTAL STUDIES

Among contemporary evaluations of regular pre-K programs initiated since the year 2000, two stand out because both used randomized experimental designs. These experimental designs are the "gold standard" for evaluation studies in education. Neither study shows long-term effects of preschool. One is the national Head Start Impact Study, and the

> "Neither the national Head Start Impact Study nor the statewide Tennessee program shows long-term effects of preschool."

"The positive effects did not last beyond the kindergarten year, and there were also no effects on reading and math skills at the end of first or third grades."

other is an evaluation of the statewide Tennessee program. These experimental studies show modest short-term effects of preschool, measured at the end of the preschool period, but the effects fade after children enter the regular elementary grades. The Tennessee study is of particular interest because it would qualify as a "high-quality" preschool program in the same sense as the Tulsa and Boston programs. A third early-childhood program evaluated with an experimental design is Early Head Start, which is modeled after the Abecedarian project. As such, it is a much more extensive (and expensive) intervention than regular pre-K programs, but it will be discussed briefly for the sake of thoroughness.

Head Start

Perhaps the most important of these contemporary studies is the Head Start Impact Study (HSIS), not only because it is national in scope, but also because it follows students through third grade.[4] Head Start is also the longest-standing preschool program in the country, having begun in 1965 as part of President Lyndon Johnson's War on Poverty. In 2012 it served nearly one million students for an annual cost of about $8 billion.

The Impact Study started with a cohort of over 4,500 children who were 3 or 4 years old in the Fall of 2002.[5] These students applied for admission to a random sample of more than 300 Head Start centers in 23 states. About 2,600 children were randomly assigned to the Head Start condition, while about 1,800 students were assigned to a control group. Some control group students found other types of preschools, and some students assigned to the Head Start condition did not attend. Special techniques were used to assess how much these "misclassifications" affected the overall results.

The HSIS found statistically significant effects of Head Start for both reading and math skills during the preschool years. However, the effects were modest. A school year constitutes about 10 months of learning, and Head Start students gained about 2 months more than the control group. There were also some significant effects for social behaviors, particularly parents showing more awareness of health care issues.

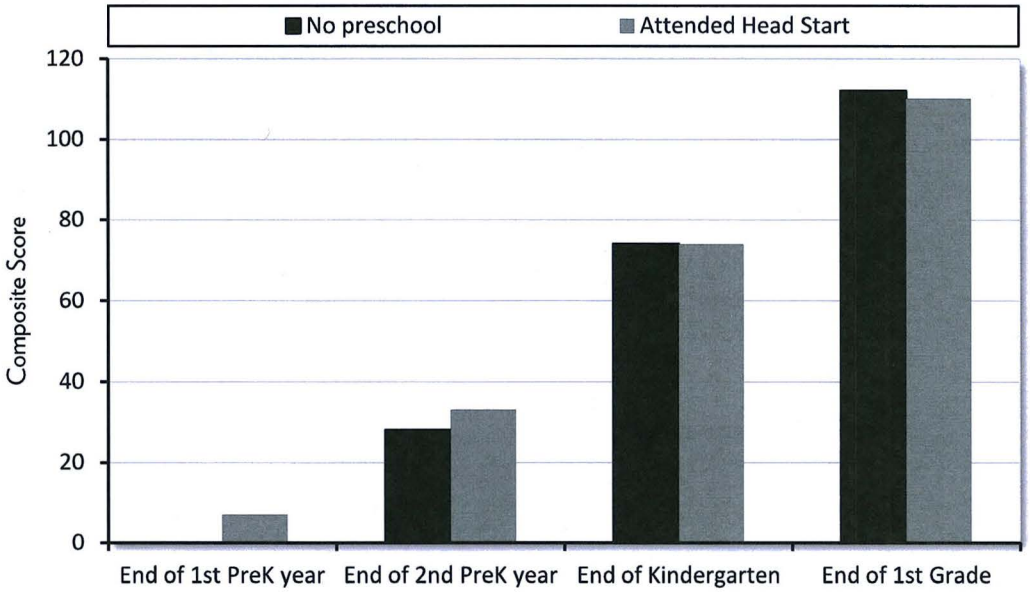
Unfortunately, these positive effects did not last beyond the kindergarten year, and there were also no effects on reading and math skills at the end of first or third grades. Likewise, there were no major effects on problem behaviors lasting into kindergarten, first grade, or third grade.

The HSIS has been criticized because some Head Start students did not finish the Head Start year, and some control group students sought out and entered some other kind of preschool.[6] The original study defended this as a realistic condition, and in any event it would be unethical to prevent the parents of control group children from seeking out other pre-K programs. Nonetheless, the effect of Head Start might be reduced by these "crossovers," since some control group children also had preschool. Various statistical analyses were undertaken in the original study to deal with this issue, and a special analysis was undertaken by Peter M. Bernardy.[7] The results of the Bernardy analysis are shown in Figure 1. In this re-analysis of the HSIS data, none of the control group had any formal preschool, and all of the Head Start students attended the Head Start program for two years. This approach intends to assess the "full" effect of Head Start as compared to children with no preschool experience.

In this special analysis, the Head Start effect at the end of the first pre-K year is 7 points and is statistically significant, representing a 3.5-month advantage for Head Start students over the control (who gained 0 in this analysis). That advantage shrinks to 5 points in the second year of Head Start (about a 2-month advantage) and is still statistically significant. But by the end of kindergarten both Head Start and control students score the same, and by the end of first grade the control students are scoring 2 points higher than Head Start students, although this is not a statistically significant difference.

Note the very large academic skill gains made each year by both groups of students during kindergarten and first grade years. The

Figure 1
Academic Skill Gains for Head Start vs. Control



Source: Peter M. Bernardy, "Head Start: Assessing Common Explanations for the Apparent Disappearance of Initial Positive Effects" (PhD diss., George Mason University, 2012).

7-point gain for three-year-old Head Start students is dwarfed by the gains for both groups during the regular school years, which are about 40 points each year. One of the reasons it is very difficult to realize lasting effects of a preschool program is that children in early elementary school are in their major development years, and they are learning four times as much material during a regular school year as they do in the preschool years,when children are just starting to learn more words, manipulate numbers, and so forth.

Tennessee Pre-K

The Voluntary Pre-K for Tennessee Initiative started in 2005, and by 2007 it had grown to more than 18,000 participants.[8] The program gives priority to high-risk students, as determined by poverty status (first priority), children with disabilities, and children with limited English proficiency. Like most other state programs, such as those in Tulsa, Oklahoma, and Boston, Massachusetts, preschool teachers must be licensed teachers with pre-K certification, and most classes have teaching assistants. It is a full-day program, requiring a minimum of 5.5 hours of instruction for five days a week. As such, this program merits the "high quality" label applied to the Tulsa and Boston studies.

Unlike the case in the Tulsa and Boston preschool studies, the evaluation of the Tennessee state preschool program utilized an experimental design whereby 3,000 children were randomly assigned to treatment and control conditions in the 2009–10 and 2010–11 school years. A subgroup of 1,100 children was randomly selected for an "intensive sub-study" involving additional testing and data collection. This study had one major design flaw, in that parental permission for data collection was obtained after the random assignment was made, and the control group had lower participation rates than the treatment group, rendering this no longer a randomized controlled trial but instead only a quasi-experiment. Propensity analysis was used to generate equivalent treatment and control groups.

During the initial evaluation, significant preschool effects were found for academic

"Children in early elementary school are learning four times as much material during a regular school year as they do in the preschool years."

"The Tennessee randomized (quasi-) experiment had results very similar to those of the national Head Start evaluation."

achievement, and the magnitudes were modest and similar to effects found of the Head Start Impact Study. For example, the composite academic scale showed an increase of about 2.5 months of learning compared to the control group. At the kindergarten and first grade follow-ups, however, the impacts had diminished. In the words of the investigators,

> the effects of [Tennessee Voluntary Pre-K] on the . . . achievement measures observed at the end of the pre-k year had greatly diminished by the end of the kindergarten year and the differences between participants and nonparticipants were no longer statistically significant. . . . Similarly, at the end of first grade, there were no statistically significant differences between TN-VPK participants and nonparticipants on the [Woodcock-Johnson] measures with one exception . . . that favored the nonparticipant group.[9]

Similarly, at the end of first grade there were no significant differences on a series of behavioral outcome as rated by teachers, including social skills, work-related skills, peer relations, and behavioral problems. In the intensely studied subgroup there was, however, a somewhat higher rate of retention in kindergarten for the control group, 6 percent versus 4 percent (it was 8 percent versus 4 percent for the full 2009–10 cohort).

In contrast to the non-experimental designs used for the Tulsa and Boston evaluations, the Tennessee randomized (quasi-) experiment had results very similar to those of the national Head Start evaluation. There were significant benefits during the preschool year, but the effects faded when students transitioned to the regular school grades, during which time nonpreschool children caught up.

Early Head Start

Early Head Start is a program designed for pregnant women and infants, providing in-home and center-based education and health services for both the child and the parent(s), extending from the prenatal period until age three.[10] The experimental evaluation of Early Head Start involved 3,000 children and their families who entered the program between 1996 and 1998 and were randomly assigned to a control group and an Early Head Start treatment group. They were followed up at age three, age five, and then at grade five. The program is significantly more costly than regular Head Start; one study estimated annual costs in 2009 to be more than $11,000 per child/family per year, so that the full three years would cost well over $30,000 per child.[11]

The outcomes at fifth grade were not very impressive, particularly given the cost of this program. Out of a total of more than 56 academic, socio-emotional, parenting, behavioral, and mental health outcomes, only two were statistically significant and favored Early Head Start: a socio-emotional success index and an anxiety/depression rating. The sizes of the impacts were quite small, being just one-tenth of a standard deviation. There were no overall effects on cognitive performance (a major objective of all preschool education programs), good parenting behaviors, or reduced negative behaviors such as aggression and rule-breaking.

There were significant positive impacts on several outcomes for the African American subgroup, mainly in the socio-emotional domain and improved parenting behaviors (e.g., involvement in school and less alcohol use). There were no significant impacts on African American cognitive outcomes, which is disappointing to those who hoped that earlier intervention might help close the achievement gap. Perhaps most disappointing was that the highest-risk subgroup (including all races)—the children of single mothers, on welfare, unemployed, and lacking a high school diploma—had no positive outcomes and numerous significant negative impacts, especially in the cognitive domain.

In short, there is little evidence that, even if policymakers are willing to spend the money, Early Head Start is the model that will pro-

duce substantial and consistent improvement in social and academic behavior for disadvantaged children.

PROBLEMS WITH CONTEMPORARY NON-EXPERIMENTAL STUDIES

Several contemporary preschool programs have been evaluated over the past 10 years and have been cited in many press accounts as evidence of the success of "high-quality" universal preschool programs. These include state-sponsored preschool programs involving multiple schools in New Jersey and Georgia, and single-city programs in Tulsa, Oklahoma, and Boston, Massachusetts.[12] An evaluation of statewide universal programs in five states also used the same methodology.

None of these studies used experimental designs, meaning randomized assignment of children to preschool and nonpreschool conditions. Instead, all of these studies used "regression discontinuity designs," or RDD. The treatment group consisted of children just starting kindergarten who completed preschool the year before, while the control group consisted of children just starting preschool; testing was done at the beginning of the school year for both groups. The design required a strict birth month cutoff (usually September 1) so that children who were four years old as of that date were eligible for preschool, while younger children had to wait until the following year. RDD also assumes that these two groups are identical except for their age and the fact that one has completed preschool while the other has not. The studies used regression analysis to control for the age difference, since age is strongly correlated with test scores.

The Institute for Education Sciences in the U.S. Department of Education publishes standards for RDD studies that must be met in order to make a valid causal inference about treatment effects.[13] At least one of these standards, and perhaps two, have been violated by the published RDD studies of preschool. First, if there is any attrition from either group, it must be recorded and reported. Adjustments can be made if effects are small, otherwise valid inferences cannot be drawn. Attrition was not reported for either the Tulsa or the New Jersey RDD studies; it was reported for the Boston studies, but the level of bias was not evaluated as required by the standards.

The attrition problem is particularly important for RDD studies because attrition occurs only for the treatment group. Children who start preschool but who do not complete the program are no longer in the treatment group and are therefore not tested at the beginning of kindergarten. Since the control group children are just starting preschool, there can be no attrition for the control group. Program dropouts, whether due to mobility or difficulty with the preschool program content, are likely to have lower test scores than those who remain in the program, and therefore scores of the treated group can be biased upward by an unknown amount. Moreover, there are no pretreatment scores for the outcome measures, which could be used to make adjustments if attrition is not too large.

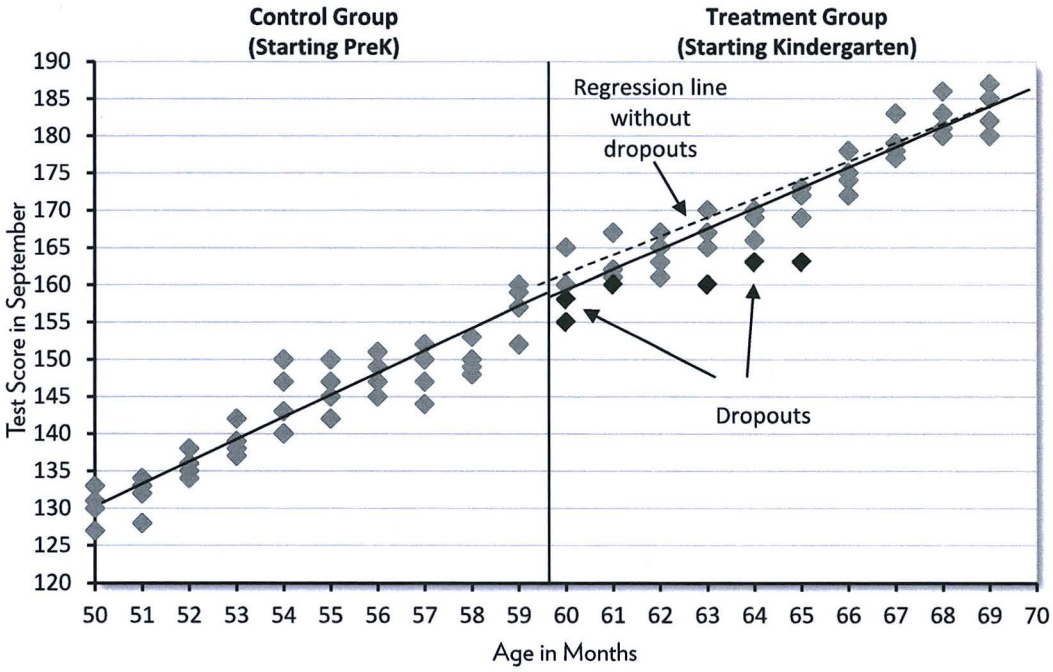
This problem is illustrated using hypothetical data in Figure 2. The solid regression lines for the treatment and control groups show a slight negative effect for treatment (about minus 1 point on the test score). The dotted line shows the treatment regression line after removing test scores for five dropouts (about 12 percent), which now indicates a statistically significant positive effect of about three points.

The second requirement for a reliable regression discontinuity study is that the "forcing" variable used to assign children to treatment and control groups, in this case the cut-off age, must not be confounded with any other characteristic that might cause different behaviors in the treatment and control group. It is likely that the age variable affects many other variables, such as the friends a child plays with, the amount of time spent in out-of-home care, and activities with parents. As a result, age is a problematic choice of forcing variable for the study of pre-school effects.

"Several contemporary preschool programs have been evaluated over the past 10 years. None of them used experimental designs, meaning randomized assignment of children to preschool and nonpreschool conditions."

"None of the studies provide a rigorous assessment of either the short- or long-term effects of preschool."

Figure 2
Hypothetical Example of RDD Method



Source: Author's calculations using hypothetical data.

A third problem, which is not mentioned in published standards, is the timing of skill testing. There is no problem if all children are tested on the very first day of schooling or within a few days of the start of school. This may not be realistic, however, since testing can take up to two months or more to complete. The problem arises if the control group testing is completed in a shorter interval than the treatment group, which is possible given the different types of classroom settings. Since cognitive growth rates are much higher in kindergarten than preschool (see Figure 1), this could result in an upward bias of treatment effects. There might be ways to ameliorate this problem, but existing studies do not report on the timing or duration of testing for the two groups.

