



Boosting Maine's Economy

Short- and Long-Term Economic Gains
through Quality Early Learning

A report by:  **AMERICA'S EDGE**
Strengthening Businesses Through Proven Investments in Kids



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Who We Are

The business leaders of AMERICA'S EDGE take a critical look at the knowledge, skills and abilities businesses need their employees to have in the 21st century, including the ability to be communicators, collaborators and critical thinkers. Using that analysis, we educate policymakers and the public about high-quality, proven investments that strengthen businesses, establish a foundation for sustained economic growth, and protect America's competitive edge in a global marketplace, while helping our nation's children get on the right track.

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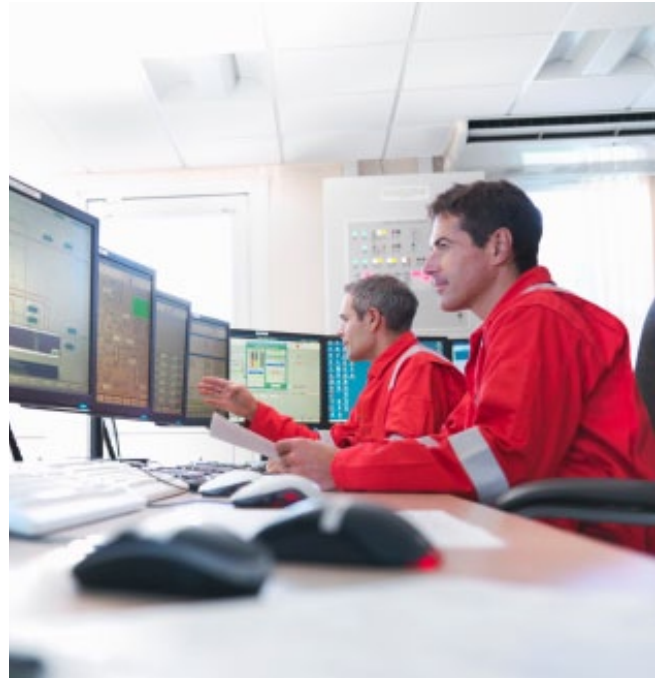
Executive Summary

While many economists agree on the long-term, positive economic impacts of high-quality early care and education programs, Maine businesses do not need to wait 18 years to experience gains from early learning investments. This report shows these investments also provide a surprisingly big boost to Maine's economy *today*. In fact, every dollar in Maine invested in high-quality early care and education generates a total of \$1.78 in sales of local goods and services throughout the state, generating as much or more activity than investments in other major economic sectors, including manufacturing, construction and transportation.

But what lies behind the impressive – and immediate – economic impact of these early learning programs? New research reveals that key “quality components” of such programs contribute to the increased economic activity generated by investments in early learning, while also creating a foundation on which we can ensure Maine's long-term economic stability.

Investing in quality early learning generates additional sales and services in two basic ways – when early learning centers purchase local goods and services to operate their programs, and when early learning teachers and staff spend their wages. This report shows that attracting the most qualified teachers to work in the classroom by appropriately compensating them for their early childhood development skills will also boost sales for Maine businesses. In addition, having small class sizes and small child-to-teacher ratios will further increase short-term economic activity because more teachers and more classrooms will be needed.

The quality components of early learning programs will, in turn, help drive the long-term benefits for Maine businesses, including reversing the “skills gap” that is contributing to the stagnation of Maine's economic recovery and generating long-term economic growth in the state. In addition to compensation, class size and child-to-teacher ratios, additional quality components include: comprehensive and age-appropriate curricula; strong family involvement; and screening and referral services for children and



Monty Rakusen - Getty Images

their families. Extensive research has shown that children who participate in early learning programs with these components are better prepared to succeed in school; have higher rates of graduation; and are more likely to hold a skilled job and earn more as adults.

But just as investments in early care and education can spur economic activity, funding cuts can be just as damaging. Every dollar defunded from early learning programs hurts Maine businesses by eliminating a total of \$1.78 in sales. Our economy and businesses cannot afford these cuts.

The Bottom Line: The fragile and halting nature of Maine's economic recovery requires that we make tough decisions and invest wisely in what will keep America competitive. High-quality early learning is such an investment.

Boosting Maine's Economy

Short- and Long-Term Economic Gains through Quality Early Learning

Critical Issues for Maine Businesses: Across the nation and in Maine, businesses face a lack of workers with the needed skills to fill and perform well in the jobs of today and those of the future.

Although businesses have always needed workers proficient in the “3 Rs” – reading, writing and arithmetic – today’s fast-paced, international and technology-driven marketplace requires even higher proficiency levels in these hard skills. But these skills are too often lacking, especially in young workers entering the U.S. workforce. According to the Nation’s Report Card, only 26 percent of 12TH grade students are proficient in math and 38 percent are proficient in reading.¹

Just as important as the hard skills are the critical “soft skills” – communication, collaboration and critical thinking – which American businesses also often find lacking in the workforce. In a 2010 survey of 2,000 executives conducted by the American Management Association, nine in ten executives said these soft skills are important to support business expansion, but less than half of those executives rated their employees as above average in those skills.² Three out of four executives believe the soft skills will become even more important in the next three to five years because of global competition and the pace of change in the business environment.³

What is driving these dismal statistics? Consider these facts in Maine:

- 16 percent of high school students do not graduate on time;⁴
- 61 percent of eighth graders are below grade level in math;⁵ and
- 68 percent of fourth graders read below grade level.⁶

Nationwide, 60 percent of 3- to 5-year-olds do not have the basic skills expected when they enter kindergarten, such as the ability to count to ten or recognize letters in the alphabet.⁷

A lack of workers with critical skills translates into American companies having difficulty filling existing job openings:

- In a 2011 survey of manufacturers nationwide, two in three companies reported moderate to serious shortages of available qualified workers and almost three quarters reported skilled production worker shortages (machinists, operators, craft workers, distributors and technicians).⁸
- In sectors like aerospace and defense and life sciences, six in ten companies nationwide report shortages of the skilled workers they need like scientists and engineers.⁹
- A recent skills gap analysis projects 26,000 new high-wage and growth Maine jobs over ten years. Significant skills gaps are forecast because of the state’s mismatch between worker skills and labor demand. The report predicts a shortage of over 1,500 associate’s degree workers in information and computer technology, over 1,000 unfilled machinist positions and 4,000 high-wage jobs going unfilled over the next decade.¹⁰

Increased Education Requirements

Lower-skilled jobs requiring less education are being eliminated through automation and shipment of jobs overseas. For example, 637,000 jobs in the manufacturing and natural resources industries nationwide are expected to disappear by 2018 for those reasons.¹¹ And while employment projections for Maine’s manufacturing industries are more positive than the national outlook, Maine still faces the loss of thousands of manufacturing jobs by 2018. Among the manufacturing industries projected to lose hundreds or even thousands of jobs in Maine this decade are: paper manufacturing, wood product manufacturing, transportation equipment manufacturing, and textile mills.¹²

While low-skilled jobs are being eliminated, the jobs of the future will increasingly require more education beyond high school:

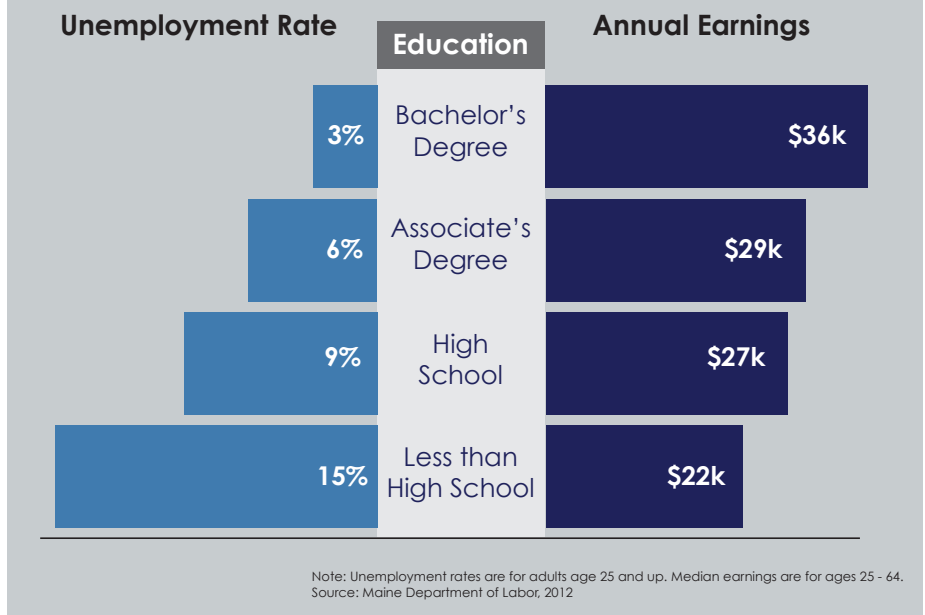
- Almost nine of every ten new jobs created in Maine between 2008 and 2018 will require some type of formal education beyond high school.¹³
- Currently, 79 percent of Maine jobs are middle- or high-skill, but only 39 percent of Maine adults have associate's degrees or higher.¹⁴
- There will be 196,000 job vacancies in Maine between 2008 and 2018, but only 6 percent of openings will be for high school dropouts and only 36 percent will be for those with only a high school degree.¹⁵
- As of 2009, middle-skill jobs – those that require more than a high school diploma but less than a four-year degree – made up 49 percent of Maine jobs, but only 44 percent of the state's workers had the education and training appropriate for the positions. Looking forward to 2018, middle-skill jobs will continue to make up the largest share of jobs in the Maine economy (48 percent).¹⁶
- Among the growth industries in Maine by 2018 will be hospital services; professional, scientific and technical services; and data processing and information services -- all of which have large proportions of middle-skill and high-skill jobs.¹⁷

The High Cost of an Unprepared Workforce

The lack of a skilled workforce comes at a high cost for individuals, businesses and the economy. Higher levels of education help protect workers against unemployment – even in an economic downturn. In 2011, 14 percent of U.S. high school dropouts were jobless, while less than 5 percent of college graduates were unemployed.¹⁸ Similarly, in Maine, 15 percent of high school dropouts were jobless, versus 3 percent of college graduates.¹⁹

Each new class of dropouts nationwide will earn \$154 billion less over their lifetimes than their high school graduate peers.²⁰ This translates to over \$500,000 less in lifetime earnings per dropout.²¹

Unemployment and Earnings by Education Level in the State of Maine



These staggering earnings losses result in less spending power, fewer contributions to the tax base and lower productivity. These losses are even starker when compared with the average lifetime earnings of an individual college graduate – \$2.1 million dollars higher than those of a high school dropout.²² From an employer's perspective, college graduates are usually more productive and worth the extra salary.

