

**Department of Elementary and Secondary Education
Missouri Strategic Initiative for Economic Growth
Early and Extended Learning**

Dr. Chris Nicastro, Missouri Commissioner of Education
October 15, 2010

A. Identify the need or problem that negatively affects Missouri’s economy

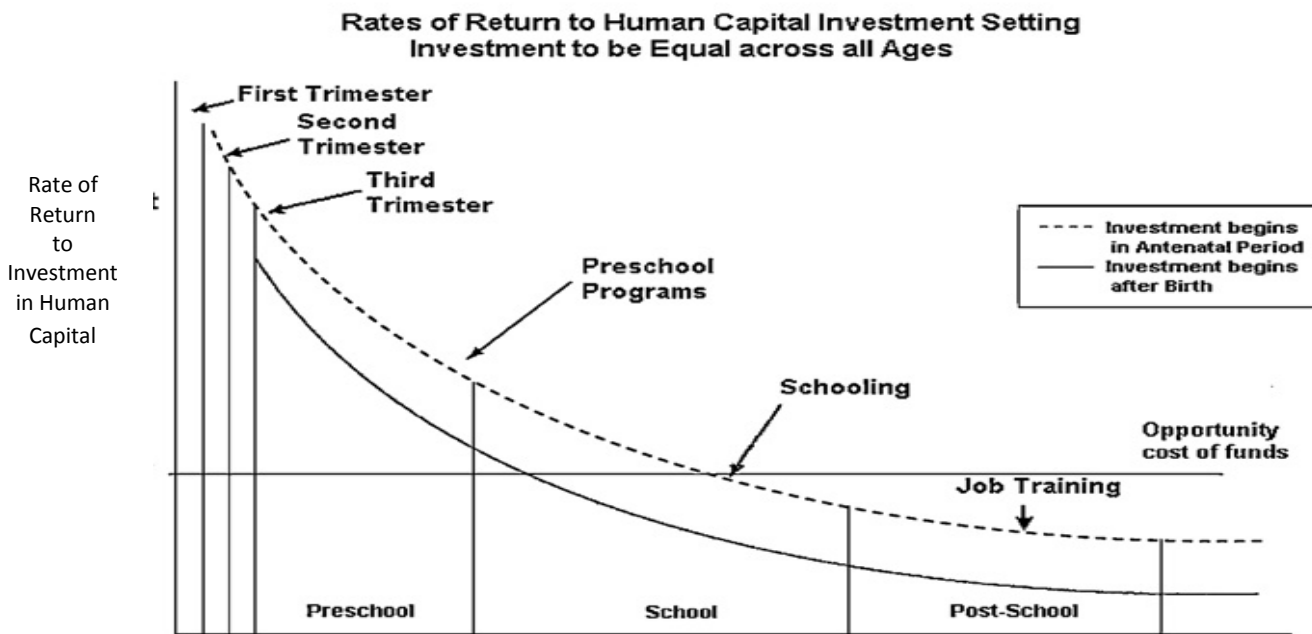
We often think of high school and college students as our “workforce of tomorrow”. However, the workforce of tomorrow starts with much younger children. Approximately 25% of Missouri children who *enter kindergarten* start school without the needed knowledge and skills to be successful academically. Directly related to this is the lack of formal education and marketable credentials among the child care teacher workforce.*

When comparing the academic records of students who graduated from high school with those who dropped out of high school, researchers found the high school dropouts had *lower* scores in reading, writing, math and spelling and these differences were evident as early as kindergarten. Disparities between the groups were evident at the beginning of the student’s academic career and the differences persisted and increased throughout their academic careers.¹

Nationally, test scores indicate that students are not on pace to become the workforce our nation needs. The majority of 4th grade and 8th grade students are not proficient in both math and reading. Many children who read below grade level at the end of 4th grade will face significant academic challenges as they enter middle school and high school. For some, these challenges will prevent them from obtaining a high school diploma.

Altering this type of academic trajectory, and ensuring all students develop the knowledge and skills needed in the workplace, requires investments in the education system well before children enter high school. As noted below (figure 1), to have a significant and cost-effective impact on human capital formation requires investments in the educational system as early as possible.

Figure 1: *Rate of Return to Investment in Human Capital Formation* ²



*For the purpose of this document, the term *child care teacher* refers to individuals who provide for young children’s (birth – one year prior to kindergarten entry) education and care within for-profit or not-for-profit early childhood centers, family child care homes, or employer-based

private centers. Across the various sectors of the education, economic, and business literature, terms such as child care worker or early childhood professional may be used.

According to Nobel-prize winning economist Dr. James Heckman, the most cost-effective route to strengthening the workforce is to invest in early education, “A large body of empirical work at the interface of neuroscience and social science has established that fundamental cognitive and non-cognitive skills are produced in the early years of childhood, long before children start kindergarten. Later remediation [remedial schooling, job training, GED] of early deficits is costly, and often prohibitively so.”³

“Investing early in our workforce pipeline ensures the best outcomes.”⁴ The Institute for Competitive Workforce (ICW) recommends supporting and directing the expansion of high-quality early childhood programs. The ICW also recommends ensuring that early childhood teachers have the formal education and marketable credentials needed to provide children with a high quality education *prior* to entry into kindergarten.

