

THE ECONOMIC IMPACT OF EARLY CHILD DEVELOPMENT PROGRAMS IN WEST VIRGINIA

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West Virginia: A Vision Shared

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The Executive Summary reviews the findings of the complete study *The Economic Impact of Early Childhood Development Programs in West Virginia*. In the complete study there is detailed analysis of each point in the Executive Summary as well as a wealth of additional material on the current research into early childhood development, the child development business in West Virginia, and programs in other states. It also contains an extensive bibliography. It can be obtained at www.marshall.edu/cber/.

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THE ECONOMIC IMPACT OF EARLY CHILD DEVELOPMENT PROGRAMS IN WEST VIRGINIA: EXECUTIVE SUMMARY

Every state in the nation has constant calls for more economic development and job creation. Some of the many different ways to answer that call produce little, if any, returns yet receive widespread public and political support. In a highly respected study by the Minneapolis Federal Reserve Bank, economists Grunewald and Rolnick¹ concluded:

Around the county, billions of public dollars are spend each year to subsidize private companies so that they will either locate or expand their businesses in hometown markets. Recent studies of this approach to economic development, however, make clear that the so-called economic bidding war among the state and local governments is actually counter productive. . . **One of the most productive investments that is rarely viewed as economic development is early child development (ECD).**²

Grunewald and Rolnick found investment in early child education produced inflation adjusted returns of 12 percent. Their conclusions were reinforced by the work of Nobel Prize wining economist Heckman whose extensive study of the economic returns to investing in early child development also found **ECD to have a major impact on economic development.**³ In her review of 24 studies linking early child development to economic development, Cornell University's Stoney concluded **early development programs were, “. . . an industry worthy of investment and as an important infrastructure that supports economic growth.**⁴

Early childhood development encompasses a variety of programs designed to provide care and education for children from birth until they enter kindergarten. These programs include child care centers, family homes, preschool programs, Head Start, Early Head Start and WV pre-k. Most of this report concerns itself with the entire ECD industry and its economic impact.

The State of West Virginia has embarked on an ambitious preschool education program for 4 year olds (WV pre-k).⁵ By the year 2012-13, each county school district must provide a pre-k program and have it available for all students. At the state level, the program will be a public/private partnership and up to half of the community programs delivered by providers who are not public school based. Criteria and standards have been established by the State relating to

¹ Grunewald, R. and Rolnick, A., (December 22, 2004) *A proposal for achieving high returns on early child development*, Committee for Economic Development: Washington, D.C. (December 2003) and Early child development: Economic development with a high public return, *The Region*, Federal Reserve Bank of Minneapolis, 6-12.

² Ibid, 2.

³ Heckman, J. and Masterov D, (October 2004) *The productivity argument for investing in young children: Working paper 5*, Washington DC: Invest in Kids Working Group, Committee for Economic Development.

⁴ Stoney, L., (February 2004) *Framing child care as economic development: Lessons from early studies*, Ithaca NY: Department of City and Regional Planning, Cornell University, 15.

⁵ W Va. Code 16-3-4, 18-2-5, 18E-1 et seq., 18-5-18c and 18-5-44

program quality.⁶ WV pre-k is more completely discussed in the full report. Implementation with appropriate public and private funding should produce solid long term economic gains for the State.

This report demonstrates the following:

- **Early child development is highly beneficial to children, increasing their capacity to be more productive workers and citizens.**
- **Early child development by freeing parents to work increases family income with the benefits for both family satisfaction and regional growth in income.**
- **Early child development is a major industry that both directly and indirectly creates millions of dollars of output and income as well as significant numbers of jobs in the West Virginia economy.**
- **Early child development produces returns on investment to public and private money which is in excess of returns to other economic development programs.**

Review of Previous Studies on Early Child Development (ECD)

The numerous studies on ECD indicate it has positive effects for children regarding:

- Cognitive and non-cognitive development
- Socialization
- Future academic success
 - Graduation from high school
 - Attend college
 - IQ scores
 - Grade repetition/retention
 - Social development
 - Special education placement
 - Math, reading, language skills
- Economic self sufficiency
- Health

In addition, these studies also reveal positive effects for society in general including:

- Reduced crime rate/delinquency
- Less teen pregnancy
- Lower welfare participation
- Higher quality workforce
 - Less absenteeism
 - Better skills and knowledge
 - More easily trained
 - Increased workforce participation
 - Improved workforce productivity
- More home ownership
- Greater lifetime earnings

⁶ Title 126, Procedural Rule Board of Education Series 28, *West Virginia's Universal Access to a Quality Education System (2525)*.

These studies are reviewed in detail in the full report.

Longitudinal Studies. There have been three major longitudinal studies completed to measure the impact of ECD programs:⁷ the Perry Preschool Project (PPP), the Carolina Abecedarian Study (CAS) and the Chicago Longitudinal Study (CLS). The PPP covered results over a 40 year period, the CAS 21 years and the CLS 20 years. All three studies concentrated on high risk African American students from the inner cities. In all three studies the students were in low income families. In addition, the PPP used exceptionally qualified teachers and a high quality curriculum. For these reasons the results of these studies may not represent what would happen from other programs in different locations.

Haskins⁸ reviewed the results of eleven other longitudinal studies finding support for the results listed above. His findings did show that the early short term effects seemed to be positive, but the long term results are not as convincing. He also reviewed the literature on the Head Start program finding a significant improvement on children's intellectual and socioeconomic skills, but the impact diminished over time. Currie's evaluation of all the literature regarding Head Start agreed that the gains diminished over time, but blamed that on children, particularly minorities, transferring to poor quality schools to finish their education. She found the short-and medium-term benefits of Head Start "compelling" and recommended the program be increased to full day and extended to children other than those in poverty.⁹

This positive assessment of Head Start has not been supported by all.¹⁰ Barnett and Hustedt¹¹ found the short term effects of Head Start to be highly positive, but there was only limited support from the evidence that Head Start improved social behavior of children. A somewhat dissenting view is provided by Gilliam and Ziglar.¹² Their consideration of 13 of the 33 state funded preschool programs discovered only modest effects on children's academic performance, school attendance and grade retention. They also found decreasing benefits over time. In addition, they caution that the methodology used in many of the other studies needed improvement.

⁷ Schweinhart, L.J. (2003) *The High/Scope Perry preschool study through age 40: Summary, conclusions and frequently asked questions*. <http://www.highscope.org/Research/PerryProject/Perryage40SumWeb.pdf> (accessed March 5, 2005); Campbell, F.A. et.al. (2002) Early child education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science*, 6, 42-57; Reynolds, A.J. (1999) Educational success in high-risk settings: Contributions of the Chicago Longitudinal Study. *Journal of School Psychology*, 37(4), 345-354.

⁸ Haskins, R. (1989) Beyond metaphor: The efficacy of early child education. *American Psychologist*, 44(2), 274-282.

⁹ Currie, J. (Spring 2001) Early childhood education programs, *Journal of Economic Perspectives*, 15:2, 235.

¹⁰ Levitt, S.D. and Dubner, S.J. (2005) *Freakonomics*, NY: Harper/Collins. "Head Start does nothing for a child's future test scores . . . it has repeatedly been proven ineffectual. Here's a likely reason: instead of spending the day with his own undereducated, overworked mother, the typical Head Start child spends the day with someone else's undereducated, overworked mother (And a whole roomful of needy children)." 170.

¹¹ Barnett, W.S. and Hustedt, J.T. (2005) Head Start's lasting benefits. *Infants and Young Children*, 18(1), 16-24.

¹² Gilliam, W.S. and Zigler, E.F. (2000) A critical meta-analysis of all evaluations of state-funded preschool from 1977 to 1998: Implications for policy, service delivery and program evaluation. *Early Childhood Education Research Quarterly*, 15(4), 441-473.

The NICHD Studies. The U.S. National Institute of Health (NIH) established the National Institute of Child Health and Human Development (NICHD) to conduct research on ECD. In a series of recent studies, NICHD investigated aspects relating to ECD. Those studies regarding quality of ECD programs are summarized as follows:

- **Quality child care/education is determined by:**
 - **Lower child-adult ratios**
 - **Better education for care givers**
 - **Greater relevant experience of care givers**
 - **Small to medium size of the group**
 - **Physical environments - safe, clean, and stimulating**
 - **Adequate compensation for care givers**
 - **Established standards for care and education**
 - **Consistent monitoring of standards achievement**
 - **Child-directed, developmentally appropriate practices**
 - **High level of parental involvement**
- **The quality of child care is a strong predictor of children's cognitive and language development and performance.**

The NICHD is the most comprehensive and statistically sound of all studies. It is unique because it examines both the quantity and quality factors of early child care and education. Its early results both enforce and expand conclusions from other research on the positive effects of quality ECD on children's development. The NICHD's research is reviewed in the full report.

Returns on Investment in Early Child Development

As indicated in the opening paragraphs, **there is consensus among researchers of ECD concerning the highly positive effects of these programs on economic development.** In addition to these studies, there is a continuing and growing literature confirming the positive short and long term benefits to economic development of quality ECD. **These studies confirm that a substantial commitment of ECD in West Virginia will be a very positive factor influencing the future economic development of the State, probably more important than any other effort currently underway.**

The positive returns to economic development from K-12 education have been well documented.¹³ The results of this report along with the other studies provide evidence indicating that ECD investment may well be the more important expenditure for relating education to economic growth because of the impact pre-k has on subsequent educational success.

¹³ Barro, R.J. (May 2, 2001) Human capital and growth, *American Economic Review*, 91, 12-17; Betts, J.R. (1995). Does school quality matter? Evidence from the national longitudinal survey of youth, *The Review of Economics and Statistics* 77(2), 231-50; Fisher, R.C. (March/April 1997) The effects of state and local public services on economic development, *New England Economic Review*, 53-62; Garcia-Mila, T. and McGuire, R.J. (1992) The contribution of publicly provided inputs to states' economics, *Regional Science and Urban Economics*, 22, 708-38; Gradstein, M and Justman, M. (2002) Education, social cohesion, and economic growth, *American Economic Review* 92(4), 1192-1204; Kodrzycki, Y. K. (2002) Educational attainment as a constraint on economic growth and social progress, *Education in the 21st Century: Meeting the Challenges of a Changing World*, Boston MA: Federal Reserve Bank; Yitzhaki, S. (2003) Cost-benefit analysis and the distributional consequences of government projects, *National Tax Journal* 56, 319-36.

The literature supports the findings that ECD contributes to economic development in a variety of ways.

- **As a major industry, creating jobs and generating incomes**
- **Creating a more productive and qualified workforce**
- **Serving as a major amenity in attracting new industry**
- **Reducing the cost of crime, welfare and social dependency**

The Minneapolis Federal Reserve Bank Study. Rolnick and Grunewald¹⁴ of the Minneapolis Federal Reserve Bank produced a study indicating the high public return on investing in ECD. Using the PPP as the basis for their analysis, they estimated **a real internal rate of return around 12 percent. According to the authors, ECD investment far exceeds the return on other publicly funded economic development initiatives.** Their report raises the issue of how a state or region can build and maintain a viable and growing state economy. Further, their report focuses on state subsidies for economic development, such as tax breaks and grants, and how these subsidies have failed to create sustained economic growth. Even though there has been continued state funding of ECD, the authors suggest that even **more education funding should be directed toward ECD.**

The biggest payoff to society in general for the short run is in the reduced level of juvenile crime and delinquency. A highly influential business group, The Committee for Economic Development¹⁵ agrees, noting that support of ECD should be seen as a profitable investment for a state, not as a cost. A study completed in West Virginia found students who were not enrolled in quality ECD programs were 70 percent more likely to commit violent crimes by age 18.¹⁶

A very recent study by Calman and Tarr-Whelan¹⁷ discusses the economic benefits of quality ECD concluding it yields high public returns. They found **every dollar spent on universally available quality ECD saves the public as much as \$13 in reduced costs for education, criminal justice and welfare as well as increased tax revenues.** This view was supported by work from the National Governor's Association.¹⁸

One of the major means by which ECD contributes to economic growth is by expanding both the quantity and quality of the labor force.¹⁹

- ECD, by improving the cognitive and non-cognitive skills of children, makes them more productive as adults by:
 - Improving the child's lifelong capacity to apply skills and knowledge obtained during secondary and post secondary training

¹⁴ Rolnick A. and Grunewald, R., (2003) Early child development: Economic development with a high public return. *Fedgazette*.

¹⁵ Committee for Economic Development (2002) *Preschool for all: Investing in a productive and just society*.

¹⁶ Fight Crime: Invest in Kids, (2004) *Preventing crime with pre-kindergarten: A critical investment in West Virginia's safety*. Washington D.C.

¹⁷ Calman, L. J. and Tarr-Whelan, L. (2005) The economic impacts of child care and early education: Financing solutions for the future, Legal Momentum's Family Initiative and MIT Workplace Center.

¹⁸ National Governors' Association, Task Force on School Readiness (2005) *Building the foundation for bright futures*.

¹⁹ Shellenback, K. (2004) *Childcare and parent productivity: Making the business case*. Cornell University. Retrieved April 2, 2005 from: <http://government.cce.cornell.edu/doc/pdf/ChildCareParentProductivity.pdf>.

- Increasing their flexibility to be retrained and to acquire new skills as adults
- Expanding their non-cognitive skills such as dependability, self esteem, individual initiative, motivation and capacity to work with others.
- Creating healthier life styles including reduced likelihood of drug use and criminal activity
- ECD expands the availability and reliability of the labor force by:
 - Reducing absenteeism due to unavailable child care
 - Freeing potential wage earners from single parent households to enter the labor force
 - Allowing second wage earners to enter the labor force
 - Improved mental health of workers (usually mothers)

The Heckman Studies. The most comprehensive studies on the economics of ECD were conducted by Nobel Prize winning economist Heckman and his colleagues.²⁰ They put ECD in the context of the theory of human capital formation. This theory isolates the impact of improving the skills, knowledge, abilities and attitudes of the labor force on economic development. The basic finding is that **investing in those policies that improve the capacity of the labor force to produce and change with new technologies and market conditions are the most important elements in economic development.**

Their work describes how individual productivity can be enhanced and created by investments in young children, particularly children who are at risk and/or living in poverty. The analysis is based on the impact of current workforce conditions and skills as well as the influence of baby boomer retirement, crime and family environments. A principal conclusion is that **the American workforce is not gaining in quality or productivity, but experiencing decline. The fear is that, if this trend continues, the workforce will be poorer educated and less productive than in the current time period or the immediate past.**

Heckman’s study emphasizes “sensitive periods” in the development of skills and abilities over the life cycle of a child’s education. Certain of these skills and abilities should be fostered in “critical periods” when they can best be acquired. Skills and abilities produced at one stage of development support later skills. They term this “self productivity”. Skills acquired in one sensitive period persist into future periods. Therefore, skills are self reinforcing.

A second feature of life cycle skill and ability formation is called “complementarity”. Skills and abilities acquired at one stage raise the productivity of skills and abilities acquired at subsequent stages. Early investment must be followed by later investment in quality further schooling if the early investment is to be fully productive.

The work of Heckman and his colleagues applies data collected through several longitudinal studies of children including the Perry Preschool Program, the Abecedarian Program and the U. S. Census’s National Longitudinal Survey of Youth (NLSY) to model the concepts of self

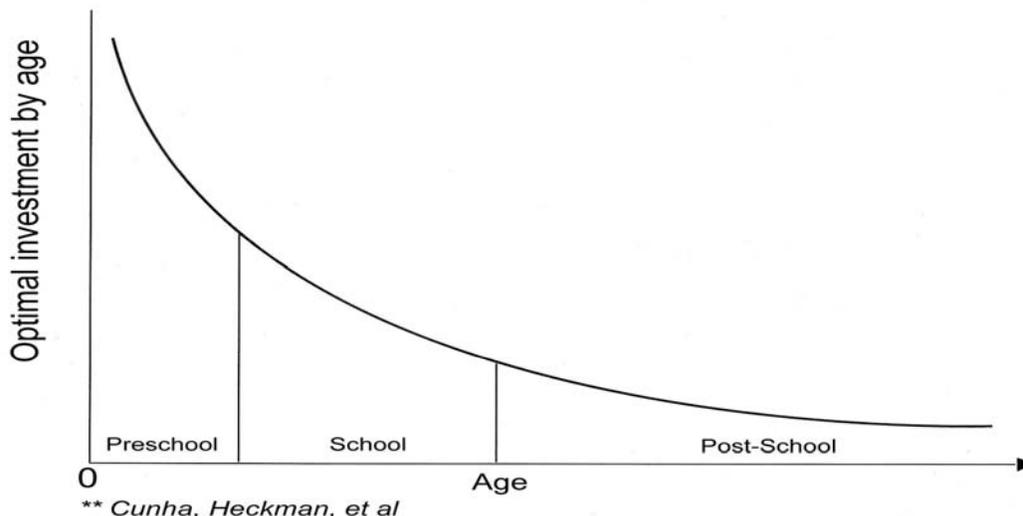
²⁰ Heckman and Masterov, D., op. cit.; Cunha, F., et. al. (2005) op. cite.

productivity and complementarity.²¹ Their **research establishes that returns to later child investment in education and remediation for young adolescents are significantly lower than returns to investments in ECD.** Simply stated, the failure to develop the cognitive and non-cognitive skills early on retards the ability to develop these at later stages in the skill development cycle. “Abilities and skills are formed over time and the early periods in a child’s life cycle are crucial for development”.²²

In summary of their findings:

- Cognitive and non-cognitive skills are important for a productive workforce.
- These skills emerge early and if not developed create a “gap” which becomes increasingly difficult to fill.
- Skills and abilities are cumulative starting early and are accumulated over time, so investing in ECD is a high return investment in both worker productivity and public safety.
- Family environments are important in establishing skills and abilities, yet an increasing number of children face adverse environments that restrict development of these.
- ECD supplemented by home visits and other forms of parental involvement can mitigate the effects of these poor home environments.
- Key workforce skills, those most desired in the new economy, such as motivation, persistence, and self-control can be developed early in a child’s life cycle.
- Beginning school at the kindergarten level is too late for maximum returns.
- Later remedies for the deficiencies in skills and abilities such as job training and “second chance” programs are less efficient and very costly compared to ECD.

To illustrate the point, Heckman and his co-authors describe these diminishing returns through illustration in the following figure.



²¹ The study evaluated a number of economic indicators for program and survey participants and cross-referenced these statistics with IQ scores and scores from the Air Force Qualifying Test for NLSY participants. Cognitive skills were evaluated separately from non-cognitive skills, as were gender-specific results.

²² Cunha and Heckman, op. cite. 6

What the figure indicates is that dollars spent on preschool have very high rates of return. The returns on investments at other stages of the life cycle, K-12 schooling and job training, produce dramatically lower returns for each dollar spent. **The most efficient and effective public policy is to emphasize ECD spending as a way to spur economic development.**

ECD as a Business and its Impact on the West Virginia Economy

ECD also contributes to economic growth by being a major industry creating jobs and income for the region. ECD is a major industry in West Virginia. Considering both the direct and indirect effects of the formal expenditures made for child development, the ECD industry provides:

- **\$152 million in State output**
- **\$79 million in State income and**
- **7,798 jobs in West Virginia**

These impacts were determined by employment of the IMPLAN model.²³ IMPLAN is the most widely used econometric tool for making these types of estimates and is used in virtually every other state or regional study regarding the economic impact of ECD²⁴. Use of IMPLAN was suggested by the Cornell Manual outlining how regional impacts of child development providers are to be conducted.²⁵

Child development's importance as an economic agent in a state comes not only from its direct employment and output in a region, but also from its linkages to other sectors of the region's economy. The first step in an analysis of ECD as an industry consists of determining the direct expenditures. This report provides data for payments made to registered and licensed establishments in 2002; the latest available, indicating 4,072 licensed facilities in West Virginia employed 7,153 full and part-time workers, paid wages of \$65 million and received \$101.6 million in gross receipts. The impact of demand for child development services in the informal, or underground economy, is not evaluated here.

But there are additional steps which must be taken to grasp the full economic impact of ECD in the State. As is the case with any other industry, child development has "linkages" to the larger state and regional economy. Firms in a regional economy buy and sell to each other. Spending in child development stimulates spending in the other sectors with which it interacts. This spending in turn creates spending in the sectors with which those firms interact. Evaluating this process is called input/output analysis and is the impact that IMPLAN measures.

There are two types of linkages that input/output analysis considers:

- Indirect effects count the multiple rounds of spending with other businesses created by child development spending on food, supplies and other items that are purchased.

²³ IMPLAN Professional Version 2.0 (1999) Minnesota IMPLAN Group, Stillwater MN.

²⁴ The results for the studies completed in other states and localities are presented in the full report.

²⁵ Ribeiro, R and Warner, M. (January 2004) *Measuring the regional economic importance of early care and education: The Cornell methodology guide*, Cornell University: Department of City and Regional Planning from <http://government.cce.cornell.edu/doc/pdf/methodologyguide.pdf>.

- Induced effects count the results of spending by those who receive wages from working in child development. These wages are spent on goods and services in the regional economy stimulating demand for food, housing and services.

For purposes of the analysis in this report, indirect and induced effects are combined.²⁶

These linkages create what are called multiplier effects that measure the indirect and induced spending impacts on output and employment. The employment multiplier estimates the total number of jobs that child development direct spending creates in the State. The employment multiplier for ECD was determined to be 1.26 that means for each person employed in child development 0.26 new jobs are created. The output multiplier estimates the total sales that child development direct spending creates.²⁷ For West Virginia, the output multiplier was 1.49 which says that for each dollar spent in child development another 49 cents in output is generated in the state.²⁸

There is one additional way in which child development contributes to the economic development of any state including West Virginia. By allowing single parents and second spouses to join the labor force, the pool of workers is expanded. The effect is not trivial.

It was estimated that some 28,325 families in West Virginia would not have one or more workers in the labor force if daycare were not available. **Because child development services allow these adults to participate in the West Virginia economy, the corresponding income received by these workers of between \$1.17 billion and \$900 million is directly attributable to availability of child development services. This income amounts to 2- 2.5 percent of the 2003 state gross product.** This is income that could have been lost if ECD had not been available in the State. By increasing the availability of child development in West Virginia to more families, there would be an even greater positive effect on the State's economy.

ECD Providers in West Virginia

The full report conveys a detailed picture of ECD providers in West Virginia. In order to garner a better understanding of the establishments providing child development, a survey of 460 providers was conducted. The survey participants were drawn from a list of 2,800 furnished by the West Virginia Department of Health and Human Services. Usable returns were received from 145 responders.²⁹ Results of the survey are in the full report. The survey did indicate the following regarding ECD establishments in West Virginia:

²⁶ Not all induced and indirect spending occurs within the region. Some is spent outside the region and these "leakages" represent output and employment in the regions where they are spent and not where they originate. For example, supplies bought from suppliers in other states do not impact the West Virginia economy. But supplies bought from West Virginia business by out-of-state buyers do stimulate the West Virginia economy.

²⁷ The larger the economy or region the greater these multipliers are as less spending is "leaked out" to other regions. For rural states like West Virginia, the multipliers will be lower than for more urbanized and densely populated states.

²⁸ These multipliers compare favorably with those found in studies for other states.

²⁹ This represents a 31.5 percent return which is sufficient to report with 95 percent confidence that the results represent the ECD industry in the state.

- Average salaries were low and averaged \$28 thousand for directors, \$18.6 thousand for teachers and \$15 thousand for aides, well below the national average.
- While the majority of ECD establishments provided paid vacations and paid sick/personal days, only 28 percent provided health insurance for employees and less than 20 percent extended health insurance to spouses and families.
- Of those responding, about half found employee turnover to be a problem with over half of those leaving, doing so for better pay or to go to a new job.

The “typical” child development facility in West Virginia according to the survey:

- Had been in operation for 10 years
- Was privately owned and likely run for profit
- Charged from \$22 per day for infants to \$18 for school age children
- Had increased charges in the last two years by more than \$5 a week
- Relied on charges to parents as their major source of income
- Employed 5 teachers and 3 aids on both a full and part time basis
- Paid relatively low wages for all classes of employees
- Experienced problems with staff turnover

The comparison of salaries and benefits paid to teachers and administrators in childcare and ECD revealed a **significant difference between West Virginia salaries and the national average**. In addition, for West Virginia and the nation as a whole, **salaries in this field have been declining relative to comparable occupations with similar qualifications leading to a decline in the educational preparation of those in the field.**³⁰ This creates a **significant problem in attracting and maintaining the skills and abilities of workers needed to provide quality ECD programs**. The problem will intensify as the more educated and qualified teachers retire in the near future.

Benefit-Cost Ratios for ECD in West Virginia

To illustrate the benefit to employers, one very recent study³¹ saw cost reductions of \$136 for absenteeism, \$1,229 for turnover and productivity increase of \$1,269 for a total benefit of \$2,634 for each employee with a child in ECD. The average cost to the employer was \$261 which means **each business received almost ten times their investment in ECD in benefits to the company**. For this study, only the benefits to employers were included as it was difficult to quantify benefits to children and society.

Other studies have found very high benefit-cost ratios for ECD.³² The Rolnick and Grunewald study found a **return greater than \$7 to the public for each dollar spent** on the Perry Preschool Program (PPP). Due to the high quality of the PPP, select teachers, low teacher to

³⁰ Herzenberg, S., Price, M., and Bradley, D. (2005) *Losing ground in early childhood education: Declining workforce qualifications in an expanding industry, 1979-2004*, Washington, DC: Economic Policy Institute.

³¹ Oregon Commission for Child Care (2005) *Child care and education: Investment in a strong economy*. Report to the Governor and the Legislature.

³² Masse, L.N. and Barnett W.S. (2002) “A benefit-cost analysis of the Abecedarian early child intervention,” National Institute for Early Education Research; Rolnick A. and Grunewald, R. op. cit.; Currie, J. op. cit.

student ratios, and high quality facilities, it can not be expected that this high a return will result from all ECD programs.

A preliminary benefit-cost analysis was completed for West Virginia ECD. This analysis provides strong support for the contention that **investing in ECD provides a very substantial “payoff” for West Virginia.** Following the path breaking work of Heckman and others on the economics of human capital, a simple model was constructed. The model looked at potential increases in worker education and productivity that are possible results from ECD.

This analysis produced a discounted cost estimate of \$1.8 billion as the amount needed to achieve the desired result with the resulting benefits discounted over the 40 years to be \$9.5 billion. The result is a **benefit cost ratio of 5.2:1.** This can be interpreted to mean that **every dollar invested in ECD in West Virginia is estimated to produce an approximately \$5.20 in benefits.**

This return is very conservative and the full return is likely to be much greater. The “secondary benefits” of ECD in West Virginia were not included. These would include lower public sector costs for welfare, health and crime as well as reduced costs for remediation of students in later grades. The benefits of increased productivity of firms whose employees had children in ECD were also not included. A more comprehensive study including these secondary benefits would have significantly increased the payoff from ECD. Such a study should be undertaken.

Conclusions

The evidence is in and it is overwhelming: early child development (ECD) programs are a major tool to be used in economic development for a state or region. The payoff for investing in ECD is probably higher than for any other economic development expenditure.

Time and again research has established the benefits to participants from ECD. It is fact that ECD raises the educational attainment above what it would have been absent the programs. This results in higher graduation rates, more college completion, higher incomes and generally better lifestyles. Two conclusions are clear:

- First, expenditures on children early in their lifecycles produce much greater results than waiting until they are already in school to begin their education.
- Second, quality ECD should be followed by quality K-12 education if the gains from ECD are to be fully captured.

The business community also benefits significantly from ECD. Not only do they have a more qualified workforce available (which means greater firm productivity), but the employees with children in the program are more productive. There is less absenteeism and a more stable workforce. Employers who provided ECD either on site or by subsidizing their employee’s participation earn a significant return that covers the cost many times.

Not to be overlooked are the benefits ECD provides to society in general. Workers with higher incomes pay more in taxes. They also are much less likely to be found in jail, using drugs, being

retained in school or on welfare roles. All these benefits reduce the drain on the public treasury and allow either for reduced taxes or increased expenditures on other worthy public programs.

West Virginia has legislation requiring the provision by all local school districts of pre-k programs for four year olds by 2012-13. The West Virginia program is more ambitious than those in other states. **Proper support by both the public and private sectors of this and other ECD projects will make West Virginia a more prosperous and growing state.**

CHAPTER I

The Contribution of Child Development Services to the West Virginia Economy

The West Virginia Early Child Development (ECD) day care industry directly supports the state economy in several ways.

- First, it provides parents the opportunity to work.
- Second, it employs individuals directly.
- Third, it stimulates economic activity within the state via the revenues received by providers.

The magnitude of the industry's impact can be fully assessed by evaluating the multiplier impacts of additional in-state spending, income and employment created by the ECD provider revenues.

The Scope of the Formal Day Care Industry

In 2002, 4,043 West Virginia businesses classified as Child Day Care Services (referred to in this report as ECD) under the North American Industrial Classification System (NAICS), employed 6,844 people, paid wages of \$62 million, and received \$95.3 million in gross receipts.³³ This figure includes two components representing two types of businesses:

- 288 employer establishments, with reported receipts of \$63.3 million, payroll of \$32 million and 3,089 employees,³⁴ (an average of 12 employees per establishment) and
- 3,755 nonemployer establishments, with reported receipts of \$32 million

Nonemployer establishments are single person operations, presumed to be small family homes that, if licensed or registered, can accept up to six children. West Virginia Head Start centers, of which the large majority are completely federally funded, received \$48,624,566 in 2002.³⁵

An additional 29 employer establishments are assumed to operate physically and legally as religious institutions and do not report day care related income separately. Including these providers generates an additional \$6.3 million in receipts, and \$3.2 million in payroll to an additional 309 employees.³⁶ These values boost the ECD industry's formal gross receipts to \$101.6 million, its payroll to \$65 million, its total establishments to 4,072 and its total employees

³³ The National Child Care Information Center reported the presence of 3,736 licensed child care programs in West Virginia in 2004, 600 of which were centers.

³⁴ Data for 2003 show an 11% increase in the number of employer establishments from 2002. Wage and employee data was not yet available for 2003.

³⁵ <http://nccic.acf.hhs.gov/statedata/statepro/westvirg.html>, reporting from the Head Start Program Fact Sheet.

³⁶ Of respondents to the survey of day care providers, in Chapter 2 of this report, 12 facilities that were physically located at the same address as a church operated under that church's name. Facilities of this type account for 10% of the survey respondents, which are a statistically significant representation of the day care services industry in West Virginia. Thus, it is estimated that 10% of the population of employer providers falls under a religious institution that does not report that income separately and is thus underestimated by the NAICS data. Receipts, employees and payroll were calculated based on the average reported by the Census.

to 7,153. These combined establishments are only a portion of the population of the child care industry. The “informal” economy is also a recipient of revenues exchanged for this service. The informal ECD economy includes relatives or neighbors who keep a small number of children, usually in their homes, while the parent is at work. Since no reliable data is available, the impact of the informal, or underground, child care services industry is not evaluated here.

Wages

The average annual salary for employer establishments was \$10,300 ($\$32 \text{ million} \div 3,089$). Salary is not reported for nonemployer establishments, but, assuming that 95% of receipts go toward the income of the operator, equates with an annual salary of approximately \$8,000 ($\$32 \text{ million} \times 95\% \div 3,755$). The remaining income is assumed to go toward operational expenditures such as snacks, toys, cribs and miscellaneous supplies.

The mean annual wage for a full-time child care worker in West Virginia was reported to be \$14,940 in 2004.³⁷ It is important to note that this figure does not include the compensation received by self-employed persons, which accounted for 93% of the day care establishments in the state in 2002. It is also difficult to estimate what portion of day care workers are employed full-time versus part-time, or how that portion might vary between employer and nonemployer establishments. However, the average annual salary of \$10,300 for the employer establishments indicates an average level of full-time employment of about 70% ($\$10,300 \div \$14,940$).

Number of Children Served

In 2003, West Virginia had approximately 103,000 children under the age of five.³⁸ This is the number of children that were not eligible to attend school and thus required day care arrangements in order for one or both of their parents to work. It is reported that the portion of households with working parents is about 55% for parents of children under the age of five, and 60% for parents with children ages five to nine, whether two or single-parent households.³⁹ Thus, in 2003, day care services were demanded for at least 56,650 children under the age of five and 63,600 children ages five to nine (part-time or after school care). The actual population of children that receive day care is likely to be somewhat greater than this due to demand for day care by households in which at least one parent does not work.

