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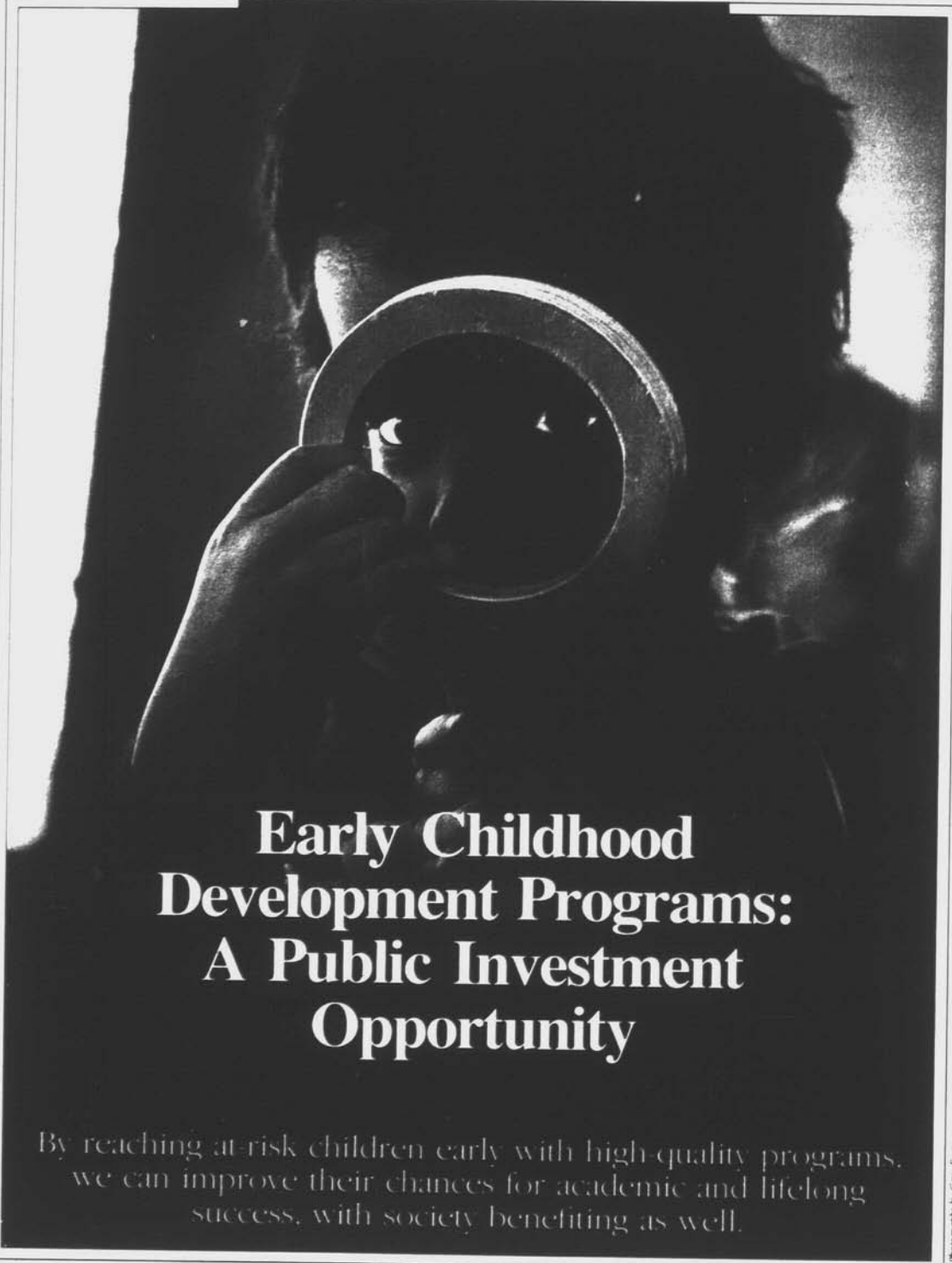


Early Childhood Development Programs: A Public Investment Opportunity

By reaching at-risk children early with high-quality programs, we can improve their chances for academic and lifelong success, with society benefiting as well.

