



## DEBUNKING THE MYTHS: BENEFITS OF PRESCHOOL

**MYTH:** Only the most disadvantaged children benefit from prekindergarten; middle class children receive no benefits. Studies on mainstream children generally do not show benefits from early education programs.

**FACT:** Research has found that high quality preschool programs DO make a difference for children from middle-income families as well as for low-income children. The most rigorous study of a universal preschool program to date finds that ALL children benefit regardless of income. This study of Oklahoma's universal prekindergarten program, which examined scores from three tests taken by approximately 4,700 prekindergarten and kindergarten students in Tulsa in September 2003, found that the benefits of early education DID extend to middle-income children.<sup>1</sup>

The Cost, Quality, and Outcomes Study, which followed a sample of children with a wide variety of family backgrounds from their next-to-last year in preschool (prior to entering kindergarten) through their early elementary school years, found higher quality preschool-age child care to be associated with better cognitive and social outcomes for children across the economic spectrum.<sup>2</sup> Several large-scale studies of preschool in the United States and abroad offer further evidence that preschool matters for children from diverse economic backgrounds.<sup>3</sup> The evidence is quite consistent, while children from better-off families may not get exactly the same benefits from preschool as children in poverty, all children benefit.

School readiness presents challenges for many children who are not poor. A national study of first-time kindergarten students in 1998 found that children from families with average (median) incomes were as far behind children in families with higher incomes as poor children were behind the average. This middle class readiness gap was found for social and emotional development as well as cognitive development. For example, dividing children into five income groupings, the children in the middle group (the middle quintile) scored 6 points higher in reading, 7.3 points higher in general knowledge, and 6.5 points higher in math than the children in the bottom quintile (the 20 percent of families with the lowest incomes). Yet, the middle group was still 6.7 points lower in reading, 6.5 points lower in general knowledge, and 6 points lower in math than children in the top quintile (the 20 percent of families with the highest incomes).<sup>4</sup>

Many middle-income children are deprived of early education opportunities because they don't qualify for income-tested programs, but their parents cannot afford to pay for prekindergarten out of their own pockets. Among families with incomes between \$30,000 and \$75,000, just half of children ages three and four not yet in kindergarten, are enrolled in preschool. This compares with three-quarters of children the same age range whose families have incomes \$75,000 and above.<sup>5</sup> Studies in California and Boston indicate that the supply of preschool programs in middle-income neighborhoods is often no greater than in low-income neighborhoods and in some cases, preschool is even more scarce.<sup>6</sup> Universal prekindergarten would address these gaps by greatly expanding opportunities for middle-income children to participate in high quality early education experiences.

**MYTH:** As universal prekindergarten programs become more common, the goal is to require all 4-year-olds to attend preschool.

**FACT:** Major organizations, experts, and political leaders are calling for VOLUNTARY preschool attendance.<sup>7</sup> In light of the fact that very few states require even *kindergarten* attendance, it is highly unlikely that compulsory preschool attendance is on the horizon anywhere. The commonly expressed goal is to make preschool available to all children whose parents wish them to attend. Data on preschool participation by parental income and education levels shows that preschool education is nearly universal for children of well-educated parents with high incomes. Parents want to send their children to good preschool programs—the problem is that so few can afford good programs without help.

When used in reference to prekindergarten programs, the term "universal" is used in several different ways.<sup>8</sup> Sometimes it is used to mean providing all families with access to free programs. But attendance is optional, not required. Universal has also been defined as providing access to all families at an affordable cost. In some cases programs would be free, and in others costs would be partly subsidized so that families could afford to enroll their children. Finally, universal sometimes refers to granting guaranteed subsidies for parents in the form of vouchers or tax credits that fund preschool attendance but do not regulate the quality of available programs. Voluntary, universally available, programs provide viable options for families who want to enroll children in preschool. There is universal agreement that compulsory attendance would be bad public policy; suggesting that that preschool advocates seek to make preschool compulsory is a dishonest scare tactic.