It is difficult to estimate the number of children served by the ECD industry. For licensed establishments the upper bound on this number is a function of the number of staff while for unlicensed establishments there is no mandate. Due to the complexities of the higher ratio of children to staff for school-age children and the likelihood of those children only requiring part-time care, only the shortage of formal care arrangements for children ages birth to four is estimated here.

³⁷ U.S. Bureau of Labor Statistics. May 2004, *State Occupational Employment and Wage Estimates*.

³⁸ U.S. Census Bureau, 2005. 2003. *American Community Survey*.

³⁹ Ibid. The portion of households with children under the age of six and where all parents work was reported to be 54% in 2000 and 56% in 2003. For children age five to nine, that portion was reported to be 60% in 2000.

If all 7,153 industry employees worked full-time and were responsible for six children for non-employers (the maximum allowable for family child care homes) and 7.6 children for employers (the average ratio for the birth to four age groups),⁴⁰ then the formal licensed or registered industry could serve about 48,354 children ages birth to four. When accounting for the calculated average part-time employment in the employer firms of 70%, the registered care capacity falls to about 40,600 children, showing a minimum capacity shortage of about 16,050 children. We can assume that these 16,050 children are currently being cared for by family members or other informal arrangements at unregistered establishments.

Impact of Day Care Services Spending on the Economy

To fully evaluate the economic impact of day care services the IMPLAN input-output software was employed to model the interrelationships between the day care services industry and the other sectors of the West Virginia economy. This software distributes spending to local industries based on known levels of economic activity. Here, IMPLAN distributes the \$101.6 million in day care spending and assigns portions of that spending to various industries as that money is spent on other businesses or by households as income. This second and third tier spending is indirect/induced spending. Not all of this spending stays in West Virginia; a portion is spent in other states and is thus not included in this impact. The following table describes the distribution of output (spending) throughout the economy by industry.

Table 5.1 - Indirect and Induced Output by Child Day Care Businesses⁴¹

Major Industry	Indirect/Induced
Ag, Forestry, Fishing	\$ 455,038
Mining	\$ 489,285
Utilities	\$2,063,007
Construction	\$ 596,275
Manufacturing	\$4,112,010
Wholesale Trade	\$2,227,601
Transportation	\$1,409,366
Retail Trade	\$6,307,357
Information	\$1,613,588
Finance & Insurance	\$2,979,777
Real Estate & Rental	\$2,405,963
Professional-Scientific	\$1,279,121
Management of Companies	\$ 205,739
Administrative & Waste Services	\$ 796,093
Educational Services	\$ 449,775
Health & Social Services	\$8,602,132
Arts- Entertainment & Rec	\$ 553,973
Accommodation & Food Services	\$3,257,312
Other Services	\$2,489,541
Government & Institutions	\$7,334,300
Total Indirect/Induced in 2002	\$49,627,252

⁴⁰ National Child Care Information Center. *State Profiles: West Virginia*. Accessed October 12, 2005 at <http://nccic.acf.hhs.gov/statedata/statepro/westvirg.html>

⁴¹ IMPLAN Regional Planning Model.

Combined with the \$101.6 million in direct receipts, the industry has a total impact of \$151.2 million in output. This is a multiplier effect of 1.49, meaning that each dollar in ECD receipts induces an additional 49 cents of spending in the WV economy. While this is a smaller impact than seen in some states, it is comparable to that reported by most states⁴² and is comparable to that of other West Virginia industries such as office management and education administration.

These estimates do not take into consideration the impacts of ECD services that are not reported as taxable income. There is undoubtedly a substantial portion of child day care services, paid and unpaid, that are not accounted for in these statistics. Nonemployer statistics also do not report receipts of less than \$1,000, that can also cause underestimation.⁴³

How Do Day Care Services' Receipts Rank?

It is useful to compare the direct impact of industry output across the economy. Again looking back at 2002, the day care industry ranked as follows compared to the gross receipts of other well-known industries in West Virginia.⁴⁴

INDUSTRY	2002 RECEIPTS
Chemical Manufacturing	\$5.7 billion
Coal Mining	\$4.4 billion
Hospitals	\$3.8 billion
Food & Beverage Stores	\$2.2 billion
Legal Services	\$730 million
Waste Management & Remediation	\$283 million
Print Publishing	\$225 million
Hair, Nail, & Skin Care Services	\$112 million
Commercial & Industrial Machinery & Equipment Rental	\$101.6 million
Child Day Care Services	\$101.6 million
Residential Mental Retardation Facilities	\$98 million
Hardware Stores	\$95 million
Internet Service Providers, Web Portals, and Data Processing	\$91 million
Gambling Industries	\$28.5 million
Tax Preparation Services	\$25.5 million
Public Relations Agencies	\$13.4 million
Amusement Parks and Arcades	\$7.3 million
Caterers	\$6 million
Economic Consulting Services	\$2.9 million

⁴² See Appendix B – “Early child education: A literature review.”

⁴³ U.S. Census Bureau. <http://www.census.gov/epcd/nonemployer/view/intro.html>

⁴⁴ U.S. Census Bureau, 2005. Economic Census of 2002.

Impact of Day Care Services on Incomes

Another way to examine the day care industry is to look at the salaries paid by the 4,072 day care establishments evaluated above. The combined employer and non-employer establishments' payrolls summed to \$65 million in 2002. In turn, these wages induced another \$14.2 million in income in West Virginia, distributed by industry as shown below. This is a multiplier effect of 1.22.

Table 5.2 - Indirect and Induced Incomes by Child Day Care Businesses⁴⁵

Major Industry	Indirect/Induced
Ag, Forestry, Fishing	\$35,307
Mining	\$65,492
Utilities	\$419,000
Construction	\$218,206
Manufacturing	\$684,698
Wholesale Trade	\$858,446
Transportation	\$476,562
Retail Trade	\$2,562,841
Information	\$395,704
Finance & Insurance	\$690,979
Real estate & Rental	\$233,926
Professional-Scientific	\$519,742
Management of Companies	\$91,952
Administrative & Waste Services	\$336,695
Educational Services	\$170,875
Health & Social Services	\$4,031,255
Arts- Entertainment & Rec	\$158,521
Accommodation & Food Services	\$1,095,239
Other Services	\$905,407
Government & Institutions	\$240,790
Total Indirect/Induced in 2002	\$14,191,635

Impact of Day Care Services on Jobs

Similarly evaluated, the day care industry indirectly creates the following 645 additional full-time jobs as a result of the 7,153 full and part-time jobs directly created by day care services. This is a multiplier effect of 1.09, significantly smaller than the output and income multipliers. This is a function of the relatively low wages and part-time positions offered within the day care industry. When accounting for the average observed 70% employment within the employer firms as described above, and adjusting those jobs to 2,162 (3,089 x 70%), the multiplier rises to 1.26

⁴⁵ IMPLAN Regional Planning Model

and more closely matches the employment multipliers calculated in other states' ECD impact studies.⁴⁶

Table 5.3 - Indirect and Induced Jobs by Child Day Care Businesses⁴⁷

Major Industry	Indirect/Induced
Ag, Forestry, Fishing	19
Mining	3
Utilities	6
Construction	8
Manufacturing	17
Wholesale Trade	20
Transportation	14
Retail Trade	140
Information	10
Finance & Insurance	22
Real Estate & Rental	28
Professional-Scientific	20
Management of Companies	2
Administrative & Waste Services	20
Educational Services	11
Health & Social Services	135
Arts- Entertainment & Rec	12
Accommodation & Food Services	87
Other Services	65
Government & Institutions	8
Total Indirect in 2002	645

In total, the day care services industry created 7,798 full and part-time jobs in 2002.

Day Care Enables Parents to Work

In addition to these direct impacts on the economy, the child day care industry also allows working adults to participate in the economy. An estimate of this impact is the sum of wages paid to the portion of households with children under the age of five and where all parents are working. Households with children under the age of five are more likely to require full-time child care as opposed to households with older children. Child care services allow 54% of these households to work. This quantity of wages is calculated by assuming that the minimum number

⁴⁶ See Appendix D – “ECD Impact Studies in Othe Locations.” North Carolina reported an employment multiplier of 1.29; Virginia - 1.25; Hawaii – 1.12; Iowa – 1.2.

⁴⁷ IMPLAN Regional Planning Model

of children receiving day care services (56,650) is equivalent to half as many households demanding day care (28,325).⁴⁸ The mean family income in West Virginia in 2003 was \$48,000; for households headed by single females, the mean income was about \$25,000 and for households headed by single males it was about \$35,000.⁴⁹ Factoring in the reduced income received by single-parent families equates to \$1.7 billion in earnings. Thus, it can be said that the day care industry enabled at least \$1.7 billion in economic activity, or nearly four percent of the State of West Virginia's 2003 gross state product of \$46.7 billion, which may otherwise have been lost if day care were not available.

⁴⁸ U.S. Census Bureau, 2003. *American Community Survey, West Virginia Mean Family Income in 2003*.

⁴⁹ Ibid. 25% of families are headed by single females and the 7% headed by single males.

CHAPTER II

Early Child Care and Education Providers in West Virginia: Results of a Survey

Methodology

In an effort to garner a better understanding of the firms providing early child care and education, CBER conducted a survey of selected providers from across the state. A list of approximately 2,800 providers was provided by the Division of Early Care and Education at the West Virginia Department of Health and Human Resources. The list, although extensive, does not include all Child Care Service providers aggregated within the Economic Census or Non-Employers Statistics programs conducted by the U.S. Census Bureau. From this list, a population was identified to: 1) target firms who could potentially provide more detailed information and 2) meet budget constraints allotted to the performance of the survey within the overall financial framework of the study. After adjusting for incomplete address information, the target population consisted of 460 providers. These providers were classified as:

- Child Care Centers
- Family Child Care Facilities
- Head Start Licensed Child Care Facilities
- School Age Child Care Facilities⁵⁰

The survey instrument development process included input from individuals of varying backgrounds representing State agencies, private entities and the CBER staff. Several revisions of the instrument were made in an effort to increase the potential rate of response, specifically to simplify the questions and shorten the required time to complete the survey. The survey instrument and the list of participants in the survey development process are included in Appendix C.

A letter from the CBER providing an explanation of the survey instrument, its aim, an assurance of data confidentiality and contact information accompanied the survey instrument, as well as a postage paid return envelope to CBER. The surveys were collected during July, 2005. A total of 145 valid responses were returned, representing a response rate of approximately 31.5 percent. This total does not include 7 instruments returned in varying states of completion that were removed from further calculation.

Significance, in statistical terms, conveys the likelihood that a given set of responses are valid and not due to chance. For large populations, a relatively large sample must be drawn to achieve a level of confidence by reducing the potential effect of random chance. With a small

⁵⁰ Child Care Centers are defined as a facility operated for the care of 13 or more children on a nonresidential basis. Family Child Care Facilities are used to provide nonresidential child care to 7-12 children for 4 or more hours per day (including children under the age of 6 living in the household). No more than 4 of these children may be under 24 months of age. Head Start Licensed Child Care Facilities also provide Head Start programs and School Age Child Care facilities primarily care for children over the age of 5 years.

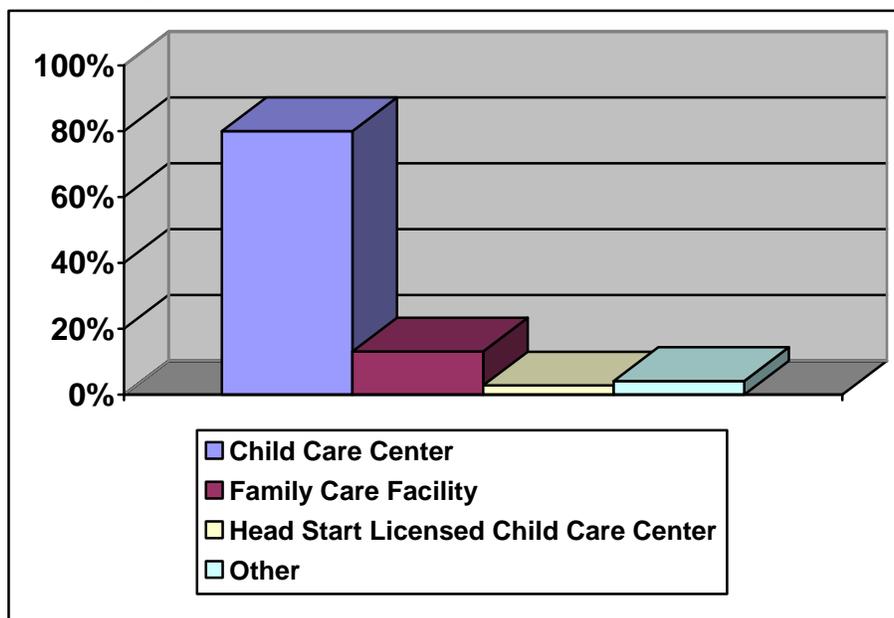
(and finite) provider population, the target for statistical significance can be reduced. Using statistical reduction techniques, the minimum number of valid surveys required to meet significance at the 95 percent confidence level ($\pm 5\%$) was determined to be 144. This means that the responses gathered by this survey have a 95 percent chance of being representative for the industry as a whole.

Results

Of the 145 valid respondents, the vast majority (94.4%) indicated that they were either the entity's director, owner, or held a combination of both titles. Of the respondents, 36.6 percent provided an email address. The following description is a question-by-question walk through quantifying the responses to the survey.

The respondents were asked to classify their program into one of four primary categories. One hundred sixteen, or approximately 80.0 percent, classified themselves as a "Child Care Center". Of the respondents, 13.1 percent described their program as a "Family Care Facility," while Head Start Licensed Centers and Others made up 2.8 and 4.1 percent respectively.

Figure II.1 Profile of Respondents by Facility Type

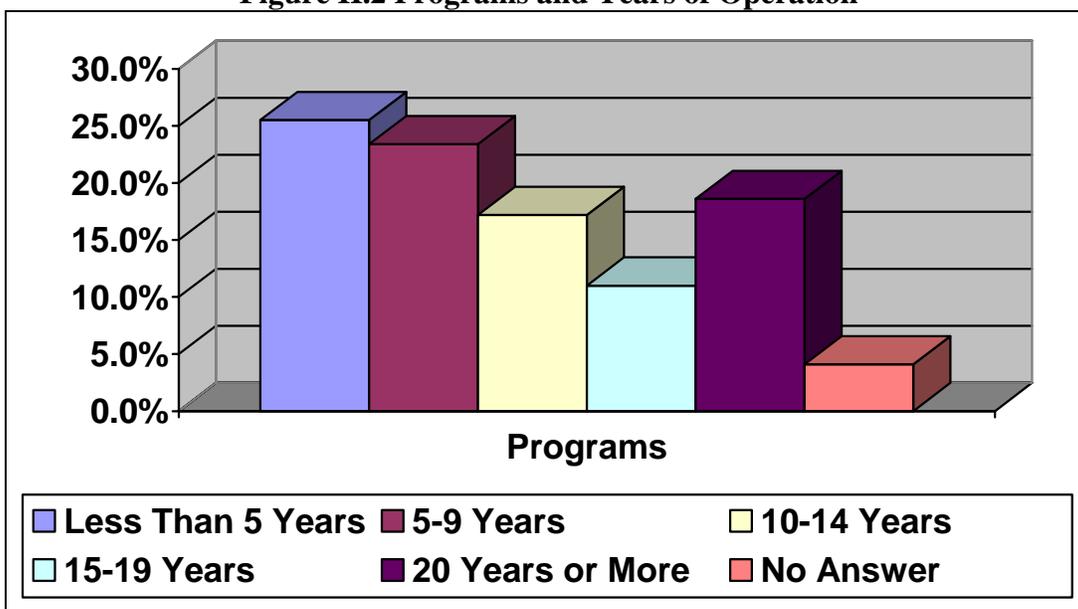


Respondents were also asked to indicate the total number of years and months that their facility has operated. The mean response was 11.62 years of total operation. A tabular and graphical summary of aggregated groups is provided in Table II.1 and Figure II.2.

Table II.1 Program Years in Operation

Total Years in Operation	Responses	Percentage
Less than 5 years	37	25.5%
5 to 9 years	34	23.4%
10 to 14 years	25	17.2%
15 to 19 years	16	11.0%
20 years or more	27	18.6%
No answer	6	4.1%
Total Responses	145	100.0%

Figure II.2 Programs and Years of Operation



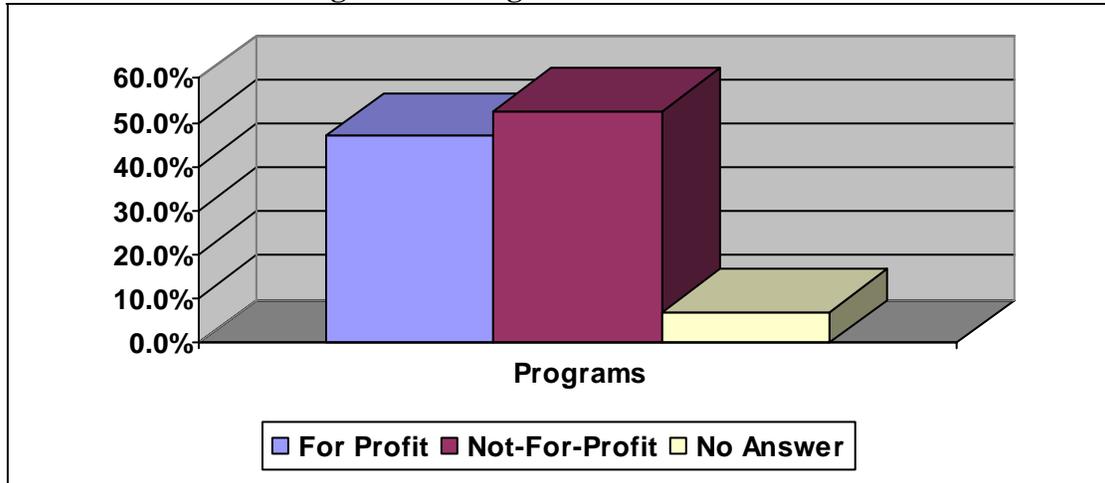
There are several possible implications from having roughly half (48.4%) of the facilities in operation for less than 10 years. Among these implications is a potentially higher rate of business failure or turnover: However, it could be simply an increase in demand creating a significant increase in the number of facilities as more parents enter the workforce and require care services.

Following is a report on the answers received from the respondents. Where appropriate, analysis of these responses is provided. There is other information and cross tabulation that could be mined from this database. This analysis reflects the current industry condition. Many of these conditions will change as the West Virginia pre-k legislation is implemented (See Appendix C). Those potential changes are discussed when appropriate.

1. Is your program or facility run for profit?

The number of respondents of programs reporting that they were operating on a not-for-profit basis was 52.4 percent, while 46.9 percent responded that they were run seeking a profit. One respondent failed to answer the question. Figure II.3 illustrates this comparison.

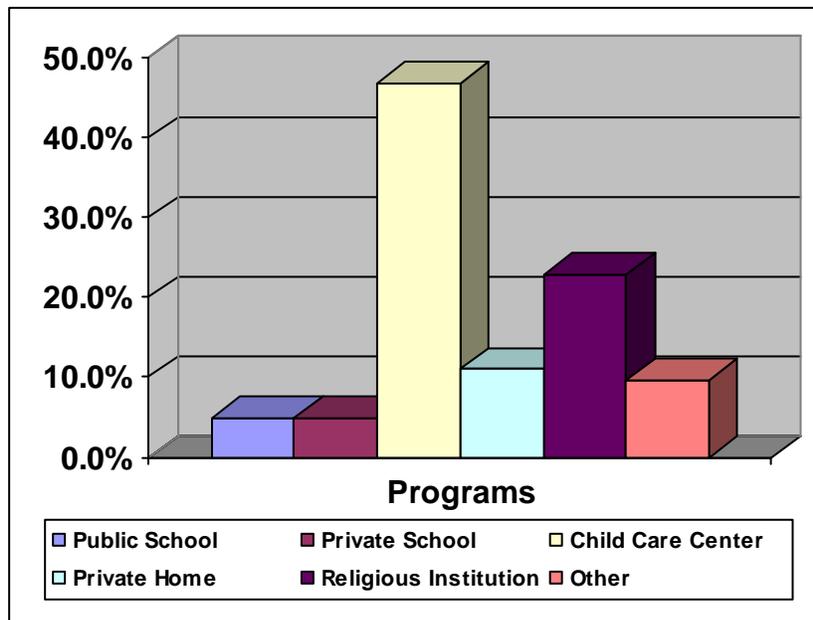
Figure II.3 Program For-Profit Status



2. Please describe where your program or facility is physically located.

The greatest number of programs (46.9 %) reported they were physically located in their own free-standing child care center. Of the respondents, 22.8 percent responded they were located at a church, synagogue or other institution while just 11.0 percent were located in a private home. Figure II.4 illustrates the distribution of physical location. These results were to be expected since “informal” home based services were not included.

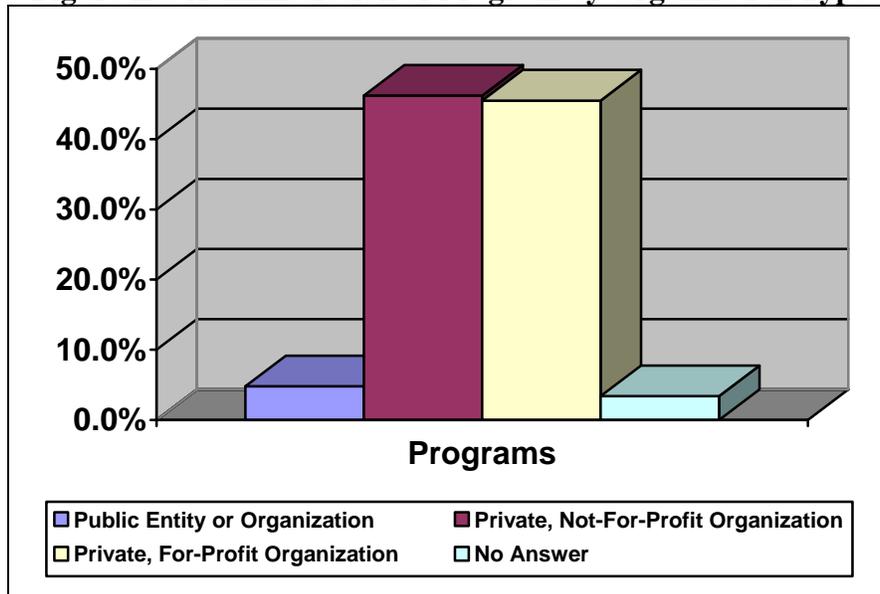
Figure II.4 Physical Location of Program Activity



3. Is your site owned, operated or managed by a ... ?

The vast majority of programs responded they were either owned, operated or managed by some form of private organization. Of the total respondents, 46.2 percent answered that they were administered by a “private, not-for-profit organization”, while a slightly smaller 45.5 percent responded that a “private, for-profit organization” was responsible. Public entities accounted for only 4.8 percent of responding programs. The 2002 West Virginia legislation that requires pre-k programs for 4-year-olds in all county school districts may alter this distribution in the future.

Figure II.5 Administration of Program by Organization Type



4. Please use the following table to describe the number of children served by your facility’s operations.

A brief summarization of the responses provided is illustrated in Table II.2.

Table II.2 Summary of Children Served

	Infant (0-12 months)	Toddler (13-35 months)	Preschooler (3-5 years)	School-Age (6-13 years)
Do not serve this age group / NA	42.8%	21.4%	6.9%	24.1%
Provide services for this age group	57.2%	78.6%	93.1%	75.9%
Average # of children served	7.7	15.0	34.1	34.6
Percentage of those served receiving some form of subsidy	42.0%	31.0%	26.0%	31.0%

Responses concerning provision of services to the different groups suggest that the staff, training, expenses and other requirements to care for the youngest children may inhibit the provision of service to infants and younger toddlers. Additionally, the demand for care in the School-Age group (6-13 years) isn't as strong as for the other groups.

The reported average number of children served increases with age suggesting that capacity increases for facilities caring for older children. This is also more likely a product of the mix of centers targeted in the survey and limitations placed on capacity by State regulation than any other factor.

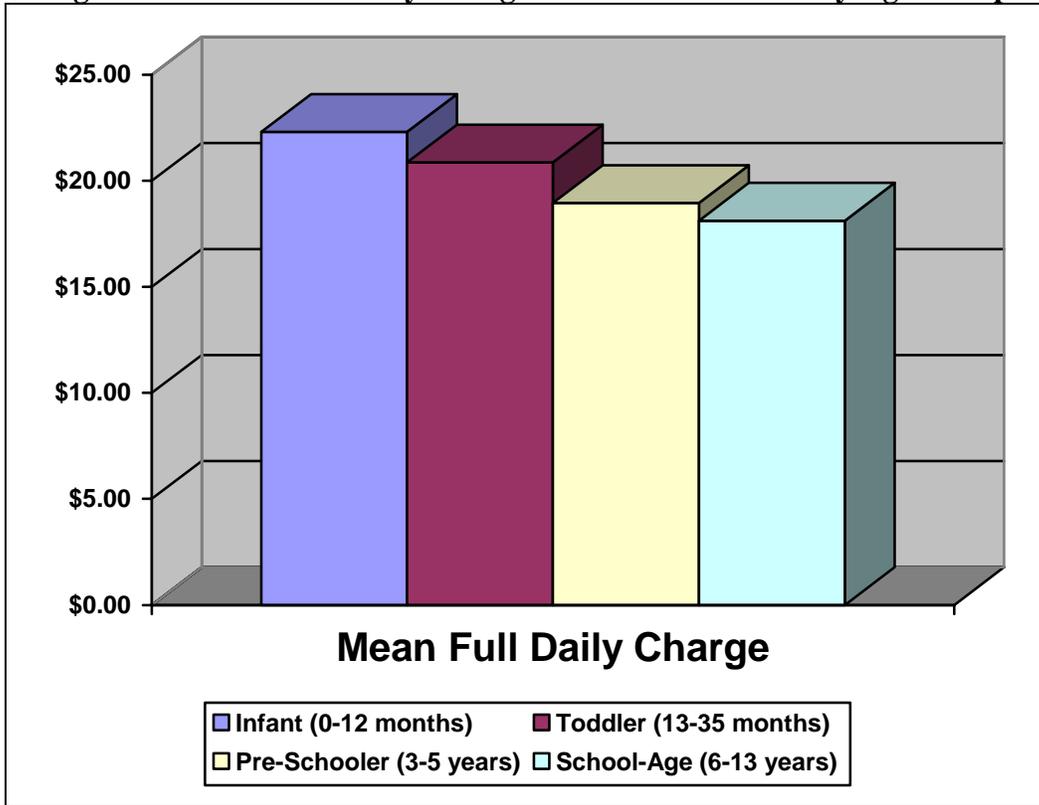
5. What is the full DAILY charge for a single child in each age group of children that you care for?

Respondents were asked to detail the full daily charge for a single child in each of the following age groups: 1) Infant (0-12 months), 2) Toddler (13-35) months), 3) Preschooler (3-5 years) and 4) School-Age (6-13 years). Many of the respondents indicated that they used pricing schedules dependent on several variables. These include, but are not limited to, multiple-child family discounts, discounts for low-income families and varied rates for children requiring only partial services. The following analysis takes into account the full daily charge only.

Table II.3 Full Daily Charge for Children Served by Age Group

	Infant (0-12 months)	Toddler (13-35 months)	Preschooler (3-5 years)	School-Age (6-13 years)
Mean Charge	22.31	\$20.86	\$18.95	\$18.12
Maximum	\$35.00	\$35.00	\$40.00	\$30.00
Upper Quartile	\$25.00	\$24.00	\$20.00	\$20.00
Median	\$23.00	\$20.00	\$18.00	\$18.00
Lower Quartile	\$18.00	\$17.00	\$15.00	\$15.00
Minimum	\$12.00	\$10.00	\$10.00	\$7.00

Figure II.6 Mean Full Daily Charge for Children Served by Age Group



6. If you have been in operation for at least a year or more, when did your facility last increase its charges?

Slightly more than half of the programs (50.3 %) responded that they had increased their charges for child care in the last two years and more than one-quarter (27.6 %) had done so within the last 12 months. Nearly one in four programs (24.1 %) indicated that they have never raised their charges. These trends indicate the rising costs associated with child care and these are not likely to abate in the foreseeable future. Rising costs may limit access to day care for low to moderate income families. The West Virginia pre-k legislation requiring universal availability for all 4-year-olds paid largely by state and local funds will reduce this problem.

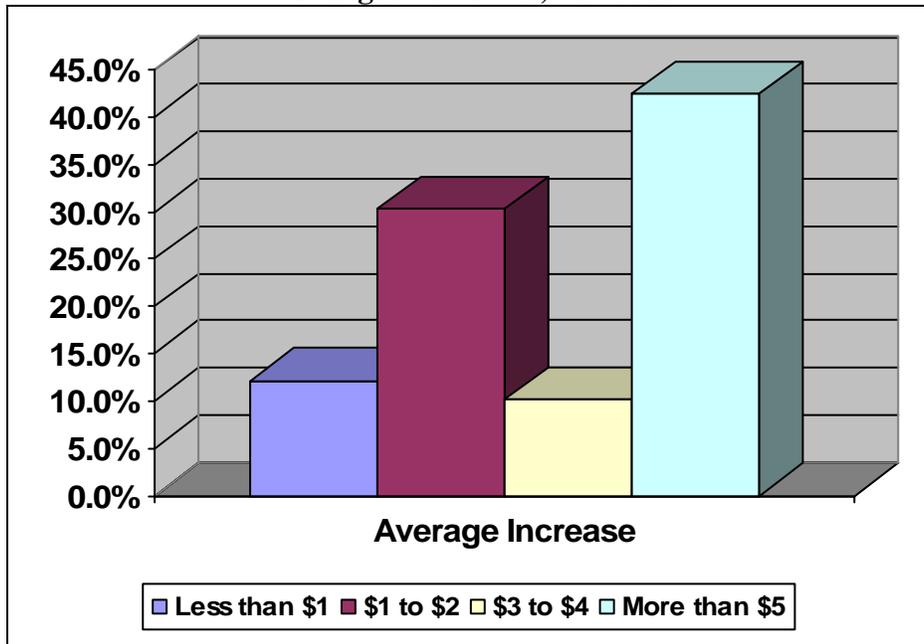
Table II.4 Time Frame for Past Charge Increases

Response	Percentage	Response	Percentage
Within last 6 months	14.5%	More than 2 years ago	17.9%
Within last 6 months to a year	13.1%	Never increased charges	24.1%
Within last year to 2 years	22.8%	Can't remember	7.6%

7. The last time you increased charges, what was the approximate average increase?

Respondents who answered that they had increased their charges in the past were then prompted to approximate the average increase. Of the 99 respondents who had increased charges, roughly one-third indicated that charges were approximately \$1 to \$2 per child, per week. Of those responding, 42.4 percent indicated that the last increase was \$5 or more per child, per week. These respondents were then asked to specify that increase. The average increase for those programs was \$6.19. It should be noted that nearly two-thirds of the respondents answering “More than \$5 per child, per week” (62.1 %) indicated raising charges by at least the minimum value possible (\$5.00), given the structure of the question. Approximate increases per facility are illustrated in Figure II.7.

Figure II.7 Approximate Last Average Increase in Charges Per Child, Per Week



8. Does your facility offer some financial help to low-income families (other than government subsidies) to off-set the cost of child care?

Of responding programs, 52.4 percent indicated that they did not offer financial assistance (beyond government subsidies) to aid low-income families in paying for child care services. Of the 44.1 percent who do offer assistance, roughly one-third base their charges on family incomes and approximately one in five have modified their payment plans to assist parents with changing needs (32.8 % and 20.3% respectively). Responses in Table II.5 illustrate the primary type of assistance given for those programs offering assistance.

Since more than half of the providers furnished no assistance, it can be concluded that finances are probably a factor limiting access to day care. The lack of assistance may force some parents to seek lower cost “informal” care even if they would have preferred otherwise.

