

# Effective Educational Programs for Young Children: What We Need to Know

Ruby Takanishi and Kimber L. Bogard

*Foundation for Child Development*

---

**ABSTRACT**—*Policymakers and researchers have shared interests in educational programs for young children. Policymakers see these programs as a potential means of narrowing the persistent gaps in achievement evident in many children entering kindergarten. Researchers see their role as one of assessing the effectiveness of various programs so that policymakers can make informed decisions. This article provides an overview of what is currently known and what needs to be determined about the factors that contribute to positive outcomes from early education programs. New prospective longitudinal studies are needed, as well as secondary analyses of recent large-scale longitudinal studies, which can inform issues of program design and impact. Five gaps in knowledge about effective programs are identified: program design for an increasingly ethnically diverse group of young children, including those of immigrants; connecting teaching and learning processes to child outcomes; understanding a broad range of child outcomes based on developmental science; bringing multiple disciplinary perspectives to bear on what constitutes effective early education programs; and continuing to address how research and practice can be mutually beneficial.*

**KEYWORDS**—*early intervention; education programs; PK-3; early childhood; policy; education research; children of immigrants; policy research; longitudinal studies*

---

In a recent international survey of countries that provide early education programs, the U.S. enrollment rates ranked in the middle of many peer nations, as well as developing countries, which do

more to enroll children in educational programs before primary school (United Nations Educational, Scientific, and Cultural Organization, 2005). Will these human capital investments in early education programs matter for the future of children in these countries or in our own? Unlike most developed nations, the United States has no national commitment to early education for all children from age 3 (prekindergarten [PK]) to Grade 1, which is the beginning of universal public education. Polls show public support for the idea of such PK programs, but policymakers and voters differ on the funding, governance, and child eligibility (targeted vs. universal) of these programs.

The United States differs in its approach to early education in another way as well: It is one of the few countries in the world that evaluates its programs for young children and uses the findings in the marketplace of competing policy options. In France, which provides universal preprimary education starting at age 3, and in other European countries with publicly funded early education programs, concerns about program effectiveness are rare. Programs for young children are viewed as a right and as a public good. In contrast, a utilitarian tradition in the United States gives rise to a variety of practical questions, such as: Do early education programs work? How do we know if they do? and What are the most effective approaches to early education? Such questions underlie debates about the age at which publicly funded education programs should begin, who should be included in them, and what the nature of the early learning experience should be. To clarify this debate, we need to have a clear picture of what is known about the benefits of early education and about who benefits the most and why.

## WHAT DO WE KNOW?

Several research syntheses (Barnett, 1995; Heckman, Layne-Farrar, & Todd, 1996; Lazar & Darlington, 1982; Reynolds,

---

Correspondence concerning this article should be addressed to Ruby Takanishi, Foundation for Child Development, 145 E. 32nd St., 14th Floor, New York, NY 10016; e-mail: Ruby@fcd-us.org.

Magnusson, & Ou, 2006) support the idea that well-designed and well-implemented early education programs can benefit children, particularly those who are socially and economically disadvantaged and likely to enter kindergarten behind their advantaged peers in terms of their reading and math skills. The benefits from such programs include increased academic achievement, greater success in school, less grade retention, fewer placements in special education, higher graduation rates, higher employment rates and earnings, lower rates of crime, greater government revenues, and lowered governmental spending for criminal justice and public benefit systems.

However, these benefits show the *potential* of high-quality early education programs and should not be considered typical for all programs. In fact, observational studies of state-funded PK programs indicate that most are of mediocre quality (Clifford et al., 2005) and may not result in the long-term outcomes of the small, high-quality programs often cited. In addition, gains made in early childhood programs can be lost as early as the end of first grade (McKey et al., 1985; Peisner-Feinberg et al., 2001), especially when children enter low-resource elementary schools (Currie & Thomas, 2000).