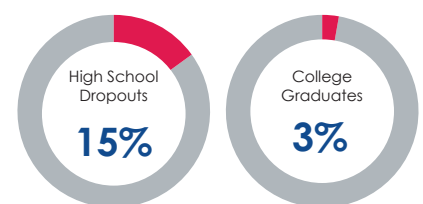
Remedial courses and training to help students catch up and get on track for postsecondary education and training are helpful, but they are expensive and inefficient. The U.S. Department of Education estimates that 36

percent of students entering higher education require at least one remedial education class.²³ Less than half of the students who are referred to remedial education at community colleges

nationwide complete all the classes to which they are referred.²⁴ Further, students who require remediation at two-year or four-year colleges graduate at a much lower rate than those who do not need remediation.²⁵ In Maine, remedial education costs students and the state an estimated \$13 million annually, and up to \$18 million annually after factoring in the reduced lifetime wages of students taking remedial courses.²⁶

In Maine, the growth of certain sectors, including information technology and precision production, is projected to lead to a shortage

Unemployment in Maine



of thousands of skilled workers to fill these positions.²⁷ The inability to fill open jobs because of the skills gap will adversely impact the U.S. and the state's economic recovery and long-term growth. Unfilled jobs mean decreased productivity and less opportunity for businesses to expand. They also mean less contribution to the tax base, less consumer spending and less economic growth.

Changing Course through High-Quality Early Learning

As the U.S. economy recovers and we strive for lasting economic security, we must create an infrastructure that will better ensure a more educated and higher-skilled future workforce. Training and re-training the current workforce must be implemented to begin to address the widening skills gap now. But a long-term problem also requires a long-term solution. High-quality early care and education is a proven approach that can help lay the foundation children need for success in school and to enter the workforce with the skills U.S. employers require to compete in a global marketplace. And there is an additional bonus: The "high quality" of early learning programs will provide a big boost to Maine's businesses and economy today.

Short-Term Economic Gains

Maine businesses will not need to wait 18 years to experience economic gains from investments in early care and education.

For every \$1 invested in early care and education in Maine, an additional \$0.78 is generated for a total of \$1.78 in new spending in the state.²⁸ This strong economic boost for local businesses is as high or higher than investments in other major sectors such as construction, retail trade, manufacturing, transportation and utilities. Inversely, every dollar cut from early learning programs in Maine eliminates a total \$1.78 in local economic activity.²⁹

Early learning investments generate this additional local economic activity in two ways: when early learning centers purchase local goods and services to operate their programs; and when early learning teachers and staff spend their wages on local goods and services. The early care and education sector has one of the highest economic output multipliers because such a high proportion of the spending by early learning programs and staff is spent locally. Much of the investment in early learning goes to teacher wages, and the person-to-person nature of this service means that it must be provided and delivered locally, since early learning teachers work directly with children in local programs.

Two key components that ensure the quality of an early learning program also impact the significant short-term economic activity of early learning investments:

- Increased teacher compensation appropriate to skills and experience; and

Early Care and Education in Maine: A Snapshot

Early care and education programs serve young children from birth through age 5. They can take several forms -- from child care centers, family child care homes and private preschool programs, to publicly funded early education programs like pre-kindergarten, Head Start and early childhood special education provided by public schools. In Maine, approximately 35,000 young children under age 5 are not served by regulated early care and education settings.⁷⁴

Early care and education programs represent a sizable small business sector in the state. The sector employs nearly 1,400 preschool teachers and the licensed child care sector employs more than 8,800 teaching and support staff.⁷⁵

- There are an estimated 706 child care centers, 1,415 licensed family child

care homes and 111 nursery schools in Maine.⁷⁶

- Although more current data are not available, a 2007 report noted that child care is the fourth largest industry in Maine, generating over \$180 million in annual gross receipts, including over \$9 million from federal funding.⁷⁷
- In 2011, Maine invested \$28.2 million on state- and locally funded early learning programs, which in turn are generating an additional \$22 million in economic activity, for a total of \$50 million in economic activity for the state.⁷⁸
- 70 percent of children under the age of 6 in Maine have both or their only parent in the work force.⁷⁹

The Early Learning sector in Maine generates more additional spending in the economy than other major economic sectors

Economic Sectors

Output Multipliers

Early Care and Education¹

\$1.78

Farming, Logging, Fishing, Hunting

1.71

Transportation

1.68

Construction

1.67

Wholesale Trade

1.64

Mining, Oil, Gas

1.54

Manufacturing

1.52

Retail Trade

1.52

Utilities

1.34

Every \$1 invested in the early learning sector generates an additional 78 cents in the local economy.

1. The early care and education sector is part of the larger services sector, which on average generates a multiplier of \$1.70 for every \$1 invested.

Source: IMPLAN, 2009 analysis of Type SAM Output Multipliers for Maine

- Smaller class sizes and small child-to-teacher ratios.

Research confirms that better-skilled teachers produce better outcomes.³⁰ If we want outcomes such as increased graduation rates, higher levels of employment and increased skill sets in our workforce, we must be willing to pay for the teacher skills that are necessary to achieve those results. Too often, you get what you pay for. In Maine, child care workers have a very modest average annual wage of only \$21,920 and preschool teachers have an average annual wage of \$31,120.³¹

A reasonable goal to attract and retain more qualified early learning teachers is salary parity with elementary school teachers, who have an average annual wage of \$47,800 in Maine. Some state pre-K programs around the country have already moved in this direction, with 12 states requiring pre-K teacher pay parity with public school teachers.³² Maine's public pre-K program does not yet require this.³³ When highly-qualified early learning teachers are paid compensation commensurate with their skills, they will in turn re-infuse that money back into the economy, spurring sales of local goods and services.

Similarly, smaller classroom sizes and small child-to-teacher ratios positively influence the local economy via the multiplier effect. Smaller classroom sizes mean additional classes as more stu-

dents gain access to early learning programs, and spurs providers to make purchases to run the programs. Small child-to-teacher ratios require more teachers, creating additional wages to be pumped back into the economy. A 50-state analysis of child care's economic impact found that states with strong quality features (lower child-to-staff ratios and higher wages for early learning

Cuts to Early Learning Hurt Businesses

In the same way that investments in early learning generate additional spending in Maine due to the multiplier effect, the reverse is also true: funding cuts to early learning programs also reduce sales from Maine businesses.

Thus, for every \$1 cut from early learning programs, a total of \$1.78 will be lost in sales of local goods and services from Maine businesses.⁹³ Our state cannot afford cuts to early learning that will directly hurt the bottom lines of Maine businesses.

“Our state’s economy is going to recover. But if we want to build long-lasting economic security, we need to support our businesses today and ensure we have an infrastructure that will attract skilled workers and new businesses. One of the best ways to do that is to have quality early learning programs in place. Just as a quality K-12 system and great colleges and universities attract skilled workers and new businesses, so also does a quality early care and education system. It deserves an equal place at the education table in Maine.”

Dana Connors,
President, Maine State
Chamber of Commerce



workers) also had higher child care output multipliers than states that were weaker on these quality features.³⁴

Long-Term Economic Benefits

The “quality” aspects of early learning programs are also a key component for reversing the skills gap and building a foundation for long-term economic growth and security. A recent analysis of early education programs in 11 states confirms that programs must be higher in quality in order to produce positive effects on children’s school readiness skills.³⁷ These early academic, literacy and social skills can, in turn, lead to improved outcomes such as increased high school graduation rates, higher employment rates and better earnings as adults.³⁸

Earnings, Employment and Productivity

Higher academic skill levels and more developed soft skills mean more productive adults who can earn more throughout their lives. And enhanced skills and increased productivity can be tied directly to early learning:

- Children who participated in the Chicago Child-Parent Centers program were 31 percent more likely than their non-participating peers to hold a job considered semi-skilled or higher as adults,³⁹ and
- The children who attended the model Perry Preschool Program in Michigan were 22 percent more likely to be employed at age 40.⁴⁰

High-quality early learning also had strong impacts on earnings. Children who participated in the Perry Preschool Program earned 36 percent more at age 40 than children left out. This produced a range of meaningful impacts on their lives. For example, 80 per-

cent of the males who attended Perry owned a car at age 40 compared to just 50 percent for the males left out of the program.⁴¹