Figure II.8 Programs Offering Financial Assistance to Low-Income Families

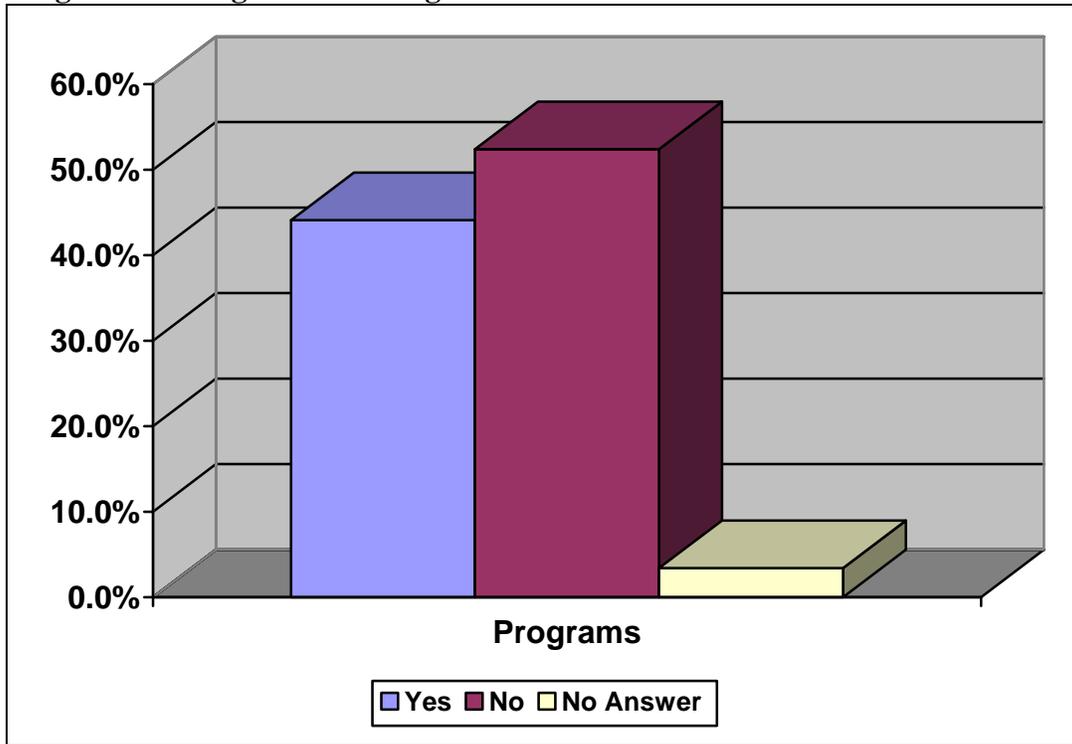


Table II.5 Types of Financial Assistance Provided to Low-Income Families

Type of Assistance	Percentage of Respondents
Fees Based on Parent Income / Sliding Scales	32.8%
Modified Payment Plans	20.3%
Multiple Child Discounts	14.1%
Outside Assistance, Donations, and/or Fundraisers	12.5%
Scholarships to Children	10.9%
Employee Discounts	9.4%

A very recent study by Bainbridge, et. al.⁵¹ found a strong link between enrollment in ECD programs and family income. They found that families in the lowest quartile of income distribution were significantly less likely to have children participating in ECD. They recommended either free public programs or subsidies for children from low income families to address disparity. The West Virginia pre-k for four year olds will be publicly funded.

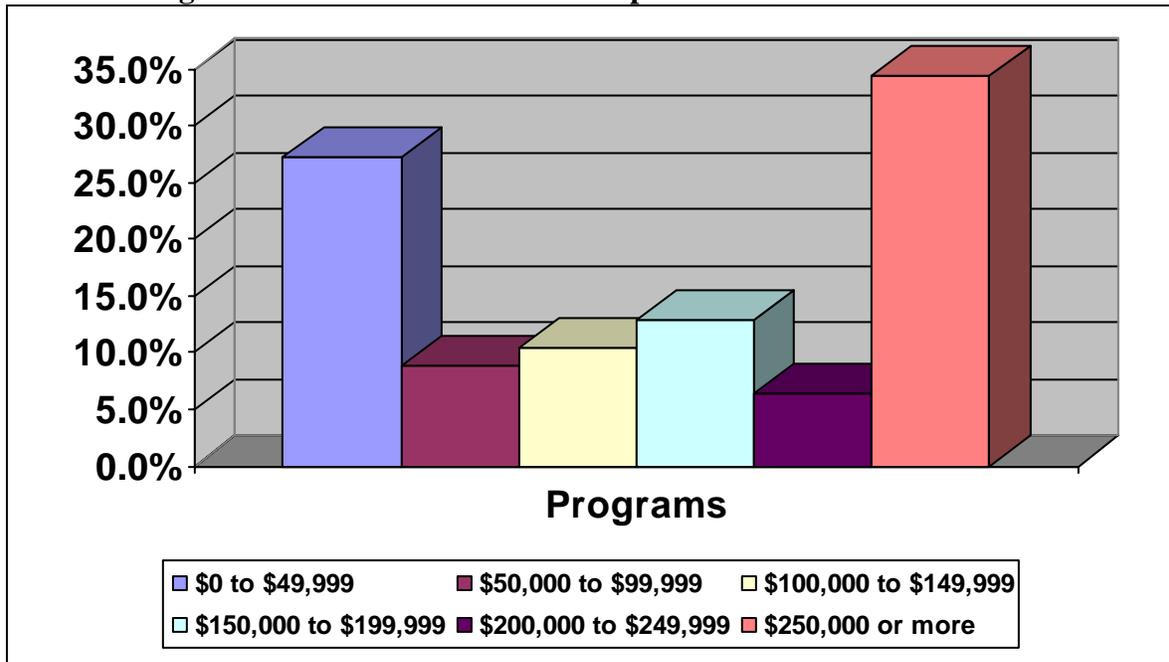
9. What was your total annual income before expenses for calendar year 2004?

Roughly 14 percent of the respondents failed to answer the question pertaining to annual income. Of those who responded, however, more than one-third (34.4 %)

⁵¹ Bainbridge, J., Meyers, M., Tanaka, S., and Waldfogel, J. (September, 2005). Who gets an early education? Family income and the enrollment of three- to five-year-olds from 1968 to 2000. *Social Science Quarterly*, 86/3, 724-745.

indicated annual incomes before expenses of \$250,000 or greater while 27.2 percent reported incomes of \$49,999 or less. The distribution of annual incomes is presented in Figure II.9. Again, this should not be viewed as indicative of every type of child care entity (especially small and non-employer facilities) as income is heavily dependent on facility size and capacity.

Figure II.9 Total Income Before Expenses in Calendar Year 2004



10. What percent of total income was expended for the following for calendar year 2004?

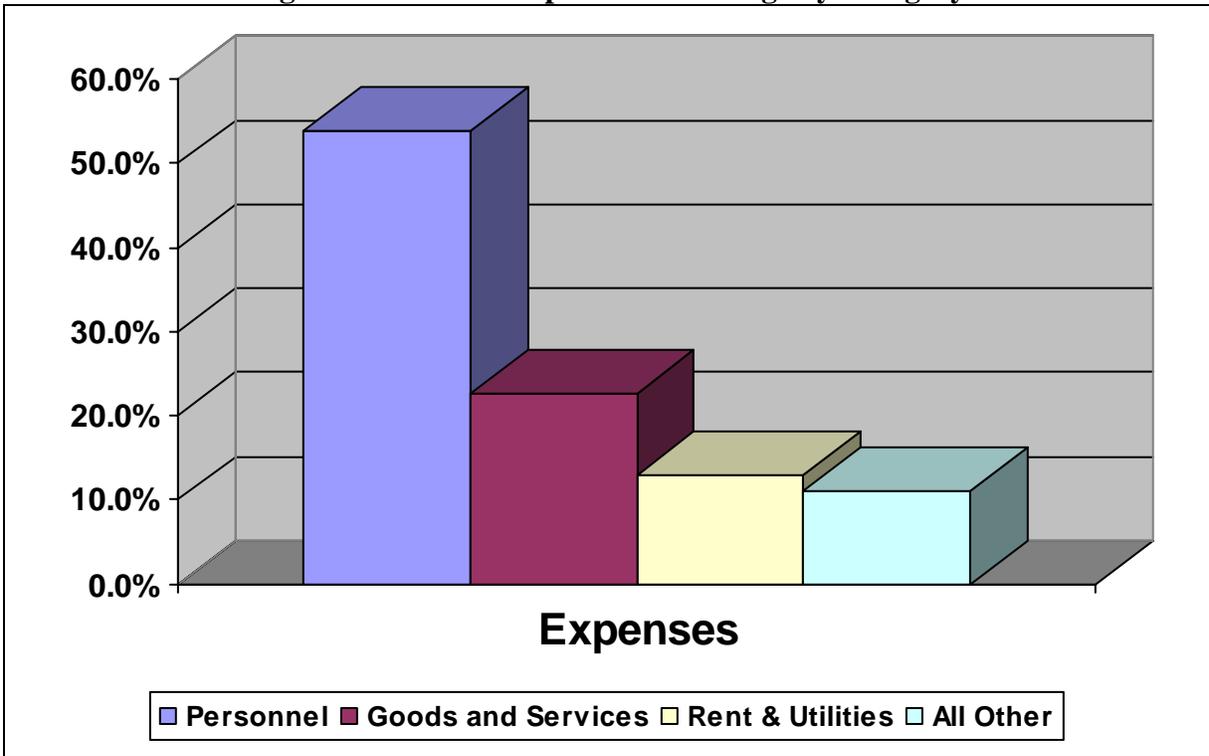
Ninety-four respondents, accounting for roughly 65 percent of the survey participants, provided information detailing expenses into one of four broad categories. These included: 1) Personnel, 2) Purchases of Goods and Services, 3) Rent and Utilities and 4) All Other Expenditures.

Table II.6 Percentage of Expenditures in Calendar Year 2004

	Personnel	Purchases of Goods and Services	Rent and Utilities	All Other Expenditures
Mean	54.0%	22.7%	13.0%	11.0%
Maximum	97.0%	100.0%	60.0%	63.2%
Upper Quartile	73.8%	30.0%	16.0%	17.0%
Median	60.0%	20.0%	10.0%	5.0%
Lower Quartile	45.0%	12.5%	4.0%	1.0%
Minimum	0.0%	0.0%	0.0%	0.0%

While it varied widely, personnel are the largest single cost item. Rent and utilities for establishments in public or private facilities may not be charged.

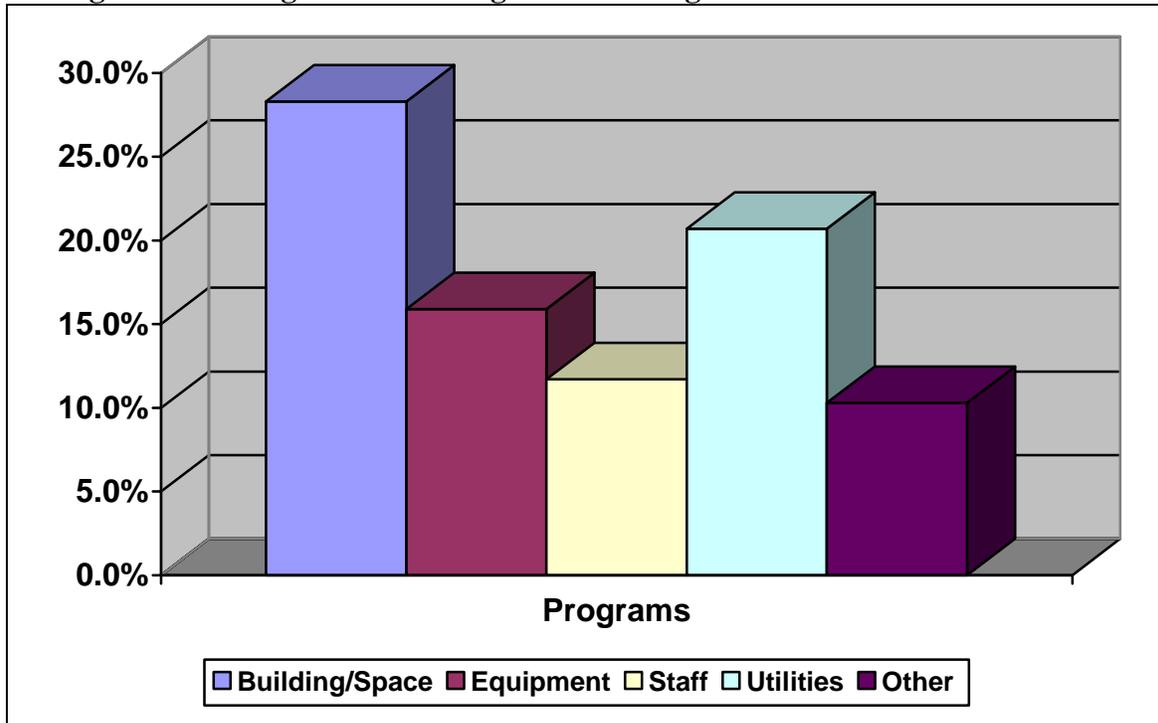
Figure II.10 Mean Expenses Percentage by Category



11. Please check all items that are donated or offered to your facility at a reduced rate.

Of the respondents, 41.7 percent responded that they received assistance either through donations or at a reduced rate. This assistance came in the form of building and/or functional space, equipment, staff, utilities or some other support. The number of respondents of programs indicating that they received either their building or functional space through donation or at a discounted rate was 23.8 percent. Roughly one in five (20.7%) received assistance with utilities. Graphical representation is presented in Figure II.11.

Figure II.11 Programs Receiving Items Through Donations or Reduced Rates



12. What approximate percentage of your expenses is made up of the following categories?

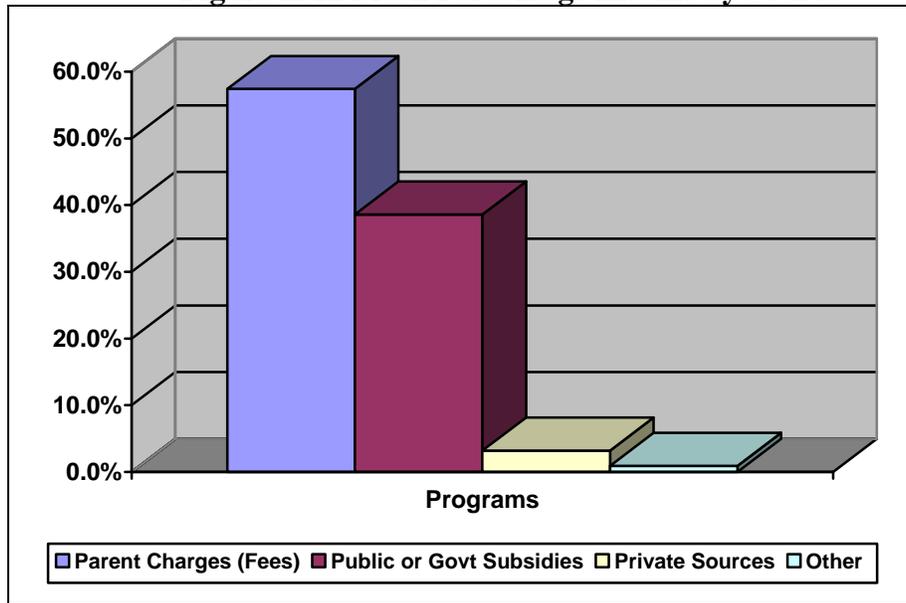
Nearly four-fifths of respondents supplied information concerning income sources. Parent charges or fees made up the largest income source for the respondents at 57.4 percent. It should be noted that a small percentage (just slightly more than 5 percent) reported no income from sources other than “public or government subsidies” and roughly 10.0 percent reported income only from “parent charges”. Mean percentage of income by source is presented in Table II.7 and Figure II.12.

Table II.7 Percentage of Income by Source in Calendar Year 2004

	Parent Charges (Fees)	Public or Government Subsidies	Private Sources (Charities, etc)	Other
Mean	57.4%	38.6%	3.2%	0.9%
Maximum	100.0%	100.0%	40.0%	15.0%
Minimum	0.0%	0.0%	0.0%	0.0%

The results showing parent charges as the largest single source of income for providers reinforces the issue of access. Low income families may be “shut out” by fees exceeding their financial capacity. The West Virginia pre-k program should significantly reduce the hurdle.

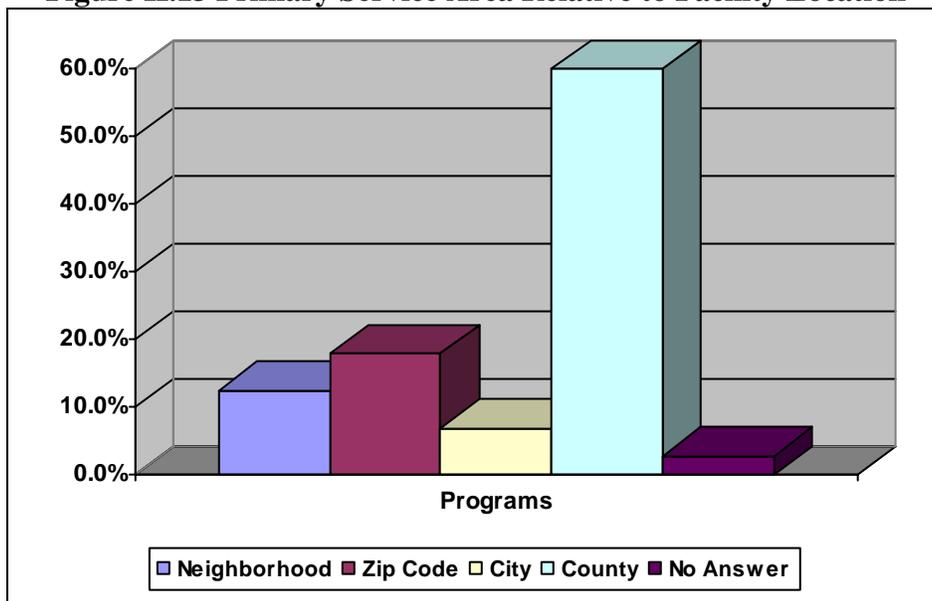
Figure II.12 Mean Percentage Income by Source



13. Where do the majority of the children served by this facility live relative to the facility itself? In the same _____?

The large majority of respondents (60.0 %) indicated that the majority of children served by their program live within the same county relative to the facility itself. Of the respondents, 17.9 percent felt the program serves children from the surrounding zip code and 12.4 percent felt that their primary service area was the neighborhood where the facility was located. The programs required under West Virginia pre-k will be the responsibility of the county school districts. This could cause some families to change providers if their current provider is not in the county where they live.

Figure II.13 Primary Service Area Relative to Facility Location



14. Please use the following table to describe the current level of staffing at your facility as applicable.
15. For each of the staffing categories and employment tenures below, please indicate how many employees currently work at your facility.
16. Please use the following table to list all staff by title along with their current annual salary.

Questions 14 through 16 describe the levels of staffing, employee tenures and salary ranges. Results for these questions are summarized in Tables II.8 and II.9.

The respondents providing staffing information reported an average of one Owner/Director position and one-half of an Assistant Director position. The programs also reported an average of 4.8 Teachers and 3.2 Aides for each facility.

Respondents reported that 58.0 percent and 50.6 percent of Program Directors and Assistant Directors respectively had been in the job for more than 5 years. The percentage of Lead Teacher/Coordinator and Teachers with tenure of more than 5 years was less than 40 percent, while the corresponding figures for aides was just over 20 percent. This suggests that the teaching positions may be filled by individuals seeking to gain experience for other jobs, employment during continuing education or filled by trailing spouses. It is also quite reasonable to assume that low pay may well affect the tenure rates reported here as well.

Table II.8 Current Staffing Levels and Tenure

Position	Average per Program (Full-Time Equivalent)	Percentage w/ less than 1 year tenure	Percentage w/ less than 1 to 5 years tenure	Percentage w/ more than 5 years tenure
Director	1.0	12.0%	30.0%	58.0%
Assistant Director	0.5	6.5%	42.9%	50.6%
Lead Teacher / Coordinator	2.0	23.9%	36.7%	39.4%
Teachers	4.8	19.6%	42.6%	37.8%
Aides	3.2	32.2%	47.2%	20.6%
Volunteers	1.0	46.0%	48.5%	5.5%
Support Staff (cooks, bus drivers, bookkeepers, etc.)	2.6	16.2%	46.8%	37.0%

As Table II.9 summarizes, the reported average salaries appear to be rather low. This is in part due to the fact that some positions (especially aides and support staff) are employed on a part-time basis. Additionally, directors (who are in many cases the owner of the facility) may draw smaller salaries to reduce business expenses.

Respondents were asked to provide the range of salary for the different positions employed by their program. Observed Average Salary Ranges were narrow for Director and Assistant Director positions despite wide differences in the minimum and maximum salaries reported. These ranges widened for Teachers, Aides and Support Staff respectively and (again) are most likely attributable to part-time employment in these positions.

Table II.9 Reported Salaries by Position Type (Full and Part-Time)

Position	Average Salary Lower Range	Average Salary Upper Range	Minimum Salary Reported	Maximum Salary Reported
Director	\$26,132	\$28,168	\$10,000	\$61,500
Assistant Director	\$17,668	\$18,904	\$9,000	\$54,000
Lead Teacher or Coordinator	\$13,914	\$16,829	\$8,000	\$36,000
Teachers	\$12,378	\$18,628	\$4,000	\$38,000
Aides	\$9,881	\$15,249	\$1,000	\$26,000
Volunteers	N/A	N/A	N/A	N/A
Support Staff (cooks, bus drivers, bookkeepers, etc.)	\$11,054	\$27,891	\$2,500	\$49,000

Table II.10 provides a comparison of State and National averages for occupations like those reported in the survey. The reported salaries from the survey respondents appear to correspond with the data reported by the Bureau of Labor Statistics. What should be noted is the large disparity between both sets of WV data and that reported for the nation as a whole.

Table II.10 Comparison of West Virginia and U.S. Average Salaries by Occupation

Occupation	WV 2004 Avg. Salary	US 2004 Avg. Salary
Education Administrators, Preschool and Child Care Center/Program	\$28,620	\$41,060
Preschool Teachers, except Special Education	\$19,750	\$23,940
Child Care Workers	\$14,940	\$17,830

Source: U.S. Bureau of Labor Statistics, May 2004, "Occupational Employment and Wage Estimates."

The problem of adequate compensation for pre-k teachers and staff has been highlighted in a recent report.⁵² Comparing the salaries received and educational attainment of ECD teachers and workers, the study discovered that the education levels of ECD teachers have fallen, and in 2004, 30 percent had only a high school education or less. The low wages and benefits paid to teachers and administrators in ECD helped to explain the decline in educational attainment. While female college graduates as a group averaged \$19.23 per hour, their counterparts in ECD averaged only \$10. With women college graduates facing ever expanding job opportunities

⁵² Herzenberg, S. Price, M. and Bradley, D. (2005) op. cite.

outside of education, the report sees a growing problem in replacing the long term and qualified staff that will retire in the next few years.

The data in this survey shows West Virginia ECD teachers and administrators well below the national averages in compensation. The national problem of finding high quality staff will intensify in the State unless corrective action is taken. Considering the importance of high quality teachers to quality ECD, the future looks ominous.

17. Please place a check mark beside any of the following benefits provided to your staff, including full and part-time employees:

Roughly three in five employers provide either “Paid vacation” (63.4 %), “Child care” (62.1%) or “Paid sick leave/personal days” (62.1%) to their full-time staff. In contrast, these benefits are provided to part time employees by 20.0 percent, 49.0 percent and 24.8 percent of programs respectively. More firms provide vacation and/or sick leave and dependent child care to employees than health insurance or retirement programs. In other words, the items provided indicate that the firms seem more likely to provide benefits that result in less direct cost. It should be noted that many employees may not demand such benefits if such benefits are derived from other sources including spouses. More detail on benefits to full and part-time employees are outlined in Table II.11.

Table II.11 Benefits Provided to Staff (including Full and Part-Time Employees)

Benefit	Full-time Employees	Part-time Employees
Paid vacation	63.4%	20.0%
Health insurance (employees)	27.6%	9.0%
Health insurance (spouse and family)	18.6%	6.2%
Retirement benefits	21.4%	9.0%
Child care	62.1%	49.0%
Paid sick leave / personal days	59.3%	24.8%

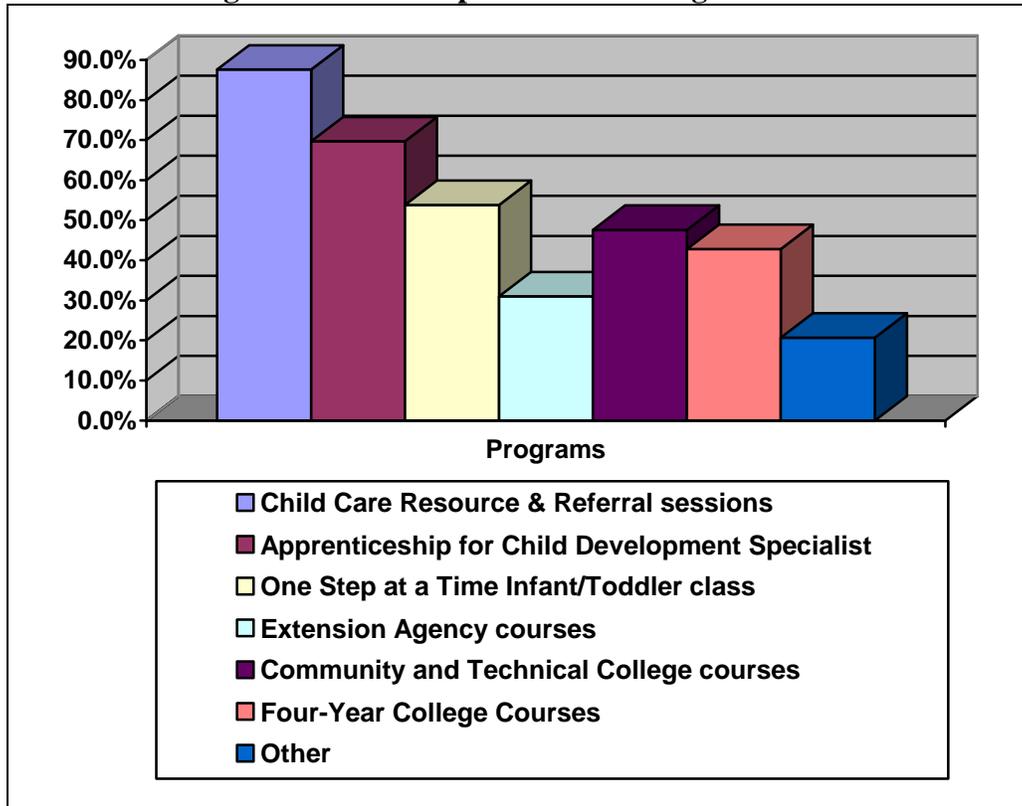
The failure to provide a full range of benefits, particularly health insurance, is probably a factor in the high turnover rates noted earlier. To an extent, the problem will be reduced under the West Virginia pre-k legislation. At least for those employed in public school facilities, pay and benefits will be provided that matches what is already given to all other school employees.

18. Do your staff participate in one or more of the following training activities (check all that apply)?

Of the respondents, 87.6 percent indicated that their program participated in “Child Care Resource & Referral” (training from WV DHHR) sessions. Over two-thirds of the programs (69.7 %) used “Apprenticeships for Child Development” training and more than half

(53.8 %) reported that staff had attended “One Step at a Time Infant/Toddler” classes. Of those responding, 47.6 percent and 42.8 percent of programs reported that staff attended Community and Technical College and 4-Year College courses as part of their training.

Figure II.14 Participation in Training Activities

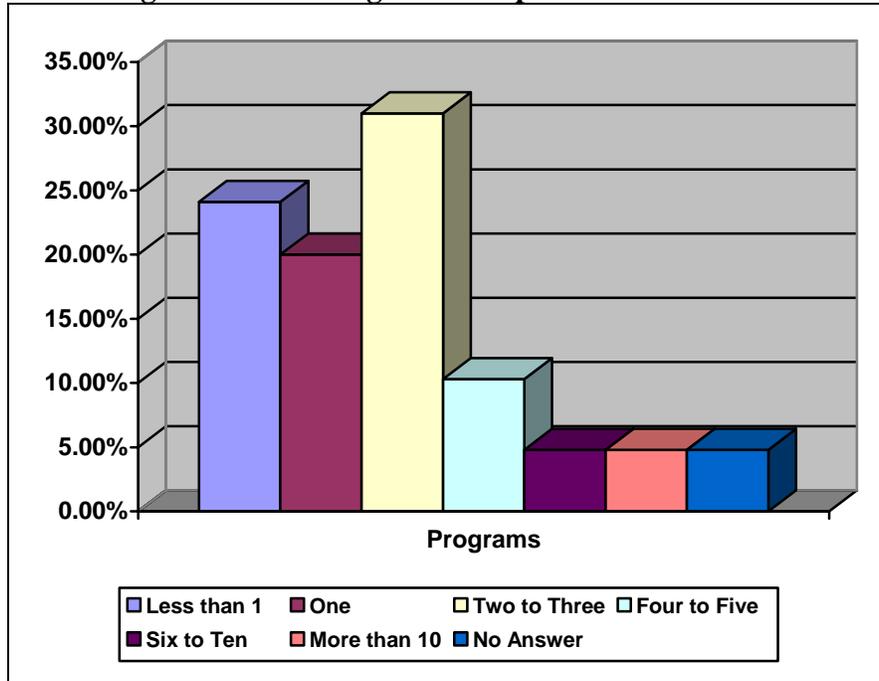


The West Virginia pre-k legislation has requirements for teacher and staff education and training. These must be met to establish eligibility. The legislation also provides a “career ladder,” laying out the training necessary to move from one job classification to another.

19. On average, how many staff members do you typically have to replace in a given year?

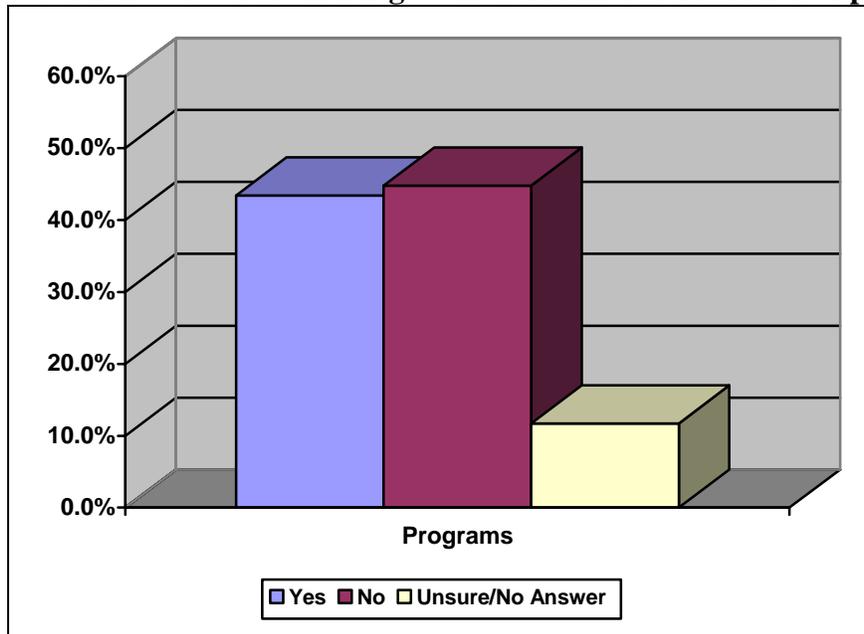
Questions 19 through 22 provide information on staff turnover. Results for these questions are summarized in Figures II.15 through II.18.

Figure II.15 Average Staff Replacement Per Year



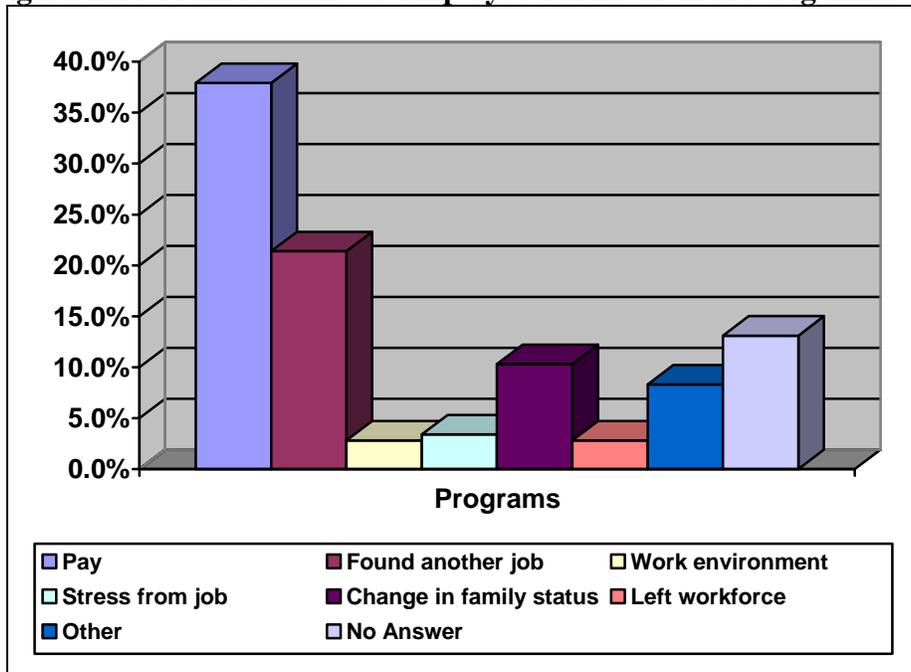
20. Do you feel that staff turnover is a significant obstacle to the successful operation of your facility?