Current research indicates that high-quality early education programs combined with quality K–3 education (PK–3) can produce more enduring benefits. Long-term longitudinal evaluations of extended early intervention programs (those that span PK and the early elementary grades) likewise indicate that the duration and intensity of the programs matter and that these programs can have impacts into the adult years (Reynolds, 2003). The implication of this research was that extended programming is the key to sustaining gains. These longitudinal studies are few in number, however, and because they were begun in the 1960s through the 1980s, they likely reflect cohort effects.

More contemporary evaluations such as the Tulsa Universal PreKindergarten program for 4-year-olds indicate that high-quality early education can provide positive outcomes for children of different ethnicities and socioeconomic backgrounds, but to different degrees. Other evaluations of universal PK programs (e.g., State of Georgia) provide additional evidence that children of all economic backgrounds can benefit from good quality PK programs (Gormley, Gayer, Phillips, & Dawson, 2005; Henry, Gordon, & Rickman, 2006). Nevertheless, despite the enormous potential of high-quality programs, none of them has met the test of generalizability across a large number of sites, largely because of the differences in funding sources, relevant policies, single or limited site implementation, and monitoring of implementation.

## WHAT DO WE NEED TO KNOW?

### A New Generation of Prospective Longitudinal Studies

Three of the often-cited longitudinal studies of extended early intervention studies (Perry Preschool, Abecedarian, and

Chicago Longitudinal Study) provide rich results on individuals now ranging from young adulthood (Chicago Longitudinal Study) to those approaching middle age (Perry Preschool Project). However, given the possible effects of sociohistorical influences (Elder, Nguyen, & Caspi, 1985) as well as of the changing ethnic backgrounds and generational status of young children (Garcia, Jensen, & Cuellar, 2006), new prospective longitudinal studies of today's cohort of children are needed for a more current understanding of the potential impact of early education programs on children's outcomes.

Currently, there are several ongoing large-scale longitudinal studies, including the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development, the U.S. Department of Education Early Childhood Longitudinal Study–Kindergarten Cohort (ECLS–K), and the Early Childhood Longitudinal Study–Birth Cohort. In addition, a new generation of longitudinal studies has been launched in specific locations (Los Angeles, Chicago, Tulsa), and smaller longitudinal studies are also in progress. All provide opportunities for secondary analyses as well as for the collection of new variables to be included in future phases of these studies.<sup>1</sup> Moreover, several federal agencies are collaborating to fund the Interagency School Readiness Consortium, which supports research on the effectiveness of specific early childhood curricula, programs, and interventions aimed at school readiness. Thus, the timing is right to raise some basic questions about how best to conduct prospective longitudinal studies, how to sustain them to follow children as they attend kindergarten to Grade 12, and how to translate the knowledge generated from these studies into effective policy choices.

### Framing Questions for Research

A major challenge in designing prospective longitudinal studies of extended early intervention programs is being clear about how we frame our questions. Longitudinal studies are costly, and given limited resources, we must think deeply about how these costs can be justified. In particular, we need to focus critically on (a) conceptualizing research questions within an historical and policy context, (b) utilizing what we have learned from decades of research, and (c) ensuring that the samples of children studied represent the rich diversity of today's and tomorrow's young child population. Following are brief examples of how we think research questions should be framed.

The first example involves the central question: What do early education programs add to children's positive outcomes, in addition to family and community factors that are known to affect developmental trajectories? Research has revealed the limitations of 1 year of early childhood intervention

<sup>1</sup>The National Institute of Child Health and Human Development study began in the 1990s and is not a nationally representative sample. ECLS–K and Early Childhood Longitudinal Study–Birth Cohort were designed as national samples, but on many outcomes, non-English-speaking children are not representative of the population.

(Brooks-Gunn, 2003; Zigler, 1978), so we need to track program quality across multiple years (PK through third grade) and relate the resulting data to child, adolescent, and adult outcomes. We also need to more deliberately examine the interacting contexts that influence children across these years and affect their outcomes—contexts ranging from the impact of state or local policies governing early education programs to the contribution of interventions that focus on parents and families (e.g., home visiting and parent engagement).