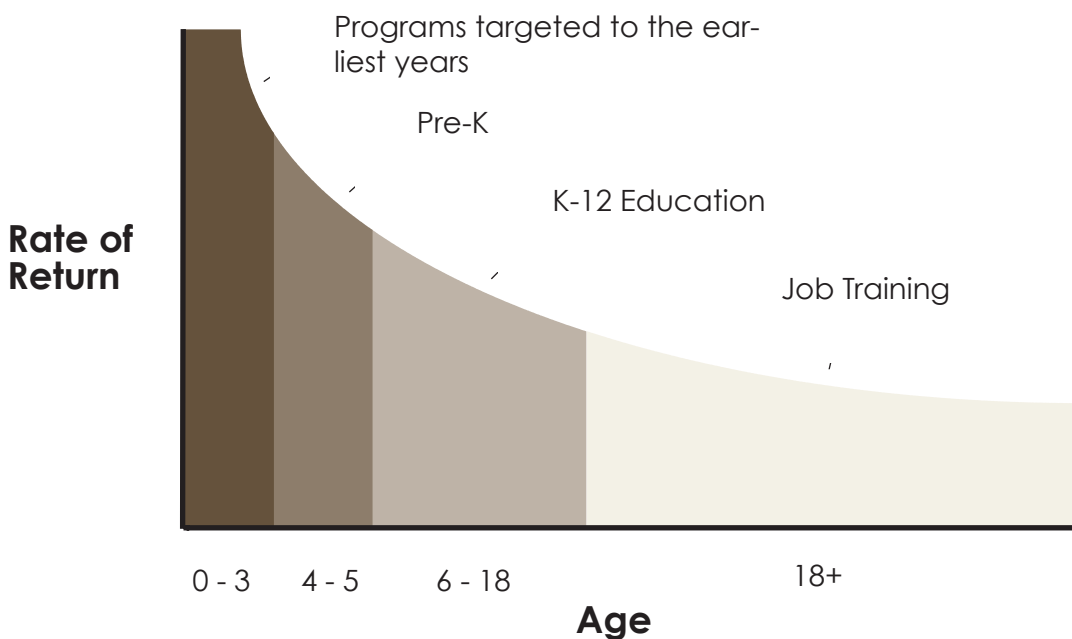
As noted earlier, more education is associated with lower unemployment – something that became increasingly clear during the recent recession. Increasing the number of children who enroll in a four-year college or university may help lower unemployment rates. As the economy recovers and we work to ensure long-term economic security, increasing the education levels of our young people may better allow the U.S. to weather future downturns.

Similarly, increased education is also associated with increased productivity, which can strengthen our economy. According to research by the Organisation for Economic Co-operation and De-

Education Levels of Early Care and Education Teachers Are Too Low

Effective teachers are essential to providing high-quality early care and education, yet a recent report shows that a majority of early childhood educators themselves have low levels of education and training, which makes it more difficult to provide quality early care and education. In general, teachers with more education and training in early childhood education are more effective than those with minimal education and training.³⁵ According to a recent Government Accountability Office report, 72 percent of early care and education staff nationally had achieved less than an associate’s degree.³⁶

Rate of Return to Investments in Human Capital



Adapted from The Heckman Equation, 2010

velopment (OECD), each year of additional education in OECD countries is associated with a 4 to 7 percent increase in per capita output.⁴² One additional year of schooling also leads to an 8.5 percent increase in manufacturing productivity, and more than a 12 percent productivity increase in other industrial sectors.⁴³

Increased School Success

High-quality early learning also produced meaningful increases in school success in elementary school and high school. Results from longer-running programs are very strong and show that the benefits continue as students progress through school. Researchers found that children attending Child-Parent Centers were 40 percent less likely to need special education or be held back a grade than those children who did not attend. They were also 15 percent less likely to drop out.⁴⁴ Similarly, children who attended the Perry Preschool Program were 44 percent more likely to graduate from high school.⁴⁵ Participants in North Carolina's Abecedarian Project, a high-quality early learning program from infancy through age 5, were four times more likely to have earned a four-year college degree by age 30 than those left out of the program – which is good news for businesses and the economy.⁴⁶

Strong Foundations for Hard and Soft Skills

The skills children develop in high-quality early learning programs are important precursors to creating a workforce that can communicate, collaborate and critically think – tools necessary to compete in a global economy. High-quality early learning helps

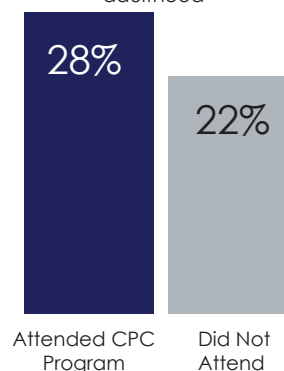
children develop these soft skills, as well as the hard skills, such as reading and math.

When pre-k teachers provided moderate- to high-quality instruction in their classrooms, students showed more advanced academic and language skills than those in low-quality classrooms.⁴⁷ Another rigorous study of state-funded pre-kindergarten, in Tennessee, found that overall gains in literacy for children who attended were 50 percent greater than for those who did not attend. In oral comprehension and picture vocabulary, participants made twice the gains of those students who were randomly assigned to a wait list.⁴⁸

Analysis by the Nobel Prize-winning economist James Heckman of the University of Chicago shows that high-quality early learning not only helps children develop a foundation for reading and

High Quality Early Education Improves Skills

Holding a semi-skilled job in early adulthood



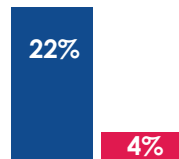
Source: Reynolds, 2010

“From a long-term perspective, high-quality early learning programs can save as much as \$16 for every \$1 invested because children who participate in these programs grow up to become better-educated and more productive workers, with far less remedial education or criminal costs to society. That is a return on investment that cannot be matched by almost any other public investment.”

Eileen Skinner
CEO, Mercy Hospital



math, it also helps them develop the aforementioned soft skills needed throughout their careers. And in Pennsylvania's pre-k program, **the percentage of 3-year-old children with conduct or self-control problems dropped from 22 percent at the time of entry into the program to 4 percent by the time the children completed the program.**⁴⁹



Federal Early Learning Programs

There are several federal early learning initiatives that serve children in Maine. Federally funded Head Start, Early Head Start (EHS) and child care programs have an important role to play in helping to promote the quality of early learning in Maine.

Head Start and Early Head Start

Head Start and EHS together provide comprehensive health, support and educational services for young children in low-income families. Children in Head Start programs, which serve children ages 3 to 5, receive comprehensive services, such as high-quality early education, health, nutrition and social and emotional development components. Head Start also stresses parent involvement. Head Start services help children enter kindergarten better prepared and help prevent them from falling behind other students, helping to close the achievement gap for at-risk students as they enter school. In Maine, 4,356 children under age 5 were enrolled in Head Start programs in 2010. The actions taken in the May 2012 supplemental budget eliminated Head Start services for 217 Maine children. Funding for Head Start is not sufficient to serve all eligible children.⁵⁰ The program in Maine currently serves less than 27 percent of income-eligible children.⁵¹

EHS was created in response to research suggesting the developmental importance of the first three years in a child's life. Established in 1994 as part of the federally funded Head Start program, EHS serves both pregnant women and children birth to

age 3, providing guidance, information, parenting support and direct services. EHS provides services through center-based, home-based and combination program options. Early Head Start had capacity to serve just 774 children and their families in Maine during 2011.⁵²

A report released in 2010 raised some questions about the effectiveness of Head Start, finding that few benefits were sustained to the end of first grade.⁵³ However, that evaluation was conducted for children who attended Head Start in 2003, before several meaningful improvements in Head Start program quality were made.⁵⁴ The 2007 reauthorization of Head Start and EHS implemented important quality improvements, including requiring Associate's degrees for all teachers and Bachelor's degrees for 50 percent of all lead teachers in Head Start classrooms; setting aside 40 percent of new Head Start funds for quality enhancements such as scholarships and salary increases for teachers; and requiring at least 15 hours of annual in-service training for teachers.⁵⁵ In 2011, another key quality improvement from the 2007 reauthorization was implemented, requiring lower-performing Head Start local programs to re compete for their federal funding.

These important improvements to Head Start are likely to improve the quality of programs. Requiring lower-performing programs to compete with other potential program operators to receive Head Start funding is expected to remove ineffective programs and identify new local grantees. In Maine, none of the Head Start programs were designated as needing to re compete for funding, an indication that Maine's programs are being operated effectively. But future evaluations should study these programs' impact on children enrolled after these important reforms have been implemented. These ongoing efforts to improve the quality of Head Start programs will help it fully realize its promise of high-quality early learning for at-risk children.

Child Care and Development Block Grant

The Child Care and Development Block Grant (CCDBG) is the principal source of federal funding for child care assistance. Though the

What is QRIS?

Quality Rating and Improvement Systems (QRIS) provide a rating of the quality of an early care and education program and are characterized by five key features:

- Provides quality standards as a basis for rating and comparing early care and education programs;
- Provides a system for monitoring improvements in the quality of programs;
- Provides a way to disseminate information about the quality of programs to parents and the public;
- Offers a process to improve programs, including providing technical assistance and making training available to providers; and
- Offers financial incentives to providers to improve their program quality.

system was designed to help all eligible children by providing subsidies to pay for part or all of the cost of child care, inadequate funding allows only a small percent of eligible children to be served. Nationally, only one in six eligible children are receiving CCDBG subsidies.⁵⁶ In Maine, approximately 3,700 children from low-income families received child care assistance in 2011.⁵⁷ In May 2012, the supplemental budget passed, reducing child care subsidy funding by 17 percent.⁵⁸

Since child care assistance is designed to help parents afford child care programs available in the local child care market, the quality of programs is determined by what is offered by local child care centers and family child care homes. Program quality is difficult to determine if local data are not available, and access to high quality programs can vary widely from community to community. While a majority of child care programs in Maine and nationwide are subject to state licensing and regulation, these licensing standards generally help ensure basic health and safety, but do not require that programs be high in quality.⁵⁹ National estimates of child care quality suggest that many programs nationwide are not high in quality.⁶⁰

CCDBG funding includes only a small portion of funds to promote quality in local programs.⁶¹ Maine, along with at least 25 other states, has developed a Quality Rating Improvement System (QRIS), which helps parents identify quality child care programs.

