



Strengthening Kansas Businesses through Investments in Early Care and Education

How Investments in Early Learning
Increase Sales from Local Businesses,
Create Jobs and Grow the Economy

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



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This report was authored by Stephanie Schaefer, Ph.D., Susan L. Gates, Lindsay Warner and Mike Kiernan.

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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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Executive Summary

How Early Learning Investments Can Help Expand Kansas' Economy

Kansas business leaders recognize that the key to boosting the state's economy and keeping struggling companies in business is to generate additional sales of local goods and services, while also creating new jobs. That is why, after taking a hard look at the research and calculating proven returns on investment, Kansas business leaders are calling on state and federal policy-makers to invest in early care and education. This report documents that investments in early learning provide a significant, immediate economic boost for local businesses and help build stronger communities over the long term.

Fully investing in early care and education would generate millions of dollars in sales of goods and services for Kansas businesses and create thousands of jobs in the state. In fact, investments in quality early learning generate as much or more new spending for local businesses than investments in eight other major economic sectors. For every dollar invested in early care and education in Kansas, an additional 68 cents are generated for a total of \$1.68 in new spending in the state. This strong economic boost for local businesses is higher than investments in other sectors such as retail trade, transportation, construction and manufacturing. Inversely, cuts to early learning programs would hurt local businesses in Kansas by eliminating \$0.68 in additional new spending for every \$1 cut.

Early care and education should be a critical component of Kansas' economic recovery. If all Kansas children age 5 or under were given access to quality early care and education at a cost of an additional \$515 million, that investment would generate \$865 million in total new spending in Kansas businesses. And nearly all of these dollars generated in Kansas would stay in Kansas – helping local businesses prosper while also creating up to 17,000 new jobs, including 3,000 jobs outside the early learning sector.

Such an investment will also save Kansas businesses money every day through reduced absenteeism and turnover. The average working parent in America misses five to nine days of work per year because of child care problems. This costs U.S. businesses

\$3 billion a year. Research confirms that if parents have quality early care and education available in their communities, not only will absenteeism and turnover go down, but productivity will also go up – immediately improving businesses' bottom lines.

Yet another strategic reason for this investment is that access to quality early care and education will increase the ability of Kansas businesses to attract skilled employees. Quality programs for our youngest children are needed for the same reasons communities strive to have a strong K-12 education system to attract skilled workers and new businesses. As our economy begins to turn around, Kansas businesses need the right resources to attract and retain the best workers. One resource that can help communities attract the best employees is the availability of quality early learning for their children.

Finally, such an investment will establish a foundation for sustained economic growth because quality early learning is key to ensuring that future employees have the skills Kansas businesses need. To remain competitive in a global marketplace, businesses need communicators, collaborators and critical thinkers. Research confirms that quality early learning is the crucial first step in the development of those skills. And research shows that the return on investment is impressive: Studies of high-quality early education programs for at-risk children have shown that quality programs can save as much as \$16 for every dollar invested.

The bottom line: With limited funds available to help businesses and our economy get back and stay on track, few investments make as much sense for Kansas businesses' balance sheets as do investments in high-quality early care and education.

Strengthening Kansas Businesses through Investments in Early Care and Education

Immediate Short-Term Economic Gains

Critical Issues for Kansas Businesses

Even in today's tough economy, many businesses are experiencing a shortage of employees with 21st century skills, in large part because high school and college graduates lack the knowledge and abilities businesses need.¹ Consider these facts. In Kansas:

- 24 percent of high school students do not graduate on time;²
- 59 percent of eighth graders are below grade level in math;³ and
- 64 percent of fourth graders read below grade level.⁴

Nationally, 60 percent of three- to five-year-olds do not have the basic skills needed to enter kindergarten, such as counting to ten and recognizing letters in the alphabet.⁵

Each year, students dropping out of high school costs the United States dearly. High school dropouts are so much less productive than high school graduates that each class of dropouts nationwide will make \$335 billion less over their lifetime than they would have as graduates.⁶ That loss of earnings translates into less spending power, decreased productivity and lower contribution to the tax base.

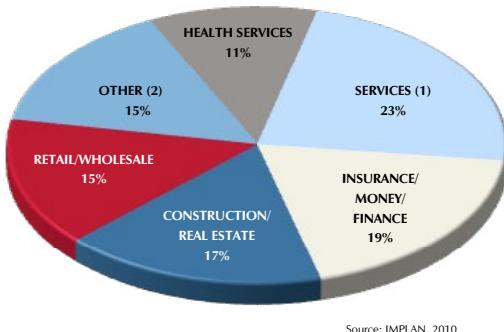
Increasing Sales of Local Goods and Services

New research by America's Edge found that attracting skilled employees, strengthening local and state economies now and

improving businesses' bottom lines can be achieved through cost effective and proven investments in quality early childhood care and education programs.⁷

What economic modeling system is the most effective way to determine early education's impact in Kansas? This report used IMPLAN, a system first developed 18 years ago that is widely used for conducting a variety of economic impact and related analyses. This study employed the most recent available (2010) data sets and IMPLAN models and adheres fully to standard input-output and IMPLAN conventions (see Appendix A for a complete explanation of IMPLAN and the report's methodology).

This economic impact modeling system found that, for every additional dollar invested in early care and education in Kansas, \$1.68 is generated in total spending within the state. This strong economic boost for local businesses is higher than investments in other major sectors such as retail trade (\$1.65), transportation (\$1.63), construction (\$1.59) and manufacturing (\$1.46).⁸ Research shows that among Kansas' major economic sectors that will spur economic growth, early care and education offers one of the smartest ways to create additional buying power for consumers and help local companies stay in business.



1. Professional, business, information, entertainment, rental, and utility services.
2. Farming, logging, fishing, and hunting; mining, oil, and gas; manufacturing; and transportation.

To ensure all Kansas children under age 5 have access to quality early care and education would require an investment of an additional \$515 million. That investment would yield \$350 million in additional sales in Kansas' economy outside of early care and education, for a total of \$865 million of new money infused into

The Early Learning sector generates as much or more additional spending in the economy as other major economic sectors in Kansas.	
Economic Sectors	Ouput Multiplier
Early Learning¹	\$1.68
Farming, Logging, Fishing, Hunting	\$1.68
Retail Trade	\$1.65
Transportation	\$1.63
Construction	\$1.59
Wholesale Trade	\$1.51
Mining, Oil, Gas	\$1.49
Manufacturing	\$1.46
Utilities	\$1.26
1. The Early Learning sector is part of the larger services sector, which on average generates a multiplier of 61 cents for every \$1 invested.	
Source: IMPLAN, 2010 analysis of Type SAM Output Multipliers for Kansas	

Every \$1 invested in the early learning sector generates an additional 68 cents in the local economy.

the state (see Appendix B).⁹ And most of these dollars generated in Kansas would stay in Kansas – helping local businesses improve sales in almost every sector. Here are some examples of the impact that investing in early learning would have on the major economic sectors in Kansas:

- **Over \$80 million in new sales in the state's services sector**, which employs the largest proportion of workers in Kansas. The additional dollars would benefit many small businesses including dry cleaners, mobile phone and cable companies and numerous professional firms such as accounting, law and tax offices.¹⁰
- **Over \$65 million in new dollars to Kansas' insurance and finance sectors**, including local banks and insurance companies.¹¹
- **Over \$60 million in new sales in real estate and construction** – providing a boost to the slumping real estate market and helping many low- and middle-income families keep up with their mortgage or rental payments.¹²
- **Over \$50 million in new sales in Kansas' retail and wholesale trade sectors**, including grocery stores, department stores and auto dealers.¹³
- **Over \$35 million in new sales in Kansas' health services sectors**, including hospitals and doctors' offices.¹⁴

The \$350 million in additional spending outside of early care and education will be generated in over 400 economic categories. Of those 400-plus categories, here are just a few concrete examples of increased sales for Kansas businesses:

- Over \$19.8 million in sales from local restaurants, the cost for over 5,500 families of four to eat out for one year;¹⁵
- Over \$6.9 million in sales from local electric companies, the cost of monthly electric bills for over 3,800 families of four for one year;¹⁶
- \$3.7 million in sales from local supermarkets, the cost of a year of groceries for 700 families of four;¹⁷
- Over \$14.1 million in sales from telecommunications companies, equal to the annual cost of telephone services for over 9,300 families of four;¹⁸

The key point is that investments in the early learning sector are very competitive with investments in other major sectors, and these investments create an immediate infusion of dollars throughout Kansas' local businesses.

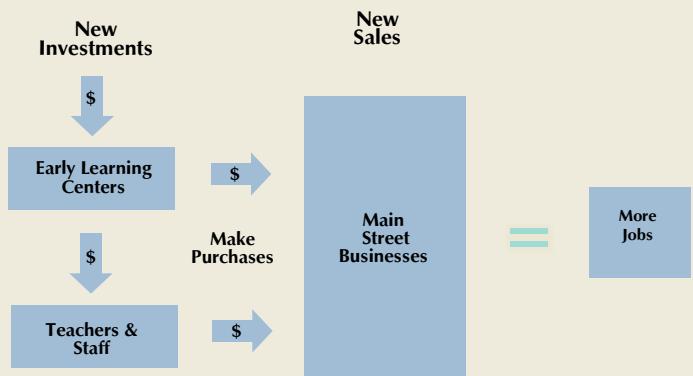
Early Learning Spending Stays in Kansas

Here's how it works:

The dollars initially invested in an early learning program recirculate through the local economy. The first dollar of spending goes directly to early care and education programs, and the additional spending is generated 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. All this additional spending is generated through what is known as the “multiplier effect.”

Although every industry generates some additional spending in these two ways (see table on page 2), the early child care and education sector has one of the highest output multipliers because a high proportion of the spending by early learning programs and staff is spent locally. Much of the investment in early education goes to teacher wages, and the person-to-person nature of this service means that it must be provided and delivered locally. This is different from many industries that are based on products that could be manufactured outside of Kansas or on services that can be provided remotely (e.g., customer service representatives via phone lines from other states or even internationally).

How Early Learning Investments Help Kansas Businesses



In turn, since early education teachers and staff are low- and moderate-wage workers (child care workers in Kansas have median annual incomes of \$19,300),¹⁹ they typically spend rather than save their wages, purchasing local goods and services — including housing and retail products.

Here's what this means in actual dollars and cents: Every dollar spent on early care and education in Kansas yields a total of \$1.68 in the state economy.²⁰

17,000 New Jobs in Kansas

Fully investing in early care and education would also create thousands of new jobs. For every five jobs created in the early care and education sector, one job is created outside that sector in Kansas' economy.²¹

An analysis of the IMPLAN economic data for Kansas shows that a \$515 million investment to offer quality early care and education to all Kansan children age five and under would create 17,000 new jobs, including 3,000 new jobs in other economic sectors.²² These additional jobs are created when expanded early learning programs and their employees purchase additional local goods and services. As demand for goods increases, so does the need to supply those goods, which creates jobs.

Thus, investment in early learning, with the increased spending power from newly-employed individuals, would help Kansas reduce its unemployment rate and immediately strengthen local businesses.

Cost Savings and Increased Productivity for Businesses

Quality early learning saves businesses money through reduced absenteeism and turnover. The average working parent in America misses five to nine days of work — or one to two weeks per year — because of child care problems. In fact, according to a study published by Cornell University, this problem costs U.S. businesses \$3 billion annually.²³ Research confirms that if parents have quality early care and education available in their communities, not only will absenteeism and turnover go down, but retention and productivity will go up.²⁴ Reduced absenteeism and turnover and increased retention and productivity translate into immediate savings and increased profits for businesses — good news to Kansas businesses on both sides of their balance sheets.

Attracting Skilled Employees

Even in tough economic times, businesses often struggle to attract qualified applicants to fill skilled positions. Having access

to quality early care and education services currently helps tens of thousands of parents stay in the workforce in Kansas.²⁵ However, approximately 110,000 children under age 5 in Kansas do not participate in regulated early learning programs, and a significant number would likely participate if high-quality, affordable programs were available in their neighborhoods.²⁶ Like strong K-12 education systems, quality early education for our youngest children can help attract skilled workers and new businesses. And Kansas businesses must be poised to compete for the most skilled workers as the economy continues to recover.

Long-Term Benefits for Economic Security

In addition to boosting Kansas' economy and creating thousands of new jobs, investments in quality early learning programs would also have important long-term benefits that would establish a foundation for sustained economic growth.

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.²⁷

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.²⁸ 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.²⁹

High-quality early care and education is a critical step to support the development of the 21st century skills that businesses now require in their workforce. Research studies demonstrate that children who participate in high-quality early learning can do better on a range of outcomes. Here are examples of what outcomes are impacted and what is possible:

- **Better preparation to succeed in elementary school** – children exposed to one year of Oklahoma’s universal

The Perry Preschool Program

One of the best studies of early care and education for 3- and 4-year-olds, the High/Scope Perry Preschool Program in Ypsilanti, Michigan, followed a group of children who attended the preschool and a group that did not until they were age 40. From 1962 through 1967, preschool teachers worked intensively with these low-income, 3- and 4-year-old children. The children attended preschool during the week and teachers came to their homes once a week to coach their parents. When the children were age 40, researchers compared the life stories of subjects in the two groups. The payoff was impressive. Children who participated in the preschool program had significantly higher reading achievement and arithmetic achievement scores at age 14 compared to the children not participating in the program; 44 percent more of the children in the Perry program graduated from high school; and 60 percent of participants were earning upward of \$20,000 a year in their forties, versus 40 percent of those in the control group.³⁷

pre-kindergarten program experienced a 16 percent increase in their overall test score;³⁰

- **Less special education** – children who attended the Chicago Child-Parent Centers program were 40 percent less likely to need special education;³¹
- **Lower rates of retention in school** – children participating in the Abecedarian early education program in North Carolina were 43 percent less likely to be held back in school;³²
- **Higher rates of high school graduation** – children attending the High/Scope Perry Preschool Program in Michigan were 44 percent more likely to graduate from high school;³³
- **Less crime** – children not offered the Perry program were five times more likely to become chronic offenders by age 27;³⁴ and
- **Higher rates of employment** – children in the Perry program were 22 percent more likely to be employed at age 40.³⁵

Studies of high-quality early education programs for at-risk children have shown that these programs can save as much as \$16 for every dollar invested.³⁶ These long-term benefits are

Early Care and Education in Kansas: An economic snapshot

Early care and education programs serve young children from birth through age 5. These programs take several forms, including child care centers, family child care homes, private preschool programs and publicly funded and regulated early education programs including public pre-kindergarten, Head Start and early childhood special education programs provided by the public schools. In Kansas, approximately 110,000 young children under age 5 are not served by regulated early care and education settings.³⁸

Early care and education is an important economic sector in Kansas, 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 7,800 child care workers, preschool teachers and early care and education administrators.³⁹
- Kansas' early care and education sector generates more than \$500 million dollars annually in gross receipts (including both public investments and parent fees).⁴⁰
- Currently, Kansas invests \$141 million on state-funded early learning programs, which in turn are generating an additional \$96 million in economic activity, for a total of \$237 million in economic activity for the state.⁴¹

realized when the children who receive high-quality early learning grow up and 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.

Conclusion

Research is clear that investments in high-quality early care and education will help boost our economy through an immediate increase in sales for Kansas businesses and the creation of many new jobs. 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 during the recession. Funding for early care and education should be a priority since it is one of the best ways we can immediately strengthen our economy while creating lasting economic security.

Appendix A

Economic Multipliers Analysis

Economists have documented the contributions that the early care and education sector makes to the economy in the short term through economic multiplier effects.

The short-term economic development benefits of the early child care and education sector are based on estimates calculated from what are called input-output economic models. These models show the linkages between all sectors in the economy, creating a matrix detailing how spending in each sector ripples through other economic sectors via the purchases of goods and services from other sectors.

There are three types of economic linkage effects that this input-output analysis captures. Direct effects of new spending in the child care sector are seen within the sector itself, through new money spent on child care programs. Indirect effects reflect the inter-industry expenditures generated when child care businesses purchase goods and services from other sectors. These businesses, in turn, are stimulated to increase their input purchases, and so on in widening ripple effects throughout the economy. Induced effects reflect similar economy-wide impacts due to the increased spending on goods and services of early education workers as first their wages increase, and then the wages of workers in other affected industries increase. The combined linkage effect of indirect (inter-industry spending) and induced (household spending) is called a Type SAM multiplier.

Early learning investments generate new dollars and jobs throughout Kansas' economy. Every new dollar spent on early learning yields a total of \$1.68 in the state economy.

AMERICA's EDGE commissioned an analysis of the most recent available data for Kansas on the economic impact of the early care and education sector on other sectors.

All input-output modeling results were generated using the Minnesota IMPLAN Group, Inc (MIG, Inc) IMPLAN® economic impact modeling system. First developed in 1993, the system now is in widespread use for conducting a wide variety of economic impact and related analyses.

This study employed the most recently available (2010) data sets and IMPLAN models. One model was created for Kansas. Our modeling approach and analyses adhere fully to standard input-output and IMPLAN conventions.

Multipliers were generated for the model using two separate sets of assumptions about regional purchase coefficients

(RPC), or the proportion of purchases in each sector that occur regionally (locally). First, the multipliers were generated based on estimates from MIG, Inc.'s recently-completed National Trade Flow Model. Second, in order to facilitate comparison with earlier IMPLAN modeling work, multipliers were also generated based on the previous IMPLAN standard for RPC estimates, namely an econometric model.

The reported results are based on fully disaggregated models (i.e. 440 distinct sectors). The disaggregated sectors are defined by MIG, Inc. but are based upon and cross-walked with the North American Industrial Classification System (NAICS), which several years ago replaced the Standard Industrial Classification (SIC) code system. Additional analysis was also conducted using models aggregated into a small number of very broad sectors (e.g. Agriculture, Manufacturing, Services, etc.).

To illustrate the impact of increased spending on early learning, we used the models created to estimate the indirect and induced effects on each sector of the economy of exogenous increases (e.g. of a \$1,000,000 base investment) in the demand for child care services. Because government spending is determined as much by policy decisions as by the regional dynamics of economic forces, government spending is conventionally treated as a source of exogenous demand. We focus on this source.

For additional information and background on input-output analyses of the early care and education sector, see the following resources:

Zhilin, L., Ribeiro, R., & Warner, M. (2004). Child care multipliers: Analysis from fifty states. Linking Economic Development and Child Care Research Project. Ithaca, NY: Cornell University, Cornell Cooperative Extension. Retrieved from <http://government.cce.cornell.edu/doc/pdf/50StatesBrochure.pdf>

Zhilin, L., Ribeiro, R., & Warner, M. (2004). Comparing child care multipliers in the regional economy: Analysis from 50 states. Linking Economic Development and Child Care Research Project. Ithaca, NY: Cornell University, Cornell Cooperative Extension. Retrieved from <http://government.cce.cornell.edu/doc/pdf/50States.pdf>

Appendix B

AMERICA's EDGE estimates that \$515 million in new early learning investments are needed in Kansas to serve an additional 59,000 young children from birth through age 4 currently unserved by these programs, such that these new investments plus current investments together reach a full 75 percent of all young children from birth through age 4 in the state.

Serving 75 percent of all young children is a conservative estimate for providing early care and education services to all young children who are likely to participate. These percentages are common upper-bound estimates of the full "take-up rate" for early care and education services, that is, the maximum proportion of families likely to participate in programs, given that some families use parental care exclusively or otherwise do not enroll in formal early care and education services.

Economic multipliers calculations for new investments needed

The \$865 million estimate of the total new spending generated in Kansas' economy from \$515 million in new early care and education spending was calculated by taking the Type SAM output multiplier for Kansas, 1.68, and multiplying it by the \$515 million, which yields \$865 million in new spending. This new spending includes the \$515 million new direct spending in the early care and education sector, plus the new indirect and induced spending (with a subtotal of \$350 million) which ripple out to other sectors of Kansas' economy, yielding \$865 million in new total spending.

Estimates of current capacity in early care and education programs

In Kansas, there are an estimated 205,000 children (205,492) under age 5.

US Census Bureau. (2011). DP1 – Profile of general population and housing characteristics: 2010. 2010 Demographic Profile Data. Washington, DC: Author.

To estimate the number of children under age 5 in regulated early care and education programs, AMERICA's EDGE obtained the most recently available figures documenting enrollment in such programs.

AMERICA's EDGE was able to obtain estimates of program capacity or enrollment for each major type of early care and education program available to children and families in Kansas.

Head Start: 8,948 children were enrolled in Head Start programs in Kansas, based on end of year 2010 enrollment data.

Kansas Head Start Association. (2011). Map of Kansas programs. Lawrence, KS: Author. Retrieved on February 15, 2012 from <http://www.ksheadstart.org/member-programs/map>

Licensed child care: the total number of young children in licensed child care programs (which included child care centers, family day care homes and group day care homes) was estimated to be 85,687. The total number of children in licensed child care programs based on FY 2011 licensed child care capacity was 110,561 children (including school-age children). To adjust for the presence of school-age children (ages 5 through 12) that were also counted in this initial child care capacity figure, America's Edge subtracted an estimated 24,874 school-aged children in family child care homes in the state. Since Kansas child care capacity data were not available by age, this figure was calculated based on national estimates of the proportion of school-age children in home-based child care. AMERICA's EDGE extrapolated from national estimates that approximately 41 percent of home-based child care is used by school-age children. Subtracting the school-age estimate yielded the adjusted estimate of child care capacity of 85,687 children from birth through age 4.

National Association of Child Care Resource and Referral Agencies. (2010, March). 2011 child care in the state of Kansas. Washington, DC: Author; Kansas Department of Health and Environment. (2011, June 30). FY 2011 total facility count and total capacity. Topeka, KS: Author. Retrieved on February 14, 2012 from http://www.kdheks.gov/bcclr/facts_stats.html; Capizzano, J., Tout, K., & Adams, G. (2002). Child care patterns of school-age children with employed mothers. (Occasional Paper Number 41.) Washington, DC: The Urban Institute.

Total children served and unserved

AMERICA's EDGE estimates that the total number of young children served by early care and education programs in Kansas is 95,000 (94,893) children. This estimate totals the number of children served by the early care and education programs detailed above, and adjusts for the potential for duplicated counts for individual children enrolled in more than one early care and education setting (pre-kindergarten and child care, for example) by adjusting the half-day programs estimates (for pre-kindergarten, Head Start and private preschool) downward by 50 percent, which assumes that 50 percent of these children were also enrolled in another early care and education program. Subtracting this estimate of the number of children being served (94,893 children) from the proposed number of children to be served to reach the goal of serving 75 percent of all children from birth through age 4 (154,119 children) yields 59,226 children, or approximately 59,000 children.

under age 5 not being served who would need to be served to reach this goal. Program data documenting the number of children enrolled in multiple early learning programs were not available; improved early learning data systems that track individual children's participation in multiple programs would provide useful data to develop more precise estimates across the whole early learning sector.

Calculations for per-child and total costs for early care and education investments

The National Institute of Early Education Research estimates that the average per-child annual cost for high-quality pre-kindergarten is \$8,700. Multiplying this per-child cost (\$8,700) by the total number of new children to be served to reach 75 percent of all children age 4 and under, which is an additional 59,000 children (59,226 children, rounded to 59,000), yields an estimated \$515 million in new early care and education spending needed.

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 February 14, 2012 from <http://nieer.org/resources/facts/index.php?FastFactID=5>

Appendix C

New spending generated by early care and education investments Selected major counties/regions of Kansas						
Location	Percent of children under 5 relative to state	Total new early care and education investments to serve unmet need from birth to 5	Total new spending generated outside the early care and education sector	Spending by Major Sector		
				Services - 23%	Insurance and Finance - 19%	Construction and Real Estate - 17%
Kansas	100%	\$515 million	\$865 million	\$350 million	Over \$80 million	Over \$65 million
Kansas City, KS (Johnson/Wyandotte counties)	26%	\$134 million	\$225 million	\$91 million	\$21 million	\$17 million
Wichita (Sedgewick County)	19%	\$98 million	\$165 million	\$67 million	\$15 million	\$12 million
Topeka (Shawnee County)	6%	\$31 million	\$52 million	\$21 million	\$5 million	\$4 million

Note: Values may not be precisely equivalent to percentages due to rounding.

Sources: IMPLAN, 2012, using 2010 Kansas data and statewide IMPLAN models; 2011 American Community Survey data on total children under age 5 by county. Notes: For Kansas, input-output modeling analyses were conducted to identify economic impacts. Kansas' Type SAM output multiplier was 1.68. For counties and metro areas, the figures above represent a proportional estimate of the statewide economic impact, estimated based on the proportion of children under 5 in those locations.

Endnotes

1 Deloitte Development LLC, and The Manufacturing Institute. (2009). *Boiling Point? The skills gap in U.S. manufacturing*. Retrieved December 21, 2011 from http://www.themanufacturinginstitute.org/~/media/A07730B2A798437D98501E798C2E13AA/2011_Skills_Gap_Report.pdf

2 Carnevale, A.P., Smith, N. & Strohl, J. (June 2010). *Help wanted: Projections of jobs and education requirements through 2018*. Georgetown University Center on Education and the Workforce. Washington, DC: Author. Retrieved February 14, 2012 from <http://cew.georgetown.edu/jobs2018/>

3 Editorial Projects in Education. (2011). *National graduation rate rebounds; 1.2 million students still fail to earn a diploma*. Bethesda, MD: Education Week. Retrieved on February 9, 2012 from http://www.edweek.org/media/diplomascount2011_press-release.pdf

4 National Center for Education Statistics. (2011). *The nation's report card: Mathematics 2011*. (NCES 2012-458). Washington, DC: U.S. Department of Education.

5 National Center for Education Statistics. (2011). *The nation's report card: Reading 2011*. (NCES 2012-457). Washington, DC: U.S. Department of Education.

6 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 February 14, 2012 from <http://nces.ed.gov/pubs2000/2000026.pdf>

7 Alliance for Excellent Education. (August 2009). *The high cost of high school dropouts: What the nation pays for inadequate high schools*. Washington, DC: Author. Retrieved on February 14, 2012 from <http://www.all4ed.org/files/HighCost.pdf>

8 High-quality early care and education programs include the following essential features: Highly-qualified teachers with appropriate compensation, comprehensive and age-appropriate curricula, strong family involvement, small staff-to-child ratios to ensure that each child gets sufficient attention, small, age-appropriate class sizes, and screening and referral services for developmental, health, or behavior problems. Whitebook, M. (2003). *Early education quality: Higher teacher qualifications for better learning environments—A review of the literature*. Berkeley, CA: Institute of Industrial Relations. Retrieved on February 25, 2010 from <http://iir.berkeley.edu/csce/pdf/teacher.pdf>; Katz, L. (1999). *Curriculum disputes in early childhood education*. Champaign, IL: Clearinghouse on Early Education and Parenting. Retrieved on February 14, 2012 from <http://www.ericdigests.org/2000-3/disputes.htm>; Goffin, S. G., & Wilson, C. (2001). *Curriculum models and early childhood education: Appraising the relationship* (2nd ed.). Upper Saddle River, NJ: Merrill/Prentice Hall; Some examples of a strong parent-involvement component 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. For Perry Preschool see: 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. For preschool classrooms, the staff-to-child 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., Epstein, D.J., Friedman, A.H., Sansanelli, R.A. & Hustedt, J.T. (2009). *The state of preschool 2009: State preschool yearbook*. New Brunswick, NJ: National Institute of Early Education Research; Dunkle, M., & Vismara, L. (2004). *Developmental checkups: They're good, they're cheap and they're almost never done. What's wrong with this picture?* Retrieved on February 25, 2010 from <http://www.child-autism-parent-cafe.com/child-development.html>

9 AMERICA's EDGE's commissioned an analysis of the linkage effects of early care and education. Analyses were conducted using fully disaggregated models and using models aggregated into nine very broad sectors. This analysis calculated the Type SAM (Social Accounting Matrix) Output multipliers for all nine major aggregated economic sectors in the state using IMPLAN models. The analysis was conducted on 2010 data, the most recently available data set for Kansas. The early care and education sector's Type SAM output multiplier for Kansas was \$1.68. See Table for Type SAM output multipliers of each sector analyzed. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods.

10 AMERICA's EDGE estimates that \$515 million in new early care and education investments are needed in Kansas to serve an additional 59,000 young children from birth through age 4 currently unserved by these programs. See appendix B for calculations of new early care and education investments in Kansas.

11 The services sector includes professional, business, information, entertainment, rental, and utility services. It represented 23 percent of the new spending generated outside the early care and education sector. The \$80 million figure was calculated by taking 23 percent of \$350 million (yielding \$80.5 million, rounded to over \$80 million), which is the amount of the total \$865 million in new spending that is generated outside the early care and education sector (the first \$515 million dollars invested is spent directly, in the early care and education sector).

12 The insurance and finance sectors represented 19 percent of the new spending generated outside the early care and education sector. The over \$65 million figure was calculated by taking 19 percent of \$350 million (yielding \$66 million, rounded to over \$65 million), which is the amount of the total \$865 million in new spending that is generated outside the early care and education sector.

13 The real estate and construction sectors represented 17 percent of the new spending generated outside the early care and education sector. The over \$60 million figure was calculated by taking 17.2 percent of \$350 million (yielding \$60.2 million, rounded to over \$60 million), which is the amount of the total \$865 million in new spending that is generated outside the early care and education sector.

14 The retail and wholesale trade sectors represented 15 percent of the new spending generated outside the early care and education sector. The over \$50 million figure was calculated by taking 15 percent of \$350 million (yielding \$52 million, rounded to over \$50 million), which is the amount of the total \$865 million in new spending that is generated outside the early care and education sector.

15 The health services sector represented 11 percent of the new spending generated outside the early care and education sector. The over \$35 million figure was calculated by taking 11 percent of \$350 million (yielding \$38 million, rounded to over \$35 million), which is the amount of the total \$865 million in new spending that is generated outside the early care and education sector.

16 Based on input-output analysis using fully disaggregated IMPLAN models with 440 distinct economic sectors in the 2010 Kansas model. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods. Bureau of Labor Statistics. (2012). *Consumer Expenditure Survey*. Washington, DC: U.S. Department of Labor. Retrieved on February 16, 2012 from <http://www.bls.gov/cex/>. Based on the national figure for yearly out-of-home food for a household of four people.

17 Based on input-output analysis using fully disaggregated IMPLAN models with 440 distinct economic sectors in the 2010 Kansas model. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods. Bureau of Labor Statistics. (2012). *Consumer Expenditure Survey*. Washington, DC: U.S. Department of Labor. Retrieved on February 16, 2012 from <http://www.bls.gov/cex/>. Based on the national figure for yearly spending on electricity for a household of four people.

18 Based on input-output analysis using fully disaggregated IMPLAN models with 440 distinct economic sectors in the 2010 Kansas model. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods. Bureau of Labor Statistics. (2012). *Consumer Expenditure Survey*. Washington, DC: U.S. Department of Labor. Retrieved on February 16, 2012 from <http://www.bls.gov/cex/>. Based on the national figure for yearly spending on telephone services for a household of four people.

19 Bureau of Labor Statistics. (2011, May 17). *Occupational employment statistics – May 2010 state occupational and wage estimates- Kansas*. Washington, DC: US Department of Labor. Retrieved on February 14, 2012 from http://www.bls.gov/oes/current/oes_ks.htm

20 AMERICA's EDGE commissioned an analysis of the linkage effects of early care and education using IMPLAN models. Analyses were conducted using fully disaggregated models and using models aggregated into nine very broad sectors. The analysis was conducted on 2010 data, the most recently available data set for Kansas. The early care and education sector's Type SAM output multiplier for Kansas was \$1.68. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods.

21 The linkage effects of the early care and education sector were analyzed using IMPLAN models for Kansas using 2010 data, the most recently available for the state. The Type SAM employment multiplier for early care and education for Kansas was 1.219. This means that for every one new job in the ECE sector, an additional 0.219 jobs are created outside that sector in other parts of the state economy. Multiplying both numbers by five yields this reformulation of the same finding: for every five jobs created in the ECE sector, one (1.09) job is created outside the sector.

22 The \$515 million investment in early care and education programs was applied to the 2010 Kansas employment multiplier findings for the ECE sector (with a Type SAM employment multiplier of 1.219 using IMPLAN), and yielded 17,150 total jobs, or approximately 17,000 jobs, with 3,090 of these jobs (or approximately 3,000 jobs) being in other economic sectors outside early care and education. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods.

23 Shellenback, K. (2004). Child care and parent productivity: Making the business case. *Linking Economic Development & Child Care Research Project*. Ithaca, NY: Cornell University, Cornell Cooperative Extension. Retrieved on February 26, 2010 from <http://government.cce.cornell.edu/doc/pdf/ChildCareParentProductivity.pdf>

24 Shellenback, K. (2004). Child care and parent productivity: Making the business case. *Linking Economic Development & Child Care Research Project*. Ithaca, NY: Cornell University, Cornell Cooperative Extension. Retrieved on February 26, 2010 from <http://government.cce.cornell.edu/doc/pdf/ChildCareParentProductivity.pdf>

25 In 2001, 67,440 Kansas parents claimed the Dependent Care Tax Credit, an indicator of parental employment since it is available only to employed parents. Stoney, L., Warner, M., Woolley, A. E. & Thorman, A. (2003). *Investing in the child care industry: An economic development strategy for Kansas*. Kansas City, MO: Mid-America Regional Council.

26 Although estimates of the number of children participating in regulated early learning programs vary, and no precise figure is available due to data limitations (described in Appendix B), AMERICA's EDGE estimates that about 110,000 young children under age 5 in Kansas were not in regulated early learning programs. This estimate was calculated by subtracting the estimated total number of young children in early learning programs, 94,893 children, from the Census-based population estimates of

the number of children under age 5 in Kansas (205,492 children), yielding 110,599, or approximately 110,000 children. (See Appendix B for a fuller explanation of the number of children served in each type of early learning program in Kansas.)

27 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/pubsinfo.asp?pubid=2011455>

28 American Management Association. (2010). *AMA 2010 critical skills survey. Executive Summary*. Retrieved October 25, 2010 from <http://www.p21.org/documents/Critical%20Skills%20Survey%20Executive%20Summary.pdf>

29 American Management Association. (2010). *AMA 2010 critical skills survey. Executive Summary*. Retrieved October 25, 2010 from <http://www.p21.org/documents/Critical%20Skills%20Survey%20Executive%20Summary.pdf>

30 Gormley, W.T., & Phillips, D. (2003). *The effects of universal pre-k in Oklahoma: Research highlights and policy implications*. Washington, DC: Georgetown University, Center for Research on Children in the United States. Retrieved on February 17, 2012 from http://www.teec.org/files/PK_Oklahoma.pdf

31 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.

32 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

33 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.

34 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

35 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

36 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.

37 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.

38 Although estimates of the number of children participating in regulated early learning programs vary, and no precise figure is available due to data limitations (described in Appendix B), AMERICA's EDGE estimates that about 110,000 young children under age 5 in Kansas were not in regulated early learning programs in 2010. This estimate was calculated by subtracting the estimated total number of young children in early learning programs, 94,893 children, from the Census-based population estimates of the number of children under age 5 in Kansas (205,492 children), yielding 110,599, or approximately 110,000 children. (See Appendix B for a fuller explanation of the number of children served in each type of early learning program in Kansas.)

39 Figure includes 5,470 child care workers, 2,050 preschool teachers and 330 preschool and child care center administrators. Bureau of Labor Statistics. (2011, May 17). *Occupational employment statistics – May 2010 state occupational and wage estimates- Kansas*. Washington, DC: US Department of Labor. Retrieved on February 14, 2012 from http://www.bls.gov/oes/current/oes_ks.htm

40 In 2002, gross receipts for the early care and education industry were more than \$517 million. More recent figures were not available, but are likely higher. Stoney, L., Warner, M., Woolley, A. E. & Thorman, A. (2003). *Investing in the child care industry: An economic development strategy for Kansas*. Kansas City, MO: Mid-America Regional Council.

41 The current state investment in early learning programs based on Fiscal Year 2011 early care and education funding allocations, \$141 million, was applied to the Type SAM output multiplier for Kansas of 1.68, yielding \$96 million in additional economic activity, and \$237 million in total economic activity generated by these early learning investments. The current early learning investments, \$104 million in child care funding (including Child Care and Development Fund, general fund, Temporary Assistance to Needy Families child care, and American Recovery and Reinvestment Act funds), \$18 million in At-Risk 4-Year-Old Children Preschool Program funds, \$5 million in Prekindergarten Pilot Program funds, \$11 million in Early Childhood Block Grant funds, and \$3 million in state Early Head Start funds, were summed, yielding \$123 million in current state investments in these early learning programs. FY 2011 funding appropriations obtained from the National Conference of State Legislatures. National Conference of State Legislatures. (2011) Early Care and Education State Budget Actions FY 2011: State Profiles. Denver, CO: Author. Retrieved on February 14, 2012 from <http://www.ncsl.org/?tabid=22343>; At-Risk 4-Year-Old Children Preschool Program FY 2011 actual funding obtained from the Kansas Department of Education, Topeka, KS.



NATIONAL OFFICE
1212 New York Ave., NW, Suite 300
Washington, D.C. 20005

Susan L. Gates
National Director
(202) 408-9284 x108
sgates@americasedge.org

Sandra Forlemu
Membership Associate
(202) 464-5360
sforlemu@americasedge.org

STATE OFFICES

California

Jennifer Ortega, State Director
211 Sutter Street, Suite 401
San Francisco, CA 94108
(415) 762-8275
jortega@americasedge.org

Michigan

Boji Tower, Suite 1220
124 W. Allegan Street
Lansing, MI 48933
(202) 408-9284 x108
sgates@americasedge.org

Washington

Steven Leahy, State Director
21015 NE 36th Street
Sammamish, WA 98074
(206) 790-3138
sleahy@americasedge.org

Illinois

Tim Carpenter, State Director
70 E. Lake Street, Suite 720
Chicago, IL 60601
(312) 265-2260
tcarpenter@americasedge.org

Montana

Dave Curry, State Director
1204 W. Woolman
Butte, MT 59701
(406) 558-4732
dcurry@americasedge.org

Wyoming

Martha Brooks, Western State Dir.
17675 SW Farmington Rd,
PMB#336
Beaverton, OR 97007
(503) 649-2068
mbrooks@americasedge.org

Maine

Kim Gore, State Director
4 Jersey Circle
Topsham, ME 04086
(207) 725-7238
kgore@americasedge.org

New York

Lori King-Kocsis, State Director
3 Columbia Pl, Floor 2
Albany, NY 12207
(518) 465-5462
lorikk@americasedge.org



1212 New York Avenue, NW, Suite 300 – Washington, DC 20005
Tel: 202-408-9284 Fax: 202-776-0110 – www.AmericasEdge.org

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