ENCYCLOPEDIA
on Early Childhood
Development

SCHOOL SUCCESS

Services or Programs that Influence Young Children (0-5) and Their School Completion/Academic Achievement

Penny Hauser-Cram, EdD

Boston College, Lynch School of Education, USA

May 2014, 2e éd. rév.

Introduction

Evidence is accumulating on the long-term benefits of participation in early education programs for children from low-income families. Effective early education programs are believed to influence later academic skills through increased cognitive skills, greater motivation to learn and an enhanced knowledge base at school entry,[1] all of which provide the child with further opportunities to promote academic engagement during the school years. If early education programs are effective, not only will children themselves benefit, but schools and society will also benefit through not having to provide costly services during later life stages.

Subject

©2014-2026 ABILIO | SCHOOL SUCCESS

Several important factors inform questions about the effectiveness of early education programs. The need for more quality early childhood programs has been increasing because over 64 % of mothers of young children are in the workforce, both in Canada[2] and the United States.[3] Further, much discussion on school readiness has focused on the importance of children's physical health, cognitive growth and learning, self-regulation and motivation, positive relationship with peers and cooperation with adults,[4] all of which are potential benefits of quality early education programs.

Since the 1970s, several studies on the effects of early education have been initiated. Most followed children through at least part of their elementary school experience[5] whereas a few followed participants into adulthood.[6,7] In a review of the major experimental studies, Ramey and Ramey[1] noted several common features of effective interventions. Such interventions are (1) initiated in infancy; (2) intensive, comprehensive and individualized; (3) directly provided to the child; (4) high quality with frequent program monitoring; and (5) continued in some form into the early school years.

Problems

Numerous problems are inherent in conducting research on the longitudinal effects of early education services and programs.[8] Longitudinal studies are expensive and require long-term commitments from funding agencies. They are also prone to participant attrition, making studies that begin with reasonable sample sizes fall below acceptable limits after a few years. Further, often the most needy participants drop out, especially from comparison groups, limiting knowledge of effectiveness across diverse populations. And finally, measurement problems exist, as core constructs often require different measures at different life stages.

Research Context

Initial research on long-term effects of early education programs was restricted to studies conducted on demonstration programs located at single sites and enrolling relatively small samples (e.g. the Abecedarian project, the Brookline Early Education Project, the Perry Preschool Project). These studies were initiated in the 1970s, a time when fewer mothers were in the work force and fewer early childhood programs were available than today. Nevertheless, they have produced findings on the effects of early education on participants during the school-aged, adolescent and adult years. More recent research has focused on multi-site studies with

©2014-2026 ABILIO | SCHOOL SUCCESS

fairly large samples and produced findings related to the school years.

Key Research Questions

The central question about the effectiveness of early childhood programs for children from low-income families is: To what extent do such programs make a difference in children's long-term academic outcomes? Related questions exist about which program features are associated with more positive outcomes. Additional questions focus on whether the quality of the school experiences subsequent to the early childhood program enhances or impedes the effects of early childhood experiences.

Recent Research Results

Several extensive reviews have been conducted on the effectiveness of early education programs. Brooks-Gunn[9] provided a briefing for the Subcommittee on Human Resources of the U.S. House of Representatives on the results of evaluations of high-quality early education intervention programs. She concluded that centre-based programs, in comparison to home visiting programs and case management programs, have the most consistent positive effects on children. Further, when programs served a wide socioeconomic range of families, they appear to be most effective for children who are poor or near poor and/or have mothers with little education.

Barnett[10] conducted a thorough review of 36 studies on the effects of early education programs for children from low-income families. He concluded that such programs result in short-term increases in cognitive performance and long-term effects on school performance, grade retention, placement in special education and social adjustment. Nevertheless, not all programs yielded such benefits; some failed to follow participants through the school years, while others suffered from research design problems, such as lack of random assignment to program and comparison groups. Barnett identified two studies with long-term academic outcomes as outstanding in their methodological rigour.

The first of these, the Abecedarian Project[7,11] provided high-quality early child care and school-age educational support to 111 participants. Participants were randomly assigned to the child care and school-aged components. A total of 104 individuals participated in the follow-up study at age 21. Those who had received the early child-care program had higher academic skills and intellectual performance as young adults, had completed more years of education and were more

©2014-2026 ABILIO | SCHOOL SUCCESS

likely to attend college. Benefits were more apparent for females than for males. The school-age intervention served to maintain the benefits of the early childhood component, but had weaker effects than the child care component.

The Perry Preschool Project[6] is a second study known for its methodological rigour. A total of 123 children entered this study at the age of three or four and were randomly assigned to a program or comparison group. Children in the program group received a high-quality, developmentally guided preschool program. A follow-up study conducted when participants were 27 years of age indicated that program participants had significantly higher rates of high-school completion (or its equivalent), earned higher salaries, had fewer arrests and had fewer out-of-wedlock births.

More recent interventions are also yielding positive outcomes. One promising program is the Chicago Child-parent Center (CPC).[12,13] In contrast to the two programs described above, which were model demonstration programs at a single site, CPC is part of the Chicago Public Schools and has centres in 24 locations. The program provides preschool education for children beginning at age three and family support programs aimed at encouraging parent involvement in children's education. Such services are offered through second or third grade. A total of 1281 individuals (83.2% of the original sample) participated in a follow-up study at age 20. Those who had been in the preschool program had significantly more years of education, a higher rate of high-school completion and a lower rate of school drop-out in comparison to similar individuals who had not attended the program. Benefits appeared to be more pronounced for males than for females.

Conclusions

Longitudinal evaluation of early childhood programs is challenging due to participant attrition, especially differential attrition between the program and comparison group, and the difficulty of measuring core constructs, such as motivation over time. Nevertheless, evaluations of the more rigorous studies of early education programs for children living in low-income families indicate specific advantages for participants in terms of long-term academic outcomes, notably educational attainment and high school completion. Some studies (e.g. the Perry Preschool Project) also indicate social advantages for participants, such as a reduction in arrest rates and out-of-wedlock births, as well as increased earnings.A recent follow-up study of the Brookline Early Education Project reported that the urban young adults who had participated in the project during their infant through preschool years not only had increased earnings and greater

©2014-2026 ABILIO | SCHOOL SUCCESS

educational attainment than their peers but also had more advantageous mental health and greater health efficacy.[14] Indeed, mental-health benefits, although seldom examined as an outcome of early education, may be central to academic achievement, as Hymel and Ford suggest.[15]Such benefits accrue when programs are of high quality, provide intensive centre-based services during the early childhood years and maintain continued support services to children and families during the first few years of school.

Implications

Although evidence is amassing on the effectiveness of intensive and high-quality preschool programs on children's later academic attainment, additional studies are needed to determine why some programs demonstrate benefits for females whereas others demonstrate benefits for males. More research is needed to determine the optimum age for program initiation, as some effective studies began in infancy and others were initiated during the early preschool years. Further, rather than additional studies of demonstration models, future research should focus on programs that provide services in community settings, such as public schools. One critical question is how to scale up effective programs so they can reach a large number of children. Studies are also needed to consider the type of ongoing support that is most effective for children and families during the school years. Since results of rigorous evaluations of early education programs demonstrate clear long-term benefits for children, policies related to the provision of quality universal preschool education deserve careful consideration.

As Campbell and Wentzel both indicate, the congruence among the papers in this section on the associations between participation in high-quality preschool programs and later school completion is evident. Considered as a whole, however, the articles (including my own) are incomplete. In particular, although the empirical work on the links between preschool programs and school completion are by necessity based on preschool data from an earlier time, the need for preschool service models that are appropriate to our current population of preschoolers is great. The programs developed in the 1970s and 1980s were focused on a different population of preschoolers than we have today. Many immigrant children in the United States are English language learners, and their early education needs require complementary approaches to learning a new language and maintaining growth in their home language.[16] Further, productive teacher-parent relationships demand that teachers have sufficient cultural understanding of parents' beliefs about schooling, early education, child development, and parenting and of how teacher-parent value differences may affect children's academic life.[17] Finally, children with

©2014-2026 ABILIO | SCHOOL SUCCESS

disabilities are now routinely included in many early education programs and the former early education models require revision to take into account the needs of children with a broader array of developmental pathways.

Wentzel maintains that the call for theoretical models to guide program development is crucial to the effectiveness of future preschool programs. Programs are developed based on both *explicit* and *implicit* models of change, and we are at a point in the early childhood community where we can be more deliberative in the models we select and in explicating our understanding of the services, activities and processes that promote positive development. The task, thus, is to develop those models based on developmental theory, while simultaneously considering the developmental processes through which prior programs achieved success, and attending to the needs of the full complement of current preschool children and their families.

References

1. Ramey CT, Ramey SL. Early intervention and early experience. *American Psychologist* 1998;53(2):109-120.
2. Statistics Canada. Social and Economic Characteristics of Individuals, Families and Households, 2001 Census. Available at: http://www.statcan.ca/english/IPS/Data/97F0021XCB2001001.htm. Accessed February 18, 2004.
3. U. S. Bureau of Labor Statistics. Working in the 21st century. Available at: http://www.bls.gov/opub/working/chart16.pdf. Accessed on February 18, 2004.
4. National Research Council and Institute for Medicine. *From neurons to neighborhoods: The science of early childhood development.* Washington, DC: National Academy Press; 2000.
5. Hauser-Cram P, Pierson DP, Walker DK, Tivnan T. *Early education in the public schools: Lessons from a comprehensive birth-to-kindergarten program.* San Francisco, Calif: Jossey-Bass; 1991.
6. Schweinhart LJ, Barnes HV, Weikart DP. *Significant benefits: the High/Scope Perry Preschool Study through age 27.* Ypsilanti, MI: High/Scope Press; 1993
7. Campbell FA, Ramey CT, Pungello E, Sparling J, Miller-Johnson S. Early childhood education: Young adult outcomes from the Abecedarian project. *Applied Developmental Science* 2002;6(1):42-57.
8. Lerner RM, Hauser-Cram P, Miller E. Assumptions and features of longitudinal designs: Implications for early childhood education. In: Spodek B, Saracho ON, Pelligrini AD, eds. *Yearbook in early education* Vol. 8. New York, NY: Teachers College Press; 1998:113-138
9. Brooks-Gunn J. Do you believe in magic? : What can we expect from early childhood intervention programs? *Society for Research in Child Development Social Policy Report* 2003;17(1).
10. Barnett WS. Long-term effects of early childhood programs on cognitive and school outcomes. *Future of Children* 1995;5(3):25-50.
11. Campbell FA, Pungello EP, Miller-Johnson S, Burchinal M, Ramey CT. The development of cognitive and academic abilities: Growth curves from an early childhood education experiment. *Developmental Psychology* 2001;37(2):231-242.
12. Reynolds AJ, Temple JA, Robertson DL, Mann EA. Long-term effects of an early childhood intervention on educational achievement and juvenile arrest. *JAMA - Journal of the American Medical Association* 2001;285(18):2339-2346.

©2014-2026 ABILIO | SCHOOL SUCCESS

13. Temple JA, Reynolds AJ, Miedel WT. Can early intervention prevent high school dropout? Evidence from the Chicago Child-Parent Centers. *Urban Education* 2000;35(1):31-56.

14. Palfrey JS, Hauser-Cram P, Bronson MB, Warfield ME, Sirin S, Chan E. The Brookline Early Education Project: A 25-year follow-up study of a family-centered early health and development intervention. *Pediatrics* 2005;116(1):144-152.

15. Hymel S, Ford L. School completion and academic success: The impact of early social-emotional competence. In: Tremblay RE, Barr RG, Peters RDeV, eds. *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development; 2003:1-7. Available at: http://www.child-encyclopedia.com/documents/Hymel-FordANGxp.pdf. Accessed August 29, 2005.

16. Snow CE, Paez M. The Head Start classroom as an oral language environment: What should the performance standards be? In: Zigler E, Styfco SJ, eds. *The Head Start debates (friendly and otherwise*). Baltimore, Md: P.H. Brookes Publishing; 2004:113-128.

17. Hauser-Cram P, Sirin SR, Stipek D. When teachers' and parents' values differ: Teachers' ratings of academic competence in children from low-income families. *Journal of Educational Psychology* 2003;95(4):813-820.

©2014-2026 ABILIO | SCHOOL SUCCESS