However, Maine's QRIS, called *Quality for ME*, is voluntary for programs to opt in to, and currently only half of the state's licensed programs are participating. Many child care programs not participating in *Quality for ME* are of unknown quality and remain unrated.⁶²

Improvements must be made in many local programs nationwide and in Maine that are funded by CCDBG to better ensure positive outcomes for Maine's businesses and our state's economy. Increased program quality requirements are necessary to help ensure that young children are in high-quality programs.

Quality Rating and Improvement Systems

At least 25 states, including Maine, have implemented a statewide QRIS and most others are developing or implementing their systems.⁶⁴ Most state QRIS are in the early stages of evaluation, so more evidence is expected in the coming years. The evaluation evidence on QRIS shows initial results in three areas:

1. **Different rating levels can measure meaningful differences in quality.** Studies in North Carolina, Oklahoma, Pennsylvania, Kentucky and Indiana have shown that the different rating levels do reflect real differences in the quality of early learning programs.⁶⁵
2. **QRIS can help programs improve their quality over time.** A recent evaluation in Washington state, a randomized controlled trial, offers the strongest evidence that QRIS participation can help early learning programs to improve their quality.⁶⁶ Providers who received coaching and quality improvement funds had significantly higher levels of quality of the early learning and care they provided than those in the control group at a six-month follow-up.⁶⁷ Additional evaluation studies in five different states (Colorado, Oklahoma, Pennsylvania, Tennessee and Indiana) found



some evidence that programs participating in the QRIS improved their quality over time.⁶⁸

3. **Higher QRIS-rated programs can produce better outcomes for children.** These studies examined whether children in programs with higher QRIS rating levels have better cognitive, social or behavioral outcomes than children in lower-rated programs.⁶⁹ An evaluation of Missouri's QRIS found significant gains in children's social and behavioral skills as a result of child care providers' participation in the rating system.⁷⁰ Indiana's QRIS evaluation found fewer anxiety and withdrawal behaviors for preschoolers in higher-rated programs, and a preliminary pilot study of Minnesota's QRIS found mixed results.⁷¹

Maine's QRIS, *Quality for ME*, has been implemented statewide, and 51 percent of licensed child care providers participate in the voluntary system. *Quality for ME* has four steps representing different levels of quality for programs. Maine's QRIS has an evaluation underway to monitor programs' enrollment in the system and to improve and better manage child care programs.⁷²

Another innovative approach that has not yet been evaluated is worth special notice: North Carolina has tied receipt of child care subsidies to a program's star rating level, with only higher-rated programs receiving

these subsidies.⁷³ If this proves to be successful, this approach could be an especially effective way to use QRIS to improve program quality.

The evaluation findings offer good initial evidence on the potential of QRIS for improving the quality of programs and for having positive effects on children. QRIS is an important tool for states to assess the quality of early education programs and to improve the quality of programs over time.

Support High-Quality Early Learning in Maine

Numerous research studies have documented the key characteristics of high-quality early learning programs, including:

- Highly skilled teachers with appropriate compensation;⁷⁴
- Comprehensive and age-appropriate curricula;⁷⁵
- Strong family involvement and effective parent coaching;⁷⁶
- Small staff-to-child ratios to ensure each child gets sufficient attention;⁷⁷
- Small, age-appropriate class sizes;⁷⁸ and

Federal Initiatives to Enhance Early Learning Quality

Several new federal initiatives designed to enhance the quality of early learning have been developed in recent years.

The Race to the Top—Early Learning Challenge competition, developed in 2011, will help states significantly improve the quality of their early learning systems. In 2012, the Department of Education awarded competitive grants to nine states to increase the number of low-income and disadvantaged kids enrolled in high-quality early learning programs; design and implement a system of high-quality programs and services; and improve the use of assessments to conform with early childhood standards.⁸⁵ Thirty-seven states and territories submitted applications for the program. While Maine did not receive a grant in this initial round of awards, continued funding for this program may subsequently allow the state to

apply for and be awarded funding to help the state strengthen the quality of early learning and move toward a more comprehensive system of early learning for Maine's children.

Pathways and Partnerships for Child Care Excellence is an initiative developed by the Office of Child Care within the Department of Health and Human Services to help ensure access to high-quality child care for children in low-income families. Features of this initiative include redesigned technical assistance to states; improved data collection on child care quality activities and quality outcomes; support for professional development for child care professionals; strengthened accountability in the use of child care assistance funds; and working with the states to help strengthen state child care licensing systems.⁸⁶

“How can we best invest in human capital development to increase workforce capabilities, raise productivity and social cohesion and assure America’s economic competitiveness in the global economy? ...The answer is to invest in comprehensive early childhood development – from birth to age five – particularly in disadvantaged children and their families... Ignoring this finding will put our country’s future in peril by producing a deficit of human capital that will take generations to correct.”



–James Heckman, Ph.D.
Nobel Prize-winning economist

- Screening and referral services for developmental, health or behavior problems.⁷⁹

These are the key features of early learning programs that research indicates are essential for delivering good early education and care.

Head Start, EHS and CCDBG-funded child care are important components of Maine’s early learning system, along with public pre-K and privately funded child care and preschool programs throughout the state. Business leaders are calling on federal and state policymakers to continue investing in high-quality early learning, to support and strengthen efforts to implement the evidence-based features of quality programs, and then to hold programs accountable for providing high-quality services.

Conclusion

Research is clear that investments in high-quality early care and education will boost our economy through immediate and significant economic activity. At the same time, such investments build the skills of our future workforce. Policymakers must make difficult decisions about where to invest limited funds as revenues have decreased. Funding for quality early learning should be a priority since it is one of the best ways we can immediately strengthen our economy while creating lasting economic security.

