



Boosting New York'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 policy-makers 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 market place, while helping our nation's children get on the right track.

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While many economists agree on the long-term positive impacts of high-quality early care and education programs, New York businesses do not need to wait 18 years to experience economic gains from early learning investments. This report shows these investments also provide a surprisingly big boost to New York's economy *today*. In fact, every dollar in New York invested in early care and education generates a total of \$1.86 in sales of local goods and services throughout the state, generating as much or more activity than investments in all other economic sectors, including manufacturing, construction and transportation.

What lies behind the impressive - and immediate - economic impact of these early learning programs? New research reveals that two key "quality components" of early care and education programs contribute to the increased economic activity generated by investments in early learning, while also creating a foundation on which to help ensure New York'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 immediately boost sales from New York 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 New York businesses, including reversing the "skills gap" that is stagnating New York's

Research increasingly has shown the benefits of early childhood education and efforts to promote the life-long acquisition of skills for both individuals and the economy as a whole.

-Federal Reserve Chairman
Ben Bernanke, 2011

economic recovery and generating long-term economic growth. 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 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 New York businesses by eliminating a total of \$1.86 in sales for every dollar cut. These cuts are something our economy and businesses cannot afford.

The Bottom Line: The fragile and halting nature of our state's economic recovery requires that we make tough decisions and invest wisely in what will keep America competitive. High-quality early learning meets that test.

"We cannot rest on our laurels while our international competition continues to improve."

-David M. Buicko,
Chief Operation Officer,
Galesi Group,
Schenectady, NY

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Critical Issues for New York Businesses

Across the nation and in New York, 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 Only 37 percent of New York public school students graduate “college and career ready.”²

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.³ 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.⁴

“The jobs of the future call for a highly skilled, well-educated workforce. If we fail in preparing our students for that future, beginning with early childhood education and running right through college, we put America’s future and our economic security at great risk. That’s just too high a price to pay. We must take action now.”

–Sandy Parker,
President and CEO,
Rochester Business Alliance,
Rochester, NY

“It’s no secret that the nanotech companies coming into the Capital Region, including GlobalFoundries, will have trouble finding the highly skilled workers needed to fill their job openings.”

–John C. Cavalier,
Retired CEO,
MapInfo, Inc.,
Loudonville, NY

What is driving these dismal statistics? Consider these facts in New York:

- 23 percent of high school students do not graduate on time;⁵
- 70 percent of eighth graders are below grade level in math;⁶
- 65 percent of fourth graders read below grade level.⁷

Nationwide, 60 percent of 3- to 5-year-olds do not have the basic skills expected when they enter kindergarten, such as counting to ten and recognizing letters in the alphabet.⁸

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 two thirds reported skilled production worker shortages (machinists, operators, craft workers, distributors and technicians).⁹
- 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.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 rea-

sons. New York lost 40 percent of its manufacturing jobs between 2000 and 2010 – many of which are not expected to return, given long-term structural changes. In fact, the New York manufacturing industry is shedding jobs at a rate faster than the national average.¹¹

Fourteen of the 25 fastest growing occupations in New York require postsecondary education.

–New York State Department of Labor, *A Closer Look at Occupational Projections, 2010*

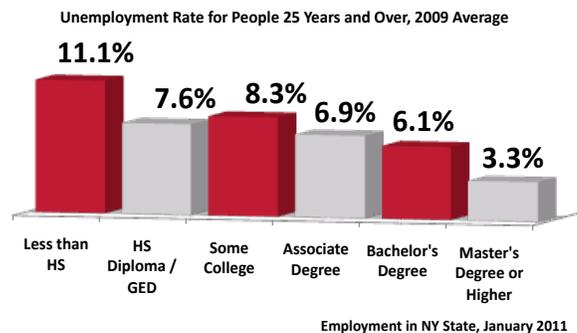
While low-skilled jobs are being eliminated, the jobs of the future will increasingly require education beyond high school:

- By 2018, 63 percent of all jobs in New York will require postsecondary education.¹²
- There will be 2.8 million New York job vacancies between 2008 and 2018, but only 10 percent of openings will be for high school dropouts and only 27 percent will be for those with only a high school degree.¹³
- As of 2009, middle-skill jobs – those that require more than a high school diploma but less than a four-year degree – made up 46 percent of New York jobs, but only 39 percent of New York 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 New York economy (44 percent).¹⁴