**MYTH:** Children are prepared for school without prekindergarten.

**FACT:** Many children do not arrive at school with the skills they need. Unfortunately, this is the seed that grows to become America's school failure and dropout problem. The National Center for Education Statistics (NCES) study of children who entered kindergarten in 1998 found that cognitive and social skills are strongly correlated with income at school entry. Although children in poverty are the furthest behind, children from middle-income families are as far behind children from higher income families as poor children are behind the middle class.<sup>9</sup> Most American children are not achieving their potential prior to school entry, and those who start behind tend to stay behind. America cannot afford to squander the talents of so many of its children by leaving them behind at the starting gate.

In a 1995 survey of 3,500 kindergarten teachers from across the country, many reported that large proportions of their students lacked important school readiness skills. For example, 46 percent of the kindergarten teachers reported that at least half of the students in their class had difficulty following directions, 36 percent reported that at least half of their class lacked academic skills they needed, and 34 percent reported that at least half of their class had difficulty working independently.<sup>10</sup> In Maryland, only 52 percent of children who entered kindergarten in 2002 were considered "fully ready."<sup>11</sup> In a 2001 statewide survey, Colorado kindergarten and first-grade teachers reported that four out of 10 children were not academically prepared for school and that about one-third of their students were not socially and emotionally prepared.<sup>12</sup>

According to a 2004 poll, a large majority kindergarten teachers believe that their students would be better prepared for school if they participated in prekindergarten.<sup>13</sup> In the poll, 66 percent of kindergarten teachers rated children who attended prekindergarten as "substantially better prepared" to start school ready to succeed compared to 1 percent of teachers who said prekindergarten kids were "less prepared." The vast majority of the teachers, ranging from 78 to 93 percent, said children who had attended quality prekindergarten programs were more likely to get along with others and be sensitive to their feelings, count, have problem-solving skills, know letters of the alphabet and follow directions, and were less likely to disrupt class.

**MYTH:** Public preschool programs do not give parents choices.

**FACT:** Many public preschool programs allow parents to choose where to send their children from among a mix of public and private providers, including preschool programs operated by for-profits, non-profits, and faith-based organizations.<sup>14</sup> What is essential is that public funding is sufficient and public standards high enough that the programs offered are all of high quality. Parents don't have effective choice if the programs available to them are of poor quality.

**MYTH:** Studies of model preschool programs are methodologically weak, and it is difficult to apply the findings from these studies to programs in public settings.

**FACT:** Misleading attacks on several of the best-known preschool studies appear to be an effort to undermine confidence in the research on preschool education generally. In some cases, the attacks are factually incorrect. In other cases, the facts are accurate but misinterpreted. Moreover, these attacks on the details of a few studies reflect a deep misunderstanding of science. No study stands alone, nor is any study perfect. The conclusion that good preschool education is one cost-effective tool for improving the school readiness and success of children rests on hundreds of studies, including dozens of long-term studies.<sup>15</sup> The patterns of findings in two of the most commonly cited -- the Perry Preschool and Abecedarian studies -- have been replicated in other studies in the United States and abroad.<sup>16</sup> The results from these studies are both statistically significant and generalizable. Methodologically sound research has consistently shown that high-quality prekindergarten programs have the potential to offer children substantial benefits that are apparent much later in life—including improved achievement and high school graduation rates, and reduced special education placements.

The Perry Preschool sample was selected to be at high-risk of school failure, but it turns out the sample is roughly representative of African-American children in the early 1960's. Some claim that no other program or study, for more than 40 years, has shown results as dramatic as those found for Perry. These same accusations often include reviews of the Abecedarian study which reports much larger gains in IQ, achievement, and school success than the Perry study. It is unclear how this claim could be made about Perry having read both studies. In fact, the Perry study has smaller effects on achievement, grade repetition and special education than many other studies. One of the important lessons from economic analysis of the Perry study's results is that even moderate gains in school success can have substantial economic pay-off.

