ENCYCLOPEDIA
on Early Childhood
Development

Preschool Programs for Children in Disadvantaged Families

Lawrence J. Schweinhart, PhD

High/Scope Educational Research Foundation, USA

December 2012, Éd. rév.

Introduction and Subject

Preschool programs are purposeful arrangements of recurrent activities that provide care and education to children in the years before they enter school. While “preschool” logically encompasses the entire period from birth to school entry, it sometimes refers specifically to the year or two before school entry, which is kindergarten entry for five-year-olds in many places. Like school programs, preschool programs typically take place in schools or centers, but can take place in private homes as well. They can be solely for the purpose of educating children or may also provide care for them while their parents are working or in school themselves.

Families vary in the advantages available to their children. Their advantages or disadvantages are largely due to families’ socioeconomic status, which is largely determined by parents’ education, employment, earnings, and wealth. Some preschool programs, such as Head Start in the U.S., are intended to compensate for the disadvantages of children from families of low socioeconomic status.

Problems and Research Context

Preschool programs have become more widespread since the middle of the 20th century for two reasons. One is the worldwide movement of mothers of young children into the work force. The other is widespread knowledge of the accumulating evidence of the value of good early childhood education from recent research on the development of the human brain and evaluative research on model preschool programs for children in disadvantaged families. Neuroscience research has found that the brains of young children raised in high-toxic-stress settings are visibly less developed than the brains of young children raised in low-toxic-stress settings and that children's brains are much more active from ages three to seven than in subsequent years.[1]

Recent Research Results

Evaluative program research has found a variety of important effects of model preschool programs on participants from early childhood into adulthood.[2] These studies have combined rigorous design, long-term study, and low rates of missing data to arrive at evidence that high-quality early childhood program experience has important positive long-lasting effects on participants which result in substantial economic return on investment.

- The HighScope Perry Preschool Study randomly assigned 123 poor children to participate in a high-quality preschool program at ages three and four or to no preschool program and followed these study participants through age 40. The program had teachers with college degrees, an intentional child development curriculum, substantial engagement with parents, and ongoing assessment of program implementation and child performance. The study found that this program had strong positive effects on participants' intellectual abilities, school achievement and commitment, high school graduation, adult earnings and employment, and avoidance of criminal activity. Economic analysis found that the program cost $10,917 per child per year in 2011 dollars (converted from the 2000 dollars reported) at a 3% annual discount rate, and provided an economic return to society of $16.14 per dollar invested.[3]
- The Carolina Abecedarian study randomly assigned 111 infants averaging 4.4 months of age from poor families, to a special program group or a typical child care group that used the prevalent child care arrangements in homes and centres. [4] It was found that this high-quality child care program for children from infancy to school entry improved participants' intellectual performance and school achievement. Fewer program participants repeated a

grade or required special services or became teen parents; and more of them graduated from high school and more attended a four-year college. Economic analysis found that, in 2011 dollars discounted (converted from the 2002 dollars reported) at a 3% annual discount rate, the program cost $16,530 per child per year and yielded benefits to society of $3.78 per dollar invested.[5]

- The Chicago Longitudinal Study compared 989 low-income children who attended the city school district's Child-Parent Centres to a comparison group of 550 of their classmates who did not attend these centres.[6] The centres provided a part-day preschool program to three- and four-year-olds. The preschool-program group surpassed the no-preschool-program group in educational performance and social behaviour, with lower rates of grade retention and special education placement and a lower rate of juvenile and adult criminal arrests and a higher on-time high school graduation rate and higher annual income. Economic analysis found that, in 2011 dollars at a 3% annual discount rate, the program cost $6,155 per child per year and yielded benefits of $7.10 return per dollar invested.[7]

In the past few years, a new generation of rigorous short-term preschool studies, most randomly assigning children to the program or no-program conditions, has produced relatively disappointing results. These studies have looked at the effects of publicly funded preschool programs, either typical Head Start programs or special Head Start and other federally funded early childhood programs.

Two studies of nationally representative samples of Head Start programs deserve special mention. The Head Start Impact Study involved random assignment of children to Head Start or no Head Start. This study has provided results for entering three-year-olds and entering four-year-olds after one year in Head Start and through the end of first grade.[8] It found evidence of small to moderate Head Start effects a year later on children's literacy and social skills, but no evidence of cognitive or social program effects on children at the end of first grade. However, only 63% of the "Head Start group" and 50% of the control group were in Head Start by the end of the second year, raising the question of what was compared to what in this study. The Head Start Family and Child Experiences Survey[9] looks at a representative national sample of Head Start programs in the U.S. Relative to national norms, children made significant gains during their Head Start year in vocabulary, early writing skills, social skills, and reduced hyperactive behaviour. Head Start graduates showed further progress toward national averages during kindergarten.

Rigorous evaluations of several special Head Start and similar programs have found small program effects, examining the effects of the Early Head Start program;[10] the Head Start Comprehensive Child Development Program;[11] and the U.S. Department of Education's Even Start Family Literacy program.[12] A study of the effects of five state-funded preschool programs, using a regression discontinuity design, found statistically significant, meaningful effects on children's vocabulary, print awareness skills, and early mathematics skills.[13]

Curriculum is a critical component of preschool programs that has been studied empirically. Several preschool curriculum comparison studies that began in the 1960s have followed preschool participants for years afterwards. One study found that young people born in poverty experienced fewer emotional problems and felony arrests if they attended a preschool program that used the child development-focused High/Scope model or a traditional child-centered Nursery School model rather than a teacher-centered Direct Instruction model.[14] This study and two other longitudinal studiesfound that children in Direct Instruction programs significantly outperformed children in traditional and other programs on various measures of intellectual performance during the program and up to a year afterwards, but then these gains faded out.[15] The evidence continues to accumulate that early childhood curriculum models can differ significantly in some of their effects on children.[16,17,18]

Conclusions and Implications

The evidence is clear that early childhood experiences can greatly influence people's lives, and model preschool programs can evoke such early childhood experiences. But it is becoming increasingly apparent that it is also possible to intervene in young children's lives in ways that do not tap this great reservoir of potential. Effective preschool programs need qualified preschool teachers who know how to contribute to children's cognitive and social development and do so. These teachers must reach out to parents and make them full partners in educating their young children. Many young children now attend preschool programs. Ensuring that all these programs have qualified teachers who know how to contribute to young children's development and motivate parents to do the same will contribute greatly to the success and achievement of the next generation.

References

1. National Scientific Council on the Developing Child (2005). *Excessive Stress Disrupts the Architecture of the Developing Brain: Working Paper No. 3*. Available at: www.developingchild.harvard.edu. Accessed November 20, 2012.

2. Bowman, B., Donovan, M. S., & Burns, M. S. (Eds.), Committee on Early Childhood Pedagogy, Commission on Behavioural and Social Sciences and Education, National Research Council (1999). Eager to learn: Educating our preschoolers. Washington, DC: National Academy Press.

3. Schweinhart, L. J., Montie, J., Xiang, Z., Barnett, W. S., Belfield, C. R., & Nores, M. (2005). Lifetime effects: The High/Scope Perry Preschool Study through age 40. Ypsilanti, MI: High/Scope Press.

4. Campbell, F. A., Ramey, C. T., Pungello, E. P., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian project. *Applied Developmental Science*, 6, 42-57.

5. Massé, L. N., & Barnett, W. S. (2002). A benefit-cost analysis of the Abecedarian early childhood intervention. In Levin, H. & McEwan P. (Eds.), *Cost effectiveness analysis in education: Methods, findings and potential*. *2002 Yearbook of the American Education Finance Association*. National Institute for Early Education Research. Available online at http://nieer.org/resources/research/AbecedarianStudy.pdf. Accessed November 20, 2012.

6. Reynolds, A. J., Temple, J. A., Ou, S. Arteaga, I. A., & White, B. A. B. (2011). School-based early childhood education and age-28 well-being: Effects by timing, dosage, and subgroups. *Science*, 333, 360–364.

7. Reynolds, A.J., Temple, J.A., Robertson, D.L., Mann, E.A. (2002). Age 21 cost-benefit analysis of the Title I Chicago child-parent centers. *Educational Evaluation and Policy Analysis*, 4, 267-303.

8. U.S. Department of Health and Human Services, Administration for Children and Families (January 2010). Head Start Impact Study. Final Report. Washington, DC.

9. Zill, N., Resnick, G., Kim, K., O'Donnell, K., Sorongon, A., McKey, R. H., Pai-Samant, S., Clark, C., O'Brien, R., & D'Elio, M. A. (May 2003). Head Start FACES (2000): A whole child perspective on program performance - Fourth progress report. Prepared for the Administration for Children and Families, U.S. Department of Health and Human Services (DHHS) under contract HHS-105-96-1912, Head Start Quality Research Consortium's Performance Measures Center.

10. 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. (2002). Building their futures: How early Head Start programs are enhancing the lives of infants and toddlers in low-income families: Vol. 1 Final technical report. Washington, DC: U.S. Department of Health & Human Services.

11. Goodson, B. D., Layzer, J. I., St. Pierre, R. G., Bernstein, L. S., & Lopez, M. (2000). Effectiveness of a comprehensive, five-year family support program for low-income families: Findings from the Comprehensive Child Development Program. *Early Childhood Research Quarterly*, 15, 5-39.

12. Planning and Evaluation Service. (1998). Even Start: Evidence from the past and a look to the future. Washington, DC: U.S. Department of Education. Available:

13. Barnett, W. S., Lamy, C., & Jung, K. (2005). The effects of state prekindergarten programs on young children's school readiness in five states. New Brunswick, NJ: National Institute for Early Education Research, Rutgers University.

14. Schweinhart, L. J., & Weikart, D. P. (1997). The High/Scope Preschool Curriculum Comparison Study through age 23. *Early Childhood Research Quarterly*, 12, 117 - 143.

15. Karnes, M. B., Schwedel, A. M., & Williams, M. B. (1983). A comparison of five approaches for educating young children from low-income homes. In Consortium for Longitudinal Studies, As the twig is bent: Lasting effects of preschool programs (pp. 133-170). Hillsdale, NJ: Erlbaum. Miller, L. B., & Bizzell, R. P. (1983). The Louisville experiment: A comparison of four programs. In Consortium for Longitudinal Studies, As the twig is bent: Lasting effects of preschool programs (pp. 171-199). Hillsdale, NJ: Erlbaum.

16. Burts, D. C., Hart, C. H., Charlesworth, R., Fleege, P. O., Mosley, J., & Thomasson, R. H. (1992). Observed activities and stress behaviors of children in developmentally appropriate and inappropriate kindergarten classrooms. *Early Childhood Research Quarterly*, 7, 297-318.

17. Marcon, R. A. (1992). Differential effects of three preschool models on inner-city 4-year-olds. *Early Childhood Research Quarterly*, 7, 517-530.

18. Preschool Curriculum Evaluation Research Consortium (2008). Effects of preschool curriculum programs on school readiness (NCER 2008-2009). Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education. Washington, DC: U.S. Government Printing Office.