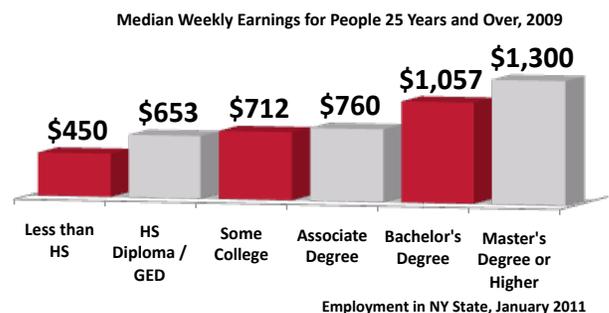
Each new class of dropouts nationwide will earn \$335 billion less over their lifetimes than their high school graduate peers.¹⁶ This translates to over \$500,000 less in lifetime earnings per dropout.¹⁷ These staggering earnings losses result in less spending power, fewer contributions to the tax base, 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.¹⁸ From an employer's perspective, college graduates are usually more productive and worth the extra salary.

Unemployment Rate in NY by Education Level



Earnings in NY by Education Level



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 2010, almost 15 percent of U.S. high school dropouts were jobless, while less than 5 percent of college graduates were unemployed.¹⁵ Similarly, in New York, 11 percent of high school dropouts were jobless, versus 6 percent of college graduates.

“Our economy is advancing along with technology. Our education system must keep pace.”

–Jim Brush,
President and CEO,
Sentry Group,
Rochester, NY

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.¹⁹ For example, three quarters of New York City public high school graduates enrolling for associate's degrees at the City University of New York (CUNY) require remedial courses.²⁰ 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.²¹ 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.²²

The Early Learning sector generates as much or more additional spending in the economy as other major economic sectors	
Economic Sectors	Output Multipliers
Early Learning ¹	\$1.86
Other Major Sectors	
Construction	\$1.86
Wholesale Trade	\$1.83
Retail Trade	\$1.83
Farming, Logging, Fishing, Hunting	\$1.75
Manufacturing	\$1.72
Transportation	\$1.72
Mining, Oil, Gas	\$1.67
Utilities	\$1.53
1. The early learning sector is part of the larger services sector, which on average generates a multiplier of \$1.98 for every \$1 invested.	
Source: IMPLAN, 2008 analysis of Type SAM Output Multipliers for New York State	

Every \$1 invested in the early learning sector generates an additional 86 cents in the local economy.

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 also be implemented to begin to address the widening skills gap now. But this 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 New York’s businesses and economy today.

Short-Term Economic Gains

New York 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 New York, an additional \$0.86 is generated for a total of \$1.86 in new spending in the state.**²³ 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, cuts to early learning programs in New York would hurt local businesses by eliminating \$0.86 in additional new spending for every \$1 cut.²⁴

Early learning investments generate this additional local economic activity in two ways: (1) when early learning centers purchase local goods and services to operate their programs; and (2) 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 lo-

“The inability to fill open jobs because of the skills gap will adversely impact the U.S. and New York’s economic recovery and long-term growth.”

–Ray Apy,
Chief Executive Officer,
Annese and Associates, Inc.,
Clifton Park, NY

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

Research confirms that better skilled teachers produce better outcomes.³¹ 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 New York state, child care workers have a very modest average annual wage of only \$24,300 and preschool teachers have an average annual wage of \$38,200.³²

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 \$67,940 in New York. 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.³³ New York's Universal Pre-Kindergarten program does not yet require this.³⁴ When highly-qualified early

“We’ve got jobs out there that can’t be filled because we can’t find qualified workers to fill them.”

–Tush Nikollai,
President and CEO,
Logicalnet Corporation,
Albany, NY

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 students gain access to early learning programs and more centers are making purchases to run the programs. Small child-to-teacher ratios requires more teachers, again, 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 workers) also had higher child care output multipliers than states that were weaker on these quality features.³⁵

Long-Term Economic Benefits

The “quality” aspects of early learning programs are also a key component for (the outcomes that will help) 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.³⁶ 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.³⁷

Only High-Quality Programs Deliver Solid Results

Researchers have found that high-quality early care and education programs have several key characteristics, including:

- Highly skilled teachers with appropriate compensation;²⁵
- Comprehensive and age-appropriate curricula;²⁶
- Strong family involvement;²⁷
- Small child-to-staff ratios to ensure each child gets sufficient attention;²⁸
- Small, age-appropriate class sizes;²⁹ and
- Screening and referral services for developmental, health or behavior problems.³⁰

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

Early Care and Education in New York: An Economic Snapshot

Early care and education programs serve young children from birth through age 5. These programs take several forms, from child care centers, family child care homes and private preschool programs, to publicly funded early education programs including Universal Pre-Kindergarten, Head Start, and early childhood special education programs provided by the public schools. In New York, over 500,000 young children under age 6 are *not* served by regulated early care and education settings.⁶⁰