In view of the ICW recommendation, it is critically important to recognize the **significant deficiency** within Missouri’s early childhood workforce. That is, although teacher education is important across the K-12 education setting, the **majority** of Missouri’s child care teachers do not have adequate formal education. In fact, 67% of center-based child care teachers and 70% of home-based teachers do not have college degrees (Associate’s degrees or higher).⁵

B. Indicate the significance of the problem/opportunity or what would occur if the problem/opportunity is not addressed

As stated earlier, the problem is that 25% of Missouri’s children are not academically and/or emotionally prepared for kindergarten entry. And, directly related to this problem is the significant deficiency within Missouri’s early childhood workforce: the teachers lack the knowledge and skills needed to provide children with a high quality education as evidenced by the teacher’s lack of formal education and marketable credentials.

According to the Missouri Department of Economic Development, 10,112 child care teachers will be needed by 2018.⁶ These data are reflective of national statistics indicating significant job growth across this sector.⁷ Although growth in the early childhood sector is reflective of both the increased demand for services (parental employment) and greater public awareness of the contribution early childhood programs provide for children’s school readiness, the job growth is also due to a highly detrimental factor: employment opportunities abound due to low entry qualifications. **By state licensing standards, no formal education for child care teachers is required.**

If we offer the child care teachers an opportunity to participate in college coursework, many will want to earn a marketable credential. Research clearly indicates a positive relationship between teacher knowledge and instructional skills and children’s long-term success. With teacher compensation being quite low, even though teachers may want to further their education, they cannot do so. In Missouri, child care teachers with a high school diploma earn an average of **\$8.94 per hour**.⁸

C. Identify the data that validates the extent of the problem/need/opportunity

Missouri data, collected in recent years from two different sources, show a similar percent of child care teachers having no formal education.

- Based on a study by the Midwest Child Care Research Consortium in 2003, findings indicated the education level of child care teachers in Missouri was quite low. Thirty-one percent of the teachers had a high school degree or less.⁹
- In October 2010, data on almost 5,000 child care teachers in Missouri show that 33% of the teachers have a high school degree/GED or less.¹⁰

Further, economic data indicate investments in early childhood education provide substantial, short- and long-term dividends for children. This is especially true for children who are *most* at-risk for poor outcomes (children living in low-income families or rural communities). An extensive body of research indicates that children who attended high-quality early childhood programs experienced a significantly more positive developmental trajectory throughout their school-age years and into adulthood when compared to children who did not attend high-quality programs (Table 1).^{11 12} This same body of research indicates that early childhood teacher characteristics, such as higher levels of formal education, more hours of training, and academic degrees (e.g., child development, early childhood education) are associated with high-quality programs and positive child outcomes.

- Children scored significantly *higher* on a range of standardized measures throughout their school years, were *less likely* to be referred for remedial or special education, and were *less likely* to be involved in any form of criminal activity when compared to peers who did not attend high-quality early childhood programs.¹³
- Cost-benefit analyses show a return of \$3.78-\$12.90 return/\$1 invested.^{14 15}

Table 1: *Short- and Long-Term Benefits Associated with High-Quality Early Childhood Programs*

Child Outcomes	Adult Outcomes
<p><i>Higher rate of:</i></p> <ol style="list-style-type: none"> 1. Completing high school 2. Above average test scores 3. Positive attitudes toward school among children and parents <p><i>Lower rate of:</i></p> <ol style="list-style-type: none"> 1. Remedial education 2. Special education 	<p><i>Higher rate of:</i></p> <ol style="list-style-type: none"> 1. Stable employment 2. Home & car ownership 3. Family involvement 4. Education attainment <p><i>Lower rate of:</i></p> <ol style="list-style-type: none"> 1. Social service use 2. Criminal involvement and substance abuse

One factor directly associated with the role of early childhood programs that cannot be ignored is that early childhood programs function as significant economic drivers within each community. Consider the research:

- The child care sector has a multiplier effect greater or equal to the retail, tourism, hospitals and job training sectors.¹⁶ While these industries are targeted for economic development initiatives, the early childhood program sector yields an equal or greater return on investment.
- Research indicates that on average nationwide, each new dollar spent in the early childhood program sector results in a broader statewide economic impact of two dollars.¹⁷
- Fifty four percent (54%) of employers surveyed reported that consistent early childhood programming helped employees reduce absenteeism by as much as 20% to 30%.¹⁸

D. Identify best practices related to this issue

Targeted educational opportunities for early childhood teachers will help raise the quality of young children’s learning experiences. As noted, many of Missouri’s teachers of preschoolers have little, if any, formal education. Based on these data and current research, these teachers will be more successful if they have formal educational opportunities and a classroom coach/mentor to support their on-going efforts to improve the quality of their instructional practices.