A fourth problem, and perhaps the most important for preschool studies, is that an RDD study can only assess the effect of preschool for the year of treatment; it cannot compare the treatment and control group for the fadeout problem in later grades. Unlike an experimental design, both the treatment and the control group will have had preschool, and thus there is no "identical" group that has not had preschool. The long-term effect of preschool is the critical policy issue, because there is little educational value for preschool effects that occur during the preschool year but that do not extend into the later grades, as when a 1st- or 2nd-grade student who has had preschool is compared to a student who has not.[14]

Because of these problems, none of the studies discussed below provide a rigorous assessment of either the short- or long-term effects of preschool. They are reviewed here because many commentators (including the studies' authors) consider them to demonstrate the efficacy of high-quality programs.

The Abbot Preschool Program:

The New Jersey Abbot Preschool program is offered in 31 predominantly low-income school districts and serves more than 40,000 three- and four-year-old children, which con-

stitutes approximately 80 percent of the eligible children in those districts. The program was implemented in 1999 as a result of a court order. A major RDD evaluation was carried out for approximately 1,500 children, half of whom attended kindergarten in 2005–06 (the treatment group) and half of whom attended preschool (the control group). No information was provided on the number of children who had started preschool the year before but had not completed the program, nor was information available about when the testing was completed for the two groups. This information may not be so important for the Abbot program, however, because the effects of preschool were only slightly larger than those found in the national Head Start program (about 3 months of learning for verbal skills and 3.5 months for math).[15]

The Tulsa Program

Oklahoma established a universal, voluntary, pre-K program for four-year-olds in 1998, and at the time of the Tulsa study about 63 percent of its four-year-old population was enrolled in the state program; another 10 percent or so was enrolled in Head Start. This gives Oklahoma the highest rate of pre-K enrollment in the nation; Georgia is a close second with a total of 63 percent total enrolled. The Tulsa study reviewed here was an RDD evaluation for approximately 3,000 students enrolled in pre-K or kindergarten in September of 2003.[16]

No detailed information is provided about how long the testing took, except for a statement that "testing took place, for the most part, during the first week of school." No information is available, either, about the number of students who started pre-K but dropped out before completing the year and thus are not counted as part of the treatment group. Some tabulations suggest that this might be a major issue. For example, the pre-K control group was 18 percent Hispanic, and 26 percent of mothers were high school dropouts, while the kindergarten treatment group was 11 percent Hispanic, and only 16 percent of mothers were high school dropouts. Both of these characteristics are strongly correlated with test scores. These differences could have been created by children from these backgrounds being more likely to drop out of the pre-K program. While these characteristics were statistically taken into account in the regression analysis, the differences suggest the treated and control groups were not "identical" and could differ on unmeasured (and therefore uncontrolled) characteristics, especially motivation and initial cognitive skills.

The impact of the Tulsa preschool program on verbal skills for this cohort of children was 8 months, or almost a full year of schooling; a later evaluation reported an effect of one full year. This is truly a staggering effect; it is unprecedented for any type of school program. It is four times the typical Head Start effect, and greater than any other "high-quality" program, including the Abecedarian and Perry Preschool programs, both of which were far more intensive. It is likely that this effect is an artifact of the RDD method, especially a high dropout rate from the treatment group. This conclusion is reinforced by another study of Oklahoma children that did not produce such extraordinary results (see the five-state study below).

The Boston Program

The Boston preschool program differs to some extent because it was not a statewide program; rather, it was developed by the Boston Schools working with researchers at the Harvard Graduate School of Education. It was initiated in 2005 but was not fully implemented and operational for several years. The evaluation took place for students who attended preschool in 2008–09; testing commenced the following year (September 2009) when the treatment group (969 children) was starting kindergarten and the control group (1049 children) was starting preschool. At that time about one-third of eligible four-year-olds attended preschool.

The study reported a sizable attrition (dropout) rate for the treatment group of about 22 percent and stated that the dropouts differed

"It is likely that the impact of the Tulsa preschool program is an artifact of the Regression Discontinuity Design method, especially a high dropout rate from the treatment group."

> "The most important information needed, such as pre-treatment cognitive skills and motivation, is not available in a Regression Discontinuity Design. This can introduce a significant bias in the results."

significantly from the completion group. Although adjustments were made using available administrative records, the most important information needed for such adjustments, such as pre-treatment cognitive skills and motivation, is not available in a RDD design. This can introduce a significant bias in the results.

Equally important, although children began school in mid-September, testing did not begin until the end of September, and only one-third of the students had been tested by the end of October. It took until the end of November—more than half way through the semester—before most of the testing was completed. This can introduce another source of bias if the treatment group finished testing later than the control group.

The size of the preschool effects on verbal skills were smaller than the Tulsa studies but were still very large, about six months of growth or three times larger than found for the national Head Start evaluation. Given that these results equaled the effects found for the Abecedarian Project after five years of preschool, and given the reported dropout rate, it is likely that the treatment and control groups were not equivalent.

Study of Five States

A special RDD study was undertaken for universal preschool programs in five states: Michigan, New Jersey, Oklahoma, South Carolina, and West Virginia.[17] Random samples were drawn for preschool classrooms, and random samples of students were drawn from the sampled classes. Kindergarten classes were then selected from the same school as the sampled preschool classroom. Children were tested in the early fall of the 2004–05 school year. Sample sizes ranged from 720 to 870 for all states except New Jersey, where the sample was about 2,000. Treatment and control samples were each about half of the total samples.

In the study no information was provided about attrition or dropout from the treatment groups, and there was no detailed information about the time of testing; we know only that it was done in "early fall." Attrition and time of testing might be less important for this study, however, because the effects were not large for most states. Significant effects for verbal skills were only found for New Jersey and Oklahoma, and the magnitudes were only modestly higher than Head Start results (3.5 and 3 months, respectively). The effect for the Oklahoma sample is much smaller than that found in the Tulsa study. The Oklahoma sample did not show a significant effect for math, but the Michigan sample produced a very strong effect for math, nearly 5 months. This is puzzling, because Michigan also showed a small negative effect on reading. No significant effects were found for verbal or math skills for South Carolina and West Virginia.

The Georgia Study

The Georgia study is the most recent RDD study to be published.[18] Data for the evaluation were collected in the fall of 2012 for about 1,200 children, 611 of whom had competed pre-K the previous school year (treatment group) and the remaining children (control group) who were just entering pre-K. The children were recruited from a random sample of 90 pre-K classrooms from the nearly 4,000 pre-K classrooms operating in Georgia as of August 2011.

No systematic information is provided for treatment-group attrition, or children who started preschool but dropped out before finishing. The treatment and control groups were similar on most demographic characteristics except race and English language proficiency (based on the pre LAS test). The control group had a somewhat higher proportion of black students (just 4 percentage points), but a much lower rate of English-language proficiency.

Nearly three-fourths of the treatment group were fully fluent in English compared to only 46 percent of the control group, and only 8 percent of the treatment group were limited or non-English speakers compared to 26 percent of the control group. This result renders the groups non-equivalent on a critical skill, and it is evidence that nonfluent English speakers were less likely to finish the pre-K year. Although the study controlled for Eng-

lish fluency in the regression analysis, the non-equivalence on this characteristic raises the possibility of non-equivalence on other characteristics including cognitive skills in general.

Another concern is the timing of assessment. Although Georgia public schools start in early August, the report states that assessment took place between September 21 and December 20, near the end of the first semester. If assessment took longer for the treatment group in kindergarten, this could introduce another factor that would lead to higher test scores for the treatment group.

The effects of the Georgia program resemble those of the Tulsa study, with an effect on verbal skills of a full school year, and an effect of a half-year on math skills. As with the Tulsa study, these extraordinarily large effects likely reflect an upward bias due to non-equivalent treatment and control groups arising from the RDD technique.

A COMMENT ON META-ANALYSES OF PRESCHOOL PROGRAMS

In addition to the specific studies reviewed here, there are several meta analyses of preschool evaluations that combine results from many individual programs and derive overall estimates of preschool effects. Generally these studies place less emphasis on study designs and more on arriving at an average effect size attributable to preschools programs.

One of the most comprehensive of these reviews examined 84 individual studies including all of the studies listed above.[19] It arrived at an overall estimate of about .2 standard deviations during the program year after adjusting for sample sizes. This is about 2 months of a normal school year during the early elementary years. This effect size is very similar to the average Head Start effect as estimated in the HSIS. The review also found that nearly all follow-up studies showed that the effect faded out after children started regular school. In other words, this meta-analysis produced average effects that were no larger than Head Start and tended to fade out in grade school.

THE QUALITY ISSUE: WHAT CONSTITUTES HIGH-QUALITY PRESCHOOL?

Many discussions of preschool distinguish "high-quality" preschools from others that are presumably not high quality. The classic Abecedarian and Perry Preschool programs, as well as the contemporary Tulsa and Boston preschool programs, have been described as high quality. According to the office that oversees the Tennessee preschool program, it is a "national leader in pre-K quality, achieving 9 out of 10 quality standard benchmarks of the National Institute for Early Education Research (NIEER)."[20] It is generally understood that, because it is a national program with thousands of pre-K programs, Head Start classrooms vary in quality.

What is high quality? At least one educator has characterized quality as one of the most confusing issues when evaluating pre-K programs.[21] Although there are many potential dimensions to the quality debate, the two most important factors cited by many researchers are teacher education and pre-K classroom quality. The state programs that have incorporated pre-K into regular public elementary schools generally have teachers with BA degrees, and many with pre-K certificates, because that is required for public school teachers. In contrast, the national Head Start program does not require BA degrees, and in the HSIS only about 30 percent of Head Start teachers had BA degrees while another 30 percent had AA degrees.

The NIEER describes a preschool classroom quality rating system called ECERS-R, which rates preschool classrooms on seven different dimensions of quality including the classroom space and furnishings, instructional activities, teacher-child interactions, materials, and relations with parents. The rating scale ranges from 1 (poor) to 7 (excellent), and a score of 5 is considered "good." The rating system has been used for many years to rate the quality of preschool programs, including Head Start programs.

"One of the most comprehensive reviews examined 84 individual studies. This meta-analysis produced average effects that were no larger than Head Start and tended to fade out in grade school."

"It may be that children who did not have preschool simply caught up with those who did."

Classroom ratings using this instrument are available for Head Start, the New Jersey Abbot Program, and Boston. In the 2007 New Jersey Study, the average classroom quality rating was 4.8, and 44 percent of classrooms were rated "good" or better. In Boston, 48 percent of classrooms were rated "good" or better in 2007, the year before the formal pre-K evaluation started.

For the Head Start programs in the national Impact Study, the average classroom quality ratings were actually higher than for the New Jersey and Boston programs. The average quality was 5.2, and 70 percent of the classrooms were rated "good" or better. In other words, Head Start scored higher in quality than the reportedly better performing Abbott and Boston programs.

The more important question is whether teacher education and assessed classroom quality make a significant difference in a preschooler's learning. Most middle class parents do a pretty good job in preparing their children for school without a formal curriculum; there are lots of materials available to help. Moreover, for 3- and 4-year-olds there is no clear reason why a BA degree is necessary for promoting growth in basic skills, as might be the case for older children.

This commonsense reasoning is born out by formal research. For example, a special review of several national and state databases on preschool programs did not find a significant relationship between teachers having a BA degree and various learning outcomes for preschoolers.[22] Equally important, a new study using national long-term data on infants and children found no relationship between quality of preschool classrooms on learning or social outcomes once a child's demographic and family characteristics were taken into account.[23]

CONCLUSIONS AND POLICY IMPLICATIONS

This review of preschool research leads to several conclusions. First, the historical projects like Abecedarian or Perry Preschool programs involve much more intensive interventions than contemporary preschool programs. Moreover, they each tested a very small sample drawn from a single community. As such, their results should not be generalized to current policies and should not be used to make inferences about the types of preschool programs being operated today.

Second, although preschool programs evaluated by the most rigorous research designs show modest but statistically significant improvements during the preschool years, these gains fade as children move into the kindergarten and first grades. The fadeout might be more accurately described as "catch up," because the cognitive growth that occurs for all children in the early elementary grades is far greater than the gains during the preschool years, so it may be that children who did not have preschool simply caught up with those who did.

Third, all of the studies finding very large pre-K effects, particularly those in Tulsa, Boston, and Georgia, used regression discontinuity designs. These are not experimental designs, and their validity depends on demonstrating that the treatment and control groups—those having completed pre-K and those just starting pre-K, respectively—are close to identical but for the treatment. That evidence is missing in several respects, particularly attrition from the treatment group and time of testing. Most important, RDD studies cannot conduct longer-term follow ups because both the treatment and control groups have had preschool.

While the Perry Preschool results might not generalize to present-day pre-K programs, it is worth mentioning a viewpoint articulated by James Heckman and his colleagues about the potential role of preschool in changing future behavior. Their research leads to a sophisticated model that posits benefits of early intervention programs (and also adolescent intervention) leading to desirable adult behaviors, particularly high-school graduation, employment, and reduced criminality.[24] This suggests a need for more, longer-term studies

of children from preschool programs to determine adult behavioral changes.

Before considering expanding preschool offerings—especially making it universal—policymakers need to seek more randomized trials that track control and treatment groups over several years, and they should only attempt to replicate programs that have statistically significant, lasting effects, which can be achieved at scale and an affordable price. The original logic of helping disadvantaged children catch up may still be valid, because Head Start–type programs do show modest benefits during the preschool year. However, the proposal to expand preschool to everyone defeats the purpose of closing achievement gaps by giving disadvantaged children a "head start." More importantly, the evidence as it currently exists demonstrates only short-term skill gains that fade after a few years, and there is insufficient evidence—two small, old, very intensive programs—for the type of long-term behavioral changes envisioned by the Heckman group.

Pre-K education may help, but the research to date does not support expanding existing government programs. New preschool programs should not be introduced unless they have statistically significant, non-negligible benefits.

NOTES

The author wishes to thank Grover "Russ" Whitehurst, Mike Puma, Nick Zill, and Chester E. Finn, Jr., for their helpful comments on earlier drafts of this paper.

1. A good example of this selective bias is found in the report by Hirokazu Yoshikawa et al., "Investing in Our Future: The Evidence Base on Preschool Education," Society for Research in Child Development, October 2013.

2. For a review of the Abecedarian Project, see F. A. Campbell et al., "The Development of Cognitive and Academic Abilities: Growth Curves from an Early Childhood Educational Experiment," *Developmental Psychology* 37 (2001): 231–42; for Perry Preschool, see Lawrence J. Schweinhart, Helen V. Barnes, and David P. Weikart, *Significant Benefits: The High/Scope Perry Preschool Study through Age 27* (Ypsilanti, MI: High Scope Press, 1993). The Chicago Parent-Child program is explained and evaluated in Arthur J. Reynolds, "Effects of a Preschool Plus Follow-On Intervention for Children at Risk," *Developmental Psychology* 30 (1994): 787–804.

3. James J. Heckman, et al., "The rate of return to the High Scope Perry Preschool Program," *Journal of Public Economics* 94 (2010): 114–28.

4. This study relies on two evaluations of Head Start published by the Department of Health and Human Services: Michael Puma, et al., "Head Start Impact Study, Final Report," 2010, and Michael Puma et al., "Third Grade Follow-up to the Head Start Impact Study," OPRE Report 2012-45, 2012.

5. A more detailed discussion of the HSIS findings can be found in David J. Armor and Sonia Sousa, "The Dubious Promise of Universal Preschool," *National Affairs* no. 18 (Winter 2014).

6. See, for example, W. Steven Barnett et al., "Abbott Preschool Program Longitudinal Effects Study: Fifth Grade Follow-Up," National Institute for Early Education Research, March 2013, nieer.org/publications/latest-research/abbott-preschool-program-longitudinal-effects-study-fifth-grade-follow.

7. Peter M. Bernardy, "Head Start: Assessing Common Explanations for the Apparent Disappearance of Initial Positive Effects" (PhD diss., George Mason University, 2012). This study used propensity analysis to produce equivalent groups of Head Start and control students.

8. See Mark W. Lipsey, et al., "Evaluation of the Tennessee Voluntary Prekindergarten Program: Kindergarten and First Grade Follow-Up Results from the Randomized Control Design," Peabody Research Institute, Vanderbilt University, 2013.

9. Lipsey, et al., p. 12.

10. This review relies on Cheri A. Vogel, et al., "Early Head Start Children in Grade 5: Long-Term Follow-Up of the Early Head Start Research and Evaluation Study Sample." OPRE Report # 2011-8, U.S. Department of Health and Human Services, 2010.

11. Nick Zill, "Ten Ideas for Improving Early Head Start—and Why the Program Needs Them," in *Investing in Young Children: New Directions in Federal Preschool and Early Childhood Policy*, ed. Ron Haskins and W. Steven Barnett (Washington: Brookings Institution Center on Children and Families), pp. 39–48.

12. For the evaluations relied upon in this report, see the following: New Jersey: Ellen Frede et al., "The Abbott Preschool Program Longitudinal Effects Study (APPLES)," National Institute for Early Education Research, June 2007, http://nieer.org/resources/research/APPLES.pdf.; Tulsa: William Gormley et al., "The Effects of Universal Pre-K on Cognitive Development," *Developmental Psychology* 41 (2005): 872–84; Boston: Christina Weiland and Hirokazu Yoshikawa, "Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills" *Child Development* 84 (2013): 2112–30.

13. See Peter Z. Schochet et al., "What Works Clearinghouse: Standards for Regression Discontinuity Designs," June 2010, ies.ed.gov/ncee/wwc/pdf/wwc_rd.pdf. Also see Howard S. Bloom "Modern Regression Discontinuity Analysis," MDRC Working Papers on Research Methodology, December 2009, www.mdrc.org/sites/default/files/full_446.pdf.

14. Some RDD evaluations follow a sample of children who did not take preschool, but this is not the control group in the RDD design. By being a self-selected group that chose not to enroll in preschool, it can differ from the treatment group in many ways, including motivation and other unmeasured characteristics (including initial skill levels).

15. These effects assume each school year consists of 10 months of learning.

16. There have been later evaluations, but this evaluation has more descriptive information available.

17. See Vivian C. Wong et al., "An Effectiveness-Based Evaluation of Five State Pre-Kindergarten Programs," *Journal of Policy Analysis and Management* 27, no. 1 (2008): 122–54.

18. Ellen S. Peisner-Feinberg et al., "Effects of Georgia's Pre-K Program on Children's School Readiness Skills: Findings from the 2012–2013 Evaluation Study," Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill, March 2014.

19. Greg J. Duncan and Katherine Magnuson, "Investing in Preschool Programs," *Journal of Economic Perspectives* 27, no. 2 (2013): 109–32.

20. Tennessee Department of Education, "2013–14 Tennessee Voluntary Pre-kindergarten Fact Sheet," www.tn.gov/education/doc_earlylearning_prek/Pre-K_Fact_Sheet.pdf.

21. Chester E. Finn Jr., *Reroute the Preschool Juggernaut* (Stanford, CA: Hoover Institution Press, 2009).

22. Diane M. Early et al., "Teachers' Education, Classroom Quality, and Young Children's Academic Skills: Results from Seven Studies of Preschool Programs," *Child Development* 78, no. 2 (2007): 558–80.

23. Terri J. Sabol and Robert C. Pianta, "Do Standard Measures of Preschool Quality Used in Statewide Policy Predict School Readiness?" *Education Finance and Policy* 9, no. 2 (2014): 116–64.

24. Flavio Cunha and James Heckman, "The Technology of Skill Formation," *The American Economic Review* 97, no. 2 (2007): 31–47.

RELATED PUBLICATIONS FROM THE CATO INSTITUTE

The Poverty of Preschool Promises: Saving Children and Money with the Early Education Tax Credit by Adam Schaeffer, Cato Institute Policy Analysis no. 641 (August 3, 2009)

Universal Preschool Is No Golden Ticket: Why Government Should Not Enter the Preschool Business by Darcy Olson, Cato Institute Policy Analysis no. 333 (February 9, 1999)

The Advancing Nanny State: Why the Government Should Stay Out of Child Care by Darcy Olson, Cato Institute Policy Analysis no. 285 (February 9, 1997)

Caveat Emptor: The Head Start Scam by John Hood, Cato Institute Policy Analysis no. 187 (December 18, 1992)

RECENT STUDIES IN THE CATO INSTITUTE POLICY ANALYSIS SERIES

759. **Public Attitudes toward Federalism: The Public's Preference for Renewed Federalism** by John Samples and Emily Ekins (September 23, 2014)

758. **Policy Implications of Autonomous Vehicles** by Randal O'Toole (September 18, 2014)

757. **Opening the Skies: Put Free Trade in Airline Services on the Transatlantic Trade Agenda** by Kenneth Button (September 15, 2014)

756. **The Export-Import Bank and Its Victims: Which Industries and States Bear the Brunt?** by Daniel Ikenson (September 10, 2014)

755. **Responsible Counterterrorism Policy** by John Mueller and Mark G. Stewart (September 10, 2014)

754. **Math Gone Mad: Regulatory Risk Modeling by the Federal Reserve** by Kevin Dowd (September 3, 2014)

753. **The Dead Hand of Socialism: State Ownership in the Arab World** by Dalibor Rohac (August 25, 2014)

752. **Rapid Bus: A Low-Cost, High-Capacity Transit System for Major Urban Areas** by Randal O'Toole (July 30, 2014)

751. **Libertarianism and Federalism** by Ilya Somin (June 30, 2014)

750. **The Worst of Both: The Rise of High-Cost, Low-Capacity Rail Transit** by Randal O'Toole (June 3, 2014)

749. **REAL ID: State-by-State Update** by Jim Harper (March 12, 2014)

748. **State-Based Visas: A Federalist Approach to Reforming U.S. Immigration Policy** by Brandon Fuller and Sean Rust (April 23, 2014)

747. **Run, Run, Run: Was the Financial Crisis Panic over Institution Runs Justified?** by Vern McKinley (April 10, 2014)

746. **State Education Trends: Academic Performance and Spending over the Past 40 Years** by Andrew J. Coulson (March 18, 2014)

745. **Obamacare: What We Know Now** by Michael Tanner (January 27, 2014)

744. **How States Talk Back to Washington and Strengthen American Federalism** by John Dinan (December 3, 2013)

743. **The New Autarky? How U.S. and UK Domestic and Foreign Banking Proposals Threaten Global Growth** by Louise C. Bennetts and Arthur S. Long (November 21, 2013)

742. **Privatizing the Transportation Security Administration** by Chris Edwards (November 19, 2013)

741. **Solving Egypt's Subsidy Problem** by Dalibor Rohac (November 6, 2013)

740. **Reducing Livability: How Sustainability Planning Threatens the American Dream** by Randal O'Toole (October 28, 2013)

739. **Antitrust Enforcement in the Obama Administration's First Term: A Regulatory Approach** by William F. Shughart II and Diana W. Thomas (October 22, 2013)

738. **SNAP Failure: The Food Stamp Program Needs Reform** by Michael Tanner (October 16, 2013)

737. **Why Growth Is Getting Harder** by Brink Lindsey (October 8, 2013)

736. **The Terrorism Risk Insurance Act: Time to End the Corporate Welfare** by Robert J. Rhee (September 10, 2013)

735. **Reversing Worrisome Trends: How to Attract and Retain Investment in a Competitive Global Economy** by Daniel Ikenson (August 22, 2013)

CATO INSTITUTE

Published by the Cato Institute, Policy Analysis is a regular series evaluating government policies and offering proposals for reform. Nothing in Policy Analysis should be construed as necessarily reflecting the views of the Cato Institute or as an attempt to aid or hinder the passage of any bill before Congress. Contact the Cato Institute for reprint permission. All policy studies can be viewed online at www.cato.org. Additional printed copies of Cato Institute Policy Analysis are $6.00 each ($3.00 each for five or more). To order, call toll free (800) 767-1241 or email catostore@cato.org.

The Heckman Equation

There's more to gain by taking a comprehensive approach to early childhood development.

James J. Heckman is the Henry Schultz Distinguished Service Professor of Economics and Director of the Center for the Economics of Human Development at the University of Chicago, a Nobel Laureate in economics and an expert in the economics of human development.

Start at birth, coordinate services into comprehensive early childhood programs and achieve greater economic and social gains. Professor Heckman's latest research, "The Lifecycle Benefits of an Influential Early Childhood Program," shows that high quality birth-to-five programs for disadvantaged children can deliver a 13% per year return on investment—a rate substantially higher than the 7-10% return previously established for preschool programs serving 3- to 4-year-olds. Heckman, his University of Chicago colleague Jorge Luis García, Duncan Ermini Leaf of the Leonard D. Schaeffer Center for Health Policy and Economics at University of Southern California, and María José Prados of the Dornsife Center for Economic and Social Research at University of Southern California, find that significant gains are realized through better outcomes in education, health, social behaviors and employment.

A past program that's very relevant today.

Lifecycle Benefits analyzes the effects of two identical, randomized-controlled preschool experiments conducted in North Carolina in the 1970's: The Carolina Abecedarian Project (ABC) and the Carolina Approach to Responsive Education (CARE). They offered comprehensive developmental resources to disadvantaged African-American children from birth to age five, including nutrition, access to healthcare and early learning. Children were randomly assigned into either the treatment group or a control group that had access to alternatives such as lower quality center-based care or in-home care. Given that many high-quality programs today include the components central to ABC/CARE, evidence from ABC/CARE is relevant today. About 19% of all African-American children would be eligible for the program today. And, research shows that the negative effects of a disadvantaged early childhood are similar across races.

Rich data provides insight into long-term benefits.

Existing research on the effectiveness of early childhood programs largely focuses on short-term academic gains when it is long-term benefits that provide a more relevant measure of value. *Lifecycle Benefits* analyzes a wide variety of life outcomes, such as health, the quality of life, participation in crime, labor income, IQ, schooling and increases in mothers' labor income as a result of subsidized childcare. ABC/CARE collected data on the participants throughout childhood and well into adulthood, allowing for an in-depth analysis of long-term effects in multiple dimensions of human development. From birth until the age of 8, data were collected annually on cognitive and socio-emotional skills, home environments, family structure, and family economic characteristics. After age 8, data on cognitive and socio-emotional skills, education, and family economic characteristics were collected at ages 12, 15, 21, and 30. In addition, there is a full medical survey at age 35 and detailed records of any criminal activity.

The Heckman Equation

The benefits of high quality starting at birth.

Children who received treatment had significantly better life outcomes than those who did not receive center-based care or those who received lower quality care. 75% of the control group children were enrolled in relatively low quality alternative childcare centers, usually after age 3; others stayed at home. Consistent with other research, results varied by gender. For females, ABC/CARE had positive effects on high school graduation, years of education, adult employment and the adult labor incomes of participants and their parents. These treatment results are higher when compared with the alternative of staying exclusively at home. The results for males show lower drug use and blood pressure, as well as positive effects on education and later labor income. The results for employment, hypertension, and blood pressure are higher when the treatment group is compared to the children who attended alternative childcare centers. Separation from the mother and being placed in relatively low quality childcare centers have far more negative consequences for male subjects than for female ones. This suggests that high program quality is necessary to generate quality outcomes.

A two-generation effect on workforce.

ABC/CARE improved the economic prospects of treated children and their mothers, allowing the latter to enter the workforce and increase earnings while their children gained the foundational skills to make them more productive in the future workforce. ABC/CARE provided childcare to the parents of treated children for more than nine hours a day for five years. Only 27% of mothers of children lived with a partner and this status barely changed during the program, making employment critical for upward mobility. Childcare generates positive effects in maternal education, labor force participation, and parental income.

Comprehensive quality care pays off.

While the costs of comprehensive early childhood education are high, the rate of return of programs like ABC/CARE imply that these costs are good investments. Every dollar spent on high quality, birth-to-five programs for disadvantaged children delivers a 13% per annum return on investment. These economically significant returns account for the welfare costs of taxation to finance the program and survive a battery of sensitivity analyses. The cost of ABC/CARE was $18,514 in 2014 U.S. dollars. The average cost of childcare alone in the United States ranges from $9,589 to a high of $23,354 with few assurances of the quality necessary to generate quality life outcomes for children.[1]

A call to do more and better for disadvantaged children.

Child poverty is growing in the United States; investing in comprehensive birth-to-five early childhood education is a powerful and cost-effective way to mitigate its negative consequences on child development and adult opportunity. Elements of the ABC/CARE program exist today through a number of often disjointed home visiting, child well-being, nutrition, early learning, childcare and preschool programs. Policymakers would be wise to coordinate these early childhood resources into a scaffolding of developmental support for disadvantaged children and provide access to all in need. The gains are significant because quality programs pay for themselves many times over. The cost of inaction is a tragic loss of human and economic potential that we cannot afford.

[1] Schulte, Brigid, and Alieza Durana. "The New America Care Report." Better Life Lab (2016): 1-104. Web. 29 Nov. 2016.

García, Jorge Luis, James J. Heckman, Duncan Ermini Leaf, and María José Prados. "The Life-cycle Benefits of an Influential Early Childhood Program." (2016): n. pag. Web.

This research was funded by the Buffett Early Childhood Fund, Pritzker Children's Initiative and the Robert Wood Johnson Foundation's Policies for Action program.

www.heckmanequation.org

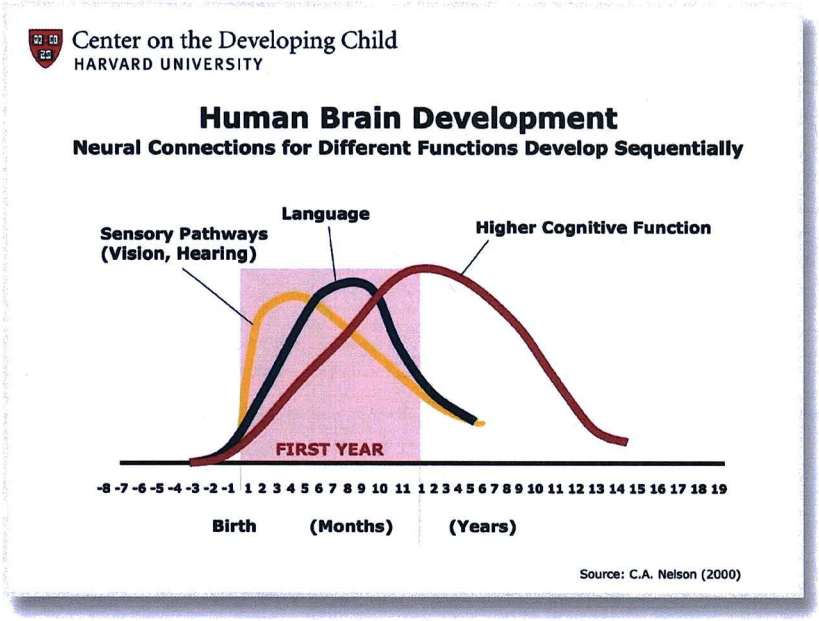
The Heckman Equation project is made possible with support from the Pritzker Children's Initiative.

Heckman
The economics of human potential.

A series of brief summaries of the scientific presentations at the National Symposium on Early Childhood Science and Policy.

The science of early brain development can inform investments in early childhood. These basic concepts, established over decades of neuroscience and behavioral research, help illustrate why child development—particularly from birth to five years—is a foundation for a prosperous and sustainable society.

1 Brains are built over time, from the bottom up. The basic architecture of the brain is constructed through an ongoing process that begins before birth and continues into adulthood. Early experiences affect the quality of that architecture by establishing either a sturdy or a fragile foundation for all of the learning, health and behavior that follow. In the first few years of life, 700 new neural connections are formed every second. After this period of rapid proliferation, connections are reduced through a process called pruning, so that brain circuits become more efficient. Sensory pathways like those for basic vision and hearing are the first to develop, followed by early language skills and higher cognitive functions. Connections proliferate and prune in a prescribed order, with later, more complex brain circuits built upon earlier, simpler circuits.



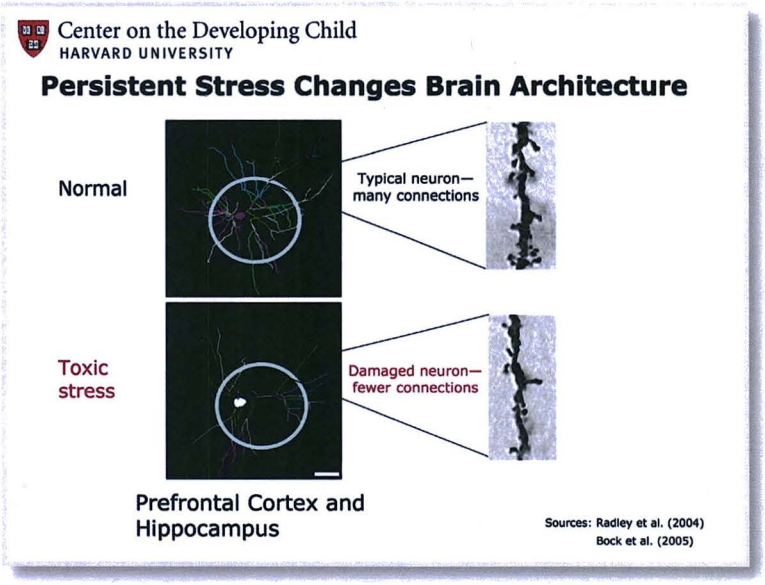
In the proliferation and pruning process, simpler neural connections form first, followed by more complex circuits. The timing is genetic, but early experiences determine whether the circuits are strong or weak.

2 The interactive influences of genes and experience shape the developing brain. Scientists now know a major ingredient in this developmental process is the "serve and return" relationship between children and their parents and other caregiv-

POLICY IMPLICATIONS

- The basic principles of neuroscience indicate that early preventive intervention will be more efficient and produce more favorable outcomes than remediation later in life.
- A balanced approach to emotional, social, cognitive, and language development will best prepare all children for success in school and later in the workplace and community.
- Supportive relationships and positive learning experiences begin at home but can also be provided through a range of services with proven effectiveness factors. Babies' brains require stable, caring, interactive relationships with adults — any way or any place they can be provided will benefit healthy brain development.
- Science clearly demonstrates that, in situations where toxic stress is likely, intervening as early as possible is critical to achieving the best outcomes. For children experiencing toxic stress, specialized early interventions are needed to target the cause of the stress and protect the child from its consequences.

ers in the family or community. Young children naturally reach out for interaction through babbling, facial expressions, and gestures, and adults respond with the same kind of vocalizing and gesturing back at them. In the absence of such responses—or if the responses are unreliable or inappropriate—the brain's architecture does not form as expected, which can lead to disparities in learning and behavior.



Brains subjected to toxic stress have underdeveloped neural connections in areas of the brain most important for successful learning and behavior in school and the workplace.

3 The brain's capacity for change decreases with age. The brain is most flexible, or "plastic," early in life to accommodate a wide range of environments and interactions, but as the maturing brain becomes more specialized to assume more complex functions, it is less capable of reorganizing and adapting to new or unexpected challenges. For example, by the first year, the parts of the brain that differentiate sound are becoming specialized to the language the baby has been exposed to; at the same time, the brain is already starting to lose the ability to recognize different sounds found in other languages. Although the "windows" for language learning and other skills remain open, these brain circuits become increasingly difficult to alter over time. Early plasticity means it's easier and more effective to influence a baby's developing brain architecture than to rewire parts of its circuitry in the adult years.

4 Cognitive, emotional, and social capacities are inextricably intertwined throughout the life course. The brain is a highly interrelated organ, and its multiple functions operate in a richly coordinated fashion. Emotional well-being and social competence provide a strong foundation for emerging cognitive abilities, and together they are the bricks and mortar that comprise the foundation of human development. The emotional and physical health, social skills, and cognitive-linguistic capacities that emerge in the early years are all important prerequisites for success in school and later in the workplace and community.

5 Toxic stress damages developing brain architecture, which can lead to life-long problems in learning, behavior, and physical and mental health. Scientists now know that chronic, unrelenting stress in early childhood, caused by extreme poverty, repeated abuse, or severe maternal depression, for example, can be toxic to the developing brain. While positive stress (moderate, short-lived physiological responses to uncomfortable experiences) is an important and necessary aspect of healthy development, toxic stress is the strong, unrelieved activation of the body's stress management system. In the absence of the buffering protection of adult support, toxic stress becomes built into the body by processes that shape the architecture of the developing brain.

For more information, see "The Science of Early Childhood Development" and the Working Paper series from the National Scientific Council on the Developing Child.
www.developingchild.harvard.edu/library/

NGA Center for BEST PRACTICES

National Conference of State Legislatures

Center on the Developing Child
HARVARD UNIVERSITY

THE INBRIEF SERIES:
INBRIEF: The Science of Early Childhood Development
INBRIEF: The Impact of Early Adversity on Children's Development
INBRIEF: Early Childhood Program Effectiveness
INBRIEF: The Foundations of Lifelong Health

www.developingchild.harvard.edu

Alaska State Legislature

Representative Kawasaki

HB 52: Alaska Voluntary Pre-Elementary Program

Sectional Analysis

Section 1.

Establishes that elementary schools shall also consist of a pre-elementary program for children 3-5 years of age which operates in a public school.

Section 2.

Establishes that a child may enter a public school pre-elementary program if they are three years old on or before September 1st.

Section 3.

Defines "pre-elementary school" as a pre-kindergarten program provided by a school district for children ages 3-5 years or whose primary function is educational.

Section 4.

Directs the board to adopt regulations regarding funding as well as statewide and local goals. Directs the board to develop approval regulations for charter, state boarding, or public schools before they can provide domiciliary services. Directs the board to develop regulations for the certification and implementation of a statewide plan to implement early childhood education.

Section 5.

The number of schools in a district is subject to a community having an average daily membership between 10 and 100. A community with an average daily membership between 101 and 425 is considered as either one elementary school (with a pre-k program) or one secondary school. Communities with an average daily membership over 425 are administered as separate schools.

Section 6.

A school district cannot include students in their average daily membership who are part of the pre-elementary program or who receive funding other than funding from this legislation.

Fiscal Note

State of Alaska
2017 Legislative Session

Bill Version: HB 52
Fiscal Note Number:
() Publish Date:

Identifier: HB052-EED-PEF-2-3-17
Title: PRE-ELEMENTARY SCHOOL PROGRAMS/PLANS
Sponsor: KAWASAKI
Requester: (H) EDC

Department: Fund Capitalization
Appropriation: Fund Capitalization (no approps out)
Allocation: Public Education Fund (starts FY17)
OMB Component Number: 2804

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2018 Appropriation Requested	Included in Governor's FY2018 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2018**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits	51,024.0		51,024.0	51,024.0	51,024.0	51,024.0	51,024.0
Miscellaneous							
Total Operating	**51,024.0**	**0.0**	**51,024.0**	**51,024.0**	**51,024.0**	**51,024.0**	**51,024.0**
Fund Source (Operating Only)							
1004 Gen Fund (UGF)	51,024.0		51,024.0	51,024.0	51,024.0	51,024.0	51,024.0
Total	**51,024.0**	**0.0**	**51,024.0**	**51,024.0**	**51,024.0**	**51,024.0**	**51,024.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimated SUPPLEMENTAL (FY2017) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2018) cost: 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? yes
If yes, by what date are the regulations to be adopted, amended or repealed? 06/30/18

Why this fiscal note differs from previous version:

Not applicable, initial version.

Prepared By: Heidi Teshner, Director — Phone: (907)465-2875
Division: School Finance & Facilities / Education Support Services — Date: 02/03/2017 05:30 PM
Approved By: Commissioner Michael Johnson — Date: 02/03/17
Agency: Dept of Education & Early Development

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2017 LEGISLATIVE SESSION

BILL NO. HB 52

Analysis

HB52 creates a pre-elementary program for those students between the ages of three and five years old. It amends AS 14.03.080 Right to attend school, by reducing the eligible age to attend and be funded from five to three years old. Funding will be through the public school funding program under AS 14.17.410, provided the students are not already being funded by another program for their education.

This fiscal note capitalizes the Public Education Fund (PEF) as set out in HB52 in order to provide sufficient funding to address the Public School Funding program (Foundation).

General Fund appropriation was calculated by taking the FY2017 October 1 kindergarten enrollment, to represent a pre-elementary cohort, multiplying by the FY2018 projected average state aid per student to arrive at a cost of $51,023,973.

FY2017 October 1 kindergarten count: 10,283-4,706 (3-5 year olds enrolled in programs outlined in Sect. 6) = 5,577
FY2018 projected average state aid per student: $9,149
Total cost of a full-time pre-elementary program estimated at $51,023,973

Please note the eligibility for space allocations and capital improvement projects through the department's facilities programs are not analyzed in this fiscal note.

This bill does not provide for an effective date.

Fiscal Note

State of Alaska
2017 Legislative Session

Bill Version: HB 52
Fiscal Note Number:
() Publish Date:

Identifier: HB052-EED-FP-2-3-17
Title: PRE-ELEMENTARY SCHOOL PROGRAMS/PLANS
Sponsor: KAWASAKI
Requester: (H) EDC

Department: Department of Education and Early Development
Appropriation: K-12 Aid to School Districts
Allocation: Foundation Program
OMB Component Number: 141

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2018 Appropriation Requested	Included in Governor's FY2018 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2018**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Fund Source (Operating Only)

None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Positions

Full-time							
Part-time							
Temporary							

Change in Revenues

None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimated SUPPLEMENTAL (FY2017) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2018) cost: 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 06/30/18

Why this fiscal note differs from previous version:

Not applicable, initial version.

Prepared By: Heidi Teshner, Director — Phone: (907)465-2875
Division: School Finance & Facilities / Education Support Services — Date: 02/03/2017 05:30 PM
Approved By: Michael Johnson, Commissioner — Date: 02/03/17
Agency: Department of Education & Early Development

FISCAL NOTE ANALYSIS

STATE OF ALASKA **BILL NO.** HB 52
2017 LEGISLATIVE SESSION

Analysis

HB52 creates a pre-elementary program for those students between the ages of three and five years old. It amends AS 14.03.080 Right to attend school, by reducing the eligible age to attend and be funded from five to three years old. Funding will be through the public school funding program under AS 14.17.410, provided the students are not already being funded by another program for their education.

This bill does not provide for an effective date.

Alaska State Legislature

Representative Kawasaki

HB 52: Alaska Voluntary Pre-Elementary Education Act

Sponsor Statement

Alaska remains one of the only states that does not provide pre-kindergarten education to its children on a statewide basis. HB 52 seeks to add Alaska to the ranks of the majority of states that have recognized the need to properly invest in our children's future.

Children who benefit from early education earn higher incomes as adults, enter the job market in much larger numbers, are more likely to obtain a college education, remain off of public assistance and stay out of prison. A report published by the National Center for Education Statistics found that 53 percent of prison inmates are either illiterate or have a very low literacy level. Children who enroll in early education programs have a much higher literacy rate than those who do not.

Alaska has a responsibility to provide the best education possible for its children. Currently, outside of a few school district classrooms, the state only provides early education through the Head Start program, which is only available to low-income children and which is chronically underfunded. Due to lack of funding, the Alaska Head Start Association estimates that more than 50 percent of children who qualify cannot receive Head Start education. Providing additional opportunities is a crucial stepping stone to improving the future of young Alaskans.

Extensive research shows that a child's intellectual development is especially important before age 6. A study by the National Institute for Early Education in 2004 found that children who attended state-funded pre-Kindergarten programs showed improvements in vocabulary 31 percent greater than other children, and 44 percent greater in math. Young children who receive high quality early education do better academically, show behavioral improvements in school, and are more likely to stay in school, graduate, and go on to complete post-secondary education.

There is also a significant economic impact of providing early education. Multiple studies have shown that funds invested in early education pay substantial dividends in the long run. Every dollar invested in high-quality pre-K programs save taxpayers up to $7 long-term. Pre-K saves money by reducing the need for remedial and special education, welfare programs, and criminal justice services. An ongoing study of 40 year-old adults in Michigan who participated in the 1962 Perry Preschool project found that adults with pre-K were more likely to be employed and earned 33 percent higher average incomes than their peers who did not have state-funded early education.

Additionally, a study prepared for the SEED program at the University of Alaska Southeast state that 87 percent of Alaska residents think it is important for state government to provide financial support for early education and childcare. It's time to start thinking long-term and ensuring a prosperous future for all of Alaska's children.

Representative Scott Jiu Wo Kawasaki

Alaska State Legislature District 1 Fairbanks

HB 52: Alaska Voluntary Pre-Elementary Program
Sponsor Statement

"An Act relating to providing a pre-elementary program within a school district; and providing for the certification of early childhood education plans."

Alaska remains one of the only states that does not provide pre-kindergarten education to its children on a statewide basis. HB 52 seeks to add Alaska to the ranks of the majority of states that have recognized the need to properly invest in our children's future.

Children who benefit from early education earn higher incomes as adults, enter the job market in much larger numbers, are more likely to obtain a college education, remain off of public assistance and stay out of prison. A report published by the National Center for Education Statistics found that 53 percent of prison inmates are either illiterate or have a very low literacy level. Children who enroll in early education programs have a much higher literacy rate than those who do not.

Alaska has a responsibility to provide the best education possible for its children. Currently, outside of a few school district classrooms, the state only provides early education through the Head Start program, which is only available to low-income children and which is chronically underfunded. Due to lack of funding, the Alaska Head Start Association estimates that more than 50 percent of children who qualify cannot receive Head Start education. Providing additional opportunities is a crucial stepping stone to improving the future of young Alaskans.

Extensive research shows that a child's intellectual development is especially important before age 6. A study by the National Institute for Early Education in 2004 found that children who attended state-funded pre-Kindergarten programs showed improvements in vocabulary 31 percent greater than other children, and 44 percent greater in math. Young children who receive high quality early education do better academically, show behavioral improvements in school, and are more likely to stay in school, graduate, and go on to complete post-secondary education.

There is also a significant economic impact of providing early education. Multiple studies have shown that funds invested in early education pay substantial dividends in the long run. Every dollar invested in high-quality pre-K programs save taxpayers up to $7 long-term. Pre-K saves money by reducing the need for remedial and special education, welfare programs, and criminal justice services. An ongoing study of 40 year-old adults in Michigan who participated in the 1962 Perry Preschool project found that adults with pre-K were more likely to be employed and earned 33 percent higher average incomes than their peers who did not have state-funded early education.

Additionally, a study prepared for the SEED program at the University of Alaska Southeast state that 87 percent of Alaska residents think it is important for state government to provide financial support for early education and childcare. It's time to start thinking long-term and ensuring a prosperous future for all of Alaska's children.

In Juneau ○ Alaska State Capitol Room 502, Juneau, Alaska 99801
In Fairbanks ○ 1292 Sadler Way Suite 306, Fairbanks, Alaska 99701
Juneau ○ (907) 465-3466 ○ **Fairbanks** ○ (907) 456-7423
Email: Rep.Scott.Kawasaki@akleg.gov

Representative Scott Jiu Wo Kawasaki

Alaska State Legislature District 1 Fairbanks

HB 52: Alaska Voluntary Pre-Elementary Program
Sectional Analysis

"An Act relating to providing a pre-elementary program within a school district; and providing for the certification of early childhood education plans."

Section 1.

Adds to AS 14.03.060(e) that elementary schools shall also consist of a pre-elementary program for children 3-5 years of age provided by a school district.

Section 2.

Adds a new subsection to AS 14.03.080 that establishes a child may enter a public school pre-elementary program if they are three years old on or before September 1st following the beginning of the school year and under school age.

Section 3.

Adds to the definition of a "pre-elementary school" under AS 14.07.020(c) a pre-elementary program that is provided by a school district.

Section 4.

Adds to the duties of the Board of Education and Early Development under 14.07.165(a) the adoption of regulations for the certification and implementation of a sitewide plan to establish an effective means for providing early childhood education through the creation of a model curriculum. The plan must include a cost-effective alternative to the pre-elementary program, provided by a school district under AS 14.17.905(a)(2)(A).

Section 5.

Adds to the facilities constituting a school under AS 14.17.905(a)(2)(A) the requirement of a pre-elementary program provided by a school district in communities with an average daily membership of at least 101, but not more than 425.

Section 6.

Adds a new subsection to 14.17.905 that prevents school districts from including students in their average daily membership who are enrolled in a program that complies with AS 14.07.165(5) or who receive funding other than funding from AS 14.17.

In Juneau ○ Alaska State Capitol Room 502, Juneau, Alaska 99801
In Fairbanks ○ 1292 Sadler Way Suite 306, Fairbanks, Alaska 99701
Juneau ○ (907) 465-3466 ○ **Fairbanks** ○ (907) 456-7423
Email: Rep.Scott.Kawasaki@akleg.gov

Fiscal Note

State of Alaska
2018 Legislative Session

Bill Version: HB 52
Fiscal Note Number:
() Publish Date:

Identifier: HB052-EED-FP-3-22-18
Title: PRE-ELEMENTARY SCHOOL PROGRAMS/PLANS
Sponsor: KAWASAKI
Requester: House Education Committee

Department: Department of Education and Early Development
Appropriation: K-12 Aid to School Districts
Allocation: Foundation Program
OMB Component Number: 141

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2019 Appropriation Requested	Included in Governor's FY2019 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2019**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Fund Source (Operating Only)

None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Positions

Full-time							
Part-time							
Temporary							

Change in Revenues

None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimated SUPPLEMENTAL (FY2018) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2019) cost: 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 06/30/19

Why this fiscal note differs from previous version/comments:

Updated for 2nd legislative session and to accurately reflect out year costs.

Prepared By: Heidi Teshner, Director — Phone: (907)465-2875
Division: Finance & Support Services — Date: 03/22/2018 02:00 PM
Approved By: Dr. Michael Johnson, Commissioner — Date: 03/22/2018
Agency: Department of Education & Early Development

FISCAL NOTE ANALYSIS

STATE OF ALASKA **BILL NO.** HB 52
2018 LEGISLATIVE SESSION

Analysis

HB52 creates a pre-elementary program for those students between the ages of three and five years old. It amends AS 14.03.080 Right to attend school, by reducing the eligible age to attend and be funded from five to three years old. Funding will be through the public school funding program under AS 14.17.410, provided the students are not already being funded by another program for their education.

This fiscal note General Fund appropriation was calculated by taking the FY2017 October 1 kindergarten enrollment, to represent a pre-elementary cohort, multiplying by the FY2018 projected average state aid per student to arrive at a cost of $51,023,973.

FY2017 October 1 kindergarten count: 10,283-4,706 (3-5 year olds enrolled in programs outlined in Sect. 6) = 5,577
FY2018 projected average state aid per student: $9,149
Total cost of a full-time pre-elementary program estimated at $51,023,973

Please note the eligibility for space allocations and capital improvement projects through the department's facilities programs are not analyzed in this fiscal note.

This bill does not provide for an effective date.

The funding mechanism is a general fund transfer to the Public Education Fund (PEF). The fiscal note effect for FY2019 through FY2024 is reported in the fiscal note for the PEF, as the funding is deposited to the PEF not into the Foundation Program funding component. The above analysis is presented here for explanation purposes only.

Fiscal Note

State of Alaska
2018 Legislative Session

Bill Version: HB 52
Fiscal Note Number:
() Publish Date:

Identifier: HB052-EED-PEF-3-22-18
Title: PRE-ELEMENTARY SCHOOL PROGRAMS/PLANS
Sponsor: KAWASAKI
Requester: House Education Committee

Department: Fund Capitalization
Appropriation: Fund Capitalization (no approps out)
Allocation: Public Education Fund (starts FY17)
OMB Component Number: 2804

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2019 Appropriation Requested	Included in Governor's FY2019 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2019**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits	51,024.0		51,024.0	51,024.0	51,024.0	51,024.0	51,024.0
Miscellaneous							
Total Operating	**51,024.0**	**0.0**	**51,024.0**	**51,024.0**	**51,024.0**	**51,024.0**	**51,024.0**
Fund Source (Operating Only)							
1004 Gen Fund (UGF)	51,024.0		51,024.0	51,024.0	51,024.0	51,024.0	51,024.0
Total	**51,024.0**	**0.0**	**51,024.0**	**51,024.0**	**51,024.0**	**51,024.0**	**51,024.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimated SUPPLEMENTAL (FY2018) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2019) cost: 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 06/30/19

Why this fiscal note differs from previous version/comments:

Updated for 2nd legislative session and to accurately reflect out year costs.

Prepared By: Heidi Teshner, Director — Phone: (907)465-2875
Division: Finance & Support Services — Date: 03/22/2018 02:00 PM
Approved By: Dr. Michael Johnson, Commissioner — Date: 03/22/2018
Agency: Department of Education & Early Development

FISCAL NOTE ANALYSIS

STATE OF ALASKA **BILL NO.** HB 52
2018 LEGISLATIVE SESSION

Analysis

HB52 creates a pre-elementary program for those students between the ages of three and five years old. It amends AS 14.03.080 Right to attend school, by reducing the eligible age to attend and be funded from five to three years old. Funding will be through the public school funding program under AS 14.17.410, provided the students are not already being funded by another program for their education.

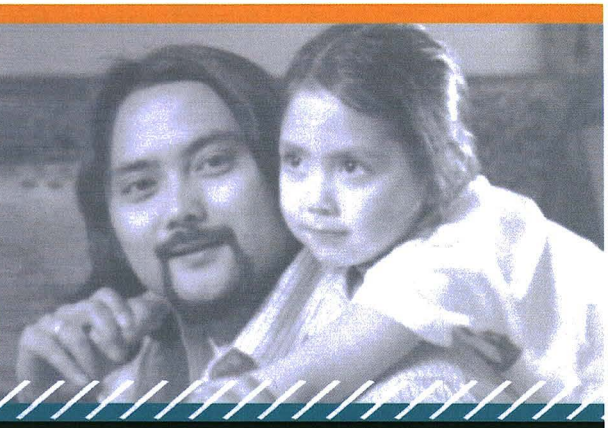
This fiscal note General Fund appropriation was calculated by taking the FY2017 October 1 kindergarten enrollment, to represent a pre-elementary cohort, multiplying by the FY2018 projected average state aid per student to arrive at a cost of $51,023,973.

FY2017 October 1 kindergarten count: 10,283-4,706 (3-5 year olds enrolled in programs outlined in Sect. 6) = 5,577
FY2018 projected average state aid per student: $9,149
Total cost of a full-time pre-elementary program estimated at $51,023,973

Please note the eligibility for space allocations and capital improvement projects through the department's facilities programs are not analyzed in this fiscal note.

This bill does not provide for an effective date.

Investing in Alaska's Young Children



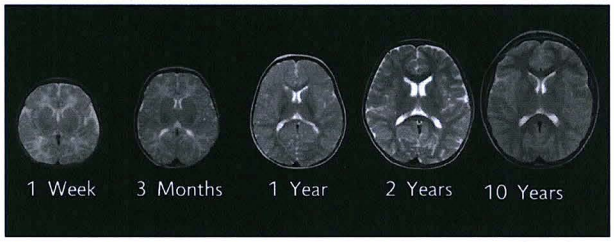
Benefits of Investing in Early Childhood

1 Early Experiences Shape the Brain

Science tells us that during the first three years of life the brain undergoes extraordinary development as children are acquiring the ability to think, speak, learn and reason.

At birth, a child's brain has close to all of the neurons it will ever have. The brain doubles in size in the first year, and by age three it has reached 80 percent of its adult volume.

Brain MRI Images



Source: Pediatric MRI Data Repository, NIH MRI Study of Normal Brain Development; 2012.

More importantly, the early years are the most active period for establishing the neural connections (i.e. synapses) that comprise our brain architecture. In fact, more synapses are formed during these early years than any other time.

Synapse Density Over Time

Source: Adapted from Corel, JL. The postnatal development of the human cerebral cortex. Cambridge, MA: Harvard University Press; 1975.

Brain architecture is constructed through an ongoing process that begins before birth and continues into adulthood. As it emerges, the quality of that architecture establishes either a sturdy or a fragile foundation for all the capabilities and behavior that follow.

2 Prevent the Achievement Gap

In Alaska, about 7,000 children repeat a grade between kindergarten and high school. Gaps in knowledge and ability between disadvantaged children and their more advantaged peers open up long before kindergarten, often persist throughout life, and are difficult and costly to close.

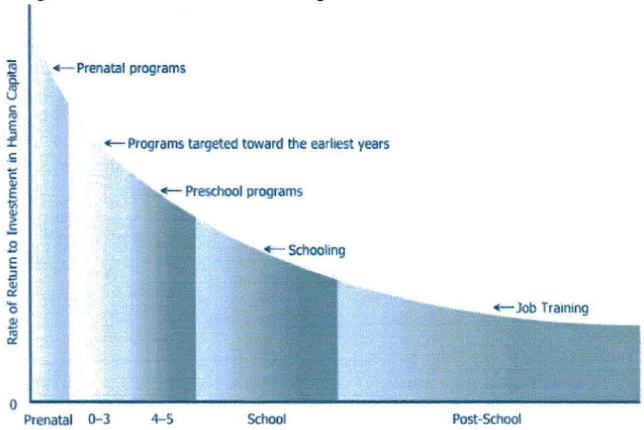
It is far more expensive to intervene during the K-12 years than it is to make an early investment. Investing in quality early childhood programs is more effective and economically efficient than trying to close the gap later on.

3 Smart Investment, Big Return

Research shows that high quality birth-to-five programs for disadvantaged children can deliver a 13% per year return on investment.

Dr. James Heckman, a Nobel Memorial Prize winner in Economics, found that early nurturing, learning experiences, and physical health from birth to age 5 greatly affect success or failure in society.

The most economically efficient time to develop these skills and abilities is in the very early years when developmental education is most effective. Start at birth, coordinate services into comprehensive early childhood programs and achieve greater economic and social gains.



Source: James Heckman, Nobel Laureate in Economics

2017 Investment Priorities

Quality Early Care

- Reinstate Child Care Assistance by $500,000 to ensure Alaska's working families have access to affordable quality child care.
- Maintain investment in Head Start and Pre-K programs to advance early learning opportunities for children.

Strengthening Families

- Support Parents as Teachers in strengthening parent knowledge of early childhood development and improving parenting practices.
- Maintain investment in Infant Learning Programs to continue to provide essential early intervention services to children with developmental disabilities/delays and children who experience abuse and/or neglect.

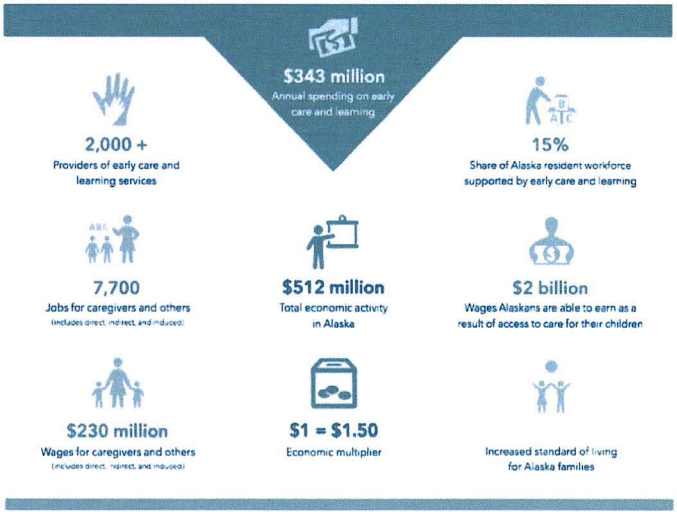
Community Engagement and Early Literacy

- Maintain investment in Best Beginnings that leverages private sector investments to provide Imagination Library books to 35% of Alaska children under 5 and promotes parent and community engagement in early learning and literacy.

4 Generate Economic Activity and Growth

Early care and learning activity in Alaska creates jobs for thousands of Alaskans; allows thousands more to participate in the workforce because care is available; and generates millions of dollars in spending by households and the public sector.

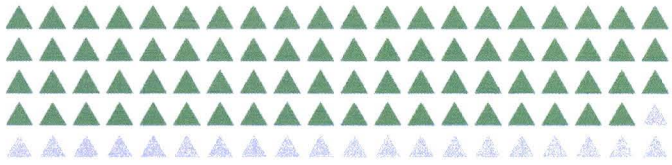
This spending generates even more economic activity through related expenditures in communities throughout the state. Investment in families with young children is a social, economic, and education imperative for the future success of Alaska.



5 Strategy for Long-term Prosperity

According to a statewide survey of 750 Alaskans conducted in September 2015, an overwhelming majority of Alaskans believe state funding for early childhood programs is important for the state's long-term prosperity.

Nearly three-quarters of respondents (71%) said that in current tough economic times, they support investment of state funds in early childhood programs as a strategy for ensuring Alaska's long-term prosperity.



Alaska AEYC · Alaska Head Start Association · Support Brings Success · Alaska Infant Learning Program Association · ALL ALASKA PEDIATRIC PARTNERSHIP · BEST BEGINNINGS Alaska's Early Childhood Investment · Parents as Teachers State Office · thread

The Alaska Early Childhood Advocacy Group is a coalition of early childhood experts and leading organizations with representation across Alaska working to increase the number of children ready to succeed in school and beyond.

Pre-Kindergarten: The Key to Saving Failing Schools

Why Pre-K? States across the country have found that universal, voluntary pre-K programs for four-year-olds are *the* most effective way to turn around failing schools and get higher returns on investment on existing education funding.

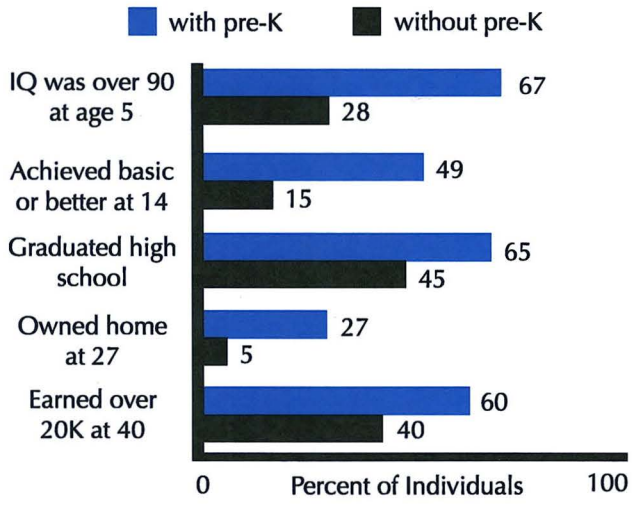
- Studies show that pre-K participants have much greater rates of success: higher achievement test scores, are held back in grades less, and are more likely to attend college.
- Alaska's fledging pre-K program has succeeded in turning around some of the state's lowest performing schools.

After decades of unsuccessful and costly school reform, Alaska has a great need for an investment in this known solution.

- Alaska's pre-K enrollment is far below the national average and as a result, only 20% of our kids enter Kindergarten prepared to learn.
- Our current system is failing to turn around chronically under performing schools and increase our low test scores.

It is senseless to ignore a solution that is proven to boost achievement and could maximize the impact of other reforms and investments in education.