Early care and education is an important economic sector in New York, making significant contributions to the local economy:

- Early care and education programs represent a sizable small business sector in the state. The sector employs over 100,000 teachers, staff and administrators. Among these workers are approximately 70,000 child care workers, 30,000 preschool

teachers and 3,900 preschool and child care program administrators.⁶¹

- There are an estimated 4,130 child care centers and 14,625 family child care homes in New York State.⁶²
- Currently, New York invests \$528 million on state-funded early learning programs, which in turn are generating an additional \$454 million in economic activity, for a total of \$982 million in economic activity for the state.⁶³
- 62 percent of children under the age of 6 in New York have both or their only parent in the workforce.⁶⁴
- New York currently has no uniform standards across early learning program environments to ensure that all programs across the state are evaluated in the same way.⁶⁵

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 attended the intensive Abecedarian infant development and preschool program were 74 percent more likely to hold a skilled job by age 21 than children randomly assigned to a control group;³⁸
- Children who participated in the Child-Parent Center program were 31 percent more likely than their non-participating peers to hold a job considered semi-skilled or higher;³⁹ and
- The children who attended the Perry Preschool Program were 22 percent more likely to be employed at age 40.⁴⁰

High-quality early learning also produced meaningful increases in school success in elementary school and high school. Abecedarian participants had lifetime earnings beyond age 21 estimated to

be \$37,500 higher than if they had not had access to high-quality early learning.⁴¹ 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 percent 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.⁴²

As noted earlier, more education is associated with lower unemployment – something that became more clear during the reces-

Over time, high-quality early education programs for at-risk children can return as much as \$16 for every dollar invested. That is a return on investment that is unmatched by almost any other public investment.

–Schweinhart et al., 2005

sion. Increasing the number of children who enroll in a 4-year college or university will help lower unemployment rates. As the economy recovers and we strive to ensure long-term economic security, increasing the education levels of our young people may better allow the U.S. to weather future economic downturns.

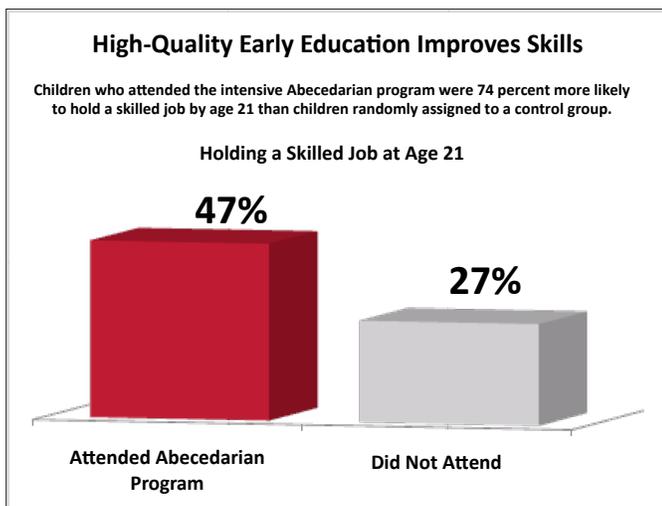
Similarly, increased education is also associated with increased productivity, which can strengthen our economy. According to research by the Organisation for Economic Co-operation and Development (OECD), each year of additional education in OECD countries is associated with a 4 to 7 percent increase in per capita output.⁴³ 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.⁴⁴

Increased School Success

High-quality early learning also produced meaningful increases in school success in elementary school and high 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.⁴⁵ Similarly, children who attended the model Perry Preschool Program were 44 percent more likely to graduate from high school.⁴⁶ Children in the Abecedarian program were 2.5 times more likely to be enrolled in a 4-year college or university at age 21 than children left out of the program.⁴⁷

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 their hard skills, such as reading and math, as well as these soft skills.



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



“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.” (2010)

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.⁴⁸ Test scores of children in Oklahoma’s pre-k program increased by 52 percent on letter and word identification, beyond the gains that would be expected as a child naturally ages, and their spelling scores increased by 27 percent.⁴⁹ Children from families of all income levels showed gains, with the largest gains among low-income students.⁵⁰

Analysis by James Heckman, the University of Chicago Nobel Prize-winning economist, shows that high-quality early learning not only helps children develop a foundation for reading and math, it also helps them develop the soft skills needed throughout their careers, like how to get along with others, to trust others to follow directions. Children participating in Oklahoma’s pre-k program were more able to pay attention and were less timid in kindergarten than comparable children not in the program.⁵¹