Figure II.16 Staff Turnover as a Significant Obstacle to Successful Operation



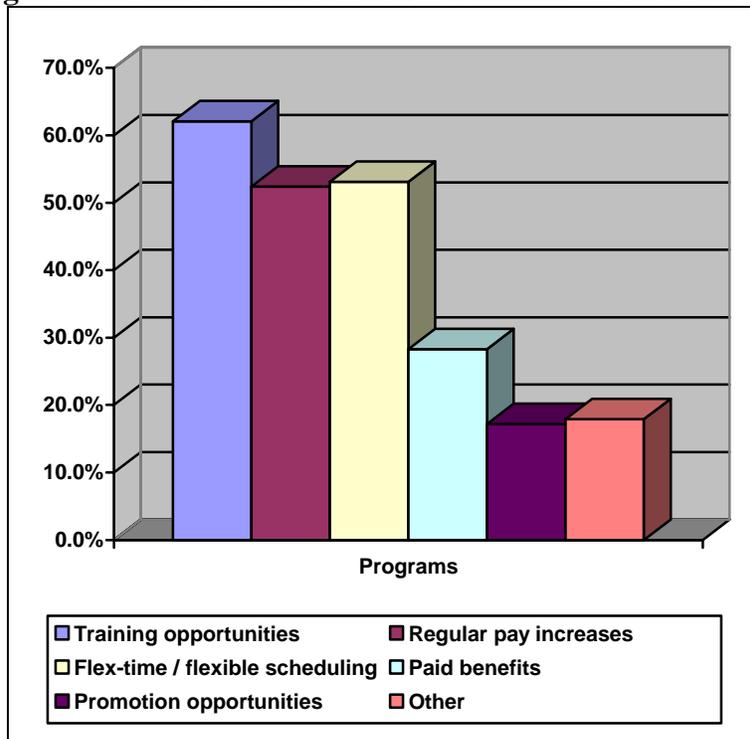
21. What is the main reason for employee turnover in your organization?

Figure II.17 Main Reason for Employee Turnover in the Organization



22. What efforts has your facility undertaken to minimize staff turnover (please check all that apply)?

Figure II.18 Efforts Undertaken to Minimize Staff Turnover



For all programs, 31.0 percent of respondents indicated that on average, “2 or 3” staff members have to be replaced annually. Approximately three in four programs (75.2 %) reported that they typically had to replace three or less employees per year. Only 4.8 percent reported staff turnover of more than ten employees per year. As discussed earlier, the turnover is directly related to the low salaries, absence of benefits, and other job opportunities. If the result of the West Virginia pre-k legislation is to establish compensation parity with public school staff, the level of turnover should be reduced.

When asked if staff turnover was a significant obstacle to the successful operation of the program, the respondents were almost evenly split. The number of respondents who felt that staff turnover presented a significant obstacle to the program’s operations was 43.4 percent while 44.8 percent disagreed. Of the respondents, 11.7 percent answered either “Unsure” or failed to answer. This is probably an indication that measures taken to reduce turnover are either effective or viewed as being effective by the respondents.

Another possibility is that respondents are willing to accept (or resigned to the fact) that turnover is inevitable. This may be especially true for younger teachers and aides looking to gain experience or those employees working while continuing their education. It is also possible that certified teachers are working in child care programs until openings are available in the public schools. It can be predicted that as the child care workforce begins to retire, finding qualified replacements will be a serious issue.

Respondents cited “Pay” (37.9 %) and “Another job” (21.4 %) as the primary drivers of turnover in their organization. Of respondents, 10.3 percent indicated that a “Change in family status” was the cause of more employee turnover, while 13.1 percent of respondents failed to answer the question. Note that the relatively low response rates for “Work environment” and “Stress from job” suggest satisfaction with the job and/or industry.

More than half of the respondents indicated that they employed “Training opportunities,” “Regular pay increases,” and “Flex-time or flexible scheduling” to help reduce employee turnover. These efforts were reported by 62.1 percent, 52.4 percent and 53.1 percent of the respondents respectively. Another 28.3 percent of respondents indicated that paid benefits were used to minimize turnover.

SUMMARY

Finally, based upon the information respondents provided in the survey, we can, in summary, build a profile of a “typical” care/education facility in West Virginia. It should be noted that this profile only applies to programs such as Child Care Centers, Family Child Care Facilities, Head Start Licensed Child Care Facilities and School Age Child Care Facilities as defined earlier. Additionally, this is based upon an average. This means that differences between this “typical” facility and any operating facility may be significant.

The “typical” child care program in West Virginia:

- Has been in operation for approximately 11 years
- Is privately owned, but equally likely to be run for profit as not
- Provides services for:
 - 4 Infants (0-12 months) at \$22.31 per full day
 - 12 Toddlers (13-35 months) at \$20.86 per full day
 - 32 Preschoolers (3-5 years) at \$18.95 per full day
 - and 26 School Age Children (6-13 years) at \$18.12 per full day
- Has increased its charges in the last two years by an average of more than \$5.00 per week
- Reports that personnel is the major expenditure (approximately 54%)
- Relies primarily upon parent charges as their major source of income
- Employs approximately 5 teachers and 3 aides (on both a full-and part-time basis)

The survey reveals problems in the provision of child care include:

- The rising cost of child care limits the access for low and moderate income families
- Pay and benefits for child care educators and workers are low, creating problems in recruiting and retaining of the staff needed to provide quality programs
- Child care is delivered in a variety of forms which provide a measure of consumer choice regarding facilities, size and program
- The West Virginia pre-k program has the potential to significantly restructure the child care industry, improving both access and quality.

CHAPTER III

A Simplified Benefit Cost Analysis of Early Child Development (ECD)

As the literature review (Appendix B) suggests, early child education can yield an array of different benefits, including (but not limited to) lower K-12 per-student costs, more productive parent-workers, and lower public expenditures for inmate incarceration, welfare, and health care. However, from a West Virginia perspective, the most important benefit from early child education programs is likely attributable to the relationship between these programs and future increased worker productivity. Simply, early child education improves education; education improves employee productivity; and increased productivity leads to higher wages and economic growth. The development of early child educational programs may stand as a remedy to the state's chronic economic under-performance. It is this potential that is at the center of the benefit cost evaluations that follow.

Background on Cost Benefit Analysis

Early Child Development (ECD) programs have been the subject of past benefit-cost studies. After a review of these, Currie concluded, "This review of the evidence concludes that these programs have significant short- and medium-term benefits, and that the effects are often greater for more disadvantaged children."⁵³ At the basis of benefit-cost analysis is a detailed estimation of the costs of the program along with identification and estimation of program benefits. A list of the possible benefits to be included was developed by Masse and Barnett⁵⁴ including:

- Earnings and fringe benefits of participants
- Earnings and fringe benefits of future generations
- Maternal employment and earnings
- Elementary and secondary education cost-savings
- Improved health
- Higher education cost savings
- Reduced welfare use

Some studies have also included the influence on crime and delinquency, but except for high risk populations, the impact of ECD appears to not be significant.⁵⁵ Costs usually are limited to instruction expenses which are primarily instructors, facilities, transportation and curriculum.

Since both benefits and costs occur over a long period of time, both must be discounted by an appropriate rate of discount to determine their value in current dollars. This is a very important step because it changes in the discount rate have profound impacts on the cost-benefit

⁵³ Currie, J, (Spring 2001) op. cite.

⁵⁴ Masse, L.N. and Barnett, W.S. (2004) *A benefit-cost analysis of the Abecedarian early child intervention*, National Institute for Early Education Research.

⁵⁵ Clarke, S.H. and Campbell, F.A. (1998) Can intervention early prevent crime later? The Abecedarian Project compared with other programs, *Early Child Research Quarterly*, 13:2, 319-343.

ratio that results.⁵⁶ This is particularly true in the case of ECD programs, since the costs are almost immediate, while the benefits are often delayed until the student enters the labor force twelve to 15 years later, and must be discounted over a 20 to 40 year working life. Some of the benefits such as lower retention rates, reduced welfare and increased workforce participation, occur earlier and extend over the time the children are enrolled.

All benefit-cost analyses are based on assumptions about what impacts result from the ECD intervention. These include how much the dropout and retention rate will decrease, how many students will finish high school and attend college, how much welfare and crime costs will be reduced for those who participate. These assumptions are based on data obtained from observations of particular groups in, or who have been in, ECD programs. This data is not strictly comparable as the demographic characterization of the student populations differ as well as the economic and social environments in which the participants find themselves.

The characteristics of the ECD program, such as the training/education of the instructor, the facilities, the curriculum, the teacher to student ratio, and the length of the program also vary. Therefore, taking the results from one study and generalizing that the same results will be obtained for another group of students in another situation is not appropriate. This explains why the results of the benefit-cost studies done to date vary widely from 3:1 to 8:1.⁵⁷ It is worth noting that none failed to show a high positive return on investment.

Population, Hypothetical Program Structure, and Costs

There are approximately 100,000 West Virginians below age five. If the age distribution of these children is constant at 20 percent, there are currently about 20,000 children who would participate in a program aimed at four-year-olds. Given that population forecasts for the State are relatively constant, the 20,000 figure is used throughout the 40-year time horizon.

The current analysis considers a nine-month half-day program for pre-kindergarten (pre-k), four year old children. Each class would be staffed by two instructors and one instructor/administrator. Based on the survey results, this structure implies that the instructional cost for 30 students would be \$70,000 or roughly \$2,300 per student. Nationally, instruction costs average 62 percent of total education expenditures. Use of this value implies a total per-student cost of \$3,700. However, given that per-student K-12 costs are higher in West Virginia than elsewhere, this study elected to increase the pre-k cost to \$4,000 per-student.⁵⁸

⁵⁶ For example, Masse and Barnett found very high benefit-cost ratios at discount rate of 3%, but at 7 % the level of benefits over costs was nearly equal.

⁵⁷ Grunewald, R. and Rolnick, A. (May 2005) *A proposal for achieving high returns on early child development*, Washington, DC: Committee for Economic Development; See also Karoly, L. et al. (1998) *Investing in our children: What we know and don't about the costs and benefits of early child interventions*. Santa Monica CA: The RAND Corporation.

⁵⁸ Not coincidentally, this value is roughly half of the yearly West Virginia per-student expenditure for students in day-long programs.

Combining this cost with the projected student population of 20,000⁵⁸ yields an annual program cost of \$80 million per year.

A Note on Human Capital and Economic Development Benefits

Perhaps the greatest consensus among economic researchers over the past two decades concerns the importance that human capital plays in accounting for regional differences in economic growth and development. Generally, prosperity requires three elements:

- Private investment in private capital
- Public investment in infrastructure
- An abundance of human capital.

Human capital is usually described as educational achievement, health, cognitive characteristics, and non-cognitive characteristics like self esteem, discipline and problem solving capacity among a population. International studies consistently find that educational achievement and the general health of the working population explain significant proportions of income differences across countries.⁶⁰

Within the United States, the ubiquitous access to capital markets and the dominant role the federal government plays in securing public infrastructure suggests that differences in the levels of human capital form the primary explanation for wealth and income differences across states and sub-regions. Also, the regional differences in health care access (and outcomes) in the United States is minimal compared to differences in educational achievement.⁶¹ Any expectation that early child education can help West Virginia bridge the gap in economic outcomes compared with other states rests squarely on the relationship between such programs and the stock of human capital available within the State.

⁵⁸ Information from the West Virginia Department of Education indicates that student population will sharply decline over the next 10-20 years. Using a constant student population of 20,000 could overestimate both the benefits and costs. To compensate, the time frame for the analysis has been lengthened from 32 to 40 years.

⁶⁰Barro, R. (1991) Economic growth in a cross section of countries, *Quarterly Journal of Economics*, 407-443; Mankiw, N.G., Romer, D., and Weil, D. N. (1992) A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 107, 407-437; Baffes, J. and Shah, A. (1998). Productivity of public spending, sectoral allocation choices, and economic growth. *Economic Development and Cultural Change*, 46(2), 291-303 ; Hannsson, L. and Henrekson, M. (1994). A new framework for testing the effect of government spending on growth and productivity. *Public Choice*, 81(3-4), 381-401.

⁶¹ Evans, P. and Karras, G. (February 2004). Are government activities productive? Evidence from a panel of U.S. states. *Review of Economics and Statistics*, 76(1), 1-11; Hicks, M. and Rusalkina, V. (2002) *Individual returns to educational investment*, Huntington, WV: Marshall University Center for Business and Economic Research at marshall.edu/cber/research/ire.pdf. These studies virtually repeat these results using longer time periods and different definitions of public and human capital.

A Simple Growth Mode, Productivity and Potential Benefits

The empirical model developed here is intended to capture the relationship between human capital, public capital, private capital, and labor productivity.⁶² This model employs cross-sectional state-level data. This approach asks, what explains differences between the 50 states in per-capita income?

The dependent variable is per-capita income. Human capital is represented by the percentage of the age 25-and-over population who have a high school degree. Public capital is proxied by the number of high-capacity highway miles per square mile of land area.⁶³ Finally, private capital is represented by the *Tax Foundation's* business tax index.⁶⁴ This index is used because it represents the cost of investing (reduction in returns) in a state when compared to other states. The higher the index the more burdensome state taxes are on business and the less likely private investment will occur.

Summary statistics for the data are provided in Table III.1, while model parameter estimates are provided in Table III.2. Within the estimation, all values are expressed in log form. The resulting model was then estimated through the use of ordinary least squares.

Both the measure of human capital and the proxy for public capital display the expected sign and are statistically significant at the 99 percent confidence level. The variable representing private capital has the anticipated sign, but is not statistically significant, suggesting that there is very little interstate variation in the availability of private capital. These findings almost perfectly echoed the results of the earlier studies mentioned above.

Table III.1 Summary Statistics

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Population	50	5616997	6185580	493782	33871648
Per-capita Income	50	20767.38	2848.74	15853	28766
Percent High School	50	0.81954	0.043726	0.7286	0.8833
Land Area	50	75880.34	97068.03	1545	663267
Business Tax Index	50	5.25648	0.858969	3.742	7.365
Highway per Land Area	50	0.081314	0.060305	0.00294	0.33915

⁶² The empirics offered here represent a direct application of the economic theory embodied within the Solow Growth Model. This is the basis for the bulk of the growth models described above.

⁶³ High-capacity highways are defined as Interstate, expressway, freeway, and major arterial highways. While public investment in highways is not the only form of public capital, it is a strong indicator of the level of public investment in a given area.

⁶⁴ For a full description of this index see www.taxfoundation.org. Higher index values reflect a more investment friendly tax climate. Readers should note that WV ranks 47th, with an index value of 4.2.

Table III.2 Estimation Results

<i>Variable</i>	<i>Parameter Estimate</i>	<i>t-Value</i>
Intercept	10.30637	55.5***
Percent High School	1.31171	4.3***
Business Tax Index	0.08346	0.8
Highway per Land Area	0.09029	4.1***
Adjusted Model R ² = 0.34	n = 50	

*** Statistically significant at a 99 percent confidence level

Clearly, education is tied to productivity and incomes, and the earlier discussions demonstrate that education is enhanced by pre-k programs. For the purpose of illustration, the current analysis employs results from earlier studies. These findings suggest that the pre-k educational program described above will gradually increase West Virginia’s high school graduation rate from the current level (75 percent) to the national average (81 percent) within a 40-year time horizon.⁶⁵

Program expenditures begin in year one. The benefit stream would begin in year 15 as students with the pre-k background begin to enter the work force. Each year, as additional and more highly prepared workers enter the work force, incomes will rise. These benefits reach the maximum in year 40, at which time all work force participants have had the benefit of pre-k training. In that year, the incremental state-wide income difference attributable to the early childcare education program would reach \$3.1 billion. Both program costs and benefits are discounted at a rate of three percent.⁶⁶ The resulting values are provided in Table III.3 that shows a possible benefit-cost ratio for an ECD program in West Virginia of \$5.20 for each dollar invested.

Table IV.3 40-Year Program Benefits and Costs

<i>Estimated</i>	<i>Value</i>
Discounted Program Costs	\$1.8 Billion
Discounted Program Benefits	\$9.5 Billion
Benefit / Cost Ratio	5.2

⁶⁵ Assuming the Perry Pre-School Study estimates of increased probability of high school completion, convergence to the current national level of high school completion will occur roughly 31 years from program implementation. Adding roughly a 25 percent risk factor to account for potential acceleration in net migration trends out of West Virginia would slow convergence to the national average by nine to 10 years. This also accounts for the possibility that the national level of high school completion would continue to grow at the rate of the past decade and that school population in West Virginia would decrease at least over the next decade.

⁶⁶ This relatively low discount rate reflects the expectation that any such program would be funded through deferred consumption (personal taxes) rather than deferred investment (business taxes). It is the most frequently used discount rate in other benefit-cost studies of ECD.

These results are based on a hypothetical ECD program with assumed impacts on high school graduation rates. But it is difficult to conceive of a circumstance or a set of assumptions under which an ECD program would not yield benefits that exceed program costs.

Secondary Benefits

As noted, the early child education program described above enjoys a number of benefits, that include lower public sector costs in remedial education, reduced incidence of crime and increased productivity for firms that employ the parents of children enrolled in the program. Many of the existing studies provide estimates of these secondary benefits. These benefits accrue to both the private sector (parents and children) and the public sector (local, state and federal government).

These estimates are not included as part of the overall benefit-cost analysis described above for two reasons. First, many of these outcomes can be achieved by policy intervention other than early child education (e.g. subsidized day-care). Second, the secondary outcomes are not the intended justification for implementation of the early child education program (e.g. crime reduction). Nonetheless, these outcomes may ultimately play a role in the policy-making process. If these secondary benefits had been included, the result would have been an even higher benefit-cost ratio.

Private benefits include an increase in parental earnings and reduction in workplace costs by employers of the parents of children enrolled in the program. One study in Oregon⁶⁷ estimated the parental employer benefits exceeded \$2,500 per parent. These benefits occur coincidentally with the expenditures, thus making their impact an offset for a significant proportion of the public costs for ECD.

The consequences of ECD also influence future receipt of public assistance, reduced crime, and reduced costs associated with remedial education for children and adults. The Perry Preschool Study suggests that these costs may dramatically exceed the program costs. However, since this study was conducted from a sample of families that were at high risk for each of these concerns, was drawn from an urban/high crime area and employed highly trained teachers with low teacher to student ratios, its applicability to West Virginia may not be appropriate. However, even if these benefits of early child education in West Virginia are a fraction of the total estimated in the Perry Preschool Program, it may be important and could further increase the benefit-cost ratio.

Summary

This chapter discusses the conceptual benefits to the States' economy associated with implementation of an early child education program. The analysis is conservative both in its

⁶⁷ Oregon Commission for Child Care and Education, (2005) *Child care and education: Investment in a strong economy*. Report to the Governor and the Legislature.

assumptions and its exclusion of secondary benefits of an ECD program. These findings closely mirror the research on human capital and economic development for the U.S. and other nations. The results are also consistent with other West Virginia studies. This study should be considered preliminary and a more complete investigation is appropriate. This finding also is supported by other studies of the benefits and costs of early child education elsewhere.

This 5.2:1 return on investment is in excess of the benefit-cost ratio observed in studies of other types of public infrastructure investment. There is little doubt that increased investment in ECD would be highly profitable for this State as it seeks to stimulate its economic development.

Appendix A

Pre-K Education in West Virginia: The Changing Environment

West Virginia has embarked on a program that will significantly increase access to early child education. Under legislation passed in 2002, local county school districts are expected to implement a pre-k program that will be available to all 4 year old children. This “universal coverage” is to be fully available in all counties by 2012-13. The information contained in this appendix demonstrates the economic benefits that will accrue to the State due to this expansion of pre-k education.

West Virginia provides support to counties that provide pre-kindergarten programs (WV pre-k). While counties were free to establish their own eligibility requirements, the 2002 legislation⁶⁸ provided for WV pre-k programs to be available to all 4 year olds in all counties by the year 2012-13. The State Board of Education has provided a detailed set of Procedural Rules⁶⁹ (Rules) to implement the legislation.

While attendance is voluntary, based on the choice of parents or guardians,⁷⁰ WV pre-k is open to all four year olds without restriction. Each county school district is given some flexibility in program design, but the program must be consistent with certain guidelines.⁷¹ These include:

- Design readiness programs to meet the needs of eligible children
- Utilize developmentally appropriate curriculum
- Provide building blocks for literacy
- View children within the context of their family
- Utilize state approved curricula and assessments
- Employ staff with professional preparation
- Consolidate learning and foster new concepts and skills
- Incorporate meaningful ways of communicating with parents/guardians/family
- Evaluate program success
- Establish appropriate teacher/child ratios
- Maximize community, state and federal resources
- Take place in a safe and healthy environment
- Include all children⁷²

The Rules further require each county to produce a collaborative plan for approval by the State.⁷³ This plan is devised by a collaborative team that includes, as a minimum, representation from the county preschool program, the preschool special needs program, a licensed community

⁶⁸ W Va. Code 16-3-4, 18-2-5, 18E-1 et seq., 18-5-18c and 18-5-44.

⁶⁹ Title 126 Procedural Rule Board of Education Series 28, *West Virginia's Universal Access to a Quality Education System* (2525).

⁷⁰ Rules 126-28-2.1.1

⁷¹ Rules 126-28-2 ff

⁷² Rule 126-3-12 provides, “Because WV pre-k is designed to prepare children to be successful in kindergarten, children may not be excluded based on developmental delays including toilet training.”

⁷³ Rule 126-28-6

child care program not operated by the county, the Head Start program, the local health and human resources department, and a parent of a preschool child.⁷⁴ No district can receive state funding without such a plan.⁷⁵ Up to 50 percent of the “classroom eligible students must be provided through contractual agreements with community programs, including but not limited to, Head Start and child care. . . .”⁷⁶

The requirements for teachers establish a high standard⁷⁷ that calls for teachers to have at least a bachelors degree with certification in pre-k education or elementary education with an emphasis on preschool. Staff is to take at least 30 hours of training within each 24 month period. This training is to be provided by the county districts.⁷⁸ Staff is to provide “positive guidance” to correct behavioral problems and neither physical nor psychological punishment is to be allowed.⁷⁹

There are also detailed regulations regarding facilities⁸⁰ that stipulate that no more than twenty students are to be in any classroom. There should also be one adult for each 10 children and at least one of these adults must be a qualified teacher. At least two adults are to be available at all times. There is to be an outdoor play area. The physical size of the classroom must include at least 35 square feet for each child, as well as a flush toilet and sink for each 15 students. An appropriate rest area is required along with appropriate sleeping equipment that does not force the child to sleep on the floor. Proper fencing and play equipment is required for play areas.

A State approved curriculum is to be used,⁸¹ and a detailed list of the requirements for a “comprehensive curriculum”⁸² is provided. In those provisions, emphasis is placed on meeting the developmental needs of the children and insuring that all students, regardless of developmental level, are able to participate in all activities. While the use of technology is encouraged, it is not to be a substitute for “effective teaching or good curriculum.”⁸³

Comprehensive assessment is also required⁸⁴ and is designed to evaluate whether or not the program supports “literacy, early numeracy and language arts.” The program is also to include methods to promote physical and manual development, as well as art and/or music. Local districts are responsible for assessment of their programs and those of community providers. The overall program is to be evaluated by the Early Childhood Environmental Rating Scale-Revised (ECERS-R). Those results are to be evaluated by the WVDE Early Childhood Coordinator with a collaborative team.⁸⁵ In addition, the WVDE is to “develop and institute a

⁷⁴ Ibid. 6.6

⁷⁵ Rule 126-28-16

⁷⁶ Ibid. 6.5

⁷⁷ 126-28-8ff

⁷⁸ Rule 126-28-14

⁷⁹ Rule 126-9-10ff

⁸⁰ Rule 126-9ff

⁸¹ Rule 126-28-11

⁸² Ibid. 11.4ff

⁸³ Ibid 11.4.11

⁸⁴ 126-11.4.13, 11.5ff

⁸⁵ Rule 126-28-17ff

system of longitudinal, scientifically based research to track learner outcomes, family satisfaction, program continuity and related variables. . .”⁸⁶

Pre-K Education in West Virginia: A Comparison with Surrounding States and the Nation

West Virginia and the states surrounding it have a commitment to pre-k education. The states’ legislation and reports indicate that all recognize its importance to children, parents and for the economic development of their state. But the states have followed different paths and provided different means and levels of support. This section provides a summary of how West Virginia compares with the states it borders. Information was obtained from the Education Commission of the States (ECS 2005)⁸⁷ and was the latest available from them at the time of writing.

Curriculum, Accreditation and Parental Involvement⁸⁸

As mentioned above, the West Virginia Department of Education has included detailed rules in its legislation relating to curriculum and parental involvement. West Virginia requires a high level of parental involvement with guaranteed membership on the cooperating committee. There are standards established for schools and community providers who receive state funding, but there is no requirement for national accreditation. Jones has stated, “. . .the West Virginia Policy 2525 and the Early Learning Standards Framework are aligned with the Head Start Performance standards, the National Pre-k Standards and NAEYC guidelines.”⁸⁹

- Kentucky established guidelines that reflect the National Association for the Education of Young Children practice standards, Head Start Performance Standards, as well as its own state licensing requirements. Further, they require active parental involvement, including home visits, conferences and volunteering.
- Maryland follows Kentucky in adopting the National Association for the Education of Young Children standards. Maryland has a general provision requiring home-school-community partnerships, but local districts have flexibility in designing these.
- Ohio uses the Head Start Performance Standards and requires state licensing. Ohio follows Head Start requirements concerning parental involvement and requires one day per week be set aside for parent involvement programs.
- The state of Pennsylvania provides little direction, leaving curriculum, accreditation and parental involvement in the hands of the local authorities. The state does monitor and review local implementation.
- Virginia requires state licensing, but leaves curriculum at local discretion. One home visit per year is required and local districts must provide actions to encourage parental involvement in their annual plans submitted to the state.

⁸⁶ Ibid 17.5

⁸⁷ Education Commission of the States (ECS), *State Funded Pre Education Programs*, accessed 7/18/2005 at http://www.ecs.org/dbsearches/Search_Info/PreK_ProgramProfile.asp/state=WV,KY,VA,OH,PA,MD

⁸⁸ Education Commission of the States (ECS), *State-funded pre-kindergarten programs: Curriculum, accreditation and parental involvement standards*. Accessed 7/18/2005 at [http://www.ecs.org/dbsearches/Search_Info/ Early Learning Reports](http://www.ecs.org/dbsearches/Search_Info/Early Learning Reports).

⁸⁹ Jones, C.R., E-mail received September 22, 2005.

There is considerable variation nationwide in the standards for curriculum, accreditation and parental involvement. Not all states with pre-k programs require providers to meet either national or state standards. Twelve states either have no specific standards, or leave standard development entirely to local control. Others apply state standards. Ten states rely upon the National Association for the Education of Young Children standards. An additional seven use Head Start standards.

Parental involvement shows even more variation. Twenty states have no requirement, but some of these encourage parental involvement or leave it to local discretion. The remaining states range from requiring home and classroom visits, parent advisory committees, required volunteering, parent counseling/training to relatively vague statements requiring the plans submitted to the state for approval contain some form of parental involvement.

Eligible Agencies⁹⁰

The West Virginia legislation allows county school districts to set up their own programs, but 50 percent of the programs may be contracted to other public or private community providers. Without establishing a percentage, Kentucky, Ohio, and Virginia have similar provisions. Pennsylvania only allows programs conducted by public school districts. Maryland also limits its program to only public school districts. However, its program expands, pressure is developing to allow contracting to other public and private agencies.

Almost all states allow pre-k to be delivered by entities other than public schools. These include Head Start programs, community centers, licensed day care programs, community colleges and private schools. A few exclude “for profit” businesses and others exclude religious organizations. Ten states restrict their programs to public schools.

Staff Qualifications⁹¹

West Virginia now requires pre-k teachers to hold a BA or BS in one of four areas: early childhood education, preschool special education, birth through pre-k education and elementary education with an endorsement in pre-k. An individual in a community program that contracts with the local school system to provide pre-k may have an associates degree if they are on a full-time permit and obtain full certification within five years. Individuals with an associates degree in child development/ pre-k or occupational development must have one year of early education teaching experience. Those individuals who do not hold the qualifying certification/endorsement must have completed at least 25 percent of the work leading to that endorsement.

- Kentucky requires a certified “preschool teacher” or “associate preschool teacher.” Preschool teachers must either be certified teachers with a bachelors degree or hold a bachelors degree in a related field. Associate preschool teachers must hold an associates

⁹⁰ Education Commission of the States (ECS) *State-funded pre-kindergarten programs: Eligible agencies*. Accessed 7/18/2005 at http://www.ecs.org/dbsearches/Search_Info/ Early Learning Reports.

⁹¹ Education Commission of the States (ECS) *State-funded pre-kindergarten programs staff qualification requirements*. Accessed 7/18/2005 at http://www.ecs.org/dbsearches/Search_Info/ Early Learning Reports.

degree with certification in early childhood or child development or a technical school diploma in one of the same fields. Associate preschool teachers must be supervised by a preschool teacher.

- Maryland requires a valid state certificate in the appropriate fields. Assistant teachers only have to be high school/GED graduates.
- Pennsylvania requires all preschool teachers to have bachelor's degrees in elementary education.
- Ohio stipulates a teacher certification in pre-k education or an early childhood specialist license that does not require a four year degree.
- Virginia has a two tier system. Those teaching in public school programs must have a bachelors degree in early childhood education. Those teaching in other settings must have an associates degree in child development as a minimum credential.

While most states require a bachelors degree with appropriate certifications to teach in public school programs, only 18 require it for teaching in other settings. Programs such as Head Start or other community programs usually require at least an associates degree with proper certification. Requirements for assistants or aides are usually minimal, with the individual required to complete a short course related to pre-k development/education.

Other Features

As the following table shows, West Virginia's program is somewhat different from those in surrounding states. The maximum class size is slightly larger as is the teacher/child ratio. West Virginia also includes all students, while the surrounding states limit enrollment to "at risk" students. (At risk includes students from low income families as well as those with disabilities.) While most states use their state aid formula to support these programs, two have specific allocations which are available on a non-competitive basis. Only Virginia is similar to West Virginia in requiring full day programs to be available.

**Table A-1
State Funded Pre-kindergarten Programs:
West Virginia and Surrounding States**

<u>Name</u>	<u>Description</u>	<u>Start Date</u>	<u>Teacher/ Child Ratio</u>	<u>Maximum Class Size</u>	<u>Hours Per Day</u>	<u>Days Per Week</u>	<u>Funding Method</u>
WV Public School Early Childhood Education	Provides state aid to counties to provide pre-kindergarten services for children under age 5. Counties establish their own eligibility criteria. Legislation passed in 2002 mandates that by the 2012-13 school years, school-based pre-kindergarten programs will be available for all 4-year-old children whose parents wish to enroll them.	1983 Revised 2005	1:10	20	No required hrs/day 12hr week minimum	5	Regular education aid
Kentucky Preschool Program	Supports half day classroom-based early care and education for 4-year-olds from low-income families and 3- and 4-year-olds with developmental delays of disabilities regardless of income	1990	1:10	20	2.5	4	Formula basis to school districts
Ohio Public School Preschool	Serves 3- and 4-year-olds from families living near poverty (185% federal poverty level). Program combined with the state's Head Start supplement allows Ohio to provide nearly all of its low-income 3- and 4-year-olds with a quality pre-kindergarten experience.	1986	1:10	20	2.5	5	Noncompetitive allocation (no formulas)
Pennsylvania Education Aid for Kindergarten for 4-Year-Olds	The state allows school districts to set the minimum entry age for kindergarten at age 4. Attendance is not compulsory.	1965			2.5	5	The aid formula is used to determine reimbursement based on enrollment in the previous year

<u>Name</u>	<u>Description</u>	<u>Start Date</u>	<u>Teacher/Child Ratio</u>	<u>Maximum Class Size</u>	<u>Hours Per Day</u>	<u>Days Per Week</u>	<u>Funding Method</u>
Maryland Extended Elementary Education Program	A state-funded pre-kindergarten program for 4-year-old children who are potentially at risk of failing in school. Quality pre-kindergarten services available to every at-risk child in the state by 2007-08.	1979	1:10	20	2.5	5	Formula basis
Virginia Preschool Initiative	Offers full-day (6 hours) early care and education, parent involvement, child health and social services, and transportation to families with 4-year-olds at risk of school failure. Each program determines eligibility.	1995	1:08	16	School day	5	According to a noncompetitive allocation is available to localities with documented unserved 4-year-olds.