Endnotes

- 1 National Center for Education Statistics. (2010). *Grade 12 reading and mathematics 2009 national and pilot state results*. Retrieved November 29, 2010 from <http://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2011455>
- 2 American Management Association. (2010). *AMA 2010 critical skills survey*. Executive Summary. Retrieved April 23, 2012 from <http://www.p21.org/documents/Critical%20Skills%20Survey%20Executive%20Summary.pdf>
- 3 American Management Association. (2010). *AMA 2010 critical skills survey*. Executive Summary. Retrieved April 23, 2012 from <http://www.p21.org/documents/Critical%20Skills%20Survey%20Executive%20Summary.pdf>
- 4 In the past, AMERICA'S EDGE used the graduation rates reported in Editorial Projects in Education's *Diplomas Count* report. Since the U.S. Department of Education has released four-year adjusted cohort graduation rates, a common measure being used by all states for the first time, America's Edge is using this new data source. U. S. Department of Education. (2012). *Provisional data file: SY2010-11 four-year regulatory adjusted cohort graduation rates*. Retrieved on November 30, 2012 from <http://www2.ed.gov/documents/press-releases/state-2010-11-graduation-rate-data.pdf>
- 5 National Center for Education Statistics (2011). *The Nation's Report Card: Mathematics 2011* (NCES 2012-458). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, D.C.
- 6 National Center for Education Statistics (2011). *The Nation's Report Card: Reading 2011* (NCES 2012-457). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, D.C.
- 7 Nord, C.W., Lennon, J., Baiming, L., & Chandler, K. (1999). *Home literacy activities and signs of children's emerging literacy, 1993 and 1999*. Washington, DC: U.S. Department of Education. Retrieved on May 21, 2010 from <http://nces.ed.gov/pubs2000/2000026.pdf>
- 8 Morrison, T., Maciejewski, B., Giffi, C., Stover DeRocco, E., McNelly, J., & Carrick, G. (2011). *Boiling point? The skills gap in U.S. manufacturing*. Deloitte Consulting & The Manufacturing Institute. Retrieved January 31, 2012 from http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/AD/us_PIP_2011SkillsGapReport_01142011.pdf
- 9 Morrison, T., Maciejewski, B., Giffi, C., Stover DeRocco, E., McNelly, J., & Carrick, G. (2011). *Boiling point? The skills gap in U.S. manufacturing*. Deloitte Consulting & The Manufacturing Institute. Retrieved January 31, 2012 from http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/AD/us_PIP_2011SkillsGapReport_01142011.pdf
- 10 Planning Decisions, Inc. (September 2011). *Closing the gap: A Southern Maine Community College report on Maine education and labor skills gaps and the economic impact of higher education*. Southern Maine Community College. Retrieved April 17, 2012 from <http://media.kjonline.com/documents/ClosingTheGap.pdf>
- 11 Carnevale, A.P., Smith, N., & Strohl, J. (June 2010). *Help wanted: Projections of jobs and education requirements through 2018*. Washington, DC: Georgetown University Center on Education and the Workforce. Retrieved April 23, 2012 from <http://cew.georgetown.edu/jobs2018/>
- 12 Planning Decisions, Inc. (2011, September). *Closing the gap: A Southern Maine Community College report on Maine education and labor skills gaps and the economic impact of higher education*. South Portland, ME: Southern Maine Community College.
- 13 Carnevale, A.P., Smith, N., & Strohl, J. (June 2010). *Help wanted: Projections of jobs and education requirements through 2018*. Washington, DC: Georgetown University Center on Education and the Workforce. Retrieved April 17, 2012 from <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/main.pdf>
- 14 Achieve. (2011, July). *Maine's college and career-ready commitment*. Washington, DC: Author. Retrieved on May 29, 2012 from <http://www.achieve.org/files/Maine-CCRFactSheet-July2011.pdf>
- 15 Carnevale, A.P., Smith, N., & Strohl, J. (June 2010). *Help wanted: Projections of jobs and education requirements through 2018*. Washington, DC: Georgetown University Center on Education and the Workforce. Retrieved April 23, 2012 from <http://cew.georgetown.edu/jobs2018/> (10% figure).
- 16 National Skills Coalition. (2011). *Middle-skill jobs state-by-state: Maine*. Washington, DC: Author. Retrieved April 12, 2012 from http://www.nationalskillscoalition.org/resources/fact-sheets/state-fact-sheets/middle-skill/nsc_middlekillsfs_maine.pdf
- 17 Planning Decisions, Inc. (2011, September). *Closing the gap: A Southern Maine Community College report on Maine education and labor skills gaps and the economic impact of higher education*. South Portland, ME: Southern Maine Community College.
- 18 U.S. Bureau of Labor Statistics (2012, March 23). *Employment projections: Education pays*. Retrieved April 25, 2012 from http://www.bls.gov/emp/ep_chart_001.htm
- 19 Mills, G. (n.d.). *The demographics of employment, unemployment, and labor force participation in Maine*. Augusta, ME: Maine Department of Labor.
- 20 Alliance for Excellent Education. (2011, August). *The high cost of high school dropouts: What the nation pays for inadequate high schools*. Washington, DC: Author. Retrieved April 24, 2012 from <http://www.all4ed.org/files/HighCost.pdf>
- 21 Carnevale, A.P., Smith, N., & Strohl, J. (June 2010). *Help wanted: Projections of jobs and education requirements through 2018*. Washington, DC: Georgetown University Center on Education and the Workforce. Retrieved April 23, 2012 from <http://cew.georgetown.edu/jobs2018/>
- 22 Carnevale, A.P., Smith, N., & Strohl, J. (June 2010). *Help wanted: Projections of jobs and education requirements through 2018*. Washington, DC: Georgetown University Center on Education and the Workforce. Retrieved April 23, 2012 from <http://cew.georgetown.edu/jobs2018/>
- 23 National Center for Education Statistics (2008). *National Postsecondary Student Aid Study. Remedial courses, ever taken*. Institute for Education Sciences, U.S Department of Education. Retrieved October 25, 2010 from <http://nces.ed.gov/dasolv2/tables/mainPage.asp#varLine499>
- 24 Bailey, T., Jeong, D.W., and Cho, S. (2010). Referral, enrollment, and completion in developmental education sequences in community college. *Economics of Education Review*, 29(2), 255-270.
- 25 National Center for Education Statistics (2004). *The condition of education*. Student effort and educational progress, post secondary persistence and progress, remediation and degree completion, indicator 18. Retrieved January 13, 2011 from <http://nces.ed.gov/programs/coe/2004/section3/indicator18.asp>
- 26 Alliance for Excellent Education. (2011, May). *Saving now and saving later: How high school reform can reduce the nation's wasted remediation dollars*. Washington, DC: Author. Retrieved on April 23, 2012 from <http://www.all4ed.org/files/SavingNowSavingLaterRemediation.pdf>
- 27 Planning Decisions, Inc. (2011, September). *Closing the gap: A Southern Maine Community College report on Maine education and labor skills gaps and the economic impact of higher education*. South Portland, ME: Southern Maine Community College.
- 28 AMERICA'S EDGE commissioned an analysis of the linkage effects of early care and education. Analyses were conducted using the IMPLAN economic impact modeling system. The analysis used 2009 data for Maine, and calculated Type SAM (Social Accounting Matrix) output multipliers for early care and education and nine major aggregated economic sectors in the state. For a fuller discussion of the additional economic activity that early learning can generate for Maine, please see America's Edge's 2011 report: Schaefer, S., Gates, S., & Kiernan, M. (2011). *Strengthening Maine businesses through investment in early care and education: How investments in early learning increase sales from local businesses, create jobs, and grow the economy*. Washington, DC: America's Edge. Retrieved on April 23, 2012 from <http://cdn.americasedge.org/clips/ME%20early%20ed%20economic%20analysis%20report.pdf>
- 29 For a fuller discussion of the additional economic activity that early learning can generate for Maine, please see America's Edge's 2011 report: Schaefer, S., Gates, S., & Kiernan, M. (2011). *Strengthening Maine businesses through investment in early care and education: How investments in early learning increase sales from local businesses, create jobs, and grow the economy*. Washington, DC: America's Edge. Retrieved on December 22, 2011 from <http://cdn.americasedge.org/clips/ME%20early%20ed%20economic%20analysis%20report.pdf>
- 30 Burchinal, M., Vandergrift, N., Pianta, R., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in pre-kindergarten programs. *Early Childhood Research Quarterly*, 25, 166-176; Goffin, S.G. (2010). *NCRECE in focus: Increasing knowledge in early childhood*. Charlottesville, VA: University of Virginia, National Center for Research on Early Childhood Education.
- 31 U.S. Bureau of Labor Statistics. (2011, May). *May 2011 State Occupational Employment and Wage Estimates - Maine*. Washington, DC: Author. Retrieved on April 12, 2012 from http://www.bls.gov/oes/current/oes_me.htm
- The National Institute of Early Education Research (NIEER) estimates that the average per-child annual cost for high-quality pre-k is \$8,700. The NIEER cost estimate is also inclusive of quality provisions needed for prekindergarten such as skilled teachers, small class sizes and small child-to-teacher ratios.
- National Institute for Early Education Research. (2011). Cost of providing quality preschool education to America's 3- and 4-year olds. New Brunswick, NJ: Author. Retrieved on January 9, 2012 from <http://nieer.org/resources/facts/index.php?FastFactID=5>
- 32 U.S. Bureau of Labor Statistics. (2011, May). *May 2011 State Occupational Employment and Wage Estimates - Maine*. Washington, DC: Author. Retrieved on April 12, 2012 from http://www.bls.gov/oes/current/oes_me.htm; Epstein, D. J. (2009). *The changing landscape: National trends in quality standards in state-funded prekindergarten initiatives*. [Presentation]. New Brunswick, NJ: National Institute for Early Education Research. Retrieved on December 14, 2011 from <http://nieer.org/pdf/changing-landscape-2009-presentation.pdf>
- 33 Department of Education. (2008). *Four Year Old Program - Certification requirements*. Augusta, ME: Author. <http://www.maine.gov/education/fouryearold/certification.html>
- 34 Previous analysis of the early learning sector compared to other service infrastructure sectors shows that private elementary and secondary teachers, a comparable sector with better compensation, had identical output multiplier to the early learning sector, with output multipliers of 1.91. This demonstrates that the increased compensation of elementary and secondary teachers as compared to child care teachers and staff did not result in a lower output multiplier. Therefore, increased compensation in the early learning sector is not likely to diminish the multiplier effect. Liu, Ribeiro, and Warner suggest that the similar multipliers for these and other service-based infrastructure sectors are due in part to the labor-intensive nature of these sectors. Liu, Z., Ribeiro, R. & Warner, M. (2004). *Comparing child care multipliers in the regional economy: Analysis from 50 states*. Ithaca, NY: Cornell University Department of City and Regional Planning.
- 35 A body of earlier studies had established a positive relationship between teacher education levels and the quality of early care and education programs, which has been the basis for teacher degree requirements in pre-kindergarten and other early care and education programs. Although the research about teacher education levels and its association with quality has become more complex in recent years, the evidence remains clear that teacher's skills and interactions with children matter for providing quality early care and education programs. Teachers with minimal education and training are less likely to be well equipped with the essential skills needed to provide quality early care and education.
- Whitebook, M. (2003). *Early education quality: Higher teacher qualifications for better learning environments—A review of the literature*. Berkeley, CA: UC Berkeley, Institute of Industrial Relations; Early, D. M., Maxwell, K. L., Burchinal, M., Alva, S., Bender, R. H., Bryant, D. et al. (2007). *Teachers' Education, Classroom Quality, and Young Children's Academic Skills: Results From Seven Studies of Preschool Programs*. *Child Development*, 78, 558-580; Zaslow, M., Tout, K., Halle, T., Whittaker, J.V., Lavelle, B. & Child Trends. (2010). *Toward the identification features of effective professional development for early childhood educator - Literature review*. Washington, DC: US Department of Education; National Child Care Information and Technical Assistance Center. (2009). *Professional development research: Emerging findings and implications*. Fairfax, VA: Author; Vu, J.A., Jeon, H. & Howes, C. (2008). Formal education, credential, or both: Early childhood program classroom practices. *Early Education & Development*, 19(3), 479-504.
- 36 U.S. Government Accountability Office. (2012, February). *Early Child Care and Education: HHS and Education are taking steps to improve workforce data and enhance worker quality*. (GAO-12-248). Washington, DC: Author.
- 37 Burchinal, M., Vandergrift, N., Pianta, R., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in pre-kindergarten programs. *Early Childhood Research Quarterly*, 25, 166-176; Goffin, S.G. (2010).

NCRECE in focus: *Increasing knowledge in early childhood*. Charlottesville, VA: University of Virginia, National Center for Research on Early Childhood Education.

38 Barnett, W. S., & Masse, L. N. (2007). Comparative benefit-cost analysis of the Abecedarian program and its policy implications. *Economics of Education Review*, 26, 113-125; Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2005). *Lifetime effects: The High Scope/Perry Preschool Study through age 40*. Ypsilanti, MI: High/Scope Press.