The second example involves the question: What is the relationship between teachers' qualifications and classroom quality and child outcomes (Early et al., 2006)? This is a hot-button question for policymakers and legislators who allocate funds for PK programs, especially when lower levels of teacher and staff qualifications are proposed for cost-cutting purposes. Both authors strongly believe that a BA degree with specialized training in early childhood should be the *minimum* requirement for all teachers, including PK teachers (Bowman, Donovan, & Burns, 2001), and that teachers should be supported by assistant teachers who may not have the BA degree. In fact, however, the question linking teacher preparation and outcomes is simplistic as currently framed. One serious flaw in research on this question is the fact that the preparation of teachers for early childhood programs (as well as for K–12 education) is not standardized and tied to state-by-state requirements and therefore reflects a variety of pathways, even with the BA degree. This wide variation in teacher preparation is a direct challenge to studies that assume that a BA degree captures similar training levels and experiences. A related flaw is the lack of research attention paid to the larger school context, including principal leadership and district policies that can either strengthen or weaken the connection between teacher preparation and child outcomes (Wang, Haertel, & Walberg, 1990). Thus, it should not be a surprise that recent studies indicate that the relationship between teacher degree and child outcomes is modest, if not non-existent.

### Five Gaps in Knowledge

There are five gaps in our knowledge of early education programs that urgently need to be filled. First, we must increase our understanding of the growing population of immigrant children—who are not typically represented in current research—and of the impact of their early experiences in their families and in early childhood programs on future achievement. Second, we must increase our understanding of the nature of teacher–child interactions in early education and how these interactions relate to outcomes. Third, we must consider a broad range of outcomes for children, no matter what the current policy frameworks and goals are. Fourth, engaging a broad representation of the behavioral and social sciences in research on early education programs will contribute to a richer understanding of these programs. Fifth, we must reconsider how

mutual, two-directional, synergistic relationships between research and practice take place.

### *Changing Demography of the Young Child Population*

The most important challenge in designing research on early education today is the changing demography of the young child population. Nationally, one of five children lives in a family where at least one parent is an immigrant (Capps, Fix, Ost, Reardon-Anderson, & Passel, 2005). In some traditional gateway cities like New York City, more than 50% of the school-age population includes children living in immigrant families. In the state of California, one of two children under the age of 6 has at least one parent who is an immigrant.

In contrast, the children in the three often-cited longitudinal studies of early childhood program intervention are, with the exception of a small group of Hispanic/Latinos included in the Chicago Longitudinal Study, exclusively low-income African Americans. Clearly, future studies must place a high priority on ensuring representative racial and ethnic diversity in their samples. (Among other things, this means that, given their significant and growing numbers in the population, children who do not speak English as their first language should not be excluded from national studies, particularly longitudinal ones.) When the National Task Force on Early Childhood Education for Hispanics recently concluded that information on which to base early education programs for the growing population of young Latino children is limited (e.g., Hernandez, 2006), it was not only correct but undoubtedly could have been speaking for other ethnic groups as well.

### *Understanding Teaching and Learning in Early Education and Elementary School Settings*

Understanding how programs with positive long-term outcomes work is essential to implementing these programs on a larger scale. Yet, relatively little is known about teacher–child interactions in early childhood programs and how these interactions influence child outcomes. Part of this problem is related to the Black Box paradigm of the first generation of studies of early intervention programs: The components of the programs are clear, but how they work together is not, particularly with respect to the actions between teachers and children.

Symptomatic of this problem is the issue of program nomenclature. Simply put, there is no standardization in the labeling of programs for young children. Not only do these programs go by a variety of titles—early learning, early education, preschool, PreKindergarten, nursery school, Head Start, child care, and so on—but also the title of a particular program may not reflect the nature of the learning experiences it provides. In addition, parental retrospective reports, such as in ECLS-K, may not be reliable (e.g., some parents do not wish to report that their children were in Head Start). The nomenclature problem highlights the need for future

studies to more fully capture the nature of teaching and learning in early education programs.