One solution that targets early childhood teachers who have no formal education is the Child Development Associate (CDA). The CDA is a nationally-recognized credential that provides specific skills for teachers of young children and results in nine college credits for the teacher. The *Council for Professional Recognition* defines a CDA in the following way:

- A Child Development Associate (CDA) is an individual who has successfully completed the CDA assessment process and has been awarded the CDA Credential. CDAs are able to meet the specific needs of children and work with parents and other adults to nurture children's physical, social,

emotional, and intellectual growth in a child development framework.

- To date, there are more than 200,000 CDAs in all 50 United States, the Commonwealth of Puerto Rico, and the U.S. territories of Guam and the Virgin Islands.
- Earning the CDA Credential has many advantages, including motivating caregivers toward continuing education and providing a platform for professional and career opportunities. The Council works to ensure that it is a credible and valid credential, recognized by the profession as a vital part of a coordinated system of professional development.

E. Develop an outline of the proposed solutions or actions to address the need/problem/opportunity

Support 200 early childhood/child care teachers each year over a 5-year period so the teachers can earn their CDA Credential. This investment could touch the lives of over 10,000 children over the 5-year period. And, of course, thousands more children in the future would continue to be served by these more educated early childhood teachers. Provide some on-site coaching following the receipt of the CDA so teachers can continue to improve their classroom instructional practices.

F. Indicate the resources necessary to implement the actions

The average cost per teacher to receive a CDA, including 9 college credits, books, travel stipend, release time, and the CDA Assessment Fee is \$3,000. Upon completion of the CDA, several follow-up visits from a coach need to be provided to reinforce the teacher's improved instructional practices. In addition, we need to measure the improvement in the classroom in the short term. In the long term, we need to measure the children's performance once they get into school. These coaching visits and measurement costs will be approximately \$1,400 per teacher. So, for a total of \$4,400 per teacher, we can take a large step toward improving the quality of education for our youngest citizens.

Providing this initial education to 1,000 early childhood teachers over the 5-year period will take an investment of approximately \$880,000 per year for a total of \$4,400,000 over the five years.

G. Indicate the likely immediate and long-range benefits of the proposed actions/solutions, and the method to measure performance

From all the previous research done in Missouri and the United States, we can expect that the children who were in classrooms with teachers with a CDA, as compared to teachers with a high school diploma only, will be more prepared to enter school and, later graduate from high school with the knowledge and skills needed to become productive citizens. With reliable and valid observation tools, we can measure the quality of the classroom and teacher knowledge prior to and following the CDA. We can also compare children's success in school in third grade and beyond.

¹ Hickman, G.P., Bartholomew, M., Mathwig, J., & Heinrich, R.S. (2008) Differential development pathways of high school dropouts and graduates. *The Journal of Education Research*, 102(1), 3-14.

² Doyle, O., Harmon, C. P., Heckman, J. J. & Tremblay, R. E. (2009). Investing in early human development: Timing and economic efficiency. *Economics and Human Biology*, 1(6), 1-6.

³ *ibid*

⁴ Institute for a Competitive Workforce. (2010). *Why business should support early childhood education*. U.S. Chamber of Commerce: Washington, DC.

⁵ Center for Family Policy & Research. (n.d.). *Who is educating Missouri's young children?* University of Missouri: Author.

⁶ Missouri Department of Economic Development. (n.d.). Missouri Economic Research and Information Center. Retrieved October 2010 from <http://www.missourieconomy.org/customer/statewide.stm>

⁷ Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2008-09 Edition, Child Care Workers. Retrieved June 2010 from <http://www.bls.gov/oco/ocos170.htm>

⁸ OPEN Initiative. Unpublished raw data. Retrieved October, 2010 from <https://www.openinitiative.org/Content.aspx?file=Home.txt>

⁹ Peterson, C., Hegland, S., Shimmin, C., Thornburg, K., Mayfield, W., Scott, J., Mumford, J., Atwater, J., Messner, L., Hecker, J., Raikes, H., Torquati, J., Davis, D., Edwards, C. (2008, October). *The Midwest Child Care Research Consortium Quality Rating System Pilot Project*. Lincoln, NE: Midwest Child Care Research Consortium.

¹⁰ OPEN Initiative. Unpublished raw data. Retrieved October, 2010 from <https://www.openinitiative.org/Content.aspx?file=Home.txt>

¹¹ Camilli, G., Vargas, S., Ryan, S., Barnett, S.W. (2010). Meta-analysis of the effects of early childhood education interventions on cognitive and social development. *Teachers College Record*, 112, 579-620.

¹² Galinsky, E. (2006, February). *The economic benefits of high-quality early childhood programs: What makes the difference?* The Committee for Economic Development.

¹³ Belfield, C. R., Nores, M., Barnett, S. & Schweinhart, L. (2006). The High/scope perry preschool program: Cost-benefit analysis using data from the age-40 followup. *The Journal of Human Resources* (41, 1), 162-190.

¹⁴ ibid

¹⁵ Lynch, R. G. (2004). *Exceptional returns: Economic, fiscal, and social benefits of investments in early childhood development*. Washington, D.C.: Economic Policy Institute.

¹⁶ Warner, M. (2009). *Child Care Multipliers: Stimulus for the States*. Retrieved February 24, 2009 from <http://economicdevelopment.cce.cornell.edu>

¹⁷ ibid

¹⁸ ibid