39 Based on Barratt Simplified Measure of Social Success, Level 4 on 0-8 scale. Reynolds, A.J., Temple, J.A., & Ou, S.R. (2010). *Impacts and implications of the Child-Parent Center preschool program*. In Reynolds, A.J., Rolnick, A.J., Englund, M.M., & Temple, J.A. (2010). *Childhood programs and practices in the first decade of life: A human capital integration*. New York, NY: Cambridge University Press.

40 Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2005). *Lifetime effects: The High Scope/Perry Preschool Study through age 40*. Ypsilanti, MI: High/Scope Press.; Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). *Significant benefits: The High Scope/Perry Pre-kindergarten study through age 27*. Ypsilanti, MI: High/Scope Press.

41 Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2005). *Lifetime effects: The High Scope/Perry Preschool Study through age 40*. Ypsilanti, MI: High/Scope Press.

42 Organisation for Economic Co-operation and Development. (2001). *The well-being of nations: The role of human and social capital*. Retrieved January 14, 2011 from <http://www.oecd.org/dataoecd/36/40/33703702.pdf>

43 Black, S. E., & Lynch, L.M. (1996). Human-capital investments and productivity. *The American Economic Review*, 86 (2), 263-267.

44 Reynolds, A. J., Temple, J. A., Robertson, D. L., & Mann, E. A. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest. *Journal of the American Medical Association*, 285(12), 2339-2380.

45 Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2005). *Lifetime effects: The High Scope/Perry Preschool Study through age 40*. Ypsilanti, MI: High/Scope Press.

46 Campbell, F.A., Pungello, E. P., Burchinal, M., Kainz, K., Pan, Y., Wasik, B., et al. (2012). Adult outcomes as a function of an early childhood educational program: An Abecedarian Project follow-up. *Developmental Psychology*. Advance online publication.

47 Burchinal, M., Vandergrift, N., Pianta, R., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in pre-kindergarten programs. *Early Childhood Research Quarterly*, 25, 166-176; Goffin, S.G. (2010). *NCRECE in focus: Increasing knowledge in early childhood*. Charlottesville, VA: University of Virginia, National Center for Research on Early Childhood Education.

48 Lipsey, M.W., Farran, D.C., Bilbrey, C., Hofer, K.G., & Dong, N. (April 2011). *Initial results of the evaluation of the Tennessee Voluntary Pre-Kindergarten Program*. Nashville, TN: Peabody Research Institute, Vanderbilt University and Tennessee Department of Education.

49 Bagnato, S.J., Salaway, J., & Suen, H. (2009). *Pre-K counts in Pennsylvania for youngsters' early school success: Authentic outcomes for an innovative prevention and promotion initiative*. Pittsburgh, PA: University of Pittsburgh, Early Childhood Partnerships.

50 Based on FY 2010 data. Maine Children's Alliance. (2012). *2012 Maine Kids Count Data Book*. Augusta, ME: Author; 2012 budget updates obtained from Judith Reidt-Parker, Early Childhood Policy Analyst, Maine Children's Alliance. Personal communication in May 2012.

51 Based on FY 2010 data. Maine Children's Alliance. (2012). *2012 Maine Kids Count Data Book*. Augusta, ME: Author; 2012 budget updates obtained from Judith Reidt-Parker, Early Childhood Policy Analyst, Maine Children's Alliance. Personal communication in May 2012.

52 Based on 2011-2012 PIR (Program Information Report) data. Office of Head Start, U.S. Department of Health and Human Services. (2012). *2011-2012 Head Start Programs Information Report*. (PIR Summary Report, state level, Maine, Early Head Start). Washington, DC: Author.

53 The Head Start Impact Study, a large-scale randomized controlled trial of Head Start, found modest statistically significant positive effects on academic skills for children at the end their year in Head Start, so the program did help children enter kindergarten ready to learn. However, these initial positive effects had largely disappeared by the end of first grade.

It is worth noting, however, that multiple longitudinal early learning studies have found some degree of diminished effects on academic skills during the early elementary years, followed by enduring long-term effects into adulthood. In studies of high-quality programs that follow children into adulthood, such as the Perry Preschool Project and the Chicago Child-Parent Centers, these diminished (but still statistically significant) academic effects during the elementary years were later followed by impressive increases in rates of high school graduation, in earnings and meaningful decreases in criminal behavior.

Head Start's trajectory of effects on children has been more modest than the effects found in model longitudinal studies such as Perry Preschool, the Chicago Child-Parent Centers, and the Abecedarian Project. Other nonexperimental long-term studies of the impacts of Head Start offer some confirmation of modest but mixed long-term results, with some showing modest positive effects on graduation and crime, and others finding no significant long-term effects. It may be that the children studied in the Head Start Impact Study, if followed into adulthood, would go on to demonstrate meaningful gains in graduation rates, increased earnings and reductions in crime. It is likely true, however that reforms underway since the children participated in this study, and even more reforms will be necessary to achieve the strong results shown to be possible in the long-term studies of Perry Preschool, Abecedarian and the Chicago Child-Parent Centers.

Puma, M., et al. (2010). *Head Start impact study: Final report*. Washington, DC: Administration for Children and Families, U.S. Department of Health and Human Services; Deming, David (2009). Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start. *American Economic Journal: Applied Economics*, 1:3, 111-134; Garces, E., Thomas, D., & Currie, J. (2002). Longer-term effects of Head Start. *American Economic Review*, 92(4), 999-1012.

54 A randomized control trial study of Early Head Start found notable positive effects on language and cognitive development and reduced aggressive behavior at ages 3 and 5, but those outcomes were not sustained. Improvements in Early Head Start are already underway as part of the 2007 reauthorization of the program to ensure the positive early outcomes are strengthened and sustained. Love, J.M., Kisker, E.E., Ross, C., Constantine, J., Boller, K.,

Chazan-Cohen, R., et al. (2005). The effectiveness of Early Head Start for 3-year-old children and their parents: Lessons for policy and programs. *Developmental Psychology*, 41, 885-901; Vogel, C. A., Xue, Y., Moiduddin, E. M., Kisker, E. E., & Carlson, B. L. (2010). *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, Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

55 Administration for Children and Families, Department of Health and Human Services. (2008). Information Memorandum: Head Start Reauthorization P.L. 110-134. Washington, DC: Author. Retrieved on April 24, 2012 from http://eclkc.ohs.acf.hhs.gov/hslc/standards/IMs/2008/resour_ime_001_010308.html

56 This figure is based on federal eligibility levels for CCDF assistance, rather than on the varying state eligibility levels. Assistant Secretary for Planning and Evaluation. (2010, April). Estimates of child care eligibility and receipt for Fiscal Year 2006. *ASPE Issue Brief*. Washington, DC, Author. Retrieved on April 24, 2012 from <http://aspe.hhs.gov/hsp/10/cc-eligibility/ib.shtml>

57 3,676 children were served in Fiscal Year 2011. Reidt-Parker, J. (2012). Early learning program descriptions: Child Care Development Fund. Augusta, ME: Maine Children's Alliance.

58 Judith Reidt-Parker, Early Childhood Policy Analyst, Maine Children's Alliance. Personal communication in December 2012.

59 Payne, A. L. (2011, May). *Strong licensing: the foundation for a quality early care and education system*. Lexington, KY: National Association for Regulatory Administration. Retrieved on April 25, 2012 from http://www.naralicensing.drivethq.com/publications/Strong_CC_Licensing_2011.pdf

60 While no evaluations to date have comprehensively assessed the quality of CCDBG-funded programs, nationally representative data sets on families using child care assistance suggest that children in families receiving child care assistance have more negative academic and behavioral outcomes than comparable low income children not receiving assistance, which reinforces the need to develop effective approaches to improve child care quality.

Herbst, C. M. & Tekin, E. (2010, August). *The impact of child care subsidies on child well-being: Evidence from geographic variation in the distance to social service agencies*. National Bureau of Economic Research Working Paper 16250; Griffen, A. S., Hawkinson, L. E., Dong, N., Maynard, R. A., & National Center for Education Evaluation and Regional Assistance, U.S. Dept. of Education. (2010, November). *The effect of child care subsidies on children's cognitive development*. Unpublished paper presented at the Association for Public Policy Analysis and Management Fall 2010 Conference; Herbst, C. & Tekin, E. (2012, January). *Child care subsidies, maternal well-being, and child-parent interactions: Evidence from three nationally representative datasets*. NBER Working paper # 17774. Retrieved on February 29, 2012 from <http://crrw.princeton.edu/workingpapers/WP12-01-FE.pdf>

61 CCDBG includes a quality set aside portion of funding of four percent for quality enhancing activities. The Child Care and Development Block Grant Act of 1990 (42 USC 9858), as amended, and section 418 of the Social Security Act (42 USC 618), as amended.