Critics of the Perry Preschool study claim that: there are many aspects of the children's lives and families that were not affected by the program, that the preschool children were more likely to be in remedial classes, that there was no effect on employment at age 19, and that the preschool and control groups differed in maternal employment and this might explain the results. All of these claims are misleading, false, or unsubstantiated hypotheses that have been proven wrong. The Perry Preschool study measured most aspects of child development and family characteristics related to child development. That does not mean that preschool was expected to have an impact on all or even most of them. The pattern of effects that was found is logical, consistent with major theories of how children learn and develop, confirmed by statistical models that look at links across measures, and replicated in other studies.<sup>17</sup>

Children who went to the Perry Preschool program acquired knowledge and skills to a much greater extent than those that did not during the preschool years. The program did not give them higher self-esteem directly or change their parents' attitudes, beliefs, or abilities. When they got to school they did better and so began to feel more motivated, behave better, etc. This helped them keep on learning more in school. The program also helped them stay out of crime and delinquency. The most likely reason is that it taught them to think before they acted, take personal responsibility for their actions, and gave them skills for getting along with others. The

differences on remedial education are very tiny and could not explain larger differences on special education.

Yes, there was no difference in unemployment as it is technically defined, but only because people not trying to find a job are not considered unemployed. However, preschool led to a big increase in the percentage with a job at age 19. Finally, although the Perry treatment and control groups were comparable on every other measure, the control group had a higher percentage of mothers with jobs. However, the researchers tested for the effects of this by taking maternal employment into account and looking at the effects of maternal employment. In the Perry study, having a mother with a job was an advantage—it meant that their mothers had more education, skills, and income. So this difference actually reduced the estimated effects of the preschool program.

From an economic perspective, high-quality preschool education programs for children in poverty have the potential to yield benefits that exceed their costs.<sup>18</sup> Although there are large gaps in school success and achievement between children from low-income families and those from upper-income backgrounds, interventions that begin very early in life can help close those gaps. These gaps are so large that even falling short of closing the gap, a preschool program can make a substantial contribution. As a result, early education programs also stand to provide a great benefit to society.

High/Scope researchers involved in the Perry Preschool Study note that findings from this study are generalizable to programs that are implemented on a broader scale, provided that such programs are "reasonably similar" to the Perry program.<sup>19</sup> Reasonably similar programs are those in which teachers have bachelor's degrees and are certified in education; teacher-child ratios are limited to 1:8; preschool education is offered to children for at least 2 years, at ages 3 and 4; classes are offered 5 days per week, for at least 2.5 hours per day; in which the High/Scope curriculum or a similar model is used; and in which home visiting or parent outreach components are offered. Because the Perry Preschool Study focused on children growing up in poverty, its findings are most applicable to children from low-income families

In most states, high-quality, publicly available, preschool programs are already in place to serve children at risk.<sup>20</sup> Although these programs do not currently meet *all* of the criteria that would make them reasonably similar to the Perry Preschool program, some do meet most of those criteria—including many of the criteria that are most expensive to fund. For example, Arkansas offers a prekindergarten initiative that provides BA-level teachers with specialized training in early education, appropriate class sizes, and comprehensive support services for children and their families. This program met all 10 of the benchmarks associated with a high-quality program, as identified by the National Institute for Early Education Research. A rigorous evaluation of Oklahoma's prekindergarten program in Tulsa found impacts on achievement at kindergarten entry that quite comparable to Perry Preschool program effects in the early elementary years.<sup>21</sup>

**MYTH:** Preschool education programs do not have any lasting effects on children.

**FACT:** Numerous studies show benefits from preschool education that carry over into the first years of school and even well into the adulthood. These benefits include both (a) increased academic achievement and (b) school success and improvements in social-emotional development behavior and conduct. Dr. James Heckman, a University of Chicago economist and Nobel Laureate has concluded that the preschool years are the most productive years for new educational investments and that the long-term impacts of early education on social and emotional development may be the most important consequences of preschool education. Yet these important social-emotional benefits are often ignored.<sup>22</sup>

Over the years various opponents of compensatory education for disadvantaged children have reported that preschool education programs produce few long-term benefits—that is, that any positive effects of these programs "fade out" and eventually disappear over time. This claim is largely incorrect.