A related issue involves better coordinating classroom instruction with new understandings of how children learn. The coming years provide an opportunity to test curricular and instructional approaches based on research and assess their impact on children's learning. Once again, understanding what actually happens in classrooms will be crucial. In particular, future studies should address the dichotomies made between "play" and instruction and between academic skills and socio-emotional development because these variables are often prominent in the philosophical debates about the value and the content of early childhood education. The evaluation of the Chicago Child-Parent Centers indicates that both a balance between teacher-directed and child-initiated activities, plus an extensive parental involvement, are key contributors to child outcomes.

#### *Determining What Child Outcomes to Measure*

Outcomes such as self-regulation and social skills—the capacity to work with other children and adults—are important in their own right and have been shown to mediate academic outcomes as well. Careful consideration must be paid to child outcome variables. This is not a new issue. In the 1970s, Zigler (1978) addressed the goals of early intervention programs in terms of social competence, which reflected a wide range of cognitive, social, and emotional outcomes for children. The relationships among these outcomes, particularly the relationships between cognitive and socioemotional variables, and the influence of these relationships on both immediate and longer term outcomes for children are beginning to be demonstrated (Miles & Stipek, 2006). Specifically, cognitive advances, social competence, and self-regulation are all related to learning outcomes. Recognition of these relationships should dampen the debates about what are appropriate goals for early education programs, particularly between those who advocate a strong focus on literacy without the development of social skills and self-regulation and those who argue that direct instruction in literacy skills should not be introduced "too early," that is, before the primary grades.

The issue of measuring the right child outcomes for early education programs has an important social context. The current focus on "closing the achievement gap" is the prevalent rationale for arguing that more public resources be spent on early education programs—and there is no doubting that the gap exists and must be narrowed in a democratic nation such as the United States. However, this focus has created a countermovement that believes that the early emphasis on achievement and academic skills is harmful to children and robs them of their childhood.

The great benefit of longitudinal studies of extended early childhood programs is that they measure functional outcomes that matter to policymakers, such as rates of high school

completion and enrollment in college, involvement with the juvenile or the criminal justice systems, adolescent pregnancy, special education enrollment, mental health status, and adult employment with stable benefits, including health insurance. Some research also examines the impact that children's access to early education programs has on maternal employment (e.g., Gelbach, 2002).

The question of appropriate outcomes also involves assessing the relative impact of early education programs on child outcomes and that of alternative policies. We need to know not only how educational interventions can contribute in relation to other policy strategies—for example, housing, health, income policy, and family-based interventions—but also whether there must be a "comprehensive package" of strategies, at least within the United States, which does not have strong family support policies and universal health insurance. Comparative analyses of different policy choices for enhancing children's well-being, including early education programs, housing policy, and income policy, should be a high priority for future research (Leventhal, Fauth, & Brooks-Gunn, 2005; Rothstein, 2000).

#### *Conducting Multidisciplinary, Integrated Child Development Research*

One of the founding aspirations of the Society for Research in Child Development was to engage researchers from different disciplines in the study of children's development. The struggle to accomplish this goal has been arduous, but the value of having different disciplinary perspectives is illustrated by research on the effectiveness of early childhood programs (Gormley et al., 2005; Peisner-Feinberg et al., 2001; Pianta et al., 2005). Economists, for example, examine the effectiveness of early childhood education programs through cost-benefit analyses (Lynch, 2007) and are finding that investment in these programs pays dividends, not only to children and their families but also to society and government in terms of reduced social problems and their related costs. Social demographers have also made an important contribution in the area of early education by identifying factors related to program participation, particularly by underrepresented groups (Hernandez, Denton, & McCartney, in press). Instances like these make clear that integrating policy questions with the findings of multidisciplinary developmental science can lead to better-informed decisions regarding educational programming for young children (Shonkoff & Phillips, 2000).