Improving Quality: New York’s State Initiative

To improve the quality of early learning programs in New York, the state is developing its own Quality Rating and Improvement System (QRIS), QUALITYstarsNY. Initial planning and exploration of a QRIS for New York began in 2005. In 2009, New York began pilot testing for QUALITYstarsNY. Since then, the program has conducted a field test in over 230 sites in 13 communities across the state.⁵⁷

All early care and education programs regulated by a public agency in New York are eligible to apply to obtain a rating, including

Many Child Care Options Are Not High-Quality

Low-quality care and education leads to increased risk of school failure and other negative outcomes. Unfortunately, much of the child care America's children are receiving is substandard. Though more current data are not available, estimates from the 1990s indicated that the proportion of child care settings providing good- to high-quality care was small, ranging from just 9 percent to 14 percent.⁵² A lack of comprehensive program quality standards and a lack of data on quality means that the current levels of quality are unknown, but are likely still low.

A study of pre-k programs in 11 states found that children in low-quality classrooms did not show any

gains in academic skills or reductions in behavior problems.⁵³ Other studies have found that children in lower-quality care were actually more likely to display behavior problems.⁵⁴ And even more troubling, recent research shows that young children can be harmed by low-quality care. For example, a study of children in home-based child care found that 40 percent of the children showed high stress levels while in lower-quality child care.⁵⁵ Six months later, these children showed more fear and anxiety in their child care setting, as well as signs of sadness, anxiety and withdrawal.⁵⁶

child care centers, family child care homes, school-age child care programs, Head Start and Universal Pre-k programs. The ratings programs can receive range from one to five stars, and are based on a points system. For center-based programs (child care centers and preschools) and for family-based programs (family child care homes and family child care group homes), a maximum of 100 points can be earned across four areas:

- Learning environment (30 points);
- Family engagement (20 points);
- Qualifications and experience (25 points); and
- Leadership and management (25 points).⁵⁹

QUALITYstarsNY is designed to align with and complement existing quality assessment systems, including National Association for the Education of Young Children (NAEYC) accreditation.

By providing a system of accountability to measure quality and a system to provide incentives for achieving higher quality, this approach aims to enhance market incentives for early care and education programs to improve their quality, including seeking out or training their own higher-skilled teachers. The quality rating system also serves a consumer education function, helping parents make an informed choice about programs. In these cash-strapped times, QUALITYstarsNY is a promising tool available to help New York leverage improvement of early care and education programs across the state.

What is QRIS?

Quality Rating and Improvement Systems 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.⁵⁸

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, we will be building the skills of our future workforce. Policy-makers 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.

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The National Institute of Early Education Research (NIEER) estimates that the average per-child annual cost for high-quality pre-k is \$8,700. While this cost figure for high-quality pre-k is higher than New York's Universal Prekindergarten per-child cost figures, which range from \$2,700 to \$5,750, the NIEER national cost figure is a more appropriate estimate for the purposes of this report. While the UPK cost figure is based on providing a half-day pre-k program, which is typically a 2.5-hour day, the \$8,700 estimate is more reflective of full-day pre-k (which would be a 5-hour or 6-hour school day), as well as full-day child care for working parents (which would be a 9-or 10-hour day), thus the higher per-child cost to provide a high quality early care and education program on a full school day or a full working day basis. The NIEER cost estimate is also inclusive of quality provisions needed for pre-kindergarten such as skilled teachers, small class sizes and small child-to-teacher ratios.

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care programs participating in the QRIS improved their quality over time.

Missouri has measured the effects of QRIS on children's outcomes and found significant impacts on children as a result of child care providers' participation in the rating system. Missouri's QRIS evaluation found that children in high-quality programs (rated as 4- or 5-star programs) showed significantly greater gains than children in low-quality programs (rated as 1- or 2-star programs). Children in high-quality programs showed significant increases in social and behavioral skills over one academic year, a six percent increase, while children in low-quality programs actually experienced decreases in their social and behavioral skills, a decline of four percent.

The children in poverty participating in Missouri's QRIS who were in higher-quality programs had significantly greater gains in social and behavioral skills, motivation and vocabulary than the poor children in lower-quality programs. With respect to vocabulary, poor children in high-quality programs had increased their vocabulary scores by six percent over the academic year, whereas poor children in low-quality programs experienced decreased vocabulary scores, by three percent, over the academic year.

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6 are not participating in regulated early learning programs. This estimate is described in further detail in AMERICA'S EDGE's report, Schaefer, S., Gates, S., & Kiernan, M. (2010). *Strengthening New York 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/NY-earlylearning-report.pdf>

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