Research studies have generally shown that gains in IQ due to preschool programs are most apparent in the short term, but tend to gradually diminish and even disappear.<sup>23</sup> This is not always the case, but is generally true for one or two year preschool programs. However, other outcomes do not follow the same pattern. Research on the effects of preschool participation on children's achievement test scores is more variable. Some studies see effects decline over time, others find them steady, and yet others suggest that gains could even snowball.<sup>24</sup>

Overall, the methodologically strongest studies indicate that meaningful effects on achievement persist.<sup>25</sup> Results to the contrary most often are due to the use of faulty research designs and methods. Specifically, such studies lack the statistical power necessary to detect an effect due to high attrition, or are biased due to the exclusion of children attending special education classes and those repeating a grade. Studies that are more methodologically sound have found that preschool produces long-term benefits in achievement. This is consistent with uniformly positive evidence that after participating in high-quality preschool programs, children are less likely to repeat a grade or to be placed in special education. They are also more likely to graduate from high school.

In summary, the claim that all of the important effects of preschool education disappear over time is inaccurate. Even when the effects of prekindergarten on children's IQ scores decrease over time, the effects persist in a variety of other areas—delinquency and crime, special education placements, high school graduation rates, and achievement scores among them—so that high-quality preschool education yields important long-term benefits.

**MYTH:** Leading experts in child development believe that preschool education is ineffective or even harmful.

**FACT:** Opponents often misrepresent the views of leading experts including Dr. Edward Zigler and Dr. David Elkind in order to give the false impression that they oppose preschool education and support the opponent's views. This is precisely the opposite of the truth.

Selective quotes taken out of context from Dr. Zigler's publications have been used to make it seem as if he believes that all preschool education is ineffective. What Dr. Zigler actually argued was that universal preschool programs that did not provide the full array of services offered by an adequately funded Head Start program, that did not target children in poverty, and that were not followed up with continued support for children's development and learning would not produce the results for reduced school failure, lower drop-out rates and increased test scores *that he had already acknowledged were produced by strong preschool programs for children in poverty*. In fact, Zigler has been and continues to be a strong supporter of public investment in preschool education including Head Start. He also has strongly emphasized that preschool programs should not be expected to fix all of the problems that poverty poses for child development. Thus, he argues for broader and longer lasting public support for child development, not less. In a 2001 article in the *Journal of the American Medical Association*, Dr. Zigler says, "a substantial literature now supports the concept of early childhood intervention." He also states: "earlier school for every child is a welcome idea."<sup>26</sup> Zigler continues to argue that preschool alone is not a cure for the ills of poverty, that children benefit from strong support for their learning and development at every age, and that preschool programs need to address the needs of the whole child in order to be maximally effective.

Opponents also selectively quote Dr. Elkind so as to make it appear (incorrectly) that he opposes preschool education, at least for middle class children. However, what Dr. Elkind opposes is bad preschool education for any child. He has stated that every child ought to have access to good preschool education. In a 2001 article in *Education Next*, Dr. Elkind concludes: "If we want all of our children to be the best that they can be, we must recognize that education is about them, not us. If we do what is best for children, we will give them and their parents the developmentally appropriate, high-quality, affordable, and accessible early-childhood education they both need and deserve."<sup>27</sup>

Some research has found that long hours of child care beginning in the early years of life can produce modest negative effects on children's behavior when they enter school. These effects are small and may be temporary. The same studies that find this one mild negative effect also find positive effects on children's cognitive abilities and positive effects on other aspects of children's social skills and behavior including their sociability and compliance. High quality preschool programs at ages 3 and 4 have not been found to produce this negative effect. Moreover, research has shown that we know how to produce positive effects on social development and behavior and avoid negative effects. This includes large-scale "gold standard" studies of Head Start and Early Head Start that found positive rather than negative effects on behavior. Good practices need to be required and supported so that all early childhood programs produce substantial positive effects and no negative effects.<sup>28</sup>

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<sup>1</sup> Gormley, W.T. and Gayer, T. (2004). *The effects of universal pre-k on cognitive development*. Washington, DC: Public Policy Institute, Georgetown University. Available at <http://www.crocus.georgetown.edu/reports/oklahoma9z.pdf>.

<sup>2</sup> Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., Yazejian, N., Byler, P., Rustici, J., & Zelazo, J. (2000). *The children of the cost, quality, and outcomes study go to school: Technical report*. Chapel Hill: University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center.

<sup>3</sup> Anderson, B.E. (1989). Effects of public day care: A longitudinal study. *Child Development*, 60, 857-866.

Burchinal, M.R. (1999). Child care experiences and developmental outcomes. *The Annals of the American Academy of Political and Social Science: The Silent Crisis in U.S. Child Care*, 563, 73-97.

Desai, S., Chase-Lansdale, P.L., & Michael, R.T. (1989). Mother or Market? Effects of maternal employment on the intellectual ability of four-year-old children. *Demography*, 26, 545-561.

Magnuson, K.S., Meyers, M.K., Ruhm, C.J., & Waldfogel, J. (2004). Inequality in preschool education and school readiness. *American Educational Research Journal*, 41(1), 115-157.

NICHD Early Childcare Research Network, (2002). Child-care structure, process, outcome: Direct and Indirect effects of child care quality on you children's development. *Psychological Science*, 13 (3), 199-206.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., Taggart, B. (2004). *The final report: Effective pre-school education. Technical paper 12*. London: Institute of Education, University of London.

<sup>4</sup> Data from the Early Childhood Longitudinal Study—Kindergarten Cohort (Fall 1998) conducted for the National Center for Education Statistics.

<sup>5</sup> Calculations using data from the U.S. Census Bureau. *School enrollment—Social and economic characteristics of students: October 2002 detailed tables*. Table 3. Preprimary School Enrollment of People 3 to 6 Years Old, by Mother's Labor Force Status and Education, Family Income, Race and Hispanic Origin: October 2002. Available at <http://www.census.gov/population/www/socdemo/school/cps2002.html>.

<sup>6</sup> Fuller, B., Waters Boots, S., Castilla, E., & Hirschberg, D. (July 2002). A stark plateau—California families see little growth in child care centers. *PACE Policy Brief 02-2*.

Wen, P. & Dedman, B. (September 1, 2002). Stuck in a day-care dilemma working-class families struggle with shortage. *The Boston Globe*, B1.

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- <sup>7</sup> Committee for Economic Development (2002). *Preschool for all: Investing in a productive and just society*. Washington, DC: Committee for Economic Development.
- Ferrandino, V.L. (2005). *Leading early childhood learning communities*. Retrieved the August 29, from 2005 from the National Association of Elementary School Principals (NAESP) website: <http://www.naesp.org/ContentLoad.do?contentId=1659>.
- <sup>8</sup> Barnett, W. S., Brown, K., & Shore, R. (2004). The universal vs. targeted debate: Should the United States have preschool for all? *Preschool Policy Matters*, 6. New Brunswick, NJ: National Institute for Early Education Research, Rutgers University.
- <sup>9</sup> Barnett, W. S., Brown, K., & Shore, R. (2004). The universal vs. targeted debate: Should the United States have preschool for all? *Preschool Policy Matters*, 6. New Brunswick, NJ: National Institute for Early Education Research, Rutgers University.
- <sup>10</sup> Rimm-Kaufman, S. E., Pianta, R. C., & Cox, M. J. (2000). Teachers' judgments of problems in the transition to kindergarten. *Early Childhood Research Quarterly*, 15 (2), 147-166.
- <sup>11</sup> Bowler, M. (March 26, 2003). Fifty-two percent of kindergarteners in Maryland judged "fully ready." *Baltimore Sun*.
- <sup>12</sup> Educare Colorado and Colorado's Children's Campaign. (February 20,2002). First-ever statewide K-1 teacher survey on school readiness. Available at [http://www.ecs.org/clearinghouse/33/40/3340\\_files/frame.htm](http://www.ecs.org/clearinghouse/33/40/3340_files/frame.htm).
- <sup>13</sup> Fight Crime: Invest in Kids. (2004). Key findings: Kindergarten teachers poll. Available at <http://www.fightcrime.org>.
- <sup>14</sup> Barnett, W. S., Hustedt, J. T., Robin, K., & Schulman, K. L. (2004). *The state of preschool: 2004 state preschool yearbook*. New Brunswick, NJ: NIEER.
- NAEYC (2000). *A call for excellence in early childhood education*. Retrieved August 29, 2005 from <http://www.naeyc.org/policy/excellence.asp>.
- <sup>15</sup> Barnett, W.S. (2002) Early childhood education. In A. Molnar (Ed.) *School reform proposals: The research evidence* (pp.1-26). Greenwich, CT: Information Age Publishing.
- Barnett, W.S., & Camilli, G. (2000). Compensatory preschool education, cognitive development, and "race." In J. Fish (Ed.), *Race and intelligence: Separating science from myth*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Guralnick, M.J. & Bennett, F.C. (Eds.) (1987). *The effectiveness of early intervention for at-risk and handicapped children*. New York, NY: Academy Press.
- Ramey, C.T., Bryant, D.M., & Suarez, T.M. (1985). Preschool compensatory education and the modifiability of intelligence: A critical review. In D. Detterman, (Ed.), *Current topics in human intelligence* (pp. 247-96). Norwood, NJ: Ablex.
- Vandell, D. L. (2004). Early child care: The known and the unknown. *Merrill-Palmer Quarterly*, 50(3), 387-414.
- White, K., & Casto, G. (1985). An integrative review of early intervention efficacy studies with at-risk children: Implications for the handicapped. *Analysis and Intervention in Developmental Disabilities*, 5, 7-31.
- <sup>16</sup> Anderson, B.E. (1992). Effects of day care on cognitive and socio-emotional competence in thirteen-year-old Swedish school children. *Child Development*, 63, 20-36.
- Garber, H.L. (1988). *The Milwaukee Project: Prevention of mental retardation in children at risk*. Washington, DC: American Association on Mental Retardation.
- Gray, S., Ramsey, B., & Klaus, R. (1982). *From 3 to 20: The Early Training Project*. Baltimore, MD: University Park Press.
- Johnson, D., & Walker, T. (1991). A follow-up evaluation of the Houston Parent Child Development Center: School performance. *Journal of Early Intervention*, 15(3), 226-36.
- McKay, H., Sinisterra, L., McKay, A., Gomez, H., & Lloreda, P. (1978). Improving cognitive ability in chronically deprived children. *Science*, 200, 270-78.
- Raine, A., Mellingen, K., Liu, J., Venables, P., Mednick, S.A. (2003). Effects of environmental enrichment at ages 3-5 years on schizotypal personality and antisocial behavior at ages 17 and 23 years. *American Journal of Psychiatry*, 160(9), 1627-1635.
- Reynolds, A. J., Temple, J., Robertson, D., Mann, E., (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15-year follow-up of low-income