62 Dean, A. & Cobo-Lewis, A. (2012, April 2). Quality for ME evaluation report: Maine's child care quality rating and improvement system. [Presentation slides]. Portland, ME: University of Southern Maine; Department of Health and Human Services. (2012). Quality for ME. Augusta, ME: Author. Retrieved on April 24, 2012 from <http://www.maine.gov/dhhs/ocfs/ec/ocfhs/qualityforme.htm>

63 Child Trends. (2010, May). *Quality Rating and Improvement Systems for early care and education*. Early Childhood Highlights, 1(1). Washington, DC: Author. Retrieved on May 17, 2012 from http://www.childtrends.org/Files/Child_Trends-2010_05_10_HL_QRIS.pdf; National Center on Child Care Quality Improvement. (2012). *Quality Rating and Improvement System Resource Guide - About QRIS*. Fairfax, VA: Author. Retrieved on May 17, 2012 from <http://www.acf.hhs.gov/resource/wwwroot/index.cfm?do=qrabout#1>

64 Alliance for Early Childhood Finance. (2012). *Quality rating and improvement systems*. Retrieved on April 24, 2012 from <http://www.earlychildhoodfinance.org/qr>

65 Child Trends. (2010, May). Quality Rating and Improvement Systems for early care and education. *Early Childhood Highlights*, 1(1). Washington, DC: Author. Retrieved on October 11, 2012 from http://www.childtrends.org/Files/Child_Trends-2010_05_10_HL_QRIS.pdf; Barnard, W., Etheridge Smith, W., Fiene, R., & Swanson, K. (2006). *Evaluation of Pennsylvania's Keystone STARS quality rating system in child care settings*. Pittsburgh, PA: University of Pittsburgh Office of Child Development. Retrieved on Oct 11, 2012 from <http://www.pakeys.org/docs/Keystone%20STARS%20Evaluation.pdf>; Elicker, J., Clawson Langill, C., Ruprecht, K., & Kwon, K. (2007). *Paths to Quality: a scientific rating system for Indiana. What is its scientific basis?* West Lafayette, IN: Purdue University. Retrieved on October 11, 2012 from <http://www.in.gov/fssa/files/ScientificBasisPTQ.pdf>; Grisham-Brown, J., Gravit, M., Gao, X., & Missal, K. (2008). *KIDS NOW evaluation*. University of Kentucky. Lexington, KY: University of Kentucky.

66 Joseph, G. E., Feldman, E.N., Brennan, C., Naslund, R., Phillips, J., & Petras, A. (2011). *Seeds to Success field test: Year two - final technical report*. University of Washington: Center for Research and Training, Childcare Quality and Early Learning. Retrieved on October 11, 2012 from http://www.del.wa.gov/publications/elac-qr/qr/docs/Seeds_to_Success_Final_Evaluation_June_2011.pdf; Boller, K., Del Grosso, P., Blair, R., Jolly, Y., Fortson, K., Paulsell, D., et. al. (2010). *The Seeds to Success modified field test: Findings from the impact and implementation studies*. Mathematica Policy Research. Retrieved on October 11, 2012 from http://www.mathematica-mpr.com/publications/PDFs/EarlyChildhood/seeds_to_success_mft.pdf

67 Joseph, G. E., Feldman, E.N., Brennan, C., Naslund, R., Phillips, J., & Petras, A. (2011). *Seeds to Success field test: Year two - final technical report*. University of Washington: Center for Research and Training, Childcare Quality and Early Learning. Retrieved on October 11, 2012 from http://www.del.wa.gov/publications/elac-qr/qr/docs/Seeds_to_Success_Final_Evaluation_June_2011.pdf; Boller, K., Del Grosso, P., Blair, R., Jolly, Y., Fortson, K., Paulsell, D., et. al. (2010). *The Seeds to Success modified field test: Findings from the impact and implementation studies*. Mathematica Policy Research. Retrieved on October 11, 2012 from http://www.mathematica-mpr.com/publications/PDFs/EarlyChildhood/seeds_to_success_mft.pdf

68 Tout, K., Starr, R., Soli, M., Moodie, S., Kirby, G., & Boller, K. (2010). *The child care Quality Ratings System assessment: Compendium of quality rating systems and evaluation*. Washington, DC: Child Trends & Mathematica Policy Research. Retrieved on October 11, 2012 from http://www.acf.hhs.gov/programs/opre/cc/childcare_quality/compendium_qrs/qrs_compendium-fi

- nal.pdf; Child Trends. (2010, May). *Quality Rating and Improvement Systems for early care and education*. Early Childhood Highlights, 1(1). Washington, DC: Author. Retrieved on October 11, 2012 from http://www.childtrends.org/Files/Child_Trends-2010_05_10_HL_QRIS.pdf; Norris, D., Dunn, L., & Eckert, L. (2003). *"Reaching for the stars" center validation study final report*. Norman, OK: University of Oklahoma, Early Childhood Collaborative of Oklahoma. Retrieved on October 11, 2012 from http://www.okdhs.org/NR/rdonlyres/4C0EF19D-6FC4-40C6-8926-A3371B7F4130/0/ReachingForTheStarsCenterValidationStudyFinalReport_dcc_05212007.pdf
- 69 An additional QRIS evaluation study, in Colorado, examined child outcomes and found mixed results, but the study had several flaws, including significant sample attrition, rendering its findings inconclusive. Zelman, G. L., Perlman, M., Le, V., & Setodji, C. M. (2008). *Assessing the validity of the Qualistar Early Learning quality rating and improvement system as a tool for improving child-care quality*. (MG-650-QEL). Santa Monica, CA: RAND Corporation. Retrieved on March 29, 2011 from <http://www.rand.org/pubs/monographs/MG650.html>
- 70 Tout, K., Starr, R., Soli, M., Moodie, S., Kirby, G., & Boller, K. (2010). *The child care Quality Ratings System assessment: Compendium of quality rating systems and evaluation*. Washington, DC: Child Trends & Mathematica Policy Research. Retrieved on October 11, 2012 from http://www.acf.hhs.gov/programs/opre/cc/childcare_quality/compendium_qrs/qrs_compendium_final.pdf; Thornburg, K. R., Mayfield, W. A., Hawks, J.S., & Fuger, K. L. (2009). *The Missouri Quality Rating System school readiness study: Executive summary*. Kansas City, MO: Center for Family Policy & Research, University of Missouri, and the Institute for Human Development, University of Missouri. Retrieved on October 11, 2012 from <http://mucenter.missouri.edu/MOQRSecex.pdf>
- 71 Elicker, J.G., Langill, C. C., Ruprecht, K. M., Lewsader, J., & Anderson, T. (2011). *Evaluation of "Paths to QUALITY," Indiana's child care quality rating and improvement system: Final report*. (Technical report #3). West Lafayette, Indiana: Purdue University. Retrieved on October 11, 2012 from http://www.cfs.purdue.edu/cff/documents/project_reports/PTQFinalReportRev11012.pdf; Tout, K. Starr, R., Isner, T., Cleveland, J., Albertson-Junkans, L., Soli, M., & Quinn, K. (2011). *Evaluation of Parent Aware: Minnesota's quality rating and improvement system pilot*. (Final report summary). Retrieved on October 11, 2012 from https://s3.amazonaws.com/Omnera/VerV/s3finder/38/pdf/Parent_Aware_Year_4_Final_Full_summary_report_Dec_2011.pdf
- 72 Dean, A. & Cobo-Lewis, A. (2012, April 2). Quality for ME evaluation report: Maine's child care quality rating and improvement system. [Presentation slides]. Portland, ME: University of Southern Maine; Department of Health and Human Services. (2012). Quality for ME. Augusta, ME: Author. Retrieved on April 24, 2012 from <http://www.maine.gov/dhhs/ocfs/oc/occh/qualityforme.htm>
- 73 Early Childhood Advisory Council, Office of the Governor. (2011). *Race to the Top - Early Learning Challenge application, North Carolina*. Retrieved on October 11, 2012 from <http://www.2ed.gov/programs/racetothetop-earlylearningchallenge/awards.html>
- 74 Research shows that having skilled, capable early childhood teachers and caregivers is essential to early childhood program quality. Stimulating and sensitive teachers provide higher-quality learning environments, which lead to improved cognitive and social outcomes for young children. Shonkoff, J.P. & Phillips, D.A. (Eds.). (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press.
- 75 Katz, L. (1999). *Curriculum disputes in early childhood education*. Champaign, IL: Clearinghouse on Early Education and Parenting. Retrieved on May 16, 2012 from <http://ceep.cr.cuiuc.edu/eeearchive/digests/1999/katz99b.html>; Goffin, S. G., & Wilson, C. (2001). *Curriculum models and early childhood education: Appraising the relationship* (2nd ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.
- 76 Some examples of a strong parent involvement and parent coaching approaches provided along with early education services include the home visits in the High/Scope Perry Preschool and Syracuse University Family Development programs, and the intensive parent coaching in Chicago Child-Parent Centers. Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). *Significant benefits: The High/Scope Perry preschool study through age 27*. Ypsilanti, MI: High/Scope Press. See also D. R. Powell (Ed.) (1988). *Parent education as early childhood intervention: Emerging directions in theory, research, and practice* (pp. 79-104). Norwood, NJ: Ablex Publishing.
- 77 For preschool classrooms, the child-to-staff ratio should be not more than 10 children per teacher. In early learning settings for infants, the child-staff ratio should be not more than three children per teacher, and for toddlers, not more than four children per teacher. American Academy of Pediatrics, American Public Health Association, and National Resource Center for Health and Safety in Child Care and Early Education (2002). *Caring for our children: National health and safety performance standards: Guidelines for out-of-home child care programs, 2nd edition*. Elk Grove Village, IL: American Academy of Pediatrics and Washington, DC: American Public Health Association.
- Barnett, W.S., Carolan, M. E., Fitzgerald, J., & Squires, J.H. (2011). *The state of preschool 2011 - State preschool yearbook*. New Brunswick, NJ: Rutgers University, National Institute for Early Education Research.
- 78 Barnett, W.S., Carolan, M. E., Fitzgerald, J., & Squires, J.H. (2011). *The state of preschool 2011 - State preschool yearbook*. New Brunswick, NJ: Rutgers University, National Institute for Early Education Research.
- 79 Pinto-Martin, J. A., Dunkle, M., Earls, M., Fliedner, D., & Landes, C. (2005). Developmental stages of developmental screening: Steps to implementation of a successful program. *American Journal of Public Health*, 95(11): 1288-1932. When pre-k teachers provided a high-quality classroom experience by being more responsive and sensitive, children showed better social adjustment and fewer behavior problems than did children in moderate-or low-quality classrooms. And when pre-k teachers provided moderate-to high-quality instruction in their classrooms, children showed more advanced academic and language skills than children in low-quality classrooms. Peisner-Feinberg, E.S., Burchinal, M.R., Clifford, R.M., Yazejian, N., Culkin, M.L., Zelazo, J., Howes, C., Byler, P., Kagan, S.L., & Rustici, J. (1999). *The children of the cost, quality, and outcomes study go to school*. Retrieved on May 17, 2012 from <http://www.fpg.unc.edu/resources/children-cost-quality-and-outcomes-study-go-school-executive-summary>; Burchinal, M., Vandergrift, N., Pianta, R., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in pre-kindergarten programs. *Early Childhood Research Quarterly*, 25, 166-176; Goffin, S.G. (2010). *NCRECE in focus: Increasing knowledge in early childhood*. Charlottesville, VA: University of Virginia, National Center for Research on Early Childhood Education.
- 80 The NICHD study of Early Child Care and Youth Development reported on the incidence of quality caregiving in its national sample, but also went further to extrapolate from its findings and generate an estimate of quality caregiving intended to be representative of the U.S. population for children 1 ½ to 3 years of age. National Institute of Child Health and Human Development. (2006). *The NICHD study of early child care and youth development: Findings for children up to age 4.5 years*. Washington, DC: US Department of Health and Human Services; NICHD Early Child Care Research Network. (2000). Characteristics and quality of child care for toddlers and preschoolers. *Applied Developmental Science*, 4, 116-135; Peisner-Feinberg, E.S., Burchinal, M.R., Clifford, R.M., Yazejian, N., Culkin, et al. (1999). *The children of the cost, quality, and outcomes study go to school*. Retrieved on March 29, 2011 from <http://www.fpg.unc.edu/~ncedl/pdfs/cqo-es.pdf>
- 81 Burchinal, M., Vandergrift, N., Pianta, R., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in pre-kindergarten programs. *Early Childhood Research Quarterly*, 25, 166-176; Goffin, S.G. (2010). *NCRECE in focus: Increasing knowledge in early childhood*. Charlottesville, VA: University of Virginia, National Center for Research on Early Childhood Education.
- 82 Peisner-Feinberg, E.S., & Burchinal, M.R. (1997). Relations between pre-school children's child-care experiences and concurrent development: The cost, quality and outcomes study. *Merrill-Palmer Quarterly*, 43, 451-477; Hausfather, A., Toharia, A., LaRoche, C. & Engelsman, F. (1997). Effects of age of entry, day-care quality, and family characteristics on preschool behavior. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 38, 441-448. Cited in Vandell, D.L. & Wolfe, B. (n.d.). *Child care quality: Does it matter and does it need to be improved?*
- 83 Gunnar, M.R., Kryzer, E., Ryzin, M.J., & Phillips, D.A. (2010). The rise in cortisol in family day care: associations with aspects of care quality, child behavior, and child sex. *Child Development*, 81(3), 851-869
- 84 Gunnar, M., Kryzer, E., Van Ryzin, M., & Phillips, D. (In press). The import of cortisol rise at child care differs as a function of behavioral inhibition. *Developmental Psychology*. Cited in Phillips, D. (2010). *10 years post - Neurons to neighborhoods: What's at stake and what matters in child care*. Keynote address at the celebration of the 20th anniversary of CCDBG, October 19, 2010, Washington, DC. =
- 85 Race to the Top - Early Learning Challenge Program Description. Retrieved on May 16, 2012 from <http://www.2ed.gov/programs/racetothetop-earlylearningchallenge/index.html>
- 86 U.S. Department of Health and Human Services, Administration for Children and Families, Office of Child Care. (2012). *Pathways and partnerships for child care excellence*. Washington, DC: Author. Retrieved on April 24, 2012 from http://www.acf.hhs.gov/programs/occt/ta/pubs/pathways/pathways_partnerships_v1.pdf
- 87 Although estimates of the number of children participating in regulated early learning programs vary, America's Edge's estimates that about 35,000 young children under age 5 in Maine were not in regulated early learning programs. This estimate was calculated by subtracting the estimated total number of young children in early learning programs, 36,643 children, from the Census-based 2010 population estimates of the number of children under age 5 in Maine (71,361 children), yielding 34,718, or approximately 35,000 children. For additional details on these calculations, see America's Edge's 2011 report: *Schaefer, S., Gates, S., & Kiernan, M. (2011). Strengthening Maine businesses through investment in early care and education: How investments in early learning increase sales from local businesses, create jobs, and grow the economy*. Washington, DC: America's Edge. Retrieved on April 23, 2012 from <http://cdn.americasedge.org/clips/ME%20early%20ed%20economic%20analysis%20report.pdf>
- 88 U.S. Bureau of Labor Statistics. (2011, May). *May 2011 State Occupational Employment and Wage Estimates - Maine*. Washington, DC: Author. Retrieved on April 12, 2012 from http://www.bls.gov/oes/current/oes_me.htm
- 89 Maine Children's Alliance. (2011). *2011 Maine Children's Growth Council Report: School Readiness*. Augusta, ME: Author.
- 90 Governor's Economic Summit on Early Childhood in Maine. (2007). *The economics of early care and education in Maine*. Rockport, ME: Author. Retrieved on January 10, 2011 from <http://www.maine-eccs.org/ECE.pdf>
- 91 The current state investment in early learning programs based on Maine's Fiscal Year 2011-2012 allocations, \$28.2 million, was applied to the Type SAM output multiplier for Maine of \$1.78, yielding \$22 million in additional economic activity, and \$50 million in total economic activity generated by these early learning investments. The current early learning investments, \$4.2 million in state child care funding (as part of the Child Care and Development Fund), \$10.6 million in state Pre-k funds, and \$13.4 million in local funds for pre-k, were summed, yielding \$28.2 million in current state and local investments in these early learning programs. FY 2011-2012 child care allocations obtained from Judith Reidt-Parker, Early Childhood Policy Analyst, Maine Children's Alliance. Personal communication in March 2012. FY 2011-2012 pre-k allocations obtained from Janine Blatt, Maine Department of Education, personal communication on April 18, 2012.
- 92 Based on 2008-2010 American Community Survey data from the U.S. Census Bureau. Annie E. Casey Foundation. (2011, October). *KIDS COUNT data center*. Baltimore, MD: Author. Retrieved on April 12, 2012 from <http://datacenter.kidscount.org/>
- 93 The additional lost spending to local businesses is calculated by applying the 1.78 Type SAM output multiplier for the early care and education sector in Maine.
- 94 Although estimates of the number of children participating in regulated early learning programs vary, AMERICA'S EDGE's estimates that about 35,000 young children under age 5 in Maine were not in regulated early learning programs. This estimate was calculated by subtracting the estimated total number of young children in early learning programs, 36,643 children, from the Census-based 2010 population estimates of the number of children under age 5 in Maine (71,361 children), yielding 34,718, or approximately 35,000 children. For additional details on these calculations, see AMERICA'S EDGE's 2011 report: *Schaefer, S., Gates, S., & Kiernan, M. (2011). Strengthening Maine businesses through investment in early care and education: How investments in early learning increase sales from local businesses, create jobs, and grow the economy*. Washington, DC: America's Edge. Retrieved on April 23, 2012 from <http://cdn.americasedge.org/clips/ME%20early%20ed%20economic%20analysis%20report.pdf>

- 95 U.S. Bureau of Labor Statistics. (2011, May). *May 2011 State Occupational Employment and Wage Estimates - Maine*. Washington, DC: Author. Retrieved on April 12, 2012 from http://www.bls.gov/oes/current/oes_me.htm; Governor's Economic Summit on Early Childhood in Maine. (2007). *The economics of early care and education in Maine*. Rockport, ME: Author. Retrieved on January 4, 2013 from <http://mainecgc.org/ECE.pdf>
- 96 Maine Children's Alliance. (2011). *2011 Maine Children's Growth Council Report: School Readiness*. Augusta, ME: Author.
- 97 Governor's Economic Summit on Early Childhood in Maine. (2007). *The economics of early care and education in Maine*. Rockport, ME: Author. Retrieved on January 10, 2011 from <http://www.maine-eccs.org/ECE.pdf>
- 98 The current state investment in early learning programs based on Maine's Fiscal Year 2011-2012 allocations, \$28.2 million, was applied to the Type SAM output multiplier for Maine of \$1.78, yielding \$22 million in additional economic activity, and \$50 million in total economic activity generated by these early learning investments. The current early learning investments, \$4.2 million in state child care funding (as part of the Child Care and Development Fund), \$10.6 million in state Pre-k funds, and \$13.4 million in local funds for pre-k, were summed, yielding \$28.2 million in current state and local investments in these early learning programs. FY 2011-2012 child care allocations obtained from Judith Reidt-Parker, Early Childhood Policy Analyst, Maine Children's Alliance. Personal communication in March 2012. FY 2011-2012 pre-k allocations obtained from Janine Blatt, Maine Department of Education, personal communication on April 18, 2012.
- 99 Based on 2008-2010 American Community Survey data from the U.S. Census Bureau. Annie E. Casey Foundation. (2011, October). *KIDS COUNT data center*. Baltimore, MD: Author. Retrieved on April 12, 2012 from <http://datacenter.kidscount.org/>



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