Appendix B

Early Child Education: A Literature Review

Numerous studies have been done on early child education and its effects on cognitive development, socialization, future academic success, and non-academic benefits. However, early childhood education not only affects each individual child and his or her family, it also has a tremendous impact on regional economic development and economic development of the country. More specifically, the child care industry generates jobs, contributes to the economy through the purchase of goods and services, and supports working families at all income levels.

This review of the literature discusses and compares the findings and methodologies of the most significant studies and research efforts focusing on ECD. Such an approach is necessary in the process of developing and improving methodology and modeling approaches. In general, the literature focuses on the following research:

- Studies that demonstrate the impact of early education on the future student success
- Studies that examine early child education as an investment and focus on financing issues
- A series of studies conducted by the National Institute of Child Health and Human Development
- Other research

Impact of Early Child Education on the Future Student Success

High/Scope Perry Preschool Study⁹²

This is one of the most significant studies and it examines the lives of 123 African Americans born in poverty and at high risk of failing in school. From 1962–1967, at ages 3 and 4, high-risk children born in poverty were selected and randomly divided into a program group and a comparison group. The program group received a high-quality preschool program which was based on High/Scope's participatory learning approach.⁹³ A comparison group did not receive any preschool program.

Teachers in the early education program had bachelor's degrees and certification in education. Each teacher was assigned to no more than eight students. Class meetings were held five days a week and lasted for two and a half hours. During these meetings, children were involved in various learning activities including individual assignments, working in small groups, and in whole-class groups. In addition, teachers visited their students at home every two weeks.

⁹² Schweinhart, L. J. (2003). *op. cite*.

⁹³ Participatory learning model supports children's self-initiated learning activities along with small-group and large-group activities. Teachers engage children in various key experiences in child development, focusing on the areas of personal initiative, social relations, creative representation, movement and music, logic and mathematics, and language and literacy (Schweinhart, 2003,9).

In the study's most recent phase, 97 percent of the participants were interviewed at age 40. Additional data were gathered from the subjects' school, social services, and arrest records. The study found adults at age 40 who participated in the preschool program had:

- 1) Obtained higher earnings
- 2) Shown better ability to hold their jobs
- 3) More often graduated from high school
- 4) Committed fewer crimes than adults who did not have preschool

Carolina Abecedarian Study⁹⁴

The Carolina Abecedarian Study (North Carolina) began in 1972. It involved 112 mostly African-American children born between 1972 and 1977. Similar to the Perry Preschool Study, these children had a high risk of low intellectual and social development. The study followed a similar method. The infants and children were placed into two groups: one group was involved in a quality⁹⁵ preschool program, and the other group (no program group) served as a comparison group.

The most recent results were obtained when children reached the age of 21. The results indicate that the children who participated in a high quality early education program demonstrated higher IQ test scores and higher achievement levels. Also, they were less likely to repeat grades or to be placed in special education classes. Finally, children involved in an early education program were more likely to graduate from high school and to attend a four-year college.

Chicago Longitudinal Study⁹⁶

The Chicago Longitudinal Study (1999) examines the educational outcomes and social development of low-income at-risk children.⁹⁷ Specifically, the sample included 1,539 minority (mostly African American) inner-city children who were enrolled in government-sponsored kindergarten programs in the Chicago public schools in the 1985-1986 school year.

The data collection process began during children's preschool years and continued during their school-age years on an annual basis. Most participants completed their high school in the spring of 1998 or 1999; in 2000, most of the participants were 20 years old.

The study team utilized teacher surveys, child surveys and interviews, parent surveys and interviews, school administrative records, standardized tests, and classroom observations in their analysis. Among other factors, the study included information concerning early child intervention and education, classroom adjustment, parent involvement, grade retention, special education placement, and school mobility.

⁹⁴ Campbell, F. A. et al. (2002). *op. cite*.

⁹⁵ In the majority of the studies, the indicators of quality include: 1) high level of teacher education and training of the staff, 2) low child-teacher ratios and small class size, 3) child-directed, developmentally appropriate practices, 4) standards, monitoring, 5) adequate compensation for teachers.

⁹⁶ Reynolds, A. J. (1999). *op. cite*.

⁹⁷ Children are considered "at risk" because they face social and environmental disadvantages such as poverty, family low-income levels, and other economic and educational hardships (Reynolds, 1999).

The achievement and levels of cognitive and social developments of children participating in the Child-Parent Center Program (CPC)⁹⁸ were compared to those of children who did not participate in the program. The study produced important short-term and long-term results. The short-term effects demonstrated that children who completed the CPC preschool program had significantly higher performance results than those in the comparison group. Specifically, children enrolled in preschool:

- Had significantly higher cognitive school readiness
- Had lower rates of special education placement through age 13
- Were less often retained in the same grade
- Demonstrated higher math and reading achievement levels by the end of grades 4-6

The long-term effects examined whether the CPC program had an impact on academic achievement and development at ages 14 to 20. One of the findings demonstrated that “youth who participated in the preschool program had approximately a 4-month gain in performance in both reading and math achievement at age 15.”⁹⁹ By grade 9, CPC participants demonstrated a much lower rate of grade retention during the elementary grades than the comparison group. Sixteen percent of CPC program participants at the age of 15 were placed in special education programs compared to the 21.3 percent of the comparison group. Importantly, these differences increased over time which reinforces the importance of the results. The number of years a child spent in the program was also significant. Five or six years of participation resulted in the best performance, and the six-year group was above the Chicago public school average in reading achievement. Finally, program participants showed a 37 percent lower rate of juvenile arrest by age 18 than the comparison group.

This study is on-going and data obtained from this research was utilized in a number of reports. The most recent article (at this time it is still in press), focuses on the economic returns of investments in preschool education.

Haskins¹⁰⁰

Haskins (1989) examines impacts of quality early education programs on disadvantaged children’s intellectual and social skills. In addition, the study compares the effects produced by Head Start programs on children’s development with those produced by other quality programs.

Haskins provides a review of eleven longitudinal studies on early education that began between 1962 and 1972. He concludes that quality preschool programs can have a significant positive effect on children’s intellectual development. He particularly emphasizes the importance of short-term effects of such programs and cautions that long-term effects on IQ and achievement measures scores are less convincing. In addition, the author argues that claims of

⁹⁸ CPC Program is a center-based early intervention that provides comprehensive educational and family-support services to low-income children and their parents from preschool to early elementary school. (Chicago Longitudinal Study, 2000).

⁹⁹ Reynolds, (1999) op. cit. 6.

¹⁰⁰ Haskins, R. (1989) op. cite

quality preschool programs having long-term effects on delinquency, crime, teen pregnancy, welfare use, and employment are usually supported by inconsistent results.

The second part of the study compares the impact of the Head Start program with other similar programs on future academic success and cognitive and socio-emotional development of children. Haskins finds that both Head Start and other model programs demonstrate a significant positive impact on children's intellectual and socio-emotional development after a year of intervention. However, for both types of programs, gains on IQ measurement tests and on socio-emotional tests tended to decline within a few years. In addition, model programs had significant positive effects on teen pregnancy, delinquency, welfare participation and employment, while Head Start had no such effects. Finally, model programs proved to have considerable positive impacts on special education placement and grade retention, while Head Start programs demonstrated only modest effects on these variables.¹⁰¹

Barnett and Hustedt¹⁰²

The authors analyze the existing research on various issues related to Head Start and comparable early education programs for at-risk children. The authors review major studies and provide recommendations for future research.

In their analysis, Barnett and Hustedt divide the existing literature into studies focusing on the long-term effects of Head Start and those focusing on short-term effects. They conclude that, although long-term effects have not been fully studied and the methodologies need improvement, most reports demonstrate significant long-term benefits in educational achievement, employment, and social behavior. However, the authors also demonstrate that there is not enough information about the magnitude of these benefits as well as the effectiveness of the components of the program.

Specifically, the analysis demonstrates that initial gains in IQ tests decrease over time: However, gains on subject-matter-specific tests are likely to be maintained. In addition, the authors point out that the evidence that Head Start improves children's social behavior is limited.

The authors conclude that the majority of studies evaluating the short-term effects of Head Start demonstrate that such programs result in increases of 0.5 standard deviations in IQ and educational achievement. Measures of social behavior, self-esteem, and academic motivations are comparatively small in the majority of the reviewed studies.

Ou and Reynolds¹⁰³

The study focuses on the relationship between preschool education and school completion. Preschool programs are defined as "the provision of educational and social services

¹⁰¹ For a different and positive evaluation of Head Start; Currie (Spring, 2001) op. cite.

¹⁰² Barnett, W.S. and Hustedt, J.T. (2005) op. cite..

¹⁰³ Ou, Suh-Ruu and Reynolds, A. (2004). *Preschool education and school completion*. Centre of Excellence for Early Childhood Development. Retrieved March 8, 2005 from: <http://www.excellence-earlychildhood.ca/theme.asp?ID=19&com=1&lang=EN>.

to children at ages three or four.”¹⁰⁴ The study did not include kindergarten programs or those programs provided for children from birth to age three. The majority of children participating in the study were “at-risk children” coming from low-income families or having developmental disabilities. The study results suggest that preschool programs for “at-risk” children can positively effect school completion. The authors also recommend promoting high-quality preschool programs.

Benefits of Investing in the Early Child Education and Financing Issues

Rolnick and Grunewald¹⁰⁵

The study provides a thorough analysis of several most recent studies and argues that ECD yields high public and private returns. Using the Perry Preschool Program study, the authors estimate the real internal rate of return¹⁰⁶ for the Perry Preschool program at 12 percent. About 80 percent of the benefits went to the general public (students were less disruptive in class and went on to commit fewer crimes), bringing over a 12 percent internal rate of return for society in general. In the most recent review, they revise their results and re-estimate a slightly higher 13 percent return. Rolnick and Grunewald conclude that the results will hold even when the payments and revenues are adjusted to a more conservative distribution. Rolnick and Grunewald also developed a proposal for the Minnesota Foundation for Early Child Development and estimate that a \$1.5 billion investment is needed to create this foundation.

Barnett¹⁰⁷

Barnett uses 36 early child care and education (ECCE) studies to examine the long-term effects of such programs on children’s development. The ECCE studies include large-scale early child education programs and various model programs.¹⁰⁸ The majority of participating children are African American. The children’s families have a low income level, and their mothers’ average education level is under 12 years. The author finds that 7 of the 15 model program studies form comparison groups by random assignment; none of the 21 large-scale public program studies utilize random assignment.

The author demonstrates that the national cost of not providing at least two years of early education could be as high as \$400 billion. The results of this study also indicate that early child programs can produce large short-term benefits for children on IQ tests and considerable long-term effects on school achievement, grade retention, placement in special education, and social adjustment.

¹⁰⁴ Ou, and Reynolds (2004) op. cite. 1

¹⁰⁵ Rolnick, A. and Grunewald, R. (2003). op. cite.

¹⁰⁶ Rate of return after adjusting for inflation.

¹⁰⁷ Barnett, S.W. (1995). Long-term effects of early child programs on cognitive and school outcomes. *The Future of Children*, 5(3), 25-46.

¹⁰⁸ Model programs include: Carolina Abecedarian Project, Milwaukee Project, Houston Parent Child Development Center, Florida Parent Education Project, and other similar programs. (Barnett, 1995).

Heckman¹⁰⁹

Nobel prize winning economist, James Heckman, and Dimitriy Masterov (2004) argue that in terms of productivity, investing in children from disadvantaged families makes perfect business sense. They assert that instead of relying on immigration or outsourcing, the United States should solve the problem of the supply of skilled workers in the United States economy. According to this study, early child education is essential in building a high-quality workforce.

Heckman and Masterov provide an extensive review of the literature on various issues of early child care. Based on the results from other studies, the authors find a strong negative relationship between education and participation in crime activities. In addition, they argue that ability gaps between disadvantaged and other children open early in life and early child care education plays a significant role in reducing that gap. The authors also emphasize the role of quality of early education in achieving a more productive society. They address the importance of early child care and education developing cognitive, as well as noncognitive, skills.¹¹⁰ The study finds that early child education programs reduce crime, increase college attendance, promote high school graduation, reduce grade repetition and special education costs, assist in preventing teenage birth, and raise achievement measured by test scores and IQ tests.

The final part of the study focuses on cost-benefit analyses of various early intervention programs. Heckman and Masterov argue that most programs prove to be cost-effective. Specifically, these programs' estimated rate of return to society is 12 percent and the rate of return to the participants is 4 percent.

Heckman and Masterov conclude by reinforcing the argument for investing in early education of disadvantaged children:

“At current levels of public support, America under invests in the early years of its disadvantaged children. Redirecting funds toward the early years, before schools currently operate, is a sound investment in the productivity and safety of American society.”¹¹¹

Karoly¹¹²

The book focuses on “programs targeted to overcome the cognitive, emotional, and resource limitations that may characterize the environments of disadvantaged children during the first several years of life.”¹¹³ First, the authors list various types of existing early intervention programs and discuss their benefits and costs. In this analysis, they address both long-term and short-term benefits, and conclude that such programs can produce significant benefits for children and their families. The authors categorize these benefits into four domains: cognitive development, education, economic self-sufficiency, and health.¹¹⁴

¹⁰⁹ Heckman, J. and Masterov, D. (2004). op. cite.

¹¹⁰ Cognitive skills include math and language skills; non-cognitive skills include dependability, self-discipline, motivation, persistence, etc.

¹¹¹ Heckman, J and Masterov, D. (2004) op. cite. 35.

¹¹² Karoly, L. A. et.al. (1998). op. cite.

¹¹³ Ibid.

¹¹⁴ Ibid. 9.

Next, the research team selects two programs to provide detailed-review and cost-savings analysis. The authors find that in the case of both programs government savings are larger than program costs. However, the authors point out that “the savings do not always accumulate rapidly, so the payoff may be years after the intervention has ended.”¹¹⁵ It should be mentioned that such conclusions are drawn from a very small number of methodologically reliable studies. Therefore, further research is required to ensure reliability of results and to answer some remaining questions.

The final part of this report addresses issues relevant to investment decisions.¹¹⁶ The research team presents findings and provides policy recommendations. Also, the authors emphasize the importance of careful and sophisticated research prior to any early intervention program implementation, so that the greatest payoff is received.

Brandon¹¹⁷

Brandon argues that instead of focusing on providing limited programs for only low-income children, the ultimate policy should be to provide high quality early child care and education (ECE) for all children up to age five. The author also proposes a financing strategy which combines a subsidy to providers that is not related to the income of children’s families with an income-related voucher for parents. Brandon points out that, according to the financing model, the national investment is estimated at 6 to 13 percent of current public elementary and secondary education spending.

The author supports his analysis with results obtained from Human Services Policy Center data that was gathered in four states that participated in the Universal Financing of Early Care and Education for America’s Children project.¹¹⁸ This study’s particular focus is on four-year old children. Brandon develops a micro-simulation model that combines the policies that influence the hourly cost of high quality ECE with the policies that can help parents afford hourly cost of child care services.

The results demonstrate that it will cost approximately \$11 billion to \$18 billion a year to provide child care access to all four year olds. Although these estimates are much higher than current child care subsidies, “they would be equivalent to a modest 2 to 4 percent in public elementary and secondary education spending.”¹¹⁹ Moreover, the author estimates the cost range of providing ECE access to all children age birth through five at \$31 to \$52 billion. Brandon also points out that these numbers can be reduced by \$ 8 to \$12 billion of current early child care and education spending if the appropriate policies concerning the use of existing funds are implemented.

¹¹⁵ Ibid. 9

¹¹⁶ These issues include: the optimal design of programs in terms of the services they provide and the developmental stage at which intervention occurs; the ways in which programs can best be targeted to those children and families who will benefit most; recognition of the full range of benefits yielded, including those outside of the original program objectives; and the implications of the changing social safety net (Karoly et al, 1998, p.105).

¹¹⁷ Brandon, R.N. (2004). Head Start’s lasting benefits. *Infants and Young Children*, 18(1), 16-24.

¹¹⁸ Ibid.

¹¹⁹ Ibid. 33.

The author concludes that sharing the financial costs among federal, state and local jurisdictions is the most effective policy for providing ECE to the largest number of children. Brandon also warns that various types of potential costs that need to be taken into consideration. These costs result from the large degree of uncertainty about quality requirements, especially teachers' educational level and the level of compensation that would allow recruiting and retaining teachers with appropriate qualifications.¹²⁰

Committee for Economic Development¹²¹

The report argues that education should be viewed as an investment, not an expense, and provides valuable recommendations for both policy makers and educators. The report's main focus was to propose policy recommendations that, with the support of the federal and state governments, would help to provide high-quality pre-k education programs to all children age 3 and over. The authors estimate minimum annual cost for a high quality, part-day, and school-year universal pre-k program at \$4,000 to \$5,000 per child.

Calman and Tarr-Whelan¹²²

Based on the existing research, this report discusses the economic benefits of quality early child education as well as the issues involved in financing public investment in ECD that yields high public returns. The study argues that "every dollar invested in universally available quality care and education saves taxpayers as much as \$13 in public education, criminal justice, and welfare costs over the next few decades as well as increased tax collections in the long term."¹²³ In addition, the report includes important recommendations and a draft bill for state action.

National Governor's Association¹²⁴

The report suggests methods and actions that governors and states can take "to support families, schools, and communities in their efforts to ensure children start school ready to reach their full potential."¹²⁵ Mostly, the study is based on findings from existing studies. The report includes a brief literature review and sets of recommendations for the states, schools, communities, and families.

¹²⁰ Ibid.

¹²¹ Committee for Economic Development (2002). op. cite.

¹²² Calman, L.J, and Tarr-Whelan, L. (2005) *Early child education for all: A wise investment*. Recommendations arising from a conference "The economic impacts of child care and early education: Financing solutions for the future", sponsored by Legal Momentum's Family Initiative and the MIT Workplace Center. Retrieved May 5, 2005 from: <http://web.mit.edu/workplacecenter/docs/Full%20Report.pdf>.

¹²³ Calman, Tarr-Whelan, (2005) op. cite. 42.

¹²⁴ National Governors Association Task Force on School Readiness (2005). *Building the foundation for bright futures*. Retrieved May 20, 2005 from: <http://www.nga.org/cda/files/0501TaskForceReadiness.pdf>.

¹²⁵ Ibid. 1

NICHD Studies

A series of studies were conducted by the National Institute of Child Health and Human Development, Early Child Care Research Network (NICHD) via scientific collaboration between various educational institutions and NICHD staff. These studies address various issues of early child care and education including quality of child care and its impact on a child's performance.

Background

The NICHD study of early child care and education is significant because it is one of the few comprehensive longitudinal studies based on a diverse sample of children and their families. The families were selected from ten locations across the United States.¹²⁶ Moreover, one of the study's major strengths is that nearly every child outcome was estimated at different ages, in multiple contexts, and using a variety of data collection strategies.

- The study team evaluated the development of children in four major categories:
- Cognitive (play complexity, sustained attention, Bayley mental development index,¹²⁷ and school readiness)
 - Language (vocabulary, verbal comprehension, sentence complexity, and expressive language)
 - Socioemotional (temperament, attachment security, self-regulation, peer competence, and behavior problems)
 - Physical (growth, general health, injuries, and sleep problems)
- To enhance the reliability of the results, data was collected in a variety of settings

This included the laboratory, the homes of the children, and child-care settings. The families participating in the study varied in their income level and demographic characteristics. Specifically, 13 percent of the families in Phase I were at poverty level, 18 percent were near poverty level, and 69 percent were classified as "non-poor." Mothers of the children had various levels of education ranging from "no high school degree" (10 percent of the participants) to "post-graduate education" (15 percent). The majority of mothers (33 percent) had some college education.

The study consists of three phases. During Phase I, which was conducted from 1991-1994, children's behavior and development were observed from birth to age 3. Phase II was conducted during 1995-2000, and followed 1,226 children from age 3 through their third year in school. Phase III of the study is still in process¹²⁸ and focuses on over 1,100 children through their sixth year of school.

¹²⁶ Data collection sites included: University of Washington (Washington), University of California, Irvine (California), University of Kansas (Kansas), University of Wisconsin (Wisconsin), University of Arkansas at Little Rock (Arkansas), Western Carolina Center, (North Carolina) University of Pittsburgh (Pennsylvania), University of Virginia (Virginia), Temple University (Pennsylvania), and Wellesley College (Massachusetts).

¹²⁷ The Bayley Scales of Infant Development, are commonly used to assess outcomes of extremely low birth weight (ELBW) infants (Hack et al., 2005).

¹²⁸ Data collection for Phase III should be completed in 2005.

The results demonstrate the patterns of child care usage.¹²⁹ Specifically, 51 percent of children were enrolled in 10 or more hours of child care per week at the age of 0-3 months, 18 percent were enrolled at the age of 4 to 8 months, 5 percent were enrolled at the age of 9 to 12 months, 9 percent were enrolled at the age of 13 to 24 months, 3 percent were enrolled at the age of 25 to 36 months, and 14 percent were enrolled after 35 months. At the age of 54 months, 66 percent of the families used center-based child care. In 14 percent of the families, the mother was a primary care giver, 12 percent of the families used relatives as a type of child care, and 8 percent used child care homes.

The findings suggest that the observed care giving from ages 6 to 36 months was most positive when:

- Group sizes were smaller
- Child-adult ratios were smaller (this factor tended to decrease in importance at 36 months)
- Caregivers had more child-centered beliefs about childrearing at all ages, and more education and experience from 15-36 months
- Physical environments were safe, clean and stimulating
- Care was provided in an in-home arrangement rather than a child-care center (this factor tended to decrease in importance at the age of 36 months)

The study results suggest that not only quantity of child care, but also its quality, is essential to enhance the children's development. The quality of care was measured using:

- Behavioral scales¹³⁰
- Qualitative ratings¹³¹

The study team used specifically trained observers who conducted four 44-minute observation cycles. Observations took place over 2 days within a 2 –week period of time.

The study is on-going and data analysis of Phase IV, when children are in 8th and 10th grades, will be available soon. The NICHD study is unique because it examines both quantity and quality factors of early child care and education. Although the study does not directly place early child education into an economic framework, it provides valuable findings that reinforce the significance of early child education and its tremendous positive impact on young children who represent the most important economic asset.

Early Child Care and Children's Development Prior to School Entry: Results from the NICHD Study of Early Child Care¹³²

The report focuses on the effects of early child care on children's performance at the age of 4 ½ years. Specifically, the authors search for answers to the following questions: are early

¹²⁹ Child care includes ten or more hours of care per week.

¹³⁰ Frequency counts of specific care giving acts with the child.

¹³¹ Rating of the quality of the caregiver's behavior in relation to the child.

¹³² National Institute of Child Health and Human Development (2002). Early child care and children's development prior to school entry: Results from the NICHD study of early child care. *American Educational Research Journal*, 39(1), 133-164.

child-care experiences positively or negatively related to child functioning¹³³ prior to school entry; and are statistical effects large enough to be practically meaningful?

This is a prospective longitudinal study of more than 1,000 children. The authors attempt to determine in what direction (positively or negatively) early child care experiences affect child functioning before school entry and whether these effects are sufficiently significant to have practical implications. The research team addresses the quantity of child care provided from birth, the quality of care, and the type of care (such as center-based or home-based).

The research team studied families from ten different locations in the United States. Among other things, eligibility requirements included age, health, ability to speak English, and reasonable proximity to the research site. The final sample included 1,364 families, 24 percent of which had children of color, 11 percent included mothers who did not complete high school, and 14 percent included single mothers. The average income of the families was 3.6 times the poverty threshold.

The research team followed children and observed their development from birth to 4.5 years of age. Various interviews and observations were conducted when children were 6, 15, 24, 36, and 54 months old. In addition, during regular telephone interviews mothers reported types and hours of non-maternal care provided to a child. Observations were utilized to determine the level of child-care quality. The assessments were conducted for non-maternal care provided for 10 or more hours per week at 6, 15, 24, 36, and 54 months.¹³⁴

Controls for selection effects included measures of maternal, child, and family characteristics. Specifically, demographic variables included the mother's education, race and ethnicity; sex; partner status; and family income. Data regarding maternal depressive symptoms and mother-child interactions were also collected and analyzed by the study team. Additional child and family variables such as maternal rating of child temperament and separation anxiety were also addressed.

Numerous measures of child functioning were collected when children reached 4.5 years of age. Data was collected via laboratory visits, home visits, and child-care visits. Variables studied by the research team included pre-academic skills, short-term memory, language competence, social competence and behavior problems.

Multivariate linear regression models¹³⁵ were utilized in the study. The analyses "tested if child functioning at 4.5 years varied as a function of child-care quantity, quality, and type."¹³⁶ The results demonstrate that early child care provides both developmental benefits and developmental risks for the children before they enter school. The study team finds that higher-quality child care is associated with better future child performance on measures of cognitive and

¹³³ Child functioning includes language, cognitive, and non-cognitive skills (persistence, dependability, self-discipline).

¹³⁴ NICHD (2002). op. cite.

¹³⁵ Multivariate linear regression is the prediction of two or more dependent variables using one independent variable.

¹³⁶ NICHD (2002) op. cite. 148.

linguistic functioning, regardless of hours and type of care. However, larger amounts of child care across the first 4.5 years of life were associated with increased levels of problem behavior, even after child care quality was controlled. The authors conclude that focusing on only one aspect of child care “fails to fully represent child-care effects on young children.”¹³⁷

Type of Child Care and Children’s Development at 54 Months¹³⁸

This is a more recent follow-up study by the NICHD that examines the same sample of more than 1,000 children described above. This report provides thorough research on an extensive range of care types and attempts to determine which demographic and family characteristics affect the selection of a specific type of care (care by relatives, child care homes, and child care centers). In addition, the report provides analysis of both patterns of care use and total accumulated hours in each type of care used. Finally, controlling for family selection factors and quality of child care, the study team examines cognitive and social outcomes for children who received care in various care types.

The study examined 1,364 families with healthy newborns. The analyses of selection of child care types included 1,287 families. By the end of the data collection process (when children reached 54 months), 1,079 children were still enrolled in the study.¹³⁹ Measures utilized in the study include the following:

- Family selection covariates (family demographics and family process variables)
- Characteristics of child care
- Patterns of child care use
- Time spent in care
- Quality of child care
- Cognitive and language outcomes
- Social-emotional outcomes
- Child covariates.

The study provides numerous important results and conclusions. For example, the study finds that mothers with more education were more likely to use center-based care and less likely to use relative care than less-educated mothers. Also, mothers with higher income levels tended to use center care rather than other types of care. When analyzing the developmental outcomes of children in different types of care, the study team included six demographic and four family process covariates and found that only hours spent in center care were related to developmental outcomes. The results also demonstrated, “More center care hours in infancy was associated with lower preacademic skills at 54 months, whereas more center care in the toddler period was associated with better language skills at 54 months.”¹⁴⁰

¹³⁷ Ibid. 157.

¹³⁸ National Institute of Child Health and Human Development (2004). Type of child care and children’s development at 54 months. *Early Childhood Research Quarterly*, 19, 201-371.

¹³⁹ NICHD (2004) op. cite.

¹⁴⁰ (NICHD (2004) op. cite. 225.

Before Head Start: Income and Ethnicity, Family Characteristics, Child Care Experiences, and Child Development¹⁴¹

In another study conducted by NICHD, the authors evaluate the developmental characteristics of children from various ethnic backgrounds, whose families fit into one of three different income levels: poverty, near-poverty, and above-poverty. Child care experiences were examined for children up to three years of age. Because most family measures were collected at different times, the study team utilized longitudinal data in the analysis. Also, child variables were represented in a cross-sectional format at age three.

Data utilized in this study was obtained from the earlier NICHD longitudinal study of early child care. The final samples included 1,156 participants (children and families). These families were divided into three groups based on the income-to-needs ratio. This ratio was calculated by dividing the total family income (excluding income transfers) by the federal poverty threshold (determined by family size and number of children under 18). Next, the study team analyzed family context measures such as family demographics and maternal characteristics (maternal depression, benefits of work, maternal sensitivity, the HOME inventory,¹⁴² and maternal health).

Child care measures such as number of hours per week a child spent in non-maternal care, type of care, and the ratio of children to adults were also estimated. Child development measures included preschool readiness, cooperation and social competence, and incidence of problem behavior. Finally, children's growth and health were also measured at 36 months of age.

The research team utilized multivariate analyses of variance in this study. Most results are consistent with the previous research in this area. Specifically, "poverty and near-poverty families were more likely to have mothers with lower education, less sensitivity, more depression, and lower HOME scores."¹⁴³ Children with lower levels of cognitive development were more likely to be from families with lower income levels. Not surprisingly, children with higher levels of cognitive development were more likely to come from higher-income families. Similar results were found for a child's social behavior.

One of the unique findings was the significant variability for all types of measures. This finding has an important implication for curriculum design in Head Start programs. The study also emphasizes the significance of child care availabilities for borderline families who try very hard to avoid poverty level. Higher quality child care for at least 20 hours a week was strongly associated with improved developmental outcomes in the children when only poor and near-poor children were included in the analysis. However, when the full sample was analyzed, the

¹⁴¹ National Institute of Child Health and Human Development (2001). Before Head Start: Income and ethnicity, family characteristics, child care experiences, and child development. *Early Education and Development*, 12(4), 545-576.

¹⁴² The HOME inventory measures the level of support for development available in the home at 6, 15, and 36 months. It is based on observations and interviews to summarize behaviors that describe the stimulation and responsiveness of the mothers, their involvement with their children, availability of play and learning materials, organization and variety of physical environment, and acceptance of the child's behavior (Ibid. 551).

¹⁴³ NICHD (2001), 545.

number of hours of care and age of enrollment were not statistically significant for predicting a child's developmental outcomes.

Child Outcomes When Child Care Center Classes Meet Recommended Standards for Quality¹⁴⁴

In this report, the research team makes the following hypothesis:

“Children enrolled in child care classes that meet more professionally recommended standards would perform better on measures of cognition, language, and social competence than children enrolled in classes that met fewer of these standards.”¹⁴⁵

To test this prediction, beginning in 1991 the authors conducted a longitudinal study. For this study, a demographically varied group of 1,364 children from nine states were observed and studied at different ages. The children were observed at their homes as well as in child care centers. The study team utilized data provided by the NICHD Study of Early Child Care. In their analyses, the researchers assessed the following measures: child care variables (child-staff ratios, group sizes, caregiver education, caregiver training), family variables (ratio of income to needs, maternal education, concurrent single-parent status, child gender, and maternal sensitivity¹⁴⁶), and child outcome variables (child development at 24 and 36 months of age).

The study team utilized descriptive statistics and multivariate analyses of covariance to establish the relationship (or the absence of such) between meeting the recommended standards by the child care center and child development outcomes (school readiness, mental development, language comprehension, etc.).

Most cases observed did not meet all five recommended standards:

- Staff ratios
- Group sizes
- Caregiver training
- Caregiver education
- Child development.

The results indicated linear associations between the number of standards met and child outcomes that were more relevant at 36 months rather than at 24 months of age. Also, the results did not provide evidence of threshold effects. Children enrolled in classes that met more standards had more favorable development outcomes. Specifically, they had better school readiness scores, better language comprehension scores, and fewer behavioral problems at 36 months of age. Finally, child outcomes were predicted by child-staff ratio at 24 months and caregiver training and education at 36 months of age.

¹⁴⁴ National Institute of Child Health and Human Development (1999). Child outcomes when child care center classes meet recommended standards for quality. *American Journal of Public Health*, 89(7), 1072-1077.

¹⁴⁵ Ibid, 1072.

¹⁴⁶ Maternal sensitivity was measured using mother-child interaction ratings made during semistructured play (Ibid, 1074).

Relations Between Predictors and Child Outcomes: Are They Weaker for Children in Child Care?¹⁴⁷

In 1998, the NICHD prepared a paper focusing on the relations between family predictors and child outcomes. Specifically, the study team used data obtained from the NICHD Study of Early Child Care “to determine whether a representative set of family factors differentially predicted child socio-emotional and cognitive functioning at 2 and 3 years of age based on child-care experience.”¹⁴⁸

The sample included more than 1,000 children and their families. Beginning when the child was one month old, the research team collected information on demographic characteristics and information about child care usage via questionnaires and telephone interviews with the mothers. Children were divided into two groups. The first group was comprised of children who received 30 hours or more per week of care by someone other than their mother every month beginning at the age of 4 months (the full-time-care group). The second group included children who did not receive more than 10 hours per week of care by someone other than their mother during the same time and period in their lives (the maternal group). The hypothesis states that “family factors would predict child functioning more strongly in the mother-care group than in the full-time, nonparental-care group.”¹⁴⁹

Variables used in the study were divided into three categories: demographic variables (income-to-needs ratio¹⁵⁰ and 1-month marital status), maternal personality and attitudinal variables (mother’s personality, maternal depression, maternal beliefs about the benefits of maternal employment, and non-authoritarian child-rearing attitudes and values), and mothering and relationship variables (maternal sensitivity in play, mother attachment security, etc.). Among other things, the child outcomes included expressive and receptive vocabulary, social competence and behavior problems.

The study team correlated each of the family predictors with each of the child outcomes for the two child-care groups. The multivariate analysis did not confirm the existence of differential relations between family factors and child functioning across child-care groups on the basis of correlations. However, the researcher also utilized an exploratory approach “to determine whether there were significant differences between pairs of correlations and whether there were patterns associated with identified differences.”¹⁵¹

As a result, in the case of social competence at 24 and 36 months and school readiness and problem behavior at 36 months, they found that the relations between marital status and child functioning were larger in the maternal-care group. The relationship was statistically significant in the maternal-care group and not statistically significant in the full-time-care group. Also, the exploratory approach determined that a favorable view of the benefits of maternal

¹⁴⁷ National Institute of Child Health and Human Development (1998). Relations between predictors and child outcomes: Are they weaker for children in child care? *Developmental Psychology*, 34(5), 110-1128.

¹⁴⁸ Ibid, 1120.

¹⁴⁹ Ibid, 1121.

¹⁵⁰ Income-to-needs ratio= Family income/Appropriate poverty threshold for each family size (Ibid, 1122).

¹⁵¹ Ibid, 1123.

employment for child functioning positively predicted child development for children in the full-time-care group, and it negatively predicted child functioning for the full-time maternal care group. The authors conclude that, on average, effects of family factors and processes on child functioning are not influenced by early child care.

Child-Care Structure – Process-Outcome: Direct and Indirect Effects of Child-Care Quality on Young Children’s Development¹⁵²

The study seeks to utilize structural equation modeling to test paths from structural indicators of child-care quality,¹⁵³ such as caregiver training and child-staff ratio, through a process indicator to child outcomes. Similar to the previous studies, this analysis utilizes data from the NICHD Study of Early Child Care. The participants were studied from birth until they reached the age of 54 months. The information was obtained via interviews with the mothers, parents’ ratings, caregivers’ ratings, and laboratory assessments. The initial sample included 1,364 families. By the time children reached 54 months, 1,083 families still participated in this investigation. After several corrections and eliminations due to data unavailability or incompleteness, the sample sizes in the structural equation models varied from 656 to 789.

The model included the following measures: process measures of child care quality (such as caregivers’ relationship with the children and classroom setting), structural measures of child care (care-givers’ training and child-staff ratio), family background (mothers’ education in years and an income-to-needs ratio), maternal care giving (a composite measure of maternal sensitivity, quality of the physical and social resources available to the child in the family context, and nonauthoritarian child-rearing attitudes and values), cognitive competence, and caregivers’ and mothers’ ratings of social competence.

Six structural equation models were utilized in the analysis. The results demonstrated that maternal care giving was a strong predictor of cognitive competence and a moderate predictor of social competence. The effect size of non-maternal care giving was 22 percent of the maternal-care-giving effect for cognitive competence and 75 percent of the maternal-care-giving effect for caregivers’ social competence ratings. The quality of non-maternal care giving was negatively associated with the number of problems that caregivers reported for children. Finally, the study team determined the path from structure to process to outcome. However, the authors caution, that causality cannot be implied from this path due to the fact that input included only correlational data.

¹⁵² National Institute of Child Health and Human Development (2002). Child-care structure – process-outcome: Direct and indirect effects of child-care quality on young children’s development. *Psychological Science*, 13(3), 199-203.

¹⁵³ In the majority of the studies, the indicators of quality include: 1) high level of teacher education and training of the staff, 2) low-child-teacher ratios and small class size, 3) child-directed, developmentally appropriate practices, 4) standards, monitoring, 5) adequate compensation for teachers.

Characteristics and Quality of Child Care for Toddlers and Preschoolers¹⁵⁴

In 2000, NICHD published a study focusing on specific characteristics and quality of child care for toddlers and preschoolers. This report utilizes methodology similar to the earlier NICHD studies and uses data gathered from the NICHD Study of Early Child Care. Specifically, the study team attempts to answer the following questions:

- What structural features and caregiver characteristics predict more positive caregiver behavior in child care for 1- to 3-year-old children?
- What differences in care giving are associated with the type of child care and the child's age?
- What is the overall quality of child care for 1- to 3-year olds in the United States?¹⁵⁵

The study group examined how the quality of child care was related to child-adult ratios, group sizes, caregiver backgrounds, and the physical environment. One thousand two hundred and sixteen families continued the study through 36 months. More than 600 children were observed in their primary child-care arrangements such as home-based setting and center-based setting at 15, 24, and 36 months of age. Also, surveys, ratings, and telephone interviews with the mothers were utilized in the study. Child care quality was measured by applying NICHD observational parameters classified by maternal education, child age, and child care type to the distribution of American families (based on the National Household Education Survey). The highest participation rates accounted for in-home caregivers and centers; the rates were slightly lower for fathers and grandparents and lowest for child-care homes.

Variables included child-adult ratio, group size, caregiver education, caregiver benefits, type of care, positive care giving frequency, and positive care giving rating among others. The results indicated that “across ages and types of care, positive care giving was more likely when child-adult ratios and group sizes were smaller, caregivers were more educated, held more child-centered beliefs about childbearing, and had more experience in child care.”¹⁵⁶ In-home caregivers caring for one child appeared to provide the highest level of positive care giving. Home-based child care with a small child-adult ratio also demonstrated a rather high level of positive care giving. Center-based child care with higher child-adult ratios had the lowest level of positive care giving. Finally, in terms of child care quality, the results indicated that observed care giving was “very uncharacteristic” for 6 percent of the children involved in the study, “somewhat uncharacteristic” for 51 percent, “somewhat characteristic” for 32 percent, and “highly characteristic” for 12 percent.

¹⁵⁴ National Institute of Child Health and Human Development (2000). Characteristics and quality of child care for toddlers and preschoolers. *Applied Developmental Science*, 4(3), 116-135.

¹⁵⁵ Ibid, 116.

¹⁵⁶ Ibid, 116.

The Relation of Child Care to Cognitive and Language Development¹⁵⁷

The study addressed the quality of child care and its effects on child development. Specifically, the report examines children's cognitive development, school readiness skills, language production and language comprehension as a function of quality, type, and amount of child care during the first three years of life. Children participating in the study spent 10 or more hours per week in non-maternal care at 6, 15, 24, or 36 months. When the study began, (when children were 1 month old), 1,364 from 10 different sites in the United States were enrolled. The sample included families with various demographic characteristics, educational levels and family income levels. During the study period, children were placed and observed in different types of child care.

Data was collected in the child's home, a laboratory, and the child's primary care arrangement. The data collection process was conducted using interviews and observations. Various demographic, maternal, child, family environment, and child care characteristics were chosen as predictors of cognitive and language development outcomes.

The results indicated that quality of child care (especially language stimulation) was a consistent predictor of children's cognitive and language development and performance. However, it is important to note that quality and the other child care predictors accounted for only 1.3 percent to 3.6 percent of the variance. The amount of time that each child spent in child care appeared to have little effect on the outcomes. More specifically, children in exclusive maternal care demonstrated similar outcomes to the children enrolled in child care. Finally, the relationship of child care variables to outcomes did not vary as a function of family income, quality of home environment, child gender, or ethnic group.

Other Research

Walston and West¹⁵⁸

This is a study in a series of reports conducted by the National Center for Education Statistics (NCES). The report describes various full-day and half-day kindergarten programs at both public and private schools and examines the impact these programs have on the children's reading and mathematics progress. It also compares the progress of children enrolled in half-day classes to the progress of children enrolled in full-day classes in public schools.

This report demonstrates that in the 1998-1999 school year, 61 percent of all schools in the United States offered a kindergarten program with at least one full-day class. Full-time kindergarten prevailed in public schools located in cities, small towns or rural areas. There were fewer full-time kindergarten programs in suburban or city areas. Sixty-seven percent of children enrolled in kindergarten programs in private schools attended a full-day program, and 54 percent

¹⁵⁷ National Institute of Child Health and Human Development (2000). The relation of child care to cognitive and language development. *Child Development*, 71(4), 960-980.

¹⁵⁸ Walston, J., and West, J. (2004). *Full-day and half-day kindergarten in the United States: Findings from the Early Child Longitudinal Study, kindergarten class of 1998-1999*. U.S. Department of Education, Institute of Educational Sciences: NCES 2004-078. Retrieved May 4, 2005 from: <http://nces.ed.govpubs2004/2004078.pdf>.

of children enrolled in kindergarten programs in public schools attended full-time programs. In addition, the average number of children in public school full-day classes was higher than in half-day classes. Both full-day and half-day classes allocated time daily to reading and language art activities. Specifically, full-day kindergarten classes spent more time every day on reading, math, and science.

The comparison analysis of progress in reading and in math for children enrolled in full-day classes versus children enrolled in part-day classes demonstrates that full-day kindergarten has a positive impact on reading and mathematics during the kindergarten year. Specifically, the data shows that after controlling for race/ethnicity, poverty status, sex, class size, and other factors, children in full-day classes learned more during the school year in reading and mathematics compared to those in half-day classes. Children in larger classes demonstrated somewhat lower learning progress than did children enrolled in medium size classes.

Rosenthal and Rathbun¹⁵⁹

This study further examines research results from Walston and West (2004). The report focuses on preschool and kindergarten education in each of four regions of the United States.¹⁶⁰ Specifically, the study provides a descriptive analysis of kindergarteners' patterns of participation in preschool and kindergarten programs, and characteristics of the programs and children attending them. Early education is defined as preschool participation, the number of hours spend in preschool, and the type of kindergarten program.¹⁶¹

Data utilized in this report was obtained from the Current Population Survey (CPS) and the Fast Response Survey System's (FRSS) "Survey of Classes That Serve Children Prior to Kindergarten in Public Schools: 2000-2001." The results demonstrate that public kindergarten programs were more common than private school programs across regions. Higher percentages of children in the South and West¹⁶² came from families below the federal poverty threshold¹⁶³ compared with children in the Northeast and Midwest regions. Also, kindergarteners in the South and West were less likely to have mothers with a bachelor's degree and more likely to have mothers who did not complete high school.

¹⁵⁹ Rosenthal, E. and Rathbun, A. (2005). *Regional differences in kindergarteners' early education experiences*. U.S. Department of Education, Institute of Educational Sciences: NCES 2005-099. Retrieved July 7, 2005 from: <http://nces.ed.gov/pubs2005/2005099.pdf>.

¹⁶⁰ Northeast, South, Midwest, and West (National Center for Education Statistics, 2005).

¹⁶¹ Rosenthal and Rathbun (2005) op. cite.

¹⁶² Regions used in this study were the same as used by the U.S. Bureau of the Census

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin.

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia.

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

¹⁶³ "In 1998, the federal poverty threshold for a family of four was \$16,655" (Rosenthal and Rathbun, 2005, 3).

Of all children participating in the study, 68 percent attended preschool the year before they began kindergarten. Compared to other regions, kindergarteners in the West were less likely to attend preschool before entering kindergarten. Overall, those kindergarteners who had attended preschool had averaged twenty-two hours per week in a program. Children in the South spent more hours in preschool compared to the other regions. Finally, children in the South were the most likely to attend full-day kindergarten programs, while children in the West were least likely to attend full-day kindergarten programs.

Gilliam¹⁶⁴

Gilliam (2005) reports pre-kindergarten expulsion rates which were categorized by setting type, child age, gender, ethnicity, and access to classroom-based mental health or behavioral consultation. The author also compares pre-kindergarten expulsion rates to K-12 expulsion rates. In addition, the author attempts to determine major factors affecting these expulsion rates. The study's pre-kindergarten data was obtained from the National Pre-Kindergarten Study (NPS) that includes classroom-level data from 52 state-funded pre-kindergarten systems during the 2003 and 2004 academic years. The sample size was comprised of 3,898 respondents. Telephone survey was utilized as a primary instrument. The response rate was estimated at 81 percent. K-12 data was derived from the *Elementary and Secondary School Survey: 2000*. More than 97 percent of the U.S. schools were included in the data set.¹⁶⁵

The results demonstrate that preschool teachers in for-profit child care programs and in other types of community-based non-profit agencies tend to be more likely to report expelling a child from a program compared to teachers in either a public school or Head Start. Also, "the likelihood of a teacher expelling at least one preschooler was significantly higher when the class size or the proportion of three-year olds mixed with four-year olds was higher."¹⁶⁶

One of the most significant factors influencing the expulsion rates included the teacher's level of self-reported job stress. Importantly, when class size and teacher job stress were relatively low, the teacher was less likely to expel a child. In terms of demographic characteristics, the results indicate that older preschoolers are more likely to be expelled compared to the younger preschoolers. In addition, "African-American preschoolers were about twice as likely to be expelled as European-American students and over five times as likely as Asian-American preschoolers."¹⁶⁷ Finally, the analysis demonstrates that the teachers tend to expel boys more often than girls. Specifically, "boys were expelled at a rate over 4.5 times that of girls."¹⁶⁸

¹⁶⁴ Gilliam, W.S. (2005). *Prekindergarteners left behind: Expulsion rates in state prekindergarten systems*. Yale University Child Study Center.

¹⁶⁵ Ibid.

¹⁶⁶ Ibid. 2

¹⁶⁷ Ibid. 6

¹⁶⁸ Ibid.

Cherry and Sawicky¹⁶⁹

Cherry and Sawicky (2002) recommend possible actions tax systems can take to help low-income families. The authors provide evidence on the effectiveness of the EITC (The Earned Income Tax Credit).¹⁷⁰ One of the benefits of using the EITC is that it has inherent work incentives and provides employment opportunities for many single mothers. The authors also discuss and evaluate other tax benefits available for families with children. Tax benefits may include child and dependent care credit, child tax credit, personal exemption, and flexible spending/cafeteria plan deduction.

Gilliam and Zigler¹⁷¹

Gilliam and Zigler (2000), provide a meta-analysis of 13 of the 33 state-funded preschool programs existing from 1977 to 1998. Specifically, they develop standardized measures to compare studies included in the analysis across various areas of outcome and evaluative methods.¹⁷² The authors find modest evidence that state-funded preschool programs positively impact children's academic performance, school attendance, and reduced grade retention. However, they caution that the methodology of the majority of the studies needs to be improved to ensure more accurate conclusions. Further, Gilliam and Zigler find that even though some of the state-funded preschool programs impacts are sustained over a longer period of time, the programs' short-term effects are more significant and, in many cases, are limited to kindergarten and first grade.

Blau and Currie¹⁷³

Blau and Currie (2004) provide a detailed literature review on supply, demand, and the quality of early child care programs, as well as studies that focus on child outcomes and these programs' impacts. The authors also evaluate the current state of the child care market using the utility function approach.¹⁷⁴

¹⁶⁹ Cherry, R. and Sawicky, M. (2002). *Giving tax credit where credit is due*. Economic Policy Institute. Available online at <http://www.epinet.org/briefingpapers/eitc.html>.

¹⁷⁰ The EITC is a credit against federal personal income tax liability. The EITC is refundable, which means that if the credit exceeds tax liability, the taxpayer is entitled to the difference in cash from the IRS (Cherry and Sawicky, 2002).

¹⁷¹ Meta-analysis is a process of synthesizing research results by using various statistical methods to retrieve, select, and combine results from previous separate but related studies (dictionary/thesaurus online).

¹⁷² Gilliam and Zigler, (2000) op. cite. 441.

¹⁷³ Blau, D. and Currie, J. (2004). *Preschool, day care and after-school care: Who is minding the kids?* NBER working paper No. 10670, Cambridge, MA.

¹⁷⁴ Utility is a measure of the happiness or satisfaction gained from a good or service. In economics, it is convenient to represent preferences with a utility function and reason indirectly about preferences with utility functions (Encyclopedia online).

First, Blau and Currie examine the demand side of early child care. They review 20 studies and estimate that price elasticities¹⁷⁵ for child care range from .06 to -3.60. Blau and Currie explain such considerable variations across the studies relate to certain estimation and specification issues.

The authors also determine that the estimated elasticity of employment with respect to the price of child care ranges from .04 to -1.26 and find it difficult to explain such variation. Two of the potential problems discussed by the authors are ignoring unpaid child care and inappropriate exclusion restrictions to identify the child care price equation.

Next, the study examines the supply side of child care. The authors analyze Current Population Survey (CPS) data from studies for the years 1977-1998 and argue that the quality of child care is as important as quantity and, therefore, it needs to be defined and properly measured. The authors refer to the literature and distinguish between the two major concepts of quality: “process quality”¹⁷⁶ (or “dynamic features of care”) and “structural quality”.¹⁷⁷

Also, Blau and Currie discuss governmental intervention in the child care market, including the rationale for such intervention, subsidies, and regulations. The authors also examine existing publicly provided child care such as model early intervention programs, Head Start, Early Head Start, state programs, and programs for school aged children. The final part of the study focuses on the policy recommendations and suggestions. The authors emphasize the need to find ways for government-supported child care programs and market child care to interact with each other to ensure high quality child care and education for all children.

Berger and Black¹⁷⁸

Berger and Black (1992) “examine the effects of child care subsidies on the labor decisions of low-income mothers and on the quality of care their children receive.”¹⁷⁹ Specifically, the authors evaluate data from two programs in Kentucky that provide subsidies to low-income families. The study utilized a sample total of 527 participants from two programs. The analysis was limited to unmarried females with low income levels. Among other things, variables included mother’s age, race, education level, number of children in the family, nonlabor income, and estimated expenditure on day care center.

¹⁷⁵ The price elasticity of demand measures the rate of response of quantity demanded due to a price change. Price elasticity of demand is measured as the percentage change in quantity demanded that occurs in response to a percentage change in price. For most consumer goods and services, price elasticity tends to be between .5 and 1.5 because price elasticity for most products clusters around 1.0, it is a commonly used rule of thumb. A good having a price elasticity greater than negative one is said to be “elastic”; goods with price elasticities smaller (closer to zero) than negative one are said to be “inelastic” (Mackinac Center for Public Policy, <http://www.mackinac.org>).

¹⁷⁶ Process quality refers to the interactions between children and their caregivers, their environment, and other children (Blau and Currie, 2004, 14).

¹⁷⁷ Structural quality refers to the following characteristics of child care: child-staff ratio, group size, teacher education and training, safety, staff turnover, and program administration (Blau and Currie, 2004, 16).

¹⁷⁸ Berger, M.C. and Black, D.A. (1992). Child care subsidies, quality of care, and the labor supply of low-income, single mothers. *The Review of Economics and Statistics*, 74(4), 635-642.

¹⁷⁹ Ibid, 635.

The results demonstrate that mothers who receive a child care subsidy have a 0.975 probability of being employed. Moreover, mothers receiving child care subsidies are more satisfied with the type and quality of care their children receive. However, there was no evidence the subsidies increase hours worked.

Shellenback¹⁸⁰

Shellenback (2004), in her report “Child care and parent productivity: Making the business case”, addresses the specific measures of the economic and financial impacts of work/life and child care incentives. The author provides a review of the current studies focusing on the importance of child care incentives for financial sustainability of the company. Expressly, Shellenback points out that, according to the 2000 American Business collaboration report, “63 percent of member employees improved productivity while using quality dependent care.”¹⁸¹

The report introduces “The 5 Step Plan” that can be very useful for the organizations interested in estimating and evaluating data on the work/life incentives effectiveness. The five steps include creating the research advisory team, determining success factors, designing the research process, implementing the research process, and using and communicating findings to enhance business practices. The author provides a comprehensive explanation of the plan and calculation examples.

What Research Says and Does Not Say About Early Child Education and Its Economic Importance

The studies discussed in this review utilize various techniques and methodologies and, sometimes, reach different conclusions. However, all of the studies support the argument that early child education must be a priority. Early child education is a single factor that can have a significant effect not only on personal success or failure, but on the success of the whole country. Educated, successful, and productive employees create a foundation for economic development and prosperity. Thus, ensuring an adequate supply of high quality affordable early child care is critical.

The research demonstrates that early child education can have a positive impact on children’s cognitive development. Specifically, most studies point out that children enrolled in early education programs:

- Demonstrate higher academic achievement levels and, in many cases, higher IQ tests
- Are less likely to repeat grades
- Are more likely to complete high school
- Are more likely to attend a four-year college
- Have fewer arrests
- Are more likely to hold jobs
- Are more likely to own a house
- Have higher average annual earnings later in life

¹⁸⁰ Shellenback, K. (2004). [op. cite.](#)

¹⁸¹ Shellenback (2004) [op. cite.](#) 1.

It is important to note that early education programs have a tremendous positive impact not only on cognitive development of children, but also on the development of non-cognitive skills such as persistence, motivation, dependability, and self-discipline, which are essential for personal development. Heckman, in his studies, emphasizes the importance of non-cognitive skills and argues that school readiness is measured not only by math and language skills, but perhaps more importantly, by social and emotional competencies.

The literature clearly demonstrates the importance of early child education for regional and national economic development. The modern world is characterized by changing work patterns, family life, and women's roles. The number of working mothers is continuously increasing, and, unfortunately, the research shows that current quality early child care services supply is inadequate to satisfy the constantly growing demand. Current early child education policies are extremely costly and often ineffective, and existing problems inhibit economic growth and development. That is why the majority of studies emphasize the importance of framing child care as a powerful economic development tool. Creating a partnership between early child care resource and referral agencies and economic development agencies is critical in a collaborative effort to increase public and private support for early child care and education.

The existing literature provides the following important recommendations that would assist in improving quality and providing an adequate supply of early child education services:

- States should conduct additional cost-benefit analysis of early child education focusing on providing data supporting the importance of the industry in every state.
- Additional policy analysis is essential for developing new financing mechanisms and providing alternative sources of public and private investments.
- Policymakers and citizens need to be educated about the significance of the early child education industry as a powerful tool in the development of children and, therefore, in the development of the economy in general.
- The quality of the existing early child education services needs to be improved and new ways to expand the services need to be explored.
- One of the ways to increase the quality of early child education services is to implement higher standards for child care at the state level.
- Teachers and staff employed in the early child education sector need to be properly compensated based on their training, experience, and responsibility.

The majority of studies stress the importance of increasing the quality of the early education industry. However, the term "quality" is not clearly defined nor explained. The most commonly used indicators of quality are the following:

- High level of teacher education and staff training
- Low child-teacher ratios and small class size
- Child-directed, developmentally appropriate practices
- Standards, monitoring
- Adequate compensation for teachers

It is clear that the list of quality characteristics can be rather extensive. Moreover, from the business perspective quality means satisfying customers' expectations. Because every customer (a child, a parent) has his/her unique expectations, definition of quality in terms of early child care and education can be rather complex. Additional research is critical to identify the most significant elements of quality in the early child care context. Future findings will help to develop new early child education standards and improve the existing quality of the industry.

6. **If you have been in operation for at least a year or more, when did your facility last increase its charges? If you have been in operation for less than one year, please skip to question #8.**

- a) Within the last 6 months
- b) Within the last 6 months to a year
- c) Within the last year to two years
- d) More than 2 years ago
- e) Never increased charges (*Skip to question #8*)
- f) Can't remember

7. **The last time you increased charges, what was the approximate average increase?**

- a) Less than \$1 per child, per week
- b) \$1 to \$2 per child, per week
- c) \$3 to \$4 per child, per week
- d) More than \$5 per child, per week (please specify) _____

8. **Does your facility offer some financial help to low-income families (other than government subsidies) to off-set the cost of child care?**

- a) Yes
- b) No

If YES, please describe: _____

9. **What was your total annual income before expenses for calendar year 2004?**

- a) \$0 - \$49,999
- b) \$50,000 - \$99,999
- c) \$100,000 - \$149,999
- d) \$150,000 to \$199,999
- e) \$200,000 to \$249,999
- f) \$250,000 or more

10. **What percent of total income was expended for the following for calendar year 2004?**

- a) Personnel _____
- b) Purchases of goods & services _____
- c) Rent and utilities _____
- d) All other expenditures _____

11. **Please check all items that are donated or offered to your facility at a reduced rate.**

- Building/space
- Equipment
- Staff
- Utilities
- Other (please specify) _____

12. **What approximate percentage of your expenses are made up of the following categories?**

- a) Parent charges (fees) _____ %
- b) Public or government subsidies _____ %
- c) Private sources (e.g. foundations, charities, etc.) _____ %
- d) Other (please specify) _____ %

13. Where do the majority of the children served by this facility live relative to the facility itself? In the same _____?

- a) Neighborhood
- b) Zip Code
- c) City
- d) County

14. Please use the following table to describe the current level of staffing at your facility as applicable.

	# of Full-Time	# of Part-Time
Director		
Assistant Director		
Lead Teacher or Coordinator		
Teachers		
Aides		
Volunteers		
Support Staff (cooks, bus drivers, bookkeepers, receptionists, etc.)		
TOTALS		

15. For each of the staffing categories and employment tenures below, please indicate how many employees currently work at your facility.

	Less than 1 year	1 to 5 years	More than 5 years
Director			
Assistant Director			
Lead Teacher or Coordinator			
Teachers			
Aides			
Volunteers			
Support Staff (cooks, bus drivers, bookkeepers, receptionists, etc.)			
TOTALS			

16. Please use the following table to list all staff by title along with their current annual salary.

	Number employed	Annual Salary Range (lowest to highest)
Director		
Assistant Director		
Lead Teacher or Coordinator		
Teachers		
Aides		
Volunteers		
Support Staff (cooks, bus drivers, bookkeepers, receptionists, etc.)		
<i>Please add as needed...</i>		

17. Please place a check mark beside any of the following benefits provided to your staff, including full and part-time employees:

	Full-Time	Part-Time
Paid Vacation		
Health insurance (employee)		
Health Insurance (spouse and/or family)		
Retirement Benefits		
Child Care (including free or reduced care in your facility)		
Paid Sick Leave / Personal Days		

18. Do your staff participate in one or more of the following training activities (check all that apply)?

- Child Care Resource & Referral sessions
- Apprenticeship for Child Development Specialist
- One Step at a Time Infant/Toddler Class
- Extension agency courses
- Community and Technical College courses
- Four-Year College courses
- Other (please specify) _____

19. On average, how many staff members do you typically have to replace in a given year?

- a) Less than one per year
- b) One per year
- c) Two to three per year
- d) Four to five per year
- e) Six to ten per year
- f) More than ten per year

20. Do you feel that staff turnover is a significant obstacle to the successful operation of your facility?

- a) Yes
- b) No
- c) Unsure

21. What is the main reason for employee turnover in your organization?

- a) Pay
- b) Found another job
- c) Work environment
- d) Stress from job
- e) Change in family status
- f) Left workforce
- g) Other (please specify) _____

22. What efforts have your facility undertaken at to minimize staff turnover (please check all that apply)?

- a) Training opportunities
- b) Regular pay increases
- c) Flex-time / flexible scheduling
- d) Paid benefits
- e) Promotion opportunities
- f) Other (please specify) _____

Thank you for completing our survey. Your responses are very important to us and will be useful in examining the issue of early childhood care and education in our state.

Individuals Participating in the Review of Early Childhood Care and Education Providers Survey

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Ann Nutt, Director of Quality Initiatives, Division of Early Care and Education, WV Department of Health and Human Resources

Kay Tilton, Director of Child Care Services, WV Department of Health and Human Resources

Helen Brown, President, WV Child Care Association

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Appendix D

State/City	Date Completed	Summary	Lead Agency	Measurements
Oregon	Completed June 2005	Not available	Child Care Division Oregon Employment Department http://egov.oregon.gov/EMPL/OY/CCD/	-Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on local Economy
Iowa	Completed June 2005	<p>The report provides an overview of early child care and education services in Iowa. In addition, the report focuses on the economic role of Iowa's child care industry. Finally, the study team evaluates child care usage patterns for the two groups of families: the households with a youngest child under 5 years of age and households with a youngest child aged 5-12 years. Dividing households into two groups allowed differentiation between care for infants/toddlers/preschoolers and care for school-age children.</p> <p>Early child care establishments used in the analysis include licensed child care centers, registered family care providers, and non-registered family child care providers. Informal child care arrangements were omitted due to the unavailability of data.</p> <p>The study team used IMPAN software as a primary tool and compared the results estimated by a series of surveys of the child care industry. The results demonstrated that the Iowa child care industry generates 17,290 direct jobs, which, in turn, stimulate 1,486 jobs in the supplying sectors. Gross receipts (direct effect) are estimated at \$402.48 million. Total output is \$668.8 million. The output multiplier</p>	Iowa State University University Extension Center for Family Policy Iowa Business Council http://www.iowabusinesscouncil.com/index.html	-Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies

		<p>is \$1.66 and the employment multiplier is 1.20.</p> <p>Parent usage analysis patterns are unique for the Iowa report. Data was obtained from the Iowa Family Survey which gathered responses from 631 households with children under the age of 18 years. The results demonstrate that 67 percent of children in Iowa between ages of birth and 12 years are in some type of child care while their parents work. The report addresses various factors that play an important role when parents select a type of care for their children.</p>		
Hawaii	Completed March 2005	<p>The report provides the economic and demographic profile of the state and its implications for the early child education (ECE) industry. In addition, the economic impacts of the ECE industry are calculated by industry earnings and employment, and current levels of government investment. The linkages between early care and education, business, and economic development are discussed as well.</p> <p>In this analysis, the ECE industry is defined as the formal industry outside of K-12 education. Specifically, it includes licensed child care centers, licensed family child care homes, license-exempt family child care homes that receive government funds, Head Start, Early Head Start, Punana Leo Preschools, After-School Plus (A+) programs, centers and family child care homes that serve children of parents in the military, and Kamahameha preschools. The informal ECE industry is excluded from the study.</p> <p>Gross receipts are defined as the total amount of dollars flowing into the ECE sector in the form of payments for care including private funds (parent fees, grants, and scholarship programs), and county, state, and federal funds. Data was obtained from PATCH, Hawaii's child care resource and referral agency. The information on child care establishments was categorized by regions in order to reflect regional differences. The following formula was used to estimate gross receipts:</p> <p>Gross Receipts=Enrollment x Cost/Child/Year</p>	Good Beginnings Alliance www.goodbeginnings.org	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Working Parents' Earnings (the effect of child care enabling parents to participate in the labor force)

		<p>The gross receipts of the ECE industry were estimated at \$240 million, which is larger than motion picture and video production, information and data processing, and scientific research and design combined. The study team also measured direct employment, which according to the 2004 data, was equivalent to 9,375 employees. This number of employees is similar to the number in all building construction industries in the states, and exceeds real estate (excluding rental and leasing) and all crop production.</p> <p>The IMPLAN model was utilized to measure ECE industry linkages to other industries in Hawaii. The Type I multiplier was used in the model, and the results indicate that \$240.9 million in gross receipts correspond to \$70 million in indirect effects for a total economic effect of \$310.9 million. In addition, the findings demonstrate that employment of 9, 375 corresponds to an additional 1,260 jobs supported in other industries for a total employment of more than 10,500.</p> <p>The report evaluates the impact of the ECE industry on labor force and productivity. The study also demonstrates the link between high-quality early child care and education programs and school readiness. In addition, the study team examines the existing literature and argues that investment in early education results in a 12 percent rate of public return. The concluding section of the report includes important policy implications and recommendations for government, businesses, the ECE industry, and for other stakeholders.</p>		
Middlesex County, New Jersey	Completed February, 2005	<p>Comprehensive study funding which found a shortage of affordable child care in Middlesex County. Among the conclusions were that quality child care provides employers with a stable, productive workforce and allows parents to develop their career skills. Also found that childcare supported 2,600 jobs and generated \$30 million in income in the county. A detailed list of policy recommendations is included.</p> <p>Used R/Econ I-O Model Multipliers: Output 1.45</p>		<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care

		<p>Employment 1.28 Income 1.34</p>		<p>-Multiplier Effects on Local Economy -Governmental Transfers / Subsidies</p>
Louisiana	Completed February, 2005	<p>The child care sector is defined as licensed child care centers (providing care to seven or more children), registered child care (Family Child Day Care Home and In-Home Child Care Provider), Head Start/Early Head Start, and public/private pre-kindergarten. The study does not include unregulated and/or unlicensed child care in the analysis.</p> <p>Gross receipts include all payments, subsidies, and any other revenues paid to the industry. Gross receipts for family child day care home and in-home child care providers were calculated by taking the total number of estimated children in licensed care and multiplying it by the median weekly rate of licensed child care in Louisiana as determined by the 2003 Market Rate Survey and adjusted for inflation. To calculate gross receipts for Head Start, the total state and federal funds for pre-k were used. The federal dollars to subsidize nutrition through the CACF program and state supported efforts using federal funds to enhance quality were then added to the revenues. All administrative dollars that could be identified were excluded from economic analysis.</p> <p>The results demonstrate that the child care industry in Louisiana generates gross receipts in excess of \$658 million. The industry also directly employs more than 22,000 people.</p> <p>The input-output analysis was used as a primary method. IMPLAN modeling software was utilized to measure the linkage effects (multipliers) of the child care sector. The results indicate that for each dollar spent in the child care sector, there is an impact of a \$1.72 in the wider economy. In addition, for each new job in the child care sector, an additional 1.27 jobs are stimulated in the economy.</p> <p>The study team also measured the impact of child care enabling</p>	<p>Louisiana Department of Social Services, Office of Family Support. http://www.dss.state.la.us</p>	<p>-Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Working Parents' Earnings (the effect of child care enabling parents to participate in the labor force)</p>

		<p>parents to work. Specifically, the study team multiplied the number of parents using paid child care by per capita income in Louisiana, thus obtaining total parents' earnings which amounted to \$3.4 billion.</p> <p>The final part of the report discusses the long-term benefits of high quality child care and provides important policy recommendations.</p>		
Illinois	Completed January, 2005	<p>The report demonstrates contributions of the child care industry to the Illinois economy. Specifically, it evaluates government savings and the workforce impact of Early Care and Education in the state. The report demonstrates that the Early Care and Education industry in Illinois generates \$2.12 billion annually and employs approximately 56,000 people full-time. There are 15,800 establishments including licensed regulated day care centers, family care, regulation-exempt center care, and pre-k in public schools. The study did not include regulation-exempt home-based (informal care) or school-age providers. Some major findings are listed below:</p> <ul style="list-style-type: none"> ➤ Unregulated child care businesses comprise a very large--and largely invisible--segment of the industry. More than 58% of all children in the Illinois Child Care Assistance program, and 44% of those under 6 years old, are in licensed-exempt child care settings. ➤ Several Illinois businesses have reported positive results from including child care as part of an employee benefits package. These employers--and the increased recruitment and retention and reduced absenteeism that resulted--are highlighted in the report. ➤ With a few exceptions outside of public sector programs, even the most successful early care and education establishments operate on tight margins. Between July 1999 and December 2003, approximately 400 child care centers (that could serve as many as 17,000 preschoolers) were closed. <p>The largest population growth factor in Illinois is international</p>	Day Care Action Council of Illinois http://www.daycareaction.org Chicago	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies

		<p>migration. As a result, young children living in Illinois are more diverse in terms of race and ethnicity than the general population. This increases the need for dual or multi-lingual early care and education staff and culturally appropriate programs.</p>		
Virginia	Completed December, 2004	<p>The report focuses on the economic impact of government and private sector investments in child care and evaluates the overall benefits of the child care sector.</p> <p>Child care industry is defined as care and education programs of licensed child care centers, religious institutions exempts from licensure, state licensed family child care day homes, locally permitted family child care day homes, voluntary registered family child care day homes, and unregulated family child care day homes listed on tax revenues.</p> <p>Gross receipts were measured based on the average price (average weekly rate) charged for each type of service provided by child care establishments (infant care, toddler care, and before and after school care for school-aged children) and the number of children receiving each type of service. Because Virginia does not track the number of children by different categories (such as infants, toddlers, etc.), the study team used the examples from the other states' reports for some guidance on the distribution of children in each category. The estimated annual gross receipts (direct effects) of the child care industry in Virginia are \$1.46 billion with \$973,918,747 generated by licensed child care centers alone. Total value of gross receipts (direct and indirect) is \$2.51 billion.</p> <p>The IMPLAN model was used to calculate the linkage effect of the child care industry on the economy of the state. The findings indicate that one dollar of gross receipts in the child care industry will generate \$1.72 to the Virginia economy. In addition, one job created in the child care industry can create 0.25 additional jobs in other industries. The study also provides a list of industry ranking based on the economic impact. For example, while some industries (rail transportation, highway construction) have no linkages with child care and will</p>	<p>Voices of Virginia's Children http://www.vakids.org/Publications/economic_impact.pdf</p>	<p>Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact</p>

		<p>receive no economic impact, other industries (real estate, wholesale trade, food services and restaurants) will have a tremendous positive impact on their gross receipts.</p> <p>The concluding section of the report discusses economic impact of public investments in the child care industry and provides policy recommendations.</p>		
Colorado	Completed December, 2004	<p>The report defines and describes the relationship between early childhood care and education and the Colorado economy. The study estimates the number of children in licensed care in preschools, child care centers, licensed family child care homes or legally exempt homes. In addition, the study team estimates the number of children receiving care from unknown and untracked services such as relatives, neighbors, babysitters or nannies (based on data from the Colorado office of Resource and Referral Agencies).</p> <p>Gross receipts (direct spending) are measured using methodology found in other studies and are estimated to be \$570 million dollars. However, the consensus is that this number is much larger. The study team utilizes input-output analysis and determines that one dollar of expenditures on child care generates \$1.89 in additional output for the state. The child care industry's contribution to gross state product is \$1.06 billion; the number of jobs created by the formal child care-industry is 18,919.</p> <p>The report also examines the enabling effect (when the provision of child care services allows parents to participate in labor force). The results demonstrate that government-subsidized child care enables poor families to earn \$111 million dollars per year.</p> <p>Finally, the study team examines the investment effect by examining child care as a human capital investment. The results are consistent with the results from the Colorado Preschool Program and they demonstrate that compared with high schools or universities, child care spending offers a relatively high return to public spending. In addition, high-quality early childhood intervention can prevent</p>	<p>Colorado Children's Campaign 1120 Lincoln Street, Suite 125 Denver, Colorado 80203 303-839-1580 Fax 303-839-1354</p> <p>http://www.coloradokids.org/ECE/The%20Economic%20Impact%20of%20Child%20Care%20in%20Colorado.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact

		<p>developmental disabilities in at-risk children.</p> <p>The final section of the report provides policy recommendations for policymakers, businesses, child care providers and children's advocates.</p>		
New York City, NY	Completed December, 2004	<p>The study examines the economic impact of the early care and education sector in New York City. The child care industry is defined as licensed and/or regulated child care centers, family child care, group family child care, school-age child care, and Universal Pre-Kindergarten (UPK) programs. Unlicensed or informal care (even if paid with governmental dollars) is not included in the economic analysis.</p> <p>The total size of the child care industry was measured based on two parts: total tuition paid by parents and subsidies by the government and industry supports. Gross receipts were calculated by multiplying the number of children in care (by category) by the price of care which was obtained from the New York State Market Rate Survey information. The market rate, in turn, was determined from the surveys conducted by the New York State Office of Children and Family Services. The estimates of industry supports were obtained from data provided by State CACF program, 2003. The study team also estimated the impact of the child care sector on parent earnings.</p> <p>The results indicate that the early care and education industry generates \$1.9 billion annually including \$882.7 million in parent fees, \$956.3 million in government subsidies, and \$85.7 million in industry supports. In addition, the child care sector enables 313,000 parents to work. Finally, the child care industry is comparable in size to other important local industries such as hotels and lodging, and newspapers and periodicals. The concluding part of the report includes economic development strategy and important policy recommendations.</p>	<p>Nancy Kolben Child Care, Inc. NOW Legal Defense and Education Fund</p> <p>http://www.childcareinc.org/pubs/Economic%20Impact%20Report%20Website.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Children Served -Industry Size -Gross receipts -Child Care Labor Force -Number of Parents with Children in Paid Care - Multiplier Effects on Local Economy - Working Parents' Earnings (the effect of child care enabling parents to participate in the labor force)
Chemung County, NY	Completed November, 2004	Not available	<p>Chemung County Child Care Council, Inc.</p> <p>http://chemchildcare.com</p>	

Ohio	Completed November, 2004	<p>This report provides a careful analysis of the early care and education industry in Ohio focusing on its economic impact. The economic characteristics discussed in the study include the following: the size of the industry, as reflected in gross receipts; the total direct employment of the industry; the capture of federal and state monies designated for early care and education; and the size and characteristics of the early care and education market.</p> <p>The study focuses only on licensed and regulated early care establishments for children from birth through age twelve such as child care centers, family child care homes, registered-only family child care homes, public pre-school programs, Head Start/Early Head Start programs, Early Childhood Special Education programs, ODE (Ohio Department of Education) Latchkey classrooms, and 21st Century programs (after-school programs funded by federal grants through ODE). The informal early care and education facilities are not included in the analysis.</p> <p>The study team used the following formula to estimate gross receipts: Full-Time Equivalent Enrollment x Average Cost/Child/Year=Gross Receipts</p> <p>Gross receipts were estimated at \$1.9 billion annually. In addition, the child care industry directly employs 56,631 people every year.</p> <p>Data on full-time equivalent enrollment (except for ODE latchkey programs) was obtained from the Ohio Child Care resource and Referral Association (OCCRRA), which tracks capacity and vacancies in licensed child care centers as well as registered family child care homes by children's age groups (infant, toddler, and pre-school-age child). Enrollment numbers were calculated by subtracting reported vacancies from reported capacity in November-December 2003. Enrollment numbers for ODE Latchkey programs were gathered from onsite inspections where the total numbers of children were reported. The average market rate information from OCCRRA was used to calculate the average yearly rate for each type of care and each age</p>	<p>Build Ohio Project</p> <p>http://www.buildinitiative.org/state_oh.html</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact -Working Parents' Earnings (the effect of child care enabling parents to participate in the labor force)
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		<p>group. Gross receipts for certified family child care homes were obtained from SFY 2003 state and family co-payment spending (ODJFS reports).</p> <p>Consistent with the other studies, the Ohio report includes the use of the IMPLAN Input-Output model to trace the linkages between child care and other industries in the state. The study team uses Type II multipliers, which exclude government spending. The results indicate that total industry output (including direct, indirect, and induced effects) totals \$3.43 billion. Direct, indirect, and induced employment for the Ohio early care and education totals 72, 543 jobs.</p> <p>The study team also emphasizes the significance of early care and education industry in enabling a working parent to participate in labor force.</p>		
South Dakota	Completed November, 2004	<p>The child care establishments included in this analysis are licensed programs (child care centers and group family child care), registered programs (family child care homes caring for up to 12 children from more than one unrelated family in a family home), and Head Start/Early Head Start programs. The unlicensed and unregistered programs are not part of this study.</p> <p>The research team examines the economic impact of the child care industry in South Dakota using the IMPLAN Input-Output model. Only Type II (direct, indirect, and induced effects) multipliers, which exclude government spending, are calculated in this study. Data for the IMPLAN model was obtained from the Office of Child Care Services, South Dakota Department of Social Services and from the Head Start federal office in Denver, CO. Gross receipts were measured using the following formula: $(\text{Full-time enrollment} \times \text{Average cost/child/year}) + (\text{Part-time enrollment} \times \text{Average cost/child/year})$.</p> <p>Gross receipts were estimated at \$100.6 million annually. Also, the child care industry provides 2,430 jobs (direct employment).</p>	South Dakota Kids Count The University of South Dakota Business Research Bureau http://www.sdcchildren.org/CMOview.pdf	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact

		<p>The results indicate that every dollar spent on child care results in \$1.31 dollars of business activity. In addition, the dollar spent on child care will result in the purchases of 31 cents from other businesses, plus 12 cents induced expenditures at the household level for a total impact of \$1.43.</p> <p>South Dakota child care industry was compared to other industries in the state. According to the analysis, the child care industry is larger than service industries such as advertising and architectural services combined and half the size of engineering services.</p>		
Washington	Completed September, 2004	<p>Due to the unavailability of unlicensed day care centers data, the study focuses only on licensed day care centers in the state of Washington. The definition of “child care” includes licensed child care and preschool programs, including Head Start and Early Childhood Education Program (ECEAP), a free program offering a preschool learning experience targeted at 4 year olds from low-income families living or working in Seattle.</p> <p>Some findings include the following:</p> <ul style="list-style-type: none"> ➤ The child care industry employs 30,600 people in more than 9,000 small businesses. ➤ Gross receipts are estimated at \$836 million annually. The research team included provider charges (parent fees and vouchers in lieu of parent fees), and government funded programs (Head Start, Pre-K), but did not include provider subsidies (quality dollars, CACF program, etc.). <p>In Kings County (Seattle), each adult must earn an hourly wage of at least \$11.76 to meet basic needs. At these wages, child care for one preschooler and one school-aged child would consume 25% of the family budget.</p>	<p>Division of Child and Youth Services, Human Services Department City of Seattle</p> <p>http://www.ci.seattle.wa.us/humanservices/fys/children.htm</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact

North Dakota	Completed July, 2004	<p>The study included regulated child care centers and family child care homes, preschools, Head Start and before/after school care in its definition of child care, including programs operated by public schools. However, the study was limited to only those programs that were licensed by the state of North Dakota. In addition to analyzing the types of care utilized by North Dakota parents, the study looked at the affordability of child care by reporting the price of licensed child care in the state by age of child and by type of care. The report also included data on child care staff wages, which were compared to other early childhood education professions, national averages and other professions in North Dakota. The team used input/output analysis conducted by Cornell University to determine the multiplier effects of the child care industry.</p> <p>Gross receipts from the child care industry in North Dakota were estimated at \$123 million. Direct employment was 6,020 jobs and the number of establishments was 1,630. The study found that 71% of children under six years of age in two parent households had two employed parents and 78% of children in single parent households had a parent who worked. The study also found that government funded child care program subsidies resulted in \$42.8 million in revenues to the State.</p>	<p>North Dakota Kids Count</p> <p>http://www.ndkidscount.org/publications/ChildCareReport_Final_2004.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies
Jefferson and Hardin Counties, KY	Completed June, 2004	<p>The research team did not include Head Start and pre-k programs in their analysis because Jefferson County has the 16th largest school system in the US. Instead, the study focuses on licensed programs that are primarily funded by parent fees. Child care is defined as including full-day and part-day child development programs for young and school age children (licensed child care centers and family child care homes). Unlicensed care is not included in the analysis.</p> <p>The study examined data on the commuting patterns of employees in Jefferson and Hardin counties, the impact of lengthy commutes on child care centers that operate during nontraditional hours and the need for incorporating child care in transportation planning. In addition, the study evaluated data on the wage needed for self-sufficiency in these</p>	<p>4C: Community Coordinated Child Care National Economic Development and Law Center</p> <p>http://www.4cforkids.org/KY/CCEIRFullReport1119.pdf</p>	<ul style="list-style-type: none"> - -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers/ Subsidies

		<p>counties. The results demonstrated that the self-sufficiency wage requirement is not met by the majority of jobs in the counties examined.</p> <p>Gross receipts were \$119.8 million for Jefferson County and \$14.9 million for Hardin County. The child care industry was responsible for creating 3,840 jobs in Jefferson County and 438 jobs in Hardin County.</p> <p>In Jefferson County, 81,000 children ages 0-12 needed some form of care; in Hardin County, 1,000 children needed some form of care. Due to the lack of experience with how to measure child care industry impact on the local economy, the economic value of child care was not calculated.</p>		
Winnipeg, Manitoba, Canada	Completed June, 2004	<p>This study is similar to other studies in methodology and concept. It focuses on the regulated child care sector, which includes a range of early learning and care services for children ages 0-12. The authors used Input-Output analysis to determine the impact of the regulated child care sector on the local economy. The multiplier for the province of Manitoba was 1.38, and for the whole of Canada it was 1.45.</p> <p>Gross receipts were estimated at 101.6 million, while direct employment was equal to 3,236 jobs.</p> <p>Not surprisingly, the analysis demonstrated that wealthier neighborhoods have a larger number and better quality child care services while poorer neighborhoods have fewer child care services.</p>	<p>Child Care Coalition of Manitoba, funded by Status of Women Canada Women's Program http://www.childcaremanitoba.ca/project/</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies
North Carolina	Completed June, 2004	<p>The study focused on licensed centers and family child care facilities, before and after school programs, public and private pre-schools and Head Start. The research team also included faith-based centers which are required to be registered and receive a G.S. 110 exemption instead of a star license, and special education pre-school programs in schools. The number of unlicensed day care facilities was estimated but they</p>	<p>North Carolina Partnership for Children http://www.smartstart-nc.org/national/images/NCCCEIRFullReport.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts

		<p>were not counted in the number of establishments, labor force or gross receipts.</p> <p>Gross receipts were estimated at \$1.5 billion annually; the child care industry also contributed 46,000 jobs (direct employment) to the state's economy.</p> <p>The report provides a demographics overview and economic profile of the state. It also examines the effect of these factors on the child care industry. The study measured the number of children in each age cohort from infants to age five and the percent served by full-time care.</p> <ul style="list-style-type: none"> ➤ Approximately 19 percent of firms with more than 500 employees offered child care assistance as opposed to only 5 percent of firms with fewer than 50 employees. <p>Average NC per pupil expenditures for K-12 education (\$4,535) and for higher education (\$8,100) were compared with the total state investment per child under six enrolled in licensed care (\$770).</p>		<ul style="list-style-type: none"> -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies
Connecticut	Completed June, 2004	<p>The main purpose of this study is to assess the economic impact of the Connecticut early childhood education industry (ECE). Although the study provides some estimations on the size of the informal ECE sector in the appendix, only licensed and regulated child care establishments are included in the economic analysis.</p> <p>The study team uses a sales or revenues approach that considers the impact of all the fees, grants, and subsidies generated by the ECE establishments on the economy of the state. The research team examines how the ECE sector affects labor force participation and measures the potential economic losses due to the absence of the ECE industry. Unlike some of the studies conducted by other states that calculate wages earned by parents using ECE, the Connecticut report estimated the increased labor force participation afforded by the availability of ECE. The study team argues that it is more accurate to look at both demand-side effects as well as supply-side effects.</p>	<p>Department of Economic and Community Development, Office for Workforce Competitiveness</p> <p>http://ccea.uconn.edu/studies/Child%20Care%20Report.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Labor force

		<p>Gross receipts were estimated at \$789.4 million, and direct employment was estimated at 150,000 jobs.</p> <p>The results indicate that the total value added impact (change in gross state product) due to the licensed and regulated ECE industry is \$920 million. Also, the ECE industry purchases about \$460 million in goods and services from other businesses in the state. Almost 10 % of the total state workforce uses regulated ECE services, enabling 160,000 parents either to work outside their homes or to be more productive employees.</p>		<p>participation rates of parents, value added of formal sector, impact of disappearance of child care sector.</p>
<p>Long Island (Nassau and Suffolk Counties), NY</p>	<p>Completed Spring 2004</p>	<p>The purpose of this report was to engage the private sector in promoting early child care and education and to initiate an Island-wide data collection project. This project would unite the Nassau and Suffolk Child Care Councils and the local United Way in efforts to improve the quality of early childhood education.</p> <p>The Long Island report included regulated center and family care and license-exempt child care that could be accounted for in the CCR&R databases. The study did not include pre-k operated by public schools because the study team felt that providers and policy makers would view these programs as part of the K-12 education sector and not as a part of early child education industry. Most regulation-exempt home-based care (informal care) was also excluded.</p> <p>Gross receipts were defined as provider charges (parent fees and vouchers in lieu of parent fees), Head Start, and provider subsidies (quality dollars, Child and Adult Care Foo program (CACF), wage supplements, etc.)</p> <p>Data were derived from the Child Care Council of Suffolk's and Child Care Council of Nassau's databases. One of the challenges mentioned in the report was that data was inconsistent and the adjustment factor was applied to both counties. Also, similarly to other studies, there was no reliable data on unregulated child care. Although both Councils</p>	<p>Child Care Council of Suffolk, Inc. Child Care Council of Nassau, Inc.</p> <p>http://www.childcaresuffolk.org/pdf/news90.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact

		<p>were able to provide some data on “legal-tuos” and on nursery schools and preschool programs located in private schools, this data is incomplete. Data on unregulated care was excluded from the analysis.</p> <p>Input-output analysis was used to measure the multiplier effect that results from the spending by child care industry.</p> <p>Some of the major findings include the following:</p> <ul style="list-style-type: none"> ➤ Child care is a \$612 million dollar industry ➤ It directly employs 17,000 people ➤ Most of the industry’ revenue is generated by center-based child care ➤ The child care has an output multiplier of 1.92 (which is larger than most other Long Island industries) ➤ Long Island tax dollars spent on child care draw a large amount of federal and state dollars into the regional economy (\$10 for every \$1 invested) 		
Oklahoma	Completed January, 2004	<p>The study included all licensed and regulated child care facilities in the state such as child care centers, family child care homes, Head Start programs and government operated facilities. School-based pre-kindergarten programs were not included in the analysis. Gross receipts are estimated at \$410 million. Direct employment is estimated at 25,569 jobs.</p> <p>The study found that child care industry workers contributed more than \$16 million in sales and state income taxes in 2003. The additional \$8 million in tax receipts is generated as a result of the economic activity of child care businesses. The study also measured how quality impacts revenue per facility and the wages of child care workers. The report demonstrates that revenue per child, employee and facility type increase as the rating of the facility increases.</p>	<p>Oklahoma Department of human Services Child Care Division Oklahoma State University</p> <p>http://economy.okstate.edu/papers/okchildcareimpact2003.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact -Economic Impact by Facility Quality

				/ Sector Growth
Massachusetts	Completed 2004	<p>The set of Early Childhood Indicators (which included economic data, such as number of employees and gross receipts for the state) was designed prior to the study to evaluate Massachusetts' early care and education industry.</p> <p>The study defines the child care sector as licensed center-based care, family child care homes, nursery schools, before- and after-school programs for children ages 5 through 14, public or private pre-schools, and Head Start child development centers. Unlicensed care is not included in the analysis.</p> <p>Gross receipts were estimated at \$1.5 billion. Number of establishments was 12, 827. The child care industry provided 29,555 jobs (direct employment) to the economy of the state.</p>	<p>National Economic Development and Law Center State Education Department</p> <p>http://www.nedlc.org/MAEIR_full%20.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact
Mississippi	Completed December, 2003	<p>The study included only licensed child care centers. (Mississippi does not have a state-funded pre-kindergarten program). Data on the price of full-time child care was also included and compared to tuition at Mississippi State University. Unlike most other studies, gross receipts were not calculated in this report. In 2003, the child care industry directly employed 10,521 people.</p> <p>The study demonstrated that a single parent in Mississippi with one child can spend more than 20 % of her/his income on child care. Also, a single parent making the minimum wage could hypothetically spend 70% of the family income if she enrolled two pre-schoolers in full-time child care at the average price of care in the state. Not surprisingly, many Mississippi families use less expensive, unregulated, informal child care provided by family, friends, and neighbors.</p>	<p>Mississippi Low-Income Child Care Initiative</p> <p>http://www.mschildcare.org/resources/newsletter/vol1.html</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -% of Inc. Spent on Child Care
Texas	Completed December, 2003	<p>The report focuses on all licensed and regulated child care providers including day care centers, group day care homes, registered family homes and family homes that are listed with the Texas Department of Protective and Regulatory Services. Those programs that receive Head Start or pre-kindergarten funds and are licensed are also included in</p>	<p>Texas Workforce Commission, Child Care, Services</p> <p>http://www.twc.state.tx.us/sv</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served

		<p>the analysis. Instead of calculating gross receipts based on industry revenues, this report estimates the total wages paid to child care workers and the purchases made by the child care industry. In addition, multipliers are used to estimate the additional, economic ripple effect of wages paid and purchases made by the industry. Census and NAS data were used to determine the number of children in center-based child care.</p> <ul style="list-style-type: none"> ➤ From 1990 to 2003 the number of people employed in child care in Texas increased by 38%, and is predicted to grow another 32% by 2010 ➤ Gross receipts were estimated at \$1.75 billion annually ➤ Child care industry created and supported 144, 970 jobs ➤ Child care is the 16th largest industry in Texas and it represents 1.16 percent of the total State employment base. 	cs/childcare/ccimpact2003.pdf	<ul style="list-style-type: none"> -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy
Minnesota	Completed Fall, 2003	<p>The child care sector is defined as all formal full-day and part-day early care and education programs, Head Start, pre-schools, family child care homes, after school programs, and child care centers. The study does not include unlicensed care providers and pre-school programs funded by school districts due to a lack of data availability. Gross receipts include provider charges and exclude government funded programs (Head Start, pre-k) or provider subsidies. Gross receipts are estimated at \$962 million. The number of establishments and children served is not reported. Direct employment by the child care industry is estimated at 28,058 jobs.</p> <p>The Minnesota study provides state-specific data on how child care affects the bottom line in businesses,</p> <ul style="list-style-type: none"> ➤ In 2002, 22.6 % of Minnesota parents indicated they have been late to work, left work early, or missed work in the past 6 months because of child care issues. ➤ Child care benefits also seem to increase employee retention. ➤ The report tracks trends in labor force participation, 	<p>Minnesota Child Care Resource and Referral Network National Economic Development and Law Center</p> <p>http://www.gwdc.org/minutes/2003/ExecSum%20ChildCare.pdf</p>	<ul style="list-style-type: none"> -Child Care Labor Force -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies

		population growth by age, and employment outlook.		
Florida	Completed Fall 2003	<p>The child care sector was defined as the full range of early care and education services used by families to educate and nurture young children from birth to age five, and programs for school-aged children before and after school and during vacations. Specifically, the study team included licensed or registered family child care homes, child care centers, licensed exempts child care centers, Head Start programs, Early Head Start programs, and Pre-K Early Intervention programs in the analysis. The report did not include individuals employed in the government sector with responsibilities for the administration and/or governance of child care programs (such as child care licensing staff). When estimating gross receipts, the research team included provider charges (parent fees and vouchers in lieu), and government funded programs and did not include provider subsidies (quality dollars, CACF program, etc.) Gross receipts are estimated at \$2.08 billion. Child care industry directly contributes 46,561 jobs.</p> <ul style="list-style-type: none"> ➤ 138.75 million in tax revenue to local and state governments was paid though the child care industry ➤ The child care industry in Florida generates \$74.53 million in taxes at the state and local levels. Revenue collected through the indirect and induced effects of the child care industry generates an additional \$34,08 million and \$30.14 million, respectively. 	<p>Florida Children’s Forum</p> <p>http://www.fcforum.org</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact
New York	Completed July, 2003	<p>The child care sector definition is broad and it includes Universal Pre-K and Head Start/Early Head Start programs. Only licensed and regulated programs were included in the report. However, gross receipts included subsidies paid to informal providers not already counted in the licensing system. The study also provides a footnote on self-employed providers (this data was obtained from IRS reports). However, no additional data was available on these providers; therefore, they were not included in the estimates of establishments, workforce, and children served and gross receipts. Gross receipts were estimated at \$4.671 billion; direct employment by</p>	<p>NYSCCC and the New York State Office of Children and Family Services</p> <p>http://www.economicdevelopment.cce.cornell.edu</p> <p>http://government.cce.cornell.edu/pdf/NewYorkCornellReport.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care

		<p>the industry was equal to 119,000 jobs.</p> <p>The research team collaborated with the New York State Office of Children and Family Services to make the data collection process more effective. It was especially difficult to gather data on the labor force. To avoid the problem of under-representing the true labor force, the researchers used statewide data from the retention program to estimate administrative and support staff for centers and school age child care. The team found 0.23 non-direct care staff person for each direct care employee. The New York study team also conducted a survey of the entire CCR&R network statewide to ensure the accuracy of all data elements listed in the report. Data obtained from CCR&R was compared to state licensing and market rate data.</p>		<ul style="list-style-type: none"> -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies
Boulder County, Colorado	Completed Summer 2003	<p>This report was prepared to describe the early childhood education industry in Boulder County, compare it to the other industries, and to measure the economic impact of early childhood education on the regional economic development.</p> <p>Data was gathered from the U.S. Bureau of the Census, the U.S. Bureau of Labor Statistics, the Colorado Department of Local Affairs, the Boulder Chamber of Commerce and CCR&R Agency.</p> <p>The study team examined both direct and indirect economic impacts. The Bureau of Economic Analysis RIMS-II multipliers were applied to the direct expenditures of ECE providers and the wages that some parents would forgo if paid child care were no longer available. Such an approach was used to build a model demonstrating the total economic impact of the child care industry which was estimated at \$463 million (2002). The child care industry directly employs 1,300 people.</p> <p>Inputs to the model included financial and operational data from child care centers, preschools and family child care homes. In addition, some information was obtained via a telephone survey of 200 Boulder County parents.</p> <p>The child care industry included regulated and licensed child care</p>	<p>Early Care and Education Council of Boulder County</p> <p>http://www.bouldercountyece.org/impactstudy1.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy

		<p>centers, family homes, preschool, and school age sites. Unlike other similar studies, Boulder County study estimated the number of unlicensed care which includes relatives, friends, nannies and neighbors.</p> <p>Gross receipts included parent fees (including “but for” parents, the Colorado Child Care Assistance Program (child care subsidies for low-income families), the Colorado Preschool Program (preschool services for high-risk children), and the CACF.</p>		
Larimer County, Colorado	Completed July, 2003	<p>The study was conducted by BBC Research & Consulting in conjunction with the Boulder County, CO study. Also, the assistance in data collection and coordination was provided by the Early Care and Education Shared Vision Initiative of Larimer County and Boulder County. The study was funded by the Colorado Department of Education.</p> <p>The research team included licensed and regulated center and family care, and regulation-exempt home-based care (informal care). When estimating gross receipts, the study only included parent fees, vouchers in lieu of parent fees and provider subsidies for that proportion of space which serves children from working parents who would alter their labor force participation but for the availability of paid child care. In addition, the study also considered parent fees of those who live outside the county but have their children in paid child care within the county.</p> <p>Total economic impact of the child care industry was estimated at \$300 million. The child care industry directly employs 800 people.</p> <p>The study team defined “new dollars” as child care fees paid by “but for parents” (these are working parents who would exit the labor force, or reduce their hours of work, but for the availability of paid child care) as well as after-tax earnings net of child care expenditures of the “but for” parents. The analysis also included child care fees from parents who live outside the county but who use child care centers within the county.</p>	<p>Larimer County Early Childhood Council</p> <p>http://www.fortnet.org</p> <p>http://www.co.larimer.co.us/compass/early_care_impact.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy

		<p>The telephone survey of 200 parents was used in the study. The results demonstrated that 60% of parents would be willing to work longer hours if paid child care were available; 41 % of parents said that a working adult in their household would have to stop working if paid child care were no longer available. Ninety-three percent of parents, who choose their type of care because of educational opportunities, choose a child care center/preschool setting. Also, 50% of parents who use paid care choose a child care center or preschool while 20 % choose a family home provider. Six percent of parents indicated that they had to turn down a job or a promotion because paid child care was inconsistent or unavailable.</p>		
Minneapolis, Minnesota	Completed June, 2003	<p>The study included only licensed and regulated full-day and part-day early care and education programs, Head Start, pre-schools, family child care homes, after school programs, and child care centers. Unlicensed care providers were excluded from the analysis due to data unavailability. Pre-school programs provided by school districts were also excluded.</p> <p>Gross receipts included provider charges (parent fees and vouchers in lieu of parent fees), and did not include government funded programs (Head Start and Pre-K) or provider subsidies (quality dollars, Child and Adult Care Programs, etc.) Gross receipts were estimated at \$161.5 million. Child care industry directly employs 1,867 people.</p> <p>IMPLAN input-output model was chosen to measure the effects of the child care industry' dealings with local suppliers and the impacts on local industries caused by the expenditure of household income.</p> <p>The Minnesota study is unique because it provides state-specific data on how child care affects the bottom line in business. For example, the results demonstrate that :</p> <ul style="list-style-type: none"> ➤ Child care benefits increase employee retention ➤ Reliable quality child care options allow parents to continue to 	<p>Greater Minneapolis Day Care Association</p> <p>http://gmdca.org/pdf/GMDC A.EIS.FinalReport.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies

		<p>advance in their careers after they have started a family</p> <p>The report also tracks trends in labor force participation, population growth by age and employment outlook. Policy implications are included in the final section of the study.</p>		
Maine	Completed June, 2003	<p>The research team included only licensed and regulated child care centers and family child care homes. It did not include regulation-exempt center care, regulation-exempt home-based care and pre-k public schools. Gross receipts are defined as provider charges (parent fees and vouchers in lieu of parent fees), government funded programs (Head Start, UPK). CACFP. The study did not include quality dollars spent for training or other provider supports.</p> <p>The study team divided the revenue impact into four groups: child care centers, family child care homes, federal child care food assistance and indirect, and induced revenues. The federal and state subsidies from specific funding resources by the child care industry were also estimated.</p> <p>Gross receipts are estimated were \$253 million. The child care industry created and sustained jobs for 120,000 people (direct and indirect effects).</p>	<p>Cumberland County ACCESS People Regional Opportunity Program Early Learning Opportunities Consortium Portland, ME</p> <p>http://www.propeople.org/ExecSum2a.pdf</p>	<p>-Number of Establishments Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact</p>
Rhode Island	Completed April, 2003	<p>Similar to other reports, the major goal of the study was to demonstrate the effects of the child care industry on the economic development of the state of Rhode Island. Due to information unavailability, only licensed and regulated centers and family care were examined. Regulation-exempt, home-based centers (informal care), and pre-k in public schools were not included in the analysis. Gross receipts were defined as provider charges (parent fees and vouchers in lieu of parent fees), and did not include provider subsidies such as quality dollars and CACF.</p> <p>Data was obtained from the NACCRAWARE database supported by Options for Working Parents, the Rhode Island Department of Services INRHODES database, and the Statewide Survey of Child Care Costs 2002 administered by the Schmidt Labor Research Center</p>	<p>Options for Working Parents Child Care Resource and Referral Agency (CCR&R)</p> <p>http://www.optionsforworkingparents.com/Economic%20Impact%20Study.htm</p>	<p>-Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Governmental Transfers / Subsidies -Tax Receipts /</p>

		<p>at the University of Rhode Island.</p> <p>The results demonstrated that in 2002, Rhode Island’s child care sector generated \$228 million in revenues, an amount equal to about half of what was generated by transportation and warehousing industries. Total employment impact was 9,626 jobs. Thirty-seven percent of all children in regulated care were supported at least partially by subsidies. Seventy-six percent of all the funds spent on child care subsidies in Rhode Island in 2002 were state funds, and 24% came into Rhode Island from the Federal Child Care and Development Block Grant and other sources of federal funding.</p>		Fiscal Impact
Kansas	Completed March, 2003	<p>The child care sector was defined as center-and-family-base child care, Head Start, private preschools, and after-schools programs. The study excluded pre-kindergarten and informal child care arrangements (regulation-exempt home-based care) from gross receipts calculations. Gross receipts included provider charges, government funded programs (Head Start and pre-k), and provider subsidies (quality dollars, CACF, etc.). Gross receipts were estimated at \$0.5 billion. Direct employment resulted in 140,000 jobs.</p> <p>The study team examined the child care sector not only as an industry, but also as infrastructure. The study compared child care to other major industries such as transportation, housing, higher education, and health care.</p> <p>The research team identified data collection as the most challenging part of this project due to data unavailability and inconsistency which prevented the steering committee from addressing many important issues and concerns.</p> <p>The Kansas study is unique because it was the first to use the concept of “leverage” (the benefit that child care provides the state as a result of leveraging a significant amount of federal dollars). Multipliers were also calculated and the results demonstrated that 217 jobs and \$6.5 million would be lost if eligibility was lowered from 150% of poverty to 185% of poverty.</p>	<p>Kansas City Metropolitan Council on Child Care Kansas Children’s Cabinet CCR&R organization</p> <p>http://www.marc.org/mccc/ks/econimpactreportfinal.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact

<p>Rowan County, North Carolina</p>	<p>Completed January, 2003</p>	<p>Data was obtained from a mail survey of 47 child care centers and 36 family child care providers in March 2001. The study focused only on licensed and regulated establishments and did not include regulation-exempt center and home-based care and education.</p> <p>Unlike the majority of studies that calculated gross receipts of the industry based on per child revenues, the Rowan County study used survey data to estimate payroll generation and purchase of goods and services. In addition, the study team used multipliers to estimate total local payroll impact. Only actual net payroll dollars were used in these calculations. In addition, the study estimated the number of working parents who lived in Rowan County in August 2002 and used these data to measure collective earnings and labor pool expansion.</p> <p>Finally, the research team estimated the number of square feet that child care centers occupy. The results demonstrated a need for 10% more child care space in the next three years. The report did not include any policy recommendations.</p>	<p>Rowan Partnership for Children http://www.scopeview.net</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Square Footage and Future Demand
<p>Contra Costa County, California</p>	<p>Completed January, 2003</p>	<p>The study included only licensed and regulated large and small child care homes and regulated child care centers. Specifically, most Head Start programs were included in licensed care data; however, school-operated part-day preschool programs and private, part-day nursery schools were excluded. The study also did not capture data on informal home-based care provided by relatives, nannies, or babysitters. Gross receipts included parent fees, provider subsidies (quality, CACFP), and government funded programs (Head Start and education department funding). Gross receipts were estimated at \$231.4 million. The child care industry contributed 35,600 jobs to the state's economy (total impact).</p> <p>Data were obtained from the Contra Costa Child Care Council, CCR&R agency, and NEDLC.</p> <p>The report provides major findings, includes a table of different sources of child care subsidies, explains the multiplier effect of child care capital investments, and presents the estimates of the collective</p>	<p>Contra Costa Child Care Council (CCCCC) National Economic Development and Law Center (NEDLC) http://www.cocokids.org/</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact

		<p>earnings of working parents who use licensed child care. The study also measures the economic output of working parents in terms of county industry output, value added to the country gross product, indirect county tax revenues, property income, and county jobs. The report provides important policy recommendations including an increase in subsidies for low-income families, an overall increase in government investment in child care, and the incorporation of child care in economic development planning of the county.</p>		
<p>Merced County, California</p>	<p>Completed Winter, 2003</p>	<p>The Merced County study provides the economic profile of the county, the economic impact of the child care industry, and a thorough analysis of linkages between the child care industry, local businesses and economic output.</p> <p>The child care sector is defined as licensed centers and family homes, Head Start, state pre-schools and general child development centers, pre-schools for children with special needs, and other governmental child care programs. Legally unlicensed and informal services were excluded from the analysis.</p> <p>Gross receipts are defined as the total amount of dollars flowing into the sector in the form of payments for care, including both parent fees and private and public subsidies. Gross receipts were calculated by multiplying the number of children enrolled in each type of care by the average cost of care. Data on average hourly, daily, and weekly rates was derived from the Regional Market Rate Survey for California Child Care Providers, 2002.</p> <p>The following formula was used for Gross Receipts calculations: Gross Receipts=Enrollment x Average Cost/Child/Year</p> <p>The estimated annual gross receipts for licensed child care totaled \$33.5 million. Direct employment by the child care industry was estimated at 1,144 jobs.</p> <p>IMPLAN software was used as a major modeling technique. Employment estimates were run through IMPLAN to estimate total</p>	<p>Merced County Children and Families Commission Merced County Human Services Agency Merced County Workforce Investment Board Merced County Community Action Agency</p> <p>http://prop10.merced.ca.us/pdfs/cceir.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact

		gross receipts. Next, the child care industry's gross receipts were compared with other industries in Merced County. The results indicate that licensed child care is larger than several major local industries including clothing stores, wine grapes, and legal services.		
Monterey, California	Completed Winter, 2003	Not available		
Solano County, California	Completed 2003	<p>The report focused on all licensed full or part day child development facilities such as licensed and regulated family child care homes, centers, non-governmental preschools, state subsidy preschools, military child care facilities and Head Start programs. The study team excluded regulation-exempts center care and regulation-exempt home-base care. Gross receipts included provider charges (parent fees and vouchers in lieu of parent fees) and government funded programs such as Head Start and UPK. However, gross receipts did not include provider subsidies such as quality dollars and CACF program. Gross receipts were calculated and categorized according to the type of center.</p> <p>The report provided the size of the child care industry as measured by employment numbers, the size of subsidy capture and the linkage effects of the child care industry. Gross receipts for child care industries totaled \$87.2 million and the direct employment impact was estimated at 2, 501 jobs.</p> <p>The Solano report focused on local demographic and economic transformations that have occurred over the past ten years emphasizing those changes that had a major impact on early child care and education. Some of the findings included the following:</p> <ul style="list-style-type: none"> ➤ Childbirth was the main factor of population growth in recent years ➤ Children age 14 and under comprised almost a quarter (1/4th) of the total population ➤ The increasing diversity in child population required a wide 	<p>Solano County Children and Families Commission National Economic Development and Law Center (NEDLC)</p> <p>http://www.cafc.ca.gov/solano/Files/EcoImpactRpt.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies

		<p>range of culturally appropriate child care programs and multi-lingual staff</p> <p>Several important recommendations were also included in the report. One of the recommendations was for businesses to work with the public sector to improve the current state of child care services and to address the child care needs of employees at individual firms.</p>		
Butte County, California	Completed December, 2002	<p>The “Economic Impact Report” demonstrates the importance of the child care industry for the local economy. The child care industry is defined as the formal child care sector including all licensed care and those license-exempt programs that are quantifiable:</p> <ul style="list-style-type: none"> ➤ Private Licensed Child Care (family child care homes, child care centers) ➤ Subsidized Licensed Child Care (subsidized child care services, voucher programs, state preschools, Head Start and its entities) ➤ License-Exempt Child Care (before- and after-school programs, voucher programs) <p>Two methods are used to calculate the child care industry’s gross receipts. First, the gross receipts for licensed family care, non-subsidized care, and license-exempt after-school programs are calculated by multiplying the number of children enrolled in each type of care by the average rate for that type of care. Second, the gross receipts for Head Start. Migrant Head Start, and state pre-schools are estimated by measuring the dollar amount of their contracts (in other words, the amount of subsidies directly flowing into the economy as a result of these programs).</p> <p>The results indicate that the formal child care industry generates \$32.6 million annually. In addition, approximately 1,118 full-time equivalent local jobs are directly supported by the licensed child care industry. The report also shows that working parents who use formal child care</p>	<p>Butte County Office of Education Butte County Children and Families Commission National Economic Development Law Center (NEDLC)</p> <p>http://www.bcoe.org/ess/accent/eir.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact

		<p>increase industry output by \$252.8 million, create 109.1 million in total direct, indirect and induced income, generate \$11.9 million in indirect tax revenues, and contribute \$158.9 million value added to the gross product in the county.</p> <p>The IMPLAN input-output modeling system was utilized to determine how the economy is affected by a dollar invested in the child care industry.</p>		
Sonoma County, California	Completed November, 2002	<p>The child care sector is defined as all licensed and regulated center and family providers, Head Start, state pre-school programs, and non-governmental preschools. The study does not measure regulation-exempt center care or regulation-exempt home-based care. Gross receipts include provider charges (parent fees and vouchers in lieu of parent fees) and government funded programs (Head Start, and pre-k). Provider subsidies such as quality dollars and CACF program are not included in the analysis.</p> <p>Gross receipts were estimated at \$91.1 million. Direct employment was equivalent to 2,412 jobs.</p> <p>The study measures the size of the child care industry by gross receipts, employment numbers, the size of subsidy capture and the linkage effects of the child care industry. In addition, the multiplier effect of facility construction is calculated. Specifically, the study demonstrates that a \$1 million investment in child care facility construction would yield at least 16 full time equivalent jobs in the county. The report also includes policy recommendations focusing on increasing investment in child care supply and increasing the amount of subsidies obtained from state and federal sources.</p>	<p>Community Child Care Council of Sonoma County Sonoma County child Care Planning Council National Economic Development Law Center (NEDLC)</p> <p>http://www.sonoma4cs.org/Sonoma_EIR.pdf</p> <p>http://www.sonoma4cs.org</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies
Santa Clara, California	Completed October, 2002	<p>The major purpose of this study is to measure the local economic impact of the licensed child care industry and to assess the extent to which child care supports the Santa Clara County's economy. The report also evaluates issues in the supply and demand for the child care industry.</p> <p>As defined in this study, the child care industry includes full- and part-</p>	<p>Santa Clara LINCC project and Child Care Planning Council</p> <p>http://www.childcareoptions.org/</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of

		<p>day child development programs for young and school-age children such as family child care homes, Head Start, after-school programs, and state pre-school. Although, the study team attempted to include some data on license-exempt care, the report focuses primarily on licensed child care.</p> <p>Following the examples found in similar reports, the gross receipts of the child care industry in Santa Clara County are calculated by multiplying the number of children enrolled in each type of care by the average rate for that type of care. The estimated gross receipts for licensed child care are \$330, 929,924 per year. Importantly, Santa Clara County’s child care industry is larger in size than architectural services, advertising agencies, or computer and office equipment repair. In addition, the analysis of 2002 local licensed child care employment data demonstrates that direct, full-time equivalent employment in the licensed child care sector was 6,614. In terms of direct employment, the licensed child care sector is similar in size to electronic computer manufacturing and residential building construction.</p> <p>The IMPLAN modeling software was utilized as a primary economic analysis tool. The results indicate that the child care industry provides an additional 9,852 FTE jobs to the county’s economy.</p> <p>The study also discusses the impact of child care on local economic competitiveness, employee participation, productivity, and its role in increasing economic output of working parents.</p> <p>The final section of the report provides important recommendations for financial institutions, businesses, and government.</p>	http://www.childcareoptions.org/pdf/SCEIR.pdf	<ul style="list-style-type: none"> Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact
National	Completed Fall 2002	<p>The study measured the “formal child care sector” which is defined as care provided to children prior to when they enter kindergarten at licensed child care centers and family homes. Therefore, regulation-exempt home-based care, regulation-exempt center care, and pre-k in public schools were omitted from the analyses. The study team pointed out that defining child care and quantifying formal care was especially</p>	<p>National Child Care Association (NCCA)</p> <p>http://www.nccanet.org/NCCA%20Impact%20Study.pdf</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Number of Parents with

		<p>challenging due to data unavailability and inconsistency. The report did not measure the amount of gross receipts for the child care industry. Some of the major findings included the following:</p> <ul style="list-style-type: none"> ➤ Industry input was estimated at \$1.5 trillion ➤ By the year 2010, the United States is expected to add another 1.2 million children, aged four and under, which would amount to a 6 percent increase ➤ The cost to develop space in a new high quality facility per child is \$12,500, versus the national average of \$11,000 spent per child ➤ Employment impact was equivalent to 15.2 million jobs ➤ More Americans are directly employed in the licensed care sector than as private/secondary school teachers ➤ The child care industry’s productivity impacts (\$904 billion) are greater than GDP contribution of many higher profile industries such as construction (\$426 billion) and retail trade (\$792 billion) <p>Several important policy implications and recommendations were also included in this report.</p>		<p>Children in Paid Care</p> <ul style="list-style-type: none"> -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact
Milwaukee, Wisconsin	Completed September, 2002	<p>The report examines the overall economic impact of the child care industry in Milwaukee County and discusses the long-term economic benefits of quality child care. The analysis focuses on licensed and regulated child care including group child care centers as well as “certified” and “provisionally certified” family child-care providers.</p> <p>Similar to the other studies, the report measures annual gross receipts and the number of people directly employed by the child care industry. Unlike the majority of the studies that chose IMPLAN modeling software, the Milwaukee study team utilizes RIMS II input-output</p>	<p>Early Childhood Council of Milwaukee</p> <p>http://www.uwm.edu/Dept/CED/</p>	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care

		<p>model to determine how the expenditures for child care and employment in child-care establishments affect economic performance.</p> <p>In order to enhance the accuracy of the estimates, the study team uses NEDLC methodology which generates estimates of gross receipts and direct employment based on data on capacity, enrollment, and average tuition rates for various age groups. Gross receipts and direct employment figures were calculated for the three categories: licensed group child-care providers, licensed group child-care centers, and certified family child-care providers. The following formula was used for measuring annual gross receipts: Gross receipts= (Enrollment) x (Average Cost/ Per child/Per year Some of the major findings include the following:</p> <ul style="list-style-type: none"> ➤ Gross receipts are estimated at \$203.73 million ➤ When the ripple effects of the purchasing and employee earnings in the child care industry are considered, the industry generates around \$315 million annually in the Milwaukee County economy ➤ The regulated child care industry directly employs more than 7,200 people (this number is larger than the employment estimates for other local industries such as transportation, equipment manufacturing, printing, and legal services) ➤ Taking into account the “multiplier effect”, the child care industry creates and sustains 9,077 jobs in the county ➤ The child care industry enables approximately 21,000 parents to work <p>The study also discusses important long-term economic benefits of quality child care such as educational improvements for the child, gains in emotional and cognitive development, and improved parent-</p>		<p>-Multiplier Effects on Local Economy -Governmental Transfers / Subsidies -Tax Receipts / Fiscal Impact</p>
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		child relationships among others.		
Vermont	Completed June,2002	<p>The main goal of the study is to demonstrate the link between the child care industry and the economic development of the state. The study team defines the child care industry as all early care and education, from birth to age 11, in all types of facilities.</p> <p>Specifically, the study includes licensed care centers, regulated family child care homes, Head Start and preschool. In addition, the study team estimates unlicensed care but excludes informal care (regulation-exempt family care). Informal care is only included in the labor force data analysis. Gross receipts are measured by multiplying the average cost of care by the number of children in child care. The Child Care Labor Force data includes only regulated child care consisting of all non-parental, non-relative child care such as licensed centers and registered family child care providers regulated by the state of Vermont.</p> <p>Gross receipts are estimated at \$208 million per year. Direct employment for the child care industry is equivalent to 4,999 jobs.</p> <p>The study team conducts input/output analysis to determine the economic impact (both direct and indirect) of the child care industry in the state. The study attempted to determine a link between parents' wages and the child care industry. The study also includes data on the number of children receiving subsidies, State and Federal CCDF (Child Care and Development Fun) expenditures, a cross sector look at median hourly wages, and the supply of child care over time.</p> <p>The report provides a pie chart demonstrating child care expenditures as a percentage of a family's basic needs budget. Policy implications are not part of the report. However, the study had a major impact on the State legislation involvement in child care industry development in Vermont.</p>	<p>Windham Child Care Association & Peace and Justice Center</p> <p>http://www.windhamchildcare.org/pdf/wcc-book.pdf</p>	<ul style="list-style-type: none"> -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Percentage of 2nd Wage Earner's Income Spent on Child Care
Mariposa County, California	Completed June, 2002	Not available	Mariposa County Local Child Care Planning Council	

<p>Orange, California</p>	<p>Completed 2002</p>	<p>The report focuses primarily on licensed child care due to data unavailability and data inconsistency on the unlicensed care. Licensed child care includes child care centers and home-based providers (family child care homes).</p> <p>The size of the industry is measured in terms of gross receipts (output) and in terms of direct employment. Gross receipts are defined as the total dollar amount flowing into the sector in the form of payments for care such as parent fees and private and public subsidies. Gross receipts are measured by multiplying the number of children enrolled in each type of care (infant, part-time, state-subsidized, etc.) by the average rate for that type of care. Annual gross receipts for the child care industry are estimated at \$412 million (\$340 million for child care centers and \$72 million for family child care homes). In addition, the child care sector generates \$28.76 million in tax revenues.</p> <p>The IMPLAN modeling software was utilized to determine the economic relationship of the child care industry to other industry sectors. In total, the licensed child care industry accounts for \$719.5 million per year in the economy of the county. The results also indicate that the licensed child care sector contributes 10,694 jobs in direct employment or 0.8 % of Orange County's overall payroll employees. It also contributes 3,208 jobs to other industry sectors. Direct child care employment is comparable to the computers, peripherals and software industry and to the apparel and other textile products industry.</p> <p>The study team measures direct, indirect, and induced productivity effects of the licensed child care sector. Some of the findings include:</p> <ul style="list-style-type: none"> ➤ The licensed child care sector enables county's workers to earn \$828 million per year ➤ Productivity gains create \$2.8 billion in total direct, indirect, and induced income 	<p>United Way Success by Six</p> <p>http://www.unitedwayoc.org/community_results/initiatedocs/17/EIR.pdf</p>	<ul style="list-style-type: none"> -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy
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		<ul style="list-style-type: none"> ➤ Productivity gains generate \$312 million in indirect tax revenues ➤ Productivity gains support approximately 69,900 jobs <p>The study team identifies some of the major issues that need to be addressed in order to improve the child care industry performance. They include: the high cost of providing care, the shortage of qualified staff, high land and development costs, and the lack of affordable and financing products among others. Some important recommendations are also included.</p>		
Alameda County, California	Completed 2002	<p>This report is based on the 1998 child care economic impact study produced by the National Economic Development and Law Center (NEDLC) as a part of Alameda County’s participation in LINCC (Local Investment and Child Care) initiative. The most recent (2002) study demonstrated the changes that occurred since 1998 and disaggregated data by city creating 14 mini-studies for cities in the county. These mini-studies are formatted as one-page flyers for public distribution.</p> <p>The study includes only licensed and regulated child care establishments. Informal (regulation-exempt) child care programs, such as child care in the home of relative or unlicensed neighbors/friends, care provided by nannies, and care operated by a school or recreation program, are excluded from the analyses. Gross receipts were defined as provider charges (parent fees and vouchers in lieu of parent fees) and excluded government funded programs (Head Start, UPK) or provider subsidies (quality dollars, CACF program, etc.)</p> <p>The report provides data on revenues generated from the child care industry, the number of people the industry employs, the number of indirect jobs it creates, and the capacity growth of the child care sector in the county. Specifically, gross receipts are estimated at \$346 million annually. The child care industry also contributes 15,000 jobs to the local economy.</p>	County of Alameda General Services Agency http://www.co.alameda.ca.us/childcare/reports.shtml	-Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies

		<p>The study team found some evidence of growth in the child care industry during the period of 1998-2002. The results demonstrated a 4.3% increase in newly established businesses and a 22% gain in the number of child care spaces. In addition, the study team found that formal sector output has increased by 39% since 1997. Although it was challenging due to data unavailability, the Alameda study estimated that an additional \$173 million in “unassigned” revenue is generated annually by the informal sector in Alameda. The report includes important policy implications.</p>		
Tompkins County, New York	Completed Spring 2001, updated Spring 2002	<p>Unlike other studies, the Tompkins County study produced several fact sheets rather than reports. The fact sheets provide information on total revenue and workers in the child care sector, structure of child care in the county, and the economic impact analysis focusing on the labor shortage in child care industry.</p> <p>The child care industry is defined as licensed and regulated center and family care, pre-kindergarten, Head Start, nursery schools, part-time early care at private schools, and school-age child care. In addition, data on legally-exempt informal providers listed with the Day Care and Child Development Council is included in the study. Gross receipts include parent fees and public child care subsidies in lieu of parent fees, and publicly funded pre-k and Head Start. The study team attempted to determine the parent impact on the child care industry. In addition, a graph was developed to demonstrate the relative role of public subsidies, sliding fee scales and the need for private contribution by showing how middle-income families pay the greatest percentage of their income for child care. Finally, the study compares early care and education expenses with college tuition. Several important policy implications and recommendations were also included.</p> <p>According to the results (using data from 2000), the economic impact of the child care business spending in Tompkins Co. was \$23.9 million in product and 900 jobs. In addition, child care is estimated to enable 3,500 parents to earn \$110. 5 million. Gross receipts were estimated at</p>	Tompkins County Early Education Partnership (EEP) http://www.daycarecouncil.org/EEP/index.htm	<ul style="list-style-type: none"> -Number of Establishments -Child Care Labor Force -Children Served -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies

		\$15 million per year.		
San Mateo County, California	Completed 2001	<p>The child care industry is defined as licensed and regulated care which includes: child care centers, Head Start, family child care and group family child care. Unlicensed, home-based child care for two or fewer children and child care operated by a school district was not included in the study. Gross receipts include parent fees and government funded programs (Head Start, pre-k) and do not include provider subsidies such as CACFP and quality dollars.</p> <p>The study team conducted the input/output analysis and provided measures for gross receipts, children served, and child care workers employed. Specifically, gross receipts were estimated at \$148 million and direct employment was equivalent to 5,736 jobs. The results also demonstrated the existing supply-demand gap in the child care sector: there were 20,700 licensed child care spaces to satisfy the demand for 102,000 spaces.</p>	<p>Child Care Coordinating Council of San Mateo County LINCC project National economic development Law Center (NEDLC) CCR&R agency</p> <p>http://www.thecouncil.net/report.html</p>	<ul style="list-style-type: none"> -Child Care Labor Force -Children Served -Gross Receipts -Multiplier Effects on Local Economy -Governmental Transfers / Subsidies
California	Completed 2001	<p>The child care industry is defined as licensed and regulated child care centers and family child care homes. The study finds that the industry generates approximately \$4.7 to \$5.4 billion in gross receipts which is comparable with California's major agricultural sectors. The study team also finds that the child care industry creates and sustains 209,000 employees which is three time more than the California advertising industry, over two times more than the lumber industry, and several thousand more than accounting and legal services.</p> <p>The study argues that the major problems the child care industry continues to face include: high operational costs, limited facilities, tight profit margins, and limited revenue streams from parents and government sources. Annual turnover rates of child care staff are more than 30% due to low wages, inappropriate benefits and few opportunities for advancement.</p> <p>The final part of the report includes important policy implications and recommendations for state and local government, and business/financial organizations.</p>	<p>National Economic Development Law Center</p> <p>http://www.nedlc.org/summary.pdf</p>	
San Antonio,	Completed	The major goal of this study was to demonstrate the economic returns	Smart Start of San Antonio,	-Children Served

Texas	May, 1999	<p>from local child care subsidies in San Antonio. Instead of focusing on the whole child care industry, the study included only a part of the child care sector and examined the impact of 3,000 new subsidized child care slots on regional economic development. The number of slots used was 3,000 because it was the number of children on the San Antonio waiting list for public child care support.</p> <p>The study evaluates economic, social and redirected (lower future social services needs) benefits from the child care sector. It also examines the scope of the child care industry. The study team utilized the input/output model to examine direct and indirect economic benefits and to provide a detailed analysis of earnings and employment in the child care industry.</p> <p>The results demonstrated that all subsidies would be recovered through increased tax revenue generated by new jobs and their indirect economic benefits. Also, upon receiving access to child care, one new worker from each family would earn an hourly wage of \$6.25.</p> <p>Gross receipts were estimated at \$50,914,930 annually. The total employment impact was equivalent to 3,810 jobs.</p>	<p>Texas</p> <p>http://www.utsa.edu/liveit/</p> <p>http://www.sanantonio.gov/betterjobs/pdf/chldcareecostudywhy.pdf</p>	<p>-Multiplier Effects on Local Economy</p> <p>-Governmental Transfers / Subsidies</p> <p>-Tax Receipts / Fiscal Impact</p>
Ventura County, California	Completed 1999	<p>The study includes only regulated and licensed child care establishments such as family child care homes and child care centers. The study team found that of a total \$142 million gross receipts, child care centers account for \$106 million, and family care homes account for \$35.5 million. Gross receipts are comparable in size to the strawberry industry, which is the second largest industry in the county. The study team also reported an important finding that federal employment estimates undercounted gross receipts by 40 %, or a difference of \$55 million.</p> <p>The results also demonstrate that in 1999, approximately 7,692 total jobs were created and sustained by the child care industry. The study compares the child care industry to other industries in Ventura county. Some findings include:</p>	<p>A joint project of the County of Ventura and the Child Care Planning Council National economic Development Law Center</p> <p>http://www.childcareplanningcouncil.org/</p>	<p>-Children Served</p> <p>-Multiplier Effects on Local Economy</p> <p>-Governmental Transfers / Subsidies</p> <p>-Tax Receipts / Fiscal Impact</p>

		<ul style="list-style-type: none"> ➤ Direct child care industry employment in the county is comparable in size to the agricultural services industry and communication industry ➤ Statewide, direct child care employment is comparable in size to the motion picture and transportation industries ➤ Licensed child care employment in Ventura County grew nine times faster than overall civilian employment between 1988 and 1997 <p>The study describes several significant economic benefits of local investment in licensed child care supply-building. The authors argue that investments in quality, licensed child care will reduce local public sector expenditures in other social services.</p>		
Monterey, California	Completed October, 1997	Not available	National Economic Development Law Center http://www.nedlc.org/	
Santa Cruz County, California	Completed 1997	Not available	Santa Cruz Child Development Resource Center County Office of Education http://www.nedlc.org/Publications/publications_childcare.htm	
Contra Costa, California	Completed 1997	<p>The report focuses only on the licensed child care industry which includes child care centers and family homes serving children 0 to 12 years of age. Gross receipts are estimated at \$231.4 million which is similar to software publishing or computer systems design. Moreover, the child care industry generates more revenues than all the computer and software store sales countrywide.</p> <p>The results of the report demonstrate that licensed child care in Contra</p>	Contra Costa Child Care Council National Economic Development Law Center http://www.cocokids.org/index.taf?id=1000796	<ul style="list-style-type: none"> -Child Care Labor Force -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects

		Costa increases industry output by \$4.92, contributes \$2.66 billion value added to the gross product in the county, supports approximately 35,600 jobs, and generates \$1.58 billion in total direct, indirect and induced income. In addition, high-quality child care increases school readiness of children. Some of the major obstacles to achieving high-quality programs include staffing shortages and rapid turnover. The report provides policy implications and recommendations.		on Local Economy
Kern, California	Completed 1997	<p>The study defines the child care industry as licensed family child care, licensed and license-exempt centers, and license-exempt family child care. Specifically, the report focuses on homes and centers that are regulated and monitored by the California Department of Social Services, school-based child care programs, and license-exempt family child care providers who receive some form of subsidy payment. Unlicensed and unregulated child care is not addressed in the study. In addition, license-exempt family child care providers that are paid directly by private funds are also excluded from the analysis.</p> <p>According to the results of the study, the child care industry contributes \$140,800,000 which is comparable to the almond industry in Kern County (the fifth largest crop in the county). Also, the child care sector creates and sustains 17,791 jobs.</p> <p>The study team argues that to improve the performance of the child care industry in the county, it is necessary to address the high vacancy rates at the licensed family child care establishments. In addition, some other important issues such as assisting low-income families, reallocation of federal funds, and improving the quality of child care are discussed in the final section of the report.</p>	Community Connection for Child Care National Economic Development Law Center	-Child Care Labor Force -Gross Receipts -Number of Parents with Children in Paid Care -Multiplier Effects on Local Economy
Missouri	Not Completed		Missouri Child Care Resource and Referral Network	
Michigan	Not Completed <i>Planning Stage</i>		Child Care Network	
Oregon	Not		Child Care Division	

	Completed <i>In progress</i>		Oregon Employment Department	
New Jersey	Not Completed <i>Planning process</i>		Association for Children of New Jersey	
San Francisco City and County, California	Not Completed		San Francisco Department of Children, Youth, and Families	
Oak Park, Illinois	Not Completed		Research Department of Action for Children http://www.daycareaction.org/ _uploads/documents/live/Ele ments_of_Child_Care_Suppl y_and_Demand_2	
Kentucky	Not Completed			
Alabama	Not Completed		United Way of Central Alabama www.uwca.org	
Indiana	Not Completed		Indiana Child Care Fund, Inc. www.indichildcarefund.org	
Fairfax County, Virginia	Not Completed		Fairfax Futures www.fairfaxfutures.org	
Anchorage, Alaska	Not Completed			
Alaska	Not Completed		Kids Count Alaska Institute of Social and Economic Research http://kidscount.alaska.edu http://www.iser/uaaa.alaska.e du	
Charlotte,	Not		Childcare Resources Inc.	

North Carolina	Completed		<a href="http://www.childcarerourcesi
nc.org">http://www.childcarerourcesi nc.org	
Iowa	Not Completed		Iowa Business Council Iowa State University <a href="http://www.iowabusinesscoun
cil.com">http://www.iowabusinesscoun cil.com	

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