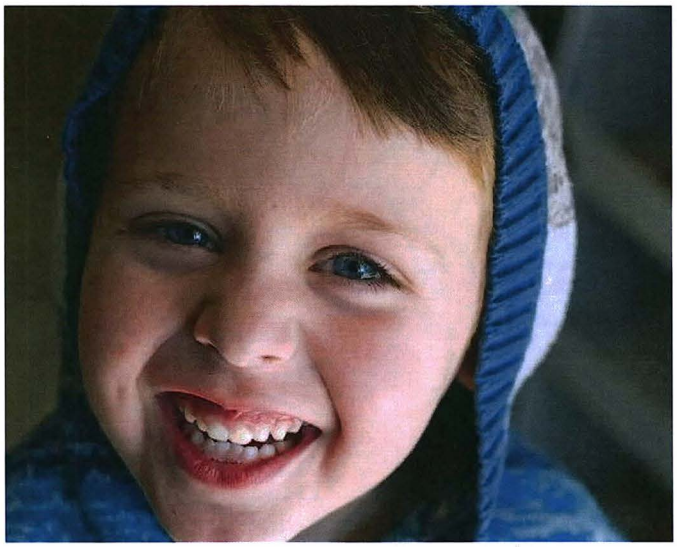
Long-Term Benefits of Pre-K



Source: The High/Scope Perry Preschool Study Through Age 40, Summary, Conclusions, and FAQ, November 2004

The good news? We already have the structure in place to launch a successful program. We have one of the highest rated pre-K programs in the country and have developed ways to adapt it to Alaska's unique communities.

The only thing missing is the funding to expand this valuable service to all of our kids.



How Does Alaska Compare?

	Alaska	Rank	National Average
3 & 4 year-olds enrolled in preschool	40.8%	39	47.3%
4 year-olds in state pre-K	3%	37	28%
4th grade reading (NAEP)	27.5%	44	34.0%
8th grade mathmatics (NAEP)	33.0%	30	34.4%
High school graduation	79.0%	30	81.0%
Postsecondary participation	33.5%	51	55.1%

Source: National Institute for Early Education Research (2013) and Education Week Research Center (2015).

Pre-Kindergarten: The Key to Saving Failing Schools

Alaska's initial attempts at pre-Kindergarten programs have succeeded in boosting academic achievement for kids in Alaska's lowest performing schools. In fact, it is our most successful intervention for turning around schools. Alaska's Pilot Pre-K program began in 2009 and had an immediate and dramatic impact on improving academic achievement: between fall and spring of the first year, the number of children in the top two percentiles for vocabulary more than doubled; by the end of the second year, 78% of students showed above-expected growth in vocabulary.[1] Schools that have invested in pre-K with their Moore settlement funds have had similar results.

And yet, despite hard scientific evidence on the efficacy of pre-K and extraordinary results locally, the state is not increasing its investment in this known solution. Only 40% of Alaskan 3- and 4-year-olds are enrolled in formal pre-K (we're 39th in the nation); even worse, only 3% of Alaskan 4-year-olds are in state funded pre-K, far below the national average of 28%. At a time when Alaska struggles to make improvements on key academic indicators, such as fourth grade reading levels—we're 44th in the nation—it is senseless to ignore a solution that is known to boost achievement and could maximize the impact of other reforms and investments in education.

From small-government Oklahoma, to recession-devastated Michigan, states across the nation have found that investment in statewide voluntary pre-Kindergarten programs produce results in educational success, job development and crime reduction. It is not sustainable to keep pouring money and effort into reforms at the elementary, middle and high school levels without first addressing the foundational skills of our children entering kindergarten. As we prepare our kids with a better base in their early years, efforts at the higher levels will have more of an impact.

Our failure to adopt statewide pre-K is limiting our ability to compete and prosper economically, and threatens the return on investment from the millions of dollars Alaska spends on increasing academic achievement. The science on the matter is clear: we are defying the research by starting our kids in school so late.

For decades, policy makers and school reform leaders have been working to "fix" K-12 education at tremendous expense and with limited success.

Two common flaws in those efforts have been a major focus on closing student achievement gaps long after they surface and an indifference to pre-k, despite its ability to change the trajectory of children's learning and to be the catalyst for higher performance throughout school.

Reforms that rely on children playing catch-up are not a long-term strategy for success.

The Pew Center on States,
Transforming Public Education: A Pathway to a Pre-K-12 Future, 2011

The Case for Pre-K

The field of early learning and brain development in infants and children has changed dramatically over the past decade due to rapid advances in biotechnology, genetics and computer science; this has changed how we view the child's developing mind, and how we view a child's education.

We now know without doubt that vital learning happens before age five. The peak period for language acquisition happens between 8 and 10 months, before infants have even spoken their first word. And the years before kindergarten are a critical period for cognitive, social and behavioral development that lays the foundation for future success in school and life.

We also know that not all children are exposed to environments that help them develop these skills. At 3 years of age, children of college-educated parents have an average vocabulary of 1,200 words; children of working class families average 600; and families in poverty only 300 (in Alaska, only 50% of children come from families where at least one parent has a postsecondary degree[2]). This gap continues to widen before traditional school entry, leaving disadvantaged students up to two years behind by Kindergarten.

And yet the majority of Alaskan children receive no formal education until age 5 or 6. As a result, fewer than 20% of children entering kindergarten in Alaska are prepared in all the ways experts say is important for success in school.[3]

> Skill formation is dynamic in nature. Skill begets skill; motivation begets motivation... The longer society waits to intervene in the life cycle of a disadvantaged child, the more costly it is to remediate disadvantage.
>
> **James J. Heckman**, Nobel Laureate economist

It is no wonder that our teachers struggle to get kids on track and our test scores languish when our kids are entering school so far behind.

Alaska's failure to develop the foundations for learning in our children haunts us throughout their education: Alaska ranks 44th in the country for 4th grade reading levels and 51st in post-secondary attainment,* with just 37.4% of our young adults enrolled in postsecondary education or with a degree (2013).[4] It is a common complaint from businesses that we don't have local talent for jobs, and as a result, Alaskans are missing opportunities for high paying jobs in our leading sectors.

The growing body of evidence shows that pre-K participants have much higher rates of success in their future academic performance. Compared with peers who have not had pre-K, they have higher achievement test scores, they repeat grades far less often, they need less special education, they graduate from high school at substantially higher rates, and are more likely to attend college.[5]

This is why the College Board, which represents over 6,000 of the world's leading educational institutions, lists pre-K for all three- and four-year-olds FIRST among its ten recommendations for increasing college enrollment.[6]

There are pre-K success stories across the country and right here in Alaska:

- **Tetlin School, Alaska Gateway School District, Tok, AK**: Tetlin was ranked the 2nd lowest

** Note that Alaska has made small gains in most categories since 2003, including a 10% rise in high school graduation rates since 2010. It's just that we've been so far behind for so long that we need more dramatic gains to catch up.*

performing school in Alaska in 2012. After a year of pre-K investment from the Moore Settlement, the school moved to 8th, and in 2014 it came within one point of being a 3 out of 5 star school. In 2010 and 2011 Tetlin did not have a proficient student in either language arts or math and did not have a student proficient in Math from 2008-2011. By 2014, they raised the levels to: reading at 64% proficiency; writing at 36%; and math at 31%.[7]

- **Whitley County School District, Kentucky**: began offering pre-K to all four-year-olds in 1996; in 2005, it raised the bar for kindergarten exit because such a high number of former pre-K students were satisfying first-grade entry requirements halfway through kindergarten.[8]

How Does Alaska Compare?

	Alaska	Rank	National Average
3 & 4 year-olds enrolled in preschool	40.8%	39	47.3%
4 year-olds in state pre-K	3%	37	28%
4th grade reading (NAEP)	27.5%	44	34.0%
8th grade mathmatics (NAEP)	33.0%	30	34.4%
High school graduation	79.0%	30	81.0%
Postsecondary participation	33.5%	51	55.1%

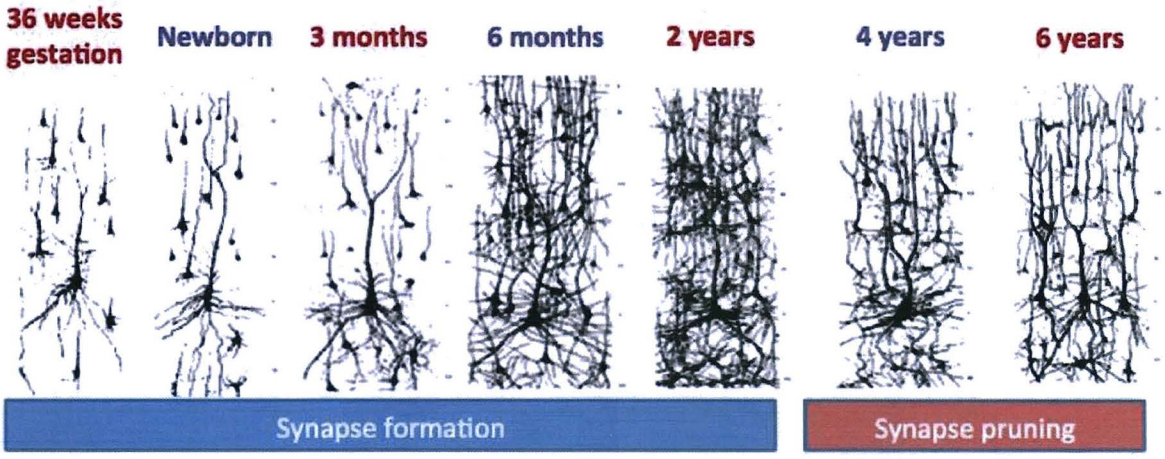
Source: Figures for 2013; graduation is class of 2012. State funded pre-K: National Institute for Early Education Research (2013); all other figures: Education Week Research Center (2015).

What's going on in that baby brain?

New technology that allows us to see brains at work has revealed that the brain is being sculpted by experience during the entire period from early infancy to the end of puberty and it is important that parents and educators understand this.

The trillion or so neurons that we all have in our brains are largely in place at birth, but they can't talk to each other until they form neural connections (synapses) that allow electric impulses to flow between them — think of telephone lines connecting houses. In the first years of life, up to age three, the brains of children are forming connections furiously. By age three, the child has twice the number of connections as the adult brain. Once all the connections are formed, the brain begins to "prune" excess connections; this pruning lasts until the end of puberty. This specific timing of the connecting and pruning process is is why it so important for kids to have exposure to vocabulary and speech patterns in their early years.

From Born to Learn: Language, Reading, and the Brain of the Child, Dr. Patricia K. Kuhl, Co-Director, Center for Mind, Brain, and Learning, University of Washington.



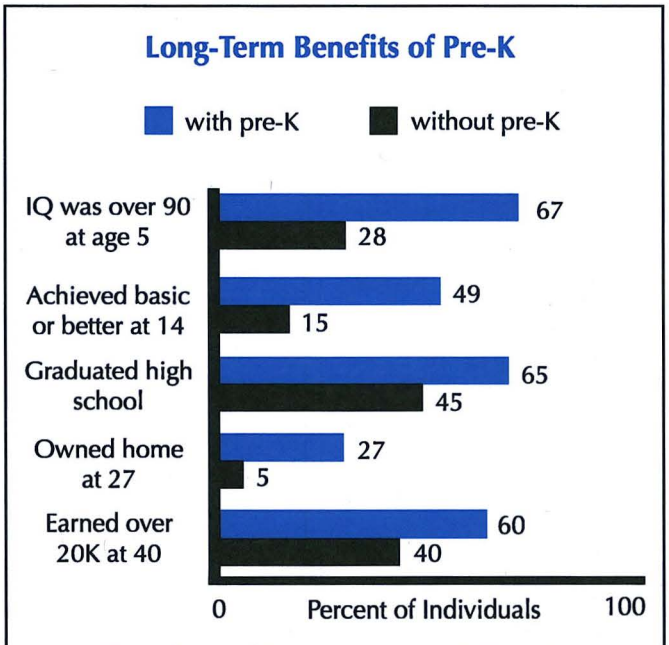
- **Oklahoma**: the state has offered voluntary pre-K for all children since 1998 and has documented significant academic gains across all income and racial groups. Participation in pre-k was a more powerful predictor of children's pre-reading and pre-writing scores than demographic variables such as race, family income, and mother's education level.[9]

Pre-K also has positive long-term effects: a 2005 longitudinal study of the alumni who attended the High/Scope Perry preschool program in Michigan in the early 1960s found that the benefits of the program lasted long into adulthood:

- 60% earned $20,000 or more per year, compared to only 40% of those without a pre-K background;

- 36% had been arrested five times or more, compared with a staggering 55% of those without pre-K.[10]

When you consider that a year of prison in Alaska costs $50,000/person (vs. $6,270/year for pre-K) and that we have over 5,000 incarcerated, reducing arrest rates by 19% would have considerable costs savings.



Source: The High/Scope Perry Preschool Study Through Age 40, Summary, Conclusions, and FAQ, November 2004

What is Pre-K?

High quality pre-K is not day care. And it is not about forcing kids into a rigid academic environment at a younger age. Pre-K doesn't necessarily teach kids how to read, but instead it stimulates brain development and helps children develop the emotional and behavioral skills that are the foundation for formal academic learning.

A high quality pre-K program integrates both the science of child development and academic performance by nurturing cognitive, emotional and behavioral "soft skills," as well as familiarizing children with standard classroom practices. It teaches letter and number recognition, develops vocabulary (recall the 1200 word vocabulary of three-year-olds from college educated families), problem-solving, interactions with teachers and peers and helps children prepare for the world of school in a fun and comfortable environment.

Skilled early learning teachers are able to convert child development research into every day learning by facilitating activities like creative play, solving puzzles, and independent or small group activities. The teachers provide feedback and help children connect what they are doing to specific concepts.

For example, a teacher reads a story to students and then leads an activity in which they carry out interactions similar to those in the book. The teacher supports the activity by providing some guidelines, scenarios and materials in advance. While letting students explore their own creativity, the teacher asks probing questions or extends certain concepts. If designed and facilitated well, this develops both cognitive and soft skills.[11]

While developing emotional and behavioral "soft skills" may seem trivial, it has a direct impact on future academic achievement. A recent analysis of more than 200 school-based social-emotional development programs involving more than 270,000 K-12 students found that, on average, children who took part in such curricula increased their academic achievement by 11 percentage points as compared with nonparticipating peers.[12]

Successful Pre-K Models

The good news is that we don't have to reinvent the wheel. There are many successful pre-K programs across the country, including right here in Alaska. A common theme of successful models is that the programs are voluntary, but open statewide to all districts and income levels. The most critical indicators of success are: high standards for teacher certification and evaluation, small class sizes, and coordination with Head Start and existing services. Without this intentional delivery, pre-K becomes glorified day care and wastes valuable education dollars.

For instance, both Florida and Oklahoma have universal, voluntary pre-K with high enrollment (78% of 4-year-olds in FL and 74% in OK), but Oklahoma has much higher standards, and as a result, greater gains in academic success. Oklahoma's program, which began in 1998, meets 9 of 10 NIEER quality benchmarks; Florida's program began in 2005 and meets only 3 of the 10 benchmarks.

Oklahoma is widely recognized as having one of the most successful pre-K programs in the country. A well-regarded study of pre-K in Tulsa, the state's largest school district, showed that poor students who attended public pre-K were 11 months ahead of their peers in pre-reading skills when entering kindergarten, and near-poor students were 10 months ahead, but even middle-class students were 7 months ahead.[13]

On the other hand, school districts in Florida are seeing abysmal results from the program and are calling for improvements. Data from Manatee County's 2012 achievement tests revealed that only half of the district's third-graders scored at proficiency levels and about a third performed at the lowest level.[14] In Escambia County, in the 2011-12 school year, less than 70% of the kindergartners who attended voluntary pre-K the previous year ended up with the requisite skills measured on the readiness tests.[15]

Nationwide, 28% of four-year-olds were enrolled in state-funded pre-K in 2013. Georgia was the first state to implement statewide, voluntary pre-K, followed by Oklahoma, Florida, the District of Columbia and West Virginia. Illinois and New York are in the process of rolling out statewide programs. Michigan, Mississippi, California and New Jersey do not offer their pre-K to all four-year-olds, but have invested heavily in programs for low- to middle-income families.

In Alaska, as of 2013, 3% of four-year-olds were in state-funded pre-K, 13% were in Head Start, and 6% were in Special Ed pre-K. Of the remaining 78% not enrolled in public programs, about 20% did attend some sort of program, offered by churches, nonprofits or private entities. Unfortunately, over half of Alaskan 4-year-olds have no exposure to pre-K.