An important challenge in understanding the issues of early education is one that faces the entire field of developmental science: the integration of findings across areas of specialized knowledge (Sternberg & Grigorenko, 2001). For example, work on early childhood interventions that focus on teaching self-regulation is typically not integrated with research on the relationships between cognitive and socioemotional development (Bedrova & Leong, 2006). Yet, neurodevelopmental research has found that emotionality and cognitive development

are linked and that connection should be reflected in the approach to instruction in early childhood programs (Blair, 2002). Because they occur in real-life settings, research and evaluation conducted in early education programs provide ample opportunities to address this need for integration across research subfields.

#### *Connecting Research and Practice*

Translating research into practice obviously requires mutually respectful relationships between researchers and practitioners working in authentic partnership. Unfortunately, such relationships have not been the norm in the history of child development research. Researchers have their own cultures and values, incentive systems, and skills, and education professionals have theirs. A promising approach is to have researchers from different disciplines working together with educators in the context of a specific intervention. This approach is time intensive, however, which is a clear barrier to its widespread practice.

### **DOES POLICY MATTER? CONNECTING RESEARCH WITH EDUCATION POLICY FOR YOUNG CHILDREN**

Asking whether policy matters for young children and their life prospects is not a rhetorical question. How much particular policies matter, for whom, and under what conditions are questions that are central to making effective policy choices, and child development researchers have an important role to play in addressing these questions. To do so they must go beyond examining the impact of program intervention on child-level characteristics and also investigate organizational variables of the educational process—such as leadership, teacher preparation, professional development, and ongoing training—that are influenced by formal policies on standards, curricula, assessment practices, and instructional approach. Providing an integrated interdisciplinary research base for the coordination of federal, state, district, and local policies into a coherent system that best serves children and families is an important area of work for researchers whose aim is to increase effective educational programming for young children.

### **REFERENCES**

- Barnett, W. S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *Future of Children*, 5(3), 25–50.
- Blair, C. (2002). School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist*, 57, 111–127.
- Bodrova, E., & Leong, D. J. (2006). Self-regulation as a key to school readiness: How early childhood teachers can promote this critical competency. In M. Zaslow & I. Martinez-Beck (Eds.), *Critical issues in early childhood professional development* (pp. 203–224). Baltimore, MD: Brookes.
- Bowman, B. T., Donovan, M. S., & Burns, M. S. (Eds.). (2001). *Eager to learn: Educating our preschoolers*. Washington, DC: National Academy Press.
- Brooks-Gunn, J. (2003). *Do you believe in magic?: What we can expect from early childhood intervention programs*. SRCD Social Policy Rep. No. 17(1), Society for Research on Child Development, Ann Arbor, MI.
- Capps, R., Fix, M. E., Ost, J., Reardon-Anderson, J., & Passel, J. S. (2005). *The health and well-being of young children of immigrants*. Washington, DC: Urban Institute.
- Clifford, R. M., Barbarin, O., Chang, F., Early, D. M., Bryant, D., Howes, C., et al. (2005). What is pre-kindergarten? Characteristics of public pre-kindergarten programs. *Applied Developmental Science*, 9, 126–143.
- Currie, J., & Thomas, D. (2000). School quality and the long-term effects of Head Start. *Journal of Human Resources*, 35, 755–774.
- Early, D. M., Bryant, D. M., Pianta, R. C., Clifford, R. M., Bruchinal, M. R., Ritchie, S., et al. (2006). Are teachers' education, major, and credentials related to classroom quality and children's academic gains in pre-kindergarten? *Early Childhood Research Quarterly*, 21(2), 174–195.
- Elder, G. H., Nguyen, T. V., & Caspi, A. (1985). Linking family hardship to children's lives. *Child Development*, 56, 361–375.
- Garcia, E. E., Jensen, B., & Cuellar, D. (2006). Early academic achievement of Hispanics in the United States: Implications for teacher preparation. *New Educator*, 2, 123–147.
- Gelbach, J. B. (2002). Public schooling for young children and maternal labor supply. *American Economic Review*, 92, 307–322.
- Gormley, W. T., Gayer, T., Phillips, D., & Dawson, B. (2005). The effects of Universal Pre-K on cognitive development. *Developmental Psychology*, 41, 872–884.
- Heckman, J., Layne-Farrar, A., & Todd, P. (1996). Human capital pricing equations with an application to estimating the effect of schooling quality on earnings. *Review of Economics and Statistics*, 78, 562–610.
- Henry, G., Gordon, C. S., & Rickman, D. K. (2006). Early education policy alternatives: Comparing quality and outcomes of Head Start and state prekindergarten. *Educational Evaluation and Policy Analysis*, 28(1), 77–97.
- Hernandez, D. (2006). *Young Hispanic children in the U.S.: A demographic portrait based on Census 2000*. National Task Force on Early Childhood Education for Hispanics, Foundation for Child Development, New York.
- Hernandez, D. J., Denton, N. A., & McCartney, S. E. (in press). Early childhood education programs: Accounting for low enrollment in newcomer and native families. In M. Waters & R. Alba (Eds.), *The next generation: Immigrant youth and families in comparative perspective*. Ithaca, NY: Cornell University Press.
- Lazar, I., & Darlington, R. B. (1982). Lasting effects of early education: A report from the Consortium for Longitudinal Studies. *Monographs of the Society for Research in Child Development*, 47(2–3, Serial No. 195).
- Leventhal, T., Fauth, R. C., & Brooks-Gunn, J. (2005). Neighborhood poverty and public policy: A 5-year follow-up of children's educational outcomes in the New York City moving to opportunity demonstration. *Developmental Psychology*, 41, 933–952.
- Lynch, R. (2007). *Exceptional returns: Economic, fiscal, and social benefits of investment in early childhood development*. Washington, DC: Economic Policy Institute.
- McKey, R. H., Condelli, L., Granson, H., Barrett, B., McConkey, C. C., & Plantz, M. (1985, June). *The impact of Head Start on children*,