- 
- children in public schools. *JAMA: Journal of the American Medical Association*, 285(18), 2339-2346.
- Reynolds, A.J., Temple, J.A., Robertson, D.L., and Mann, E.A. (2002). Age 21 cost-benefit analysis of the Title I Chicago Child-Parent Centers. *Educational Evaluation and Policy Analysis*, 24(4), 267-303.
- Wasik, B.H., Ramey, C.T., Bryant, D.M., & Sparling, J.J. (1990). A longitudinal study of two early intervention strategies: Project CARE. *Child Development*, 61, 1682-96.
- <sup>17</sup> Schweinhart, L.J. & Weikert, D.P. (1988). Early childhood education for at-risk four-year-olds? Yes. *American Psychologist*, 43, 665-667. (Response to "Formal schooling for four-year-olds? No," by E.F.Zigler, 1987, *American Psychologist*, 42, 254-260.)
- Schweinhart, L.J. & Weikert, D.P. (1991). (Response to Beyond IQ in preschool programs? by C. Locurto, 1991. *Intelligence*, 15, 313-315).
- <sup>18</sup> Barnett, W.S. (2004, November). *Maximizing returns from prekindergarten education*. Paper presented at Education & Economic Development, Federal Reserve Bank of Cleveland Research Conference, Cleveland, Ohio.
- Heckman, J. & Mastervoc, D.V. (2004). *The productivity argument for investing in young children. (Working paper 5) Invest in Kids Workgroup*. New York, NY: Committee for Economic Development.
- Lynch, R.G. (2004). *Exceptional returns: Economic, fiscal, and social benefits of investments in early childhood development*. Washington, DC: Economic Policy Institute.
- <sup>19</sup> Schweinhart, L. (2004). *The High/Scope Perry Preschool Study through age 40: Summary, conclusions, and frequently asked questions*. Ypsilanti, MI: High/Scope Educational Research Foundation.
- <sup>20</sup> Barnett, W. S., Hustedt, J. T., Robin, K., & Schulman, K. L. (2004). *The state of preschool: 2004 state preschool yearbook*. New Brunswick, NJ: NIEER.
- <sup>21</sup> Gormley, W.T. and Gayer, T. (2004). *The effects of universal pre-k on cognitive development*. Washington, DC: Public Policy Institute, Georgetown University. Available at <http://www.crocus.georgetown.edu/reports/oklahoma9z.pdf>.
- <sup>22</sup> Heckman, J.J. & Kruger, A.B. (2003). *Inequality in America: What role for human capital policies?* Cambridge, MA: MIT Press.
- <sup>23</sup> Barnett, W. S. (2004). Does Head Start have lasting cognitive effects?: The myth of fadeout. In E. Zigler & S. Styfco (Eds.), *The Head Start debates* (pp. 221-249). Baltimore: Paul H. Brookes Publishing Co.
- <sup>24</sup> Barnett, W. S. (1998). Long-term effects on cognitive development and school success. In W. S. Barnett & S. S. Boocock (Eds.), *Early care and education for children in poverty: Promises, programs, and long-term results* (pp. 11-44). Albany, NY: SUNY Press.
- <sup>25</sup> Barnett, W.S. (2002) Early childhood education. In A. Molnar (Ed.) *School reform proposals: The research evidence* (pp.1-26). Greenwich, CT: Information Age Publishing.
- <sup>26</sup> Zigler, E. & Styfco, S.J. (2001). Extended childhood intervention prepares children for school and beyond. *Journal of the American Medical Association*, 285(18), 2378-2380.
- <sup>27</sup> Elkind, D. (2001). Much too early. *Education Next*, 1(2). Retrieved August 29, 2005 from <http://www.educationnext.org/20012/8elkind.html>.
- <sup>28</sup> Boyd, J., Barnett, W.S., Bodrova, E., Leong, D.J., Gomby, D., Robin, K.B., & Hustedt, J. (2005). Promoting children's social and emotional development through preschool. *NIEER Policy Report, March 2005*. Retrieved August 25, 2005 from <http://nieer.org/docs/index.php?DocID=125>.
- Love, J. M., Kisker, E.E., Ross, C. M., Schochet, P.Z., Brooks-Gunn, J., Paulsell, D., Boller, K., Constantine, J., Vogel, C., Fuligni, A. S., & Brady-Smith, C. *Making a difference in the lives of infants and toddlers and their families: The impacts of Early Head Start. Volume I: Final technical report*. Princeton, NJ: Mathematica Policy Research Inc.
- Puma, M., Bell, S., Cook, R., Heid, C., Lopez, M., Zill, N., Shapiro, G., Broene, P., Mekos, D., Rohacek, M., Quinn, L., Adams, G., Freidman, J. & Bernstein, H. (2005). *Head Start impact study: First year findings*. Washington, DC: US Department of Health and Human Services, Administration for Children and Families.
- Vandell, D. L. (2004). Early child care: The known and the unknown. *Merrill-Palmer Quarterly*, 50(3), 387-414.