Standards for High Quality Pre-K

After years of researching high-quality programs, pre-K experts have identified several common structural characteristics of quality programs. The nonprofit National Institute for Early Educational Research uses these in its an annual Yearbook report, an evaluation of state programs using 10 quality standards.[16] ***Alaska's pre-K standards met all ten benchmarks in the 2013 review***:

1. Teacher degree: Must have a bachelor's degree;
2. Teacher training: Must have specialized preparation in preschool education;
3. Assistant teacher qualification: Must have a Child Development Associate (CDA) or equivalent credential;
4. Professional development: Teachers must receive at least 15 hours of annual in-service training;
5. Class size: May not exceed 20 children;
6. Ratio: May not exceed 10 children per staff member;
7. Early learning standards: Comprehensive standards as specified by the National Education Goals Panel for physical well-being and motor development, social/emotional development, approaches toward learning, language development, and cognition and general knowledge;
8. Comprehensive services: Vision, hearing, and health screenings and referrals as well as at least one service such as home visits, parent education, or nutrition information;
9. Nutrition: Provision of at least one meal;
10. Monitoring quality: all sites are visited to assess program quality at least once every five years.

As pre-k has become a part of the fabric of the community environment, we have found that everyone loves it. Indeed, in the most unlikely of places–*a low-tax state which is one of the country's reddest*–we have continually expanded public and private investments in pre-school and early education. It galvanizes and brings people together in ways that few public policies seem to do.

Steven Dow, Executive Director of CAP Tulsa, a community based organization in establishing pre-K as state policy in Oklahoma in 1998.

Pre-K in Alaska

While quite small, Alaska's Pre-K programs have been incredibly successful. As mentioned in the introduction, pre-K is our most successful intervention for turning around schools in Alaska and the 2012 evaluation of the Alaska Pilot Pre-Kindergarten project (FY10 and FY11) found dramatic gains in vocabulary.

It also found that at the end of year two, all but one site showed gains on the Early Childhood Environment Rating Scale-Revised Edition (one of the metrics used for the evaluation). The districts in the Pilot began at minimal levels on the scale and ended with eight sites approaching excellent or above good, four approaching good, and one above minimal.[17]

These dramatic results are possible because Alaska has built a high quality program, based on national best practices, such as high standards for teacher training and evaluation and options to partner with existing preschool and child care programs. Alaska is one of only four states to meet all ten National Institute for Early Education Research benchmarks in 2013.

Direct State Spending on Pre-Kindergarten

Prior to the current pre-K program, from FY05 to FY08, the Alaska Community Preschool Project, a federally-funded model preschool project, served approximately 250 young children per year in seven communities around Alaska.

In 2009, the Alaska Legislature provided the Department of Education and Early Development with $2M in general funds for the Pilot Pre-Kindergarten Project for FY10 and FY11, modeled on the lessons learned from the previous program. Funding was awarded to the top six out of twelve applicant districts, based on a competitive grant process. The six participating school districts—Anchorage, Juneau, Nome, Bering Strait, the Lower Kuskokwim and Yukon-Koyukuk—served 200 students in year one and 248 in year two.

Additionally, two chronically under performing districts, the Lower Yukon and Yupiit School Districts, were awarded funds for early childhood specialists to coordinate and enhance existing early childhood programs for 210 children. The majority of the Pilot Pre-K programs offer half-day programs and operate within a public school or Head Start classroom; the programs also provide outreach to families preferring in-home care.

As a result of the success of the pilot program, the project became permanent in FY12 and was expanded to $2.5M for 345 students in eight districts. Unfortunately, the program was cut back to $2M in FY14 (Alaska was one of only 3 states to cut pre-K funding; 30 raised levels and 7 maintained).[18] The program currently costs $6270 a year per student.

Future funding for the program is undecided, but at the time this paper was published, the Alaska

Pre-K Program remains in the FY16 budget for $2M and there is a bill (HB36) that proposes the establishment of a statewide voluntary pre-K. A similar proposal from the previous session estimated that the cost to provide universal pre-K in Alaska would be about $46M a year.[19]

The Moore Settlement

In addition to the Alaska Pre-K Program, 29 schools offer pre-K using funds from the Moore Settlement, which provides funding to under performing Alaska school districts to address low student achievement. The Moore Suit of 2004 challenged the adequacy of the educational system under the Alaska Constitution's guarantee of "a system of public schools open to all children," and in 2007, Judge Sharon Gleason for the first time defined the constitutional obligation and narrowed the case to the State's failure to support and oversee chronically under performing schools.

In January 2012 the State of Alaska settled with Citizens for the Educational Advancement of Alaska's Children (CEAAC) on the Moore case and created an $18 million fund for four programs (early literacy, target grants for proven educational strategies, teacher retention, and high school graduation exam support) over an anticipated three years. The Moore Collaborative Committee allocates the money, with three voting members appointed by the State and three by CEAAC. The

programs all end at the conclusion of the 2016-17 school year unless extended by action of the state.

Under the settlement agreement, the 40 schools with the lowest performance are eligible for funds to begin or expand existing Early Literacy Programs or a Two-Year Kindergarten. 29 schools in seven school districts are currently participating: Bering Strait, Lower Kuskokwim, North Slope Borough, Northwest Arctic Borough, Yupiit, Alaska Gateway, Yukon Flats and Yukon-Koyukuk.

The program launched cohorts in the 2013-14 and 2014-15 school years, and an upcoming application period to launch the final cohort for the 2015-16 school year aims to reach the remaining schools in the settlement. An evaluation will not be completed until the end of the program, but recent test results show the program is successful—as evidenced by the earlier story from Tetlin School in the Alaska Gateway District.

The Moore program is unique in that it allows school districts to tailor their pre-K to their community's specific needs and existing resources. For instance, the Bering Strait School District has spent the past 15 years fostering a relationship with its local Head Start program and did not want to waste that effort by starting an entirely new program. They used their funds to hire certified teachers (employed by the district) to join the Head Start classes to enhance learning and bring the program up to statewide pre-K standards.

Communities that do not have strong existing pre-K programs, like the Northwest Arctic Borough School District, are able to use their funds to create a two-year Kindergarten program within their existing school framework. Other districts have a mix of pre-literacy and two-year Kindergarten programs, depending on community need.

Federally Funded Pre-Kindergarten in Alaska

Head Start was created in 1965 as part of the "War on Poverty" to boost the school readiness of low-income children. The program provides preschool education; medical, dental, and mental health care; nutrition services; and helps parents foster their child's development.

Head Start enrollment in 2013 included 13% of all Alaskan four-year-olds; however the program is underfunded and the Alaska Head Start Association estimates that more than 50% of the children who qualify are not able to get in the program. It does not have the same high standards for teacher certification that have been identified as the key to success for pre-K, but efforts on a national level aim to bring it into alignment with pre-K best practices and allow flexibility for states to partner with Head Start as they expand their state programs.

Special Education Preschool is specifically designed to meet the educational and developmental needs of children with disabilities, or those experiencing developmental delays. Services for children (ages 3-5) are provided free of charge through the public school system as required by the Individuals with Disabilities Education Act. 6% of Alaskan four-year-olds are enrolled in Special Education Preschool.

Title 1 Preschool: schools or districts that qualify for Title I funding (federal formula-funding for schools with high numbers or high percentages of children from low-income families) can use their funds to improve cognitive, health, and social-emotional outcomes for eligible children below the age of Kindergarten entry. The use of Title I funds for a preschool program is a local decision based on the needs of its eligible students and the most effective use of those funds. There are over 250 Title 1 schools in Alaska and a handful offer preschool programs.

Other Statewide Early Learning Programs

The state also provides funding for several programs that provide early learning resources to the families of infants and toddlers. This is important because we know that valuable learning happens from birth to five, before most kids enter school.

Parents are children's first teachers and have an opportunity and responsibility to prepare their kids for school, but they need adequate resources and support to succeed.

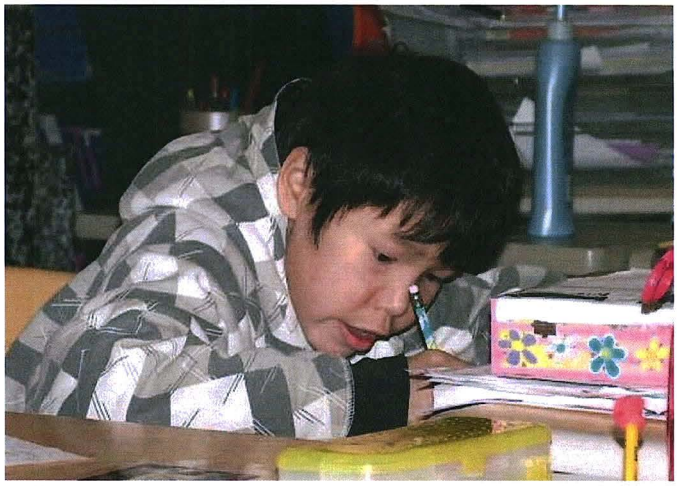
Parents as Teachers (PAT) is an early childhood parent education and family support program designed to empower parents to give their children the best possible start in life. Home visits and group socializations are offered to families in 19 communities across the state. PAT is administered by RurAL CAP and is supported by community agencies, Native organizations and community Elders. 2013 PAT Accomplishments:

- 441 children and 42 prenatal women served
- 211 PAT parents reported an expanded understanding of their role as educators in the home
- 210 PAT parents reported improved parenting skills including skills related to positive discipline and development
- 84 educators completed the Parents as Teachers Foundational Certification

The Ready to Read Resource Center is a project of the Anchorage Public Library, with funding from the Alaska State Library. The Center, which has partners in over 130 communities, loans its 250 reading kits free of charge anywhere in the state (via mail) to parents/caregivers as well as to organizations that serve infants and toddlers (child care providers, libraries, health clinics, faith-based organizations), and provides early literacy workshops. In many small communities, libraries are volunteer-run and child care is provided by family members—people not necessarily trained in child development concepts—so the Center provides support and materials to ensure that all communities in Alaska have resources to provide early literacy foundations for their children.

The Imagination Library, hosted by the nonprofit Best Beginnings, mails a free, high-quality, brand-new book each month to children from birth to age 5 who live in communities that support the program. The first book for every child is The Little Engine That Could by Watty Piper. Funding is provided through DEED and several nonprofits and Alaska Native organizations. 41% of the estimated 53,996 children in Alaska under age 5 are enrolled in Imagination Library through 111 communities and receiving a book in the mail each month.

Conclusion



Decades of costly education reform efforts in Alaska targeted at older children have not delivered the results we need. Scientific evidence and positive results right here in our own state prove the effectiveness of pre-K for turning around failing schools. We are denying common sense and missing out on an opportunity to improve our schools by failing to invest in pre-K.

Alaska needs a universal, voluntary pre-K program for four-year-olds. This is the single most important thing we can do to turn around academic achievement and get a higher return on investment on our existing education funding.

Luckily, we have the tools in place to launch a successful program. We already have one of the most rigorous programs in the country and we have innovated ways to maintain that rigor while allowing communities to tailor their oferings to their local needs.

Alaska should continue to fund our existing pre-K programs, so we don't lose the gains we've already made. The next phase should be to expand outward to ensure that all of our lowest performing schools have sustainable pre-K programs in place. Alaska's ultimate goal should be that high quality pre-K is available to every four-year-old in Alaska.

We must not let today's economic uncertainty undercut our chances for long-term success. Pre-K-12 is a vision that can help us realize ambitious goals for your children's development and our state's future leadership.

Produced by the Citizens for the Educational Advancement of Alaska's Children, February 2015.

Founded in the late 1990s, CEAAC worked for a decade to address school inadequacies in rural Alaska schools through the courts. Today, CEAAC uses research, policy development and public advocacy to solve school performance issues in rural and urban areas. CEAAC is the only nonprofit organization in Alaska focused on at-risk students and struggling schools.

PO Box 90791, Anchorage, AK, 99509 • www.ceaac.net

Endnotes

1. "Alaska Pilot Pre-Kindergarten Project, Two Year Report," State of Alaska, Department of Education & Early Development. February 10, 2012.
2. "Preparing to Launch: Early Childhood's Academic Countdown," Education Week's Quality Counts report. Jan. 8, 2015.
3. Alaska Department of Education & Early Development (DEED) on the results of the Alaska Developmental Profile (ADP). Fall 2012.
4. Fourth grade public school students proficient on NAEP (2013). "Preparing to Launch: Early Childhood's Academic Countdown," Education Week's Quality Counts report. Jan. 8, 2015.
5. A. J. Reynolds et al., "Age 21 Cost-Benefit Analysis of the Title I Chicago Child-Parent Centers," Educational Evaluation and Policy Analysis 24 (2002); Clive R. Belfield et al., "The High/Scope Perry Preschool Program: Cost-Benefit Analysis Using Data from the Age-40 Follow-up," Journal of Human Resources 41, no. 1 (2006); W. Steven Barnett and Leonard N. Masse, "Comparative Benefit-Cost Analysis of the Abecedarian Program and Its Policy Implications," Economics of Education Review 26 (2007).
6. Jennifer M. Stedron et al., "The College Completion Agenda: State Policy Guide," (Reston, VA: The College Board, 2010). http://completio- nagenda.collegeboard.org/sites/default/files/reports_pdf/Policy_Guide.pdf
7. Todd Poage, Superintendent, Alaska Gateway School District. January 2015.
8. Anthony Buenafe, "Pre-K as a School Turnaround Strategy," (Washington, DC: Pew Center on the States, 2011). http://www.pewcenteronthestates.org/uploadedFiles/Pew_PreK_School_Turnaround_Strategy.pdf.
9. William Gormley, Jr., Deborah Phillips, and Ted Gayer, "Preschool Programs Can Boost School Readiness"; Science 320 (June 27, 2008), pp.1723-24. http://www.centerforpubliceducation.org/Main-Menu/Pre-kindergarten/Pre-Kindergarten#sthash.DTjpdCz5.dpuf
10. Lawrence J. Schweinhart, Jeanne Montie, Zongping Xiang, W. Steven Barnett, Clive R. Belfield, & Milagros Nores. Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40 by 2005, Ypsilanti, MI: High/Scope Press. 2005.
11. "Transforming Public Education: A Pathway to a Pre-K-12 Future," The Pew Center on the States (p 10). September, 2011.
12. Joseph A. Durlak et al., "The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions," Child Development 82, no. 1. 2011.
13. William T. Gormley, Jr., Karin Kitchens, and Shirley Adelstein. Do Middle-Class Families Benefit from High-Quality Pre-K? Georgetown University, Center for Research on Children in the U.S. July 2013. https://georgetown.app.box.com/s/71fwkh8g3ywz6nq1kftu
14. "Florida's pre-K program in need of re-tooling," Bradenton Herald Editorial. February, 10. 2013. http://www.bradenton.com/2013/02/10/4385586_floridas-pre-k-program-in-need.html?rh=1
15. Erin Kourkounis, "State of pre-K: A look at Florida's voluntary pre-K system." Pensacola News Journal. May 6, 2013.
16. W.S. Barnett, M.E. Carolan, J.H. Squires, K. Clarke Brown. The state of preschool 2013: State preschool yearbook. New Brunswick, NJ: National Institute for Early Education Research. 2013. http://www.nieer.org/news-events/early-education-news/state-preschool-2013≠
17. "Alaska Pilot Pre-Kindergarten Project, Two Year Report," State of Alaska, Department of Education & Early Development. February 10, 2012.
18. Craig Tuten, "House Democrats to Renew Push for Pre-K." Alaska Commons. January, 8, 2015. http://www.alaskacommons.com/2015/01/08/house-democrats-renew-push-pre-k/
19. Craig Tuten, "House Democrats to Renew Push for Pre-K." Alaska Commons. January, 8, 2015.

Photo Credits

All photos by Citizens for the Educational Advancement of Alaska's Children unless otherwise noted.

Cover: by Lotus Carroll and publicly shared via Flickr under a Creative Commons license.

Page 1: by John Morgan and publicly shared via Flickr under a Creative Commons license.

Page 3: image from: http://universe-review.ca/R10-16-ANS12.htm

npred

PRESCHOOL

How Investing In Preschool Beats The Stock Market, Hands Down

December 12, 2016 · 6:47 AM ET

ERIC WESTERVELT

LA Johnson/NPR

Mayor Bill de Blasio this week pushed ahead with plans to make New York City one of nation's few big cities to offer free, full-day Preschool for all 3-year-olds.

The plan, which would eventually serve more than 60 thousand children a year, builds on one of Mayor de Blasio's signature accomplishments of his first term: universal pre-K for 4-year-olds.

Washington, D.C., West Virginia, Florida, Georgia, and Oklahoma already offer this. New York City's would be the largest.

NPR ED

A Lesson For Preschools: When It's Done Right, The Benefits Last

To achieve this ambitious goal the mayor will need significant help from the state and federal government worth upwards of 700 million dollars. And he faces the political tussles that will surely accompany his financing challenges. The mayor is running for re-election in 2017.

But there is near universal consensus that high-quality pre-K programs can have a huge positive impact on the lives of children – especially low-income ones – as well as on the parents and family.

That's the crux of the study The Life-Cycle Benefits of an Influential Early Childhood Program, co-authored by Nobel laureate James Heckman, a professor of economics at the University of Chicago and the director of the Center for the Economics of Human Development.

There's a growing body of research on the value and importance of high-quality early education programs — especially for disadvantaged kids.

But there's surprisingly little research on its impact over time. This paper helps change that. Heckman and his co-authors examine the many ways in which these high-quality programs helped participants thrive throughout life.

The paper analyzes two North Carolina programs founded in the 1970s that worked with infants from 8 weeks old through age 5. The rub for researchers: The programs included data collection from birth through age 8 on a wide range of school and home life factors as well as long-term follow-ups through age 35.

Quality early education programs are expensive upfront. But as Heckman argues, the returns are enormous; the investment well worth it.

NPR ED

Surprise! Amid Rising Inequality, One School Gap Is Narrowing

Your study found enduring positive effects of quality pre-K on a lot of things, including future earnings, health, IQ and crime reduction. Is the bottom line here stronger, fuller, richer lives?

Yes it is, but it's more than just stronger, richer, fuller lives for the children. It's also stronger, richer, fuller lives for the mothers of the children. Let me explain why. In America today we have a lot of single-parent families. We have a lot of mothers who are working.

What we've done is shown the benefits across two generations of the study of these enriched early child care programs. Not only providing child care for working mothers — allowing them to get more education — but primarily to get more work experience, higher earnings gains through participating in the workforce, but also getting high-quality child care environments that turn out to be developmentally rich. It promotes social mobility within — and across — generations. That I think is an important finding of this study.

Tell us about the two programs you've studied, serving mostly lower-income, predominantly African-American families.

The program starts very early. The children are 8 weeks old. It stays with the children until they're age 5.

It's a program that runs nine hours a day, so it's very child care-friendly in the sense that women could leave their children at the child care center and then go on to work. They provide these disadvantaged children with enriched family environments: more verbal attention, more enrichment and parenting resources available to disadvantaged, predominantly African-American women, as you say, and single-parent women. It supplements the early lives.

In addition, it gives health care screenings for children 0 to 5. The pediatrician has access to the treatment group. The pediatrician then would suggest what health indications should be taken. What kind of steps, what kind of treatment might be taken. Doesn't pay for the treatment but it does essentially screen the children and alert parents to the need for treatment.

This is true wrap-around service and personalized attention?

Yes. Turns out one of the most effective ingredients for these early child care programs is interacting with the child. What I mean by interacting is a give-and-take. The term that's used by the child development specialist is scaffolding, like building a sculpture — in this case of a human being. Staying with the child, taking the child to the next step, challenging the child. In that sense it's very personalized education.

It's very time-intensive education, but it's education that stays with the child. It also has another effect, which is that it engages, through the enhanced stimulation of the child, the parent. Parents themselves visit the center, so that there is also stimulation of the parent-child relationship that lasts long after the program itself is formally ended at age 5.

This kind of comprehensive program is more costly upfront?

For sure. The main benefit of this study is, if you count all of the benefits that accrue from this program in terms of reduced health care costs, reduced crime, greater earnings, more education, higher IQ — the list is quite long. Those all are monetized. We can compute a rate of return, the dividend would be from the investment. You get about 13 percent per annum. Much higher than the annual return on equities in the U.S. stock market post-Second World War through the 2008 meltdown.

Yeah I'd like 13 percent on my 401(k) every year.

Exactly. This is a huge, huge investment return. It competes favorably with almost any other public program.

What was the (annual) per-pupil spending while these children were in the program?

Per-year it's probably about $16,000 to $18,000. It depends on what [year] dollars you use. It's expensive.

That is pretty high. You're saying you get what you pay for?

NPR ED

What Good Preschool Looks Like: Snapshots From 4 States

Well, yes, it's a lot. But what are you getting in return? You're getting hundreds and hundreds of thousands of dollars. Seven to eight hundred thousand dollars back for what is essentially an $80,000 to $85,000 expenditure. Yes, it costs more but we can go back and think: In its time the transcontinental railroad that Abraham Lincoln launched, the Hoover Dam, the transcontinental highway system that Eisenhower launched. These all were very costly, but they also led to enormous social benefits.

These programs have enormous social benefit. They help to solve a lot of social problems. The way public policy is discussed frequently in this country is through silos. People say, "We want to reduce crime. We want to promote health." We do what is, I think, a very limited kind of notion: looking at one problem at a time and one solution very closely linked to that problem. I would encourage people who see the price tag to also look at the benefit tag. They're well-documented.

You followed these young people well into adulthood?

That's the benefit of the study. The children in the study essentially are much healthier than their counterparts who did not participate in the study. That came as a surprise to some people, but it shouldn't be a surprise. Not only did they get the health screening, but they also developed these social and emotional skills: self-control, the ability to monitor. They had more education, therefore they had more information. In a number of ways these children became more engaged, control their own lives better, and that shows up in their adult health.

What is turning out from this body of research is that promoting engagement of children, their cognitive and noncognitive skills, boosting their IQs, at the same time

boosting their social engagement, their willingness to participate in society, monitoring their health from an early age, is having huge benefits downstream for the rest of their lives.

You mentioned the return on investment. But you've also documented health benefits, crime reduction and parental benefits including boosted income and lower obesity rates. Talk about that a little.

That's folded into what we have for a measure of the rate of return. You can actually monetize the cost of the criminal justice system, the cost of incarcerating people and so forth. You can also talk about the benefits of reduced health care expenditures, higher-quality of life and so forth. All of that's incorporated into our rates of return and benefit-cost ratio. Breaking out these components, one of the most surprising findings from a study that we did published in *Science* magazine a couple of years ago. We showed that children who are in this program were much less likely to be obese, to have hypertension, to have precursor environments that would promote diabetes.

You mentioned the poisonous effect of the silofication — if we could call it that — in combating poverty. Looking at social challenges largely in isolation. This is also a hyper-partisan age. What do you think policymakers and politicians are missing when it comes to looking at early childhood education?

Some leading politicians both Republicans and Democrats are not missing. They're well aware of it. What's really interesting is that if you go out to those red states that were called fly-over states in the last election, the ones in the Midwest and the ones that people frequently ignore. It's states like Oklahoma, Kansas, Nebraska, that have been some of the most vigorous in promoting early childhood development.

The reason is that it's based on an economic efficiency argument and it also promotes what is an agenda that's frequently very common in some of those states about family values. It's really about helping bolster the American family, which I think is under attack, it's under transformation. It's simply that we have many more single-parent families. We have many more mothers who are working because they have to support their families.

You've said the ultimate risk factor in the complex poverty equation is lack of parental engagement. Talk about that and what these programs you studied did in terms of parental engagement?

It's not about getting toys that rotate or getting a particular program online to stimulate the kid. That can't hurt, but it's not the story. It's the engagement. It's "Johnny or Sally, here let's look at this together, let's go to the zoo, let's look at this book, let's see what we're doing." It's that engagement. When you engage the parent in that process, you help them bolster their arrangement, then I think you actually will keep in place over the life of the child a very strong very beneficial environment. The center core is engagement. That's what good teaching's about too when you think about it.

I don't think I'm saying anything that's revolutionary, but I do think I'm saying something that is frequently ignored in public policy. We think about a bricks-and-mortar approach to what education is about. That's exactly the wrong way to think about it. It's not a teacher lecturing to a student, it's basically the teachers or child care workers engaging students or engaging these young children and making age-adapted, person-adjusted interventions. I think that's the key.

What do these programs have that helps foster that engagement?

It turns out that many of the disadvantaged families have a mode of discouraging the child. Saying, "Don't do this, don't do that," and on and on. The alternative is to actually have a family that encourages the child and supports the child in making mistakes and learning from mistakes, but also in engaging the child to explore the world. It's this attachment and this support that really plays a fundamental role I think in the structure of essential programs. That's an example where you would literally take the child, read to the child, engage the child, and then you would show the parent, bring the parent into the center. Show how successful the child has been and then send the child home. When the child goes home the child is more engaged and also therefore engaging the parent. We found that. We found that as a byproduct: much more parental engagement among those who got the treatment compared to those who were randomized out into the control group. And these were lifetime effects.

If you look at disadvantaged children you'll find that they're getting about a third or a fourth as many words per hour as more advantaged children. The environments are fundamentally different. Over the lifetime, their young childhood — a period of say 0 to 5 — you're getting a millions of words deficit between those who are advantaged and those who aren't advantaged. That essentially is one way to close the gap. By literally reading to the child, by encouraging the child.

As you know there's been a big emphasis on what constitutes high-quality child care centers. What elements are vital to create these great early learning centers?

There's this enormous body of evidence talking about parent-child interaction. The structure of a successful [center] would be one that encourages those interactions, that fostered those.

Are we talking about empathy?

Well, yes, we're talking about empathy, and we're talking about the structure of engagement with the child, and at the core of successful programs is parenting. It's not so much having a pretty building. There's a whole mentality out there that says, "We have a textbook notion about what constitutes a good school. The teachers must have a certain level of educational attainment." There have been a lot of studies, serious studies, that show that many of these so-called guides to what makes a good teacher — in terms of things like number of degrees or number of teacher credits and on and on and on — are really worthless in terms of predicting who's a good teacher. What is important is finding this empathy, this ability to work with people, the engagement.

By empathy all I really mean is, you work with a child, you stay with a child, a child asks questions, you answer the questions. You don't discourage the questions and you promote them. At the same time you have a firm line where you say, "Yeah that's a mistake. You could go do a little better," and so forth.

We need a national empathy project, Professor Heckman.

Probably could use it across the board and not just in early childhood!

Kodiak Archipelago Rural Regional Leadership Forum
Resolution 2018-03

A RESOLUTION IN SUPPORT OF ALASKA HOUSE BILL 52/SENATE BILL 99

WHEREAS, the Kodiak Archipelago Rural Regional Leadership Forum is a consortium of community, municipal, tribal, Alaska Native corporation and other leaders who support the coastal communities of Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie and Port Lions, and

WHEREAS, many of Alaska's rural communities are facing school closures due to enrollment falling below the average daily membership (ADM) of ten (10) students, and

WHEREAS, many small, rural communities have families with preschool age children who hope to remain in their community but may be forced to relocate if local education is not available when their children enter kindergarten, and

WHEREAS, preschool enrollment is currently not included in the ADM but inclusion of such enrollment would better reflect the make-up of our rural communities, and would recognize that the education continuum begins with preschool age children, and

WHEREAS, Alaska House Bill 52 and Alaska Senate Bill 99 as currently drafted create the opportunity for public school districts to voluntarily provide universal preschool in the State, and

WHEREAS, the sponsors of Alaska House Bill 52 and Alaska Senate Bill 99 have indicated interest in amending the language of their proposed legislation to allow districts to include preschool children in the ADM of schools that face enrollment as long as these schools do not receive both state and federal funding for the same student (e.g., double funding), and

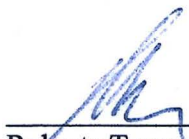
WHEREAS , many tribal governments support pre-schools in Alaska's rural communities and receive federal funds to operate these preschools, and

THEREFORE BE IT RESOLVED that the leaders of the Kodiak Archipelago Rural Regional Leadership Forum fully support the intent of Alaska HB 52 and Alaska Senate Bill 99 to allow districts to include enrolled preschoolers in the ADM of schools facing closure;

AND THEREFORE BE IT FURTHER RESOLVED that the Kodiak Archipelago Rural Leadership Forum also urges the inclusion of preschoolers enrolled in tribal preschools in the ADM of schools facing closure.

PASSED THIS 26th day of January, 2018 by the 63 rural community, municipal, tribal and Alaska Native corporation leaders participating in the Kodiak Archipelago Rural Regional Leadership Forum.

IN WITNESS THEREOF:



Roberta Townsend Vennel, Forum Facilitator

thread connecting early care & education to alaska

March 24, 2017

Dear Representative Kawasaki,

thread, Alaska's Child Care Resource and Referral Network strongly supports expanding quality early care and learning services, including Preschool. This letter is in support of HB52.

Research demonstrates that the most formative years of brain development come well before a child starts kindergarten. Early and sustained participation in quality PreK and early learning settings leads to more children graduating high school, higher earning rates for parents and for the children once grown, reduced public spending on remedial education and services, and lower incarceration rates.

Alaska's state-funded PreK programs currently serve only 3% of Alaska's preschool population. Alaska's children participating in PreK are doing well. A report from the Alaska Department of Education & Early Learning, January 2016, indicated an increase in children's cognitive, language arts and math scores as a result of their enrollment in State funded PreK. These results are consistent with the data from the start of the State's investment in the PreK pilot since FY12. We have demonstrated that Pre- K works, now we need to expand the services so that they are available to more children and families.

thread encourages any PreK services in Alaska be provided in communities allowing for a diverse delivery system. We suggest that HB52 build off of the existing PreK grant process and allow for service delivery in ways that best meet individual community needs. **thread** suggests HB 52 include:

- A definition of PreK to include delivery through school districts, Head Start, private community based child care, and home visiting services.
- An expansion of the existing PreK grant program allowing for a diverse delivery system, family engagement and Technical Assistance support from DEED.
- Use of the Early Learning Guidelines and Alaska Quality Improvement Standards as outlined by Learn & Grow. (In lieu of the current language referencing a model curriculum).

Approximately 10,000 children each year complete the Alaska Kindergarten Developmental Profile, used to assess a child's readiness for kindergarten, while Alaska's state funded PreK currently only supports 300 spaces for 4 year olds. This equates to only 3% of the total 3 & 4 year old population. Alaska's Department of Education and Early Development reports that of the 10,000 children entering Kindergarten, only 38% of these young children start school with all the skills experts say they need to succeed. Currently 7,000 (6%) children repeat a grade each year in Alaska costing Alaskans $11.5 million.

thread connecting early care & education to alaska

Expanding PreK programs will have long-term impact on Alaska's economic security. The 2015 National Assessment for Educational Progress (NAEP) average reading scores for Alaska's 4th grade children were lower than the average scores of 4th graders in 41 other states. 54% percent of 4th graders who are eligible for free and reduced priced lunch read below grade level and 66% of Alaska Native 4th grade students read below grade level. Alaska can't afford to continue the practice of addressing education gaps in the teen and adult years.

Quality early learning programs like PreK should and need to be a part of Alaska's economic infrastructure as a means of creating a literate and prepared workforce. We can invest now or pay more later. Kids without access to quality PreK/ early care and learning programs are up to 39% more likely to go to prison. The cost to incarcerate someone is $40k-$50k vs. $6,200 per child for PreK per year. The evidence is clear: high quality PreK programs are among the most cost-effective interventions with a long-term pay-off.

Sincerely,

Stephanie Berglund
thread CEO
(907) 265-3101
sberglund@threadalaska.org

CC: Representative Fansler
Representative Tuck

Olivia Garrett

From: Cheryl & Mark Lovegreen <lovegrn@alaska.net>
Sent: Wednesday, March 22, 2017 4:16 PM
To: Rep. Scott Kawasaki; Rep. Harriet Drummond
Subject: HB 52 Early Education bill

Follow Up Flag: Follow up
Flag Status: Flagged

I support HB 52 on early education. As you are aware, investment in early education gives children a good foundation for future years and creates future savings for our state government. I hope to see this bill pass the Education Committee and the full legislature.

Thanks for your time,

Cheryl Lovegreen