- families and communities*. Final report of the Head Start Evaluation, Synthesis and Utilization Project, Washington, DC.
- Miles, S. B., & Stipek, D. (2006). Contemporaneous and longitudinal associations between social behavior and literacy achievement in a sample of low-income elementary school children. *Child Development, 77*(1), 103–117.
- Peisner-Feinberg, E. S., Burchinal, M. P., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., et al. (2001). The relation of preschool child-care quality to children's cognitive and social developmental trajectories through second grade. *Child Development, 72*, 1534–1553.
- Pianta, R. C., Howes, C., Burchinal, M., Bryant, D., Clifford, R., Early, D., et al. (2005). Features of prekindergarten classrooms, and teachers: Do they predict observed classroom quality and child-teacher interactions? *Applied Developmental Science, 9*(3), 144–159.
- Reynolds, A. (2003). The added value of continuing early intervention into the primary grades. In A. J. Reynolds, M. C. Wang, & H. J. Walberg (Eds.), *Early childhood programs for a new century* (pp. 163–196). Washington, DC: CWLA Press.
- Reynolds, A. J., Magnusson, K., & Ou, S. (2006, January). *P-3 education: Programs and practices that work in children's first decade*. Working paper: Advancing PK-3 No. 6, Foundation for Child Development, New York.
- Rothstein, R. (2000). *Improving educational achievement: A volume exploring the role of investments in schools and other supports and services for families and communities*. Washington, DC: The Finance Project, Center on Education Policy.
- Shonkoff, J. P., & Phillips, D. A. (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press.
- Sternberg, R. J., & Grigorenko, E. L. (2001). Unified psychology. *American Psychologist, 56*, 1069–1079.
- United Nations Educational, Scientific, and Cultural Organization. (2005). *Education for all global monitoring report*. Paris: Author.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1990). What influences learning? A content analysis of review literature. *Journal of Educational Research, 84*, 30–43.
- Zigler, E. (1978). The effectiveness of Head Start: Another look. *Educational Psychologist, 13*, 71–77.