Photographs by Gary Eaton

The raising of young children is changing dramatically in our time. Parental roles are shifting as unprecedented numbers of mothers are joining the work force. Single-parent families and poverty among children are both on the increase. Amid these changes, early childhood development programs have emerged as a response to immediate family needs, as well as a potential public investment that can improve the quality of life for the next generation of children.

Early childhood development programs, providing education or supplemental care, have increased dramatically in recent years. Between 1970 and 1984, the percentage of three- and four-year-olds enrolled in programs identified as "nursery schools" or "kindergartens" increased from 21 to 36 percent, serving 2.6 million of the nation's 7.2 million three- and four-year-olds in 1984 (U.S. Bureau of the Census 1985). The percentage of families using supplemental child care arrangements, while difficult to estimate directly, is closely tied to the labor force participation rate of mothers. Between 1950 and 1985, the percentage of mothers in the labor force with children under 18 increased from 14 to 62 percent, with similar rates for mothers of three- and four-year-olds (U.S. Bureau of the Census 1983 and unpublished updates). Thus, 4.3 million three- and four-year-olds today require supplemental child care arrangements while their mothers and fathers are working. Nursery schools and kindergartens serve about one-third of these children, providing some or all of the supplemental care that they need.

Public schools serve 85 percent of kindergarten children and 91 percent of students in grades 1–12 (U.S. Bureau of the Census 1985). In contrast, only one out of three nursery school enrollments is in a publicly funded program. The primary source of public funding for programs for three- and four-year-olds is the federal government, which provides at least 85 percent of the total public funds for these programs while spending only about 7 percent of the total public funds for elementary and secondary schools (National Center for Education Statistics 1985, p. 36). Federal spending includes about $1 billion a year for Project Head Start and about $1 billion a year for various other education and supplemental care programs for young children (Schweinhart 1985). Also, the federal dependent care tax credit leaves parents with about $2 billion a year to cover expenses of supplemental care for young children.

State, county, and municipal governments and school boards have recently renewed their interest in public investment in early childhood programs prior to kindergarten. State funding for these programs has grown to over a quarter-billion dollars annually. In the past two years, 19 states have initiated, maintained, or expanded their own investments in early childhood programs—Alaska, California, Florida, Illinois, Louisiana, Maryland, Maine, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New York, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Texas, and Washington. Large cities—such as Chicago, New York, Philadelphia, and Washington, D.C.—are making significant investments of their own in early childhood programs. County and municipal funding is widespread, since school districts and local agencies, in the process of administering federal and state funds, often contribute their own funds.

"Good early childhood experiences help a child to acquire an interest in learning, a willingness to try new things and to trust adults, a strong sense of independence, and to avoid negative behaviors such as misconduct, rejection of school and adults, and an inability to respond properly to adult requests."

Early childhood programs are particularly valuable for young children living in poverty. One of every four children under six is poor (U.S. Bureau of the Census 1984). Early childhood poverty is rampant among minorities, extending to half of all black children and two of every five Hispanic children. Figure 1 illustrates the growth in the poverty rate from 1969–1983. This growth, over and above the general poverty rate, may be attributed largely to the growth in single-parent families, resulting from the high divorce rate and the growing rate of never-married mothers.

Early childhood poverty often leads to children's failure in school (e.g., see Education Commission of the States 1984), which in turn often results in their dropping out of high school (National Center for Education Statistics 1983) and eventual socioeconomic failure and poverty in adulthood. In this country, continuing poverty from generation to generation is not inevitable, but the connection remains strong. Two out of five children from the poorest fifth of families remain in the poorest fifth as young adults; seven out of ten remain in the poorest two-fifths (Hill and Ponza 1983). Poverty and school failure are also correlated to some extent with high rates of both juvenile delinquency (Loeber and Dishion 1983) and teenage pregnancy (Guttmacher Institute 1981).

Potential Benefits of Early Childhood Development Programs

The 1960s saw a renaissance of interest in early childhood education as a means of addressing the consequences of poverty for children. Martin Deutsch in New York, Susan Gray in Tennessee, and David Weikart in Michigan initiated the first of this new wave of experimental early childhood

In a corner of the High/Scope Preschool classroom in Ypsilanti, child and teacher abandon blocks for a moment to compare hand size

"A possible policy alternative is to offer early childhood programs that are open to all children, but to provide funding only for low-income children at special risk of school failure, . . . [which] conserves public funds, while maintaining universal enrollment opportunity."

programs for children from low-income families. The designers of these experimental programs all employed curriculum approaches specifically geared to the perceived needs of young children living in poverty. They also used research methods to evaluate their programs and continued these evaluations for some years after children had completed the programs. Thus, the fortunes of early childhood education for children from low-income families became linked to longitudinal research findings.

As might be expected, many studies have addressed the short-term effects of early childhood programs, while only a handful have been able to examine effectiveness ten years or more after program completion. Yet, the weight of the evidence from carefully designed studies suggests that effective programs help children from low-income families do better in school and avoid the later problems that have their roots in school failure.

Table 1 summarizes the findings of some of the better-designed studies, most with random assignment of subjects to program and comparison groups. Each study compared two groups of children from low-income families. One group was placed in some type of early childhood program; the other group attended no program. These studies found that the early programs help improve children's intellectual performance as school begins, though this advantage appears to be temporary. The programs also reduce the need for children to be placed in special education programs or to repeat grade levels because they are unable to do the work expected of them. Third, participation in these programs leads to a lower high school dropout rate. Additional evidence, largely from the High/Scope Foundation's Perry Preschool study, indicates that good early childhood programs can lead to consistent improvement in poor children's

achievement throughout schooling, reduced rates of delinquency and arrest and teenage pregnancy; an increased employment rate at age 19; and a decreased rate of welfare dependency at age 19.

To understand how early childhood experiences can affect children throughout their lives, look at life as a series of interactions between persons and settings, with performance and experience in one setting affecting access to the next setting, and so on. For example, successful performance in first grade leads to second grade, while failure may lead to repetition of first grade. Success occurs not only from year to year, but day to day, and even minute to minute. Early childhood experiences stand at the gateway of schooling—a formal cultural system with clear norms of right and wrong activities. Good early childhood experiences help a child to acquire an interest in learning, a willingness to try new things and to trust adults, a strong sense of independence. They also help children avoid negative behaviors such as misconduct, rejection of school and adults, and an inability to respond properly to adult requests.

In seeking to understand the long-term effects of early childhood development programs for at-risk children, we proposed and tested a causal model of early childhood program effects over time (Schweinhart and Weikart 1980, Berrueta-Clement et al. 1984). The model builds on a simple framework that links short-, mid-, and long-term preschool effects:

1. Poor children who attend a good early childhood development program are better prepared for school, intellectually and socially.

2. A better start in school helps children achieve greater school success, as demonstrated by a decreased need for attending special education classes or repeating a grade.

3. Greater school success leads to greater success in adolescence and adulthood, as demonstrated by lower rates of delinquency, teenage pregnancy, welfare, and unemployment.

The evidence for short-term effects of good early childhood programs is abundant (e.g., see McKey et al. 1985, the final report of the Head Start Synthesis Project). The evidence for mid-term effects comes largely from the Consortium for Longitudinal Studies (Lazar et al. 1982, Consortium 1983), a collection of follow-up studies of early childhood programs that operated in the 1960s. The evidence for long-term effects comes from High/Scope's Perry Preschool study and a few other studies. We anticipate more of this same pattern—many studies identifying short-term effects, a modest number of studies establishing mid-term effects, and a few studies indicating long-term effects.

An economic cost-benefit analysis was conducted with data from the High/Scope Perry Preschool study (Berrueta-Clement et al. 1984, Barnett 1985). Since the data from this study are consistent with other studies, the economic findings may well apply to some extent to other good early childhood programs for low-income children.

The analysis indicates that, strictly in financial terms, such programs can be an excellent investment for taxpayers. One way to represent the program's investment potential is its internal rate of return, equivalent to the real interest rate that the investment earns. This rate was 8 percent for the two-year program and over 11 percent for the one-year program. (The two-year program had the same effects as the one-year program, but its operational costs were about twice as much.)

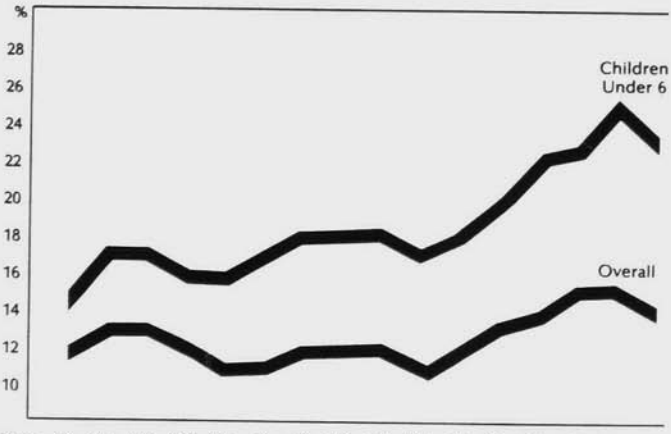
Another way to represent the returns to taxpayers of the Perry Preschool program is to depict its per-child profits in constant dollars over and above some reasonable standard of investment profitability. Figure 2 presents the value of the program investment in constant 1981 dollars discounted at 3 percent annually. The

Table 1
Documented Effects of Good Preschool Programs for Poor Children

Finding / Study	Program Group	Control Group	Probability of Error*
Intellectual ability (IQ) at school entry			
Early Training	96	86	<.01
Perry Preschool	94	83	<.01
Harlem	96	91	<.01
Mother-Child Home	107	103	—
Special education placements			
Rome Head Start	11%	25%	<.05
Early Training	3%	29%	<.01
Perry Preschool	16%	28%	<.05
New York Prekindergarten (age 9)	2%	5%	<.01
Mother-Child Home (age 9)	14%	39%	<.01
Retentions in grade			
Rome Head Start	51%	63%	—
Early Training	53%	69%	—
Perry Preschool	35%	40%	—
Harlem	24%	45%	<.01
New York Pre-Kindergarten	16%	21%	<.05
Mother-Child Home	13%	19%	—
High school dropouts			
Rome Head Start	50%	67%	<.05
Early Training	22%	43%	<.10
Perry Preschool	33%	51%	<.05
Additional Perry Preschool findings			
Functional competence (average or better score)	61%	38%	<.05
Postsecondary enrollments	38%	21%	<.05
Detentions and arrests	31%	51%	<.05
Teenage pregnancies per 100 girls	64	117	<.10
19-year-olds employed	50%	32%	<.05
19-year-olds on welfare	18%	32%	<.05

Note: Adapted from John R. Berrueta-Clement, Lawrence J. Schweinhart, W. Steven Barnett, Ann S. Epstein, and David P. Weikart. *Changed Lives: The Effects of the Perry Preschool Program on Youths through Age 19*, (Monographs of the High/Scope Educational Research Foundation, 8.) Ypsilanti, Mich.: High/Scope Press, 1984, pp. 2 and 102.

*Statistical likelihood that the difference between the groups could occur by chance; "<.01" means that a particular group difference could occur by chance less than 1 time out of 100.



Year	'69	'70	'71	'72	'73	'74	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84
Under 6 (%)	15	17	17	16	16	17	18	18	18	17	18	20	22	23	25	24
Overall (%)	12	13	13	12	11	11	12	12	12	11	12	13	14	15	15	14

Note: Figures for children under six and for 1984 are from unpublished data of the U.S. Bureau of the Census. Figures for the overall poverty rate are from U.S. Bureau of the Census. *Money Income and Poverty Status of Families and Persons in the United States: 1983*, Current Population Reports, Series P-60, No. 145. Washington, D.C.: U.S. Government Printing Office, 1984, p. 20.

Fig. 1. U.S. Poverty Rates, 1969–1983, Overall and for Children under Age 6

"Since school failure is at the root of many of our social problems, preventing it can benefit our society as well as the children involved."

3 percent discount rate is equivalent to the long-term growth rate of the U.S. economy. The major cost of the program was the initial investment of about $5,000 per participant per program year. Major benefits to taxpayers were reduced costs of about $5,000 per preschool participant for special education programs, $3,000 for crime, and $16,000 for welfare assistance. Additional postsecondary education of preschool participants added about $1,000 to costs. Participants were expected to pay $5,000 more in taxes because of increased lifetime earnings resulting from their improved educational attainment.

Thus, total benefits to taxpayers amounted to about $28,000 per participant, nearly six times the initial cost of the one-year program or three times the cost of the two-year program. The return is large enough that even a two-year program that was only half as cost-effective as the program studied would still yield a positive return on investment at the 3 percent discount rate.

Who Should Be in Public Preschool Programs?

In responding to the demonstrated potential of good early childhood programs, policymakers and administrators must decide whether to provide these programs for all children or only for some—and, if only for some, which children shall be eligible.

Some educational leaders have advocated that publicly funded preschool programs should be made available to all four-year-olds. Serving everyone of a certain age has obvious appeal. The age criterion is widely accepted, and no one protests that they have been unjustly or improperly excluded. The public schools select this option for older students almost exclusively. When they do serve special populations, such as the handicapped, schools provide the service in lieu of another service received by the rest of children.

Evidence from the Brookline Early Education Project (BEEP) in Massachusetts indicates that the school problems of middle-class children are lessened somewhat by experience in good early childhood programs. At the end of grade two, 14 percent of BEEP participants exhibited inappropriate classroom learning behaviors, as compared to 28 percent of a control group; 19 percent of BEEP participants had difficulty in reading, as compared to 32 percent of the control group (Pierson et al. 1984). These are certainly significant, but not as profound in magnitude or in economic effect as the positive impact of early childhood programs for children living in poverty.

Ironically, nursery school enrollment rates are lower for children living in poverty than for more affluent children. One national survey found that the preprimary enrollment rate for three- and four-year-olds was only 29 percent for families with annual incomes below $10,000 but that it was 52 percent for families with annual incomes above $20,000. Parents' educational level also plays a role: the enrollment rate for three- and four-year-old children of elementary school dropouts was 23 percent, but for children of college graduates it was 58 percent (National Center for Education Statistics 1982).

A possible policy alternative is to

offer early childhood programs that are open to all children, but to provide funding only for low-income children at special risk of school failure. This option conserves public funds while maintaining universal enrollment opportunity. The prekindergarten programs in Texas exercise a variation on this approach, making state funds for four-year-olds universally available, with districts required to provide programs if they contain 15 or more four-year-olds who are either "unable to speak and comprehend the English language" or "from a family whose income . . . is at or below subsistence level" (Texas House Bill 72, Section 1).

If all children are not served or do not receive funding, they must be selected for the program or for funding by some criteria. These criteria generally focus in some way on risk of school failure, for example, children living in poverty or those identified by a screening test as being at risk. Perhaps the best option is to use the poverty criterion supplemented by screening test information.

However, screening tests should only be used if they meet the psychometric criteria of reliability and validity, particularly the ability to predict accurately which children will later fail in school and which will succeed. One recent review of screening instruments recommends only four of the many that are on the market—Denver Developmental Screening Test, Early Screening Inventory, McCarthy Screening Test, and Minneapolis Preschool Screening Instrument (Meisels 1986).

Only High-Quality Programs Are a Good Investment

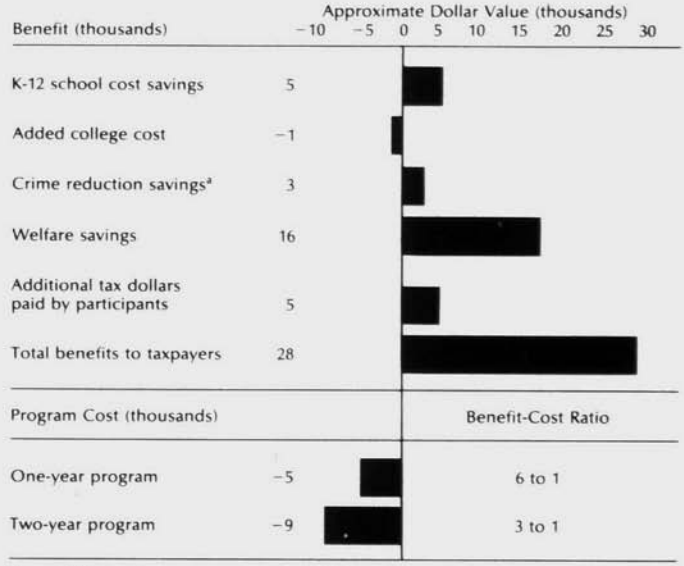
Unless program quality is carefully defined and maintained, an early childhood program is just another place for a child to be. There is no intrinsic value in a young child's leaving home for a few hours a day to join another adult and a group of children. If an early childhood program is to promote healthy child development, research and experience show that it must be conducted to high standards of quality by competent child development professionals who establish an environment that supports active learning by the child (see Epstein et al. 1985). To achieve this goal, a program should have a child development curriculum, proper staffing, and adequate attention to child and family needs.

A Child Development Curriculum

Unlike a solely academic approach that does not take full advantage of the potential for positive influence on long-term habits of social behavior, a child development curriculum enhances social, intellectual, and physical development. There are many kinds of early childhood curriculum models based on principles of child development, particularly the notion that children learn actively from their surroundings. Roopnarine and Johnson (1986) have recently compiled a book of curriculum models for young children, containing at least eight variations of the child development curriculum approach.

The High/Scope Educational Research Foundation has developed its own version of a child development curriculum. The fundamental premise of the High/Scope curriculum (Hohmann et al. 1979), which is based on Piaget's ideas, is that children are active learners who learn best from activities that they plan and carry out themselves. The teachers arrange interest areas in the classroom and maintain a daily routine that permits children to plan and carry out their own activities. During these activities, the teachers ask children questions that encourage them to think. The teachers encourage various key experiences that help children learn to place things in categories, rank things in order, predict consequences, and generally engage in thinking at their own levels of development.

Teachers who use the High/Scope curriculum must be committed to pro-



Note: Table entries are constant 1981 dollars, discounted at 3 percent annually. Adapted from John R. Berrueta-Clement, Lawrence J. Schweinhart, W. Steven Barnett, Ann S. Epstein, and David P. Weikart. *Changed Lives: Effects of the Perry Preschool Program on Youths through Age 19*, Monographs of the High/Scope Educational Research Foundation, 8 (Ypsilanti, Mich.: High/Scope Press), 1984, p. 91.

[a]Savings to citizens as taxpayers and as potential crime victims.

Fig. 2. Perry Preschool Program Per-Child Costs and Benefits to Taxpayers

viding settings in which children learn actively and construct their own knowledge. Their knowledge comes from personal interaction with the world, from direct experience with real objects, and from the application of logical thinking to this experience. The teacher's role is to supply experiences with real objects and to help children think about them logically. In a sense, children are expected to learn by the scientific method of observation and inference, at their own level of understanding, something that even very young children can do.

Child progress in the curriculum is reviewed around a set of key experiences that include active learning, using language, representing experiences and ideas, classification, seriation, number concepts, spatial relations, and time. These categories help teachers organize their interaction with children, just as children organize their activities through the daily routine of the plan-do-review sequence. Those key experiences help the teacher to support and extend the child's self-designed activities. They provide a way of thinking about curriculum that frees the teacher from schedules of teacher-imposed activities, as well as promoting the growth of rational thought in children.

Unlike many curriculum models, the High/Scope curriculum does not require any special materials; the only cost is that of equipping the classroom, as would be typical of any good nursery school program. The High/Scope curriculum lends itself to training and supervision and shares its emphasis on the child as active learner with historic early childhood methods like those of Froebel and Montessori. It differs from them in its use of cognitive-developmental theory to place primary emphasis on problem solving and independent thinking, instead of focusing primarily on social development and relationships. In social development approaches, the child's active learning occurs because the teacher stands out of the way and permits it to take place, not because the teacher encourages it to happen. In some Montessori programs, for example, teachers view themselves almost as guests in the child's classroom environment. Using the High/Scope model, teachers continuously gauge the child's developmental status and present intellectual challenges to stretch awareness and understanding.

Teachers or caregivers cannot maintain a child development curriculum without a support system. The administrators to whom they report are the key individuals in providing that support, both personally and institutional-

The outside play area of the High/Scope program offers a combination of sturdy equipment and found materials. Each staff member, trained in early childhood education, is responsible for no more than 10 preschoolers.

The only teacher characteristic found to predict program effectiveness in the National Day Care Study was the amount of early childhood training, no other characteristic was found to be related to teacher effectiveness—not college degrees or amount of experience, whether in teaching or child care.

ly. Above all, those administrators must be curriculum leaders who understand and agree with program goals and who communicate these beliefs to staff and parents.

Further, the evaluation techniques and inservice training provided must support and enhance the child development curriculum. It is essential to evaluate the progress of children and the success of the program with observational and testing techniques that are sensitive to children's developmental status and needs. Teaching staff should be able to use the feedback from evaluations in developing their teaching strategies. The program of inservice training provided to all the teaching staff should be directly applicable to the early childhood curriculum in use. As more and more staff are required for growing early childhood programs, a sound inservice training program in child development and early childhood education is absolutely essential to program quality.

Staffing

A second characteristic of quality programs pertains to the number and qualifications of their staff members. Smaller classroom group sizes were found to be associated with desirable classroom behavior and improved cognitive performance in the National Day Care Study conducted by Abt Associates in the 1970s (Ruopp et al. 1979). This large-scale study found the most favorable outcomes for groups with fewer than 16 preschool-age children enrolled, with positive outcomes extending to groups of up to 20 children enrolled; larger groups had negative outcomes. Study findings also led to a recommendation of two adults per group. The only teacher characteristic found to predict program processes and effectiveness in the National Day Care Study was amount of early childhood training. No other teacher characteristic was found to be related to effectiveness—*not* college degrees and *not* amount of experience, whether in teaching or in child care.

If teaching young children is to be a valued and stable function in our society, we must create a hierarchical profession that permits viable careers. Teaching assistants making lower wages should see the promise of salaries for master teachers that permit them to support their families at a reasonable standard of living. If this is an issue for the teaching profession in general, it is much more of an issue for early childhood teachers. The average annual salary of Head Start staff members in 1985 was $7,700, substantially below the average *starting* public school salary of $14,500 and a mere one-third of the average public school salary of $23,546 (quoted by Hymes, 1986). While some of this disparity is attributable to a greater use of teaching assistants in Head Start, much of it is due to an undervaluing of the early childhood teaching specialization. This specialization has been accorded very low stature because of society's failure to recognize the vast potential of early childhood development programs, when properly implemented, to contribute to preventing educational and social problems.

Child and Family Services

Third, a good relationship between teaching staff and parents in early childhood development programs is crucial to program success. Parents placing their children in these programs retain primary responsibility for their children and have unique and profound psychological influence over them. In terms of sheer contact time, most children spend the majority of their waking hours with their parents, even if their parents work full-time.

Parents are best viewed as partners or colleagues of early childhood teachers, with both parent and teacher having their own areas of responsibility and expertise. The parent-teacher relationship should be built on mutual respect and a pooling of knowledge about individual children and child development principles. For example, if a parent tells the teacher to teach a three-year-old reading skills for which the child is not ready, the teacher should explain to the parent why the child is not ready to learn those skills and identify for the parent the skills that the child can and will be developing.

Maintaining a broad focus on the whole child rather than a narrow focus on academics has long been a rallying cry for early childhood educators. The phrase has implications not only for classroom curriculum but for support services needed by children and families. As the number of U.S. children living in poverty increases, so does the need for early childhood educators who are sensitive to children's health and nutrition needs and to their families' needs for various social services. Head Start has proven that such needs can be met in the context of early childhood programs. But even if the services are not integrated into the early childhood program delivery system, educators should know how to gain access to them.

Today the majority of families with young children need supplemental child care services. Some early childhood programs are designed to partially meet the need by providing programs either part-day (2–3 hours) or full-school day (5–6 hours). Families needing full-time supplemental child care (typically 8–9 hours a day) must make additional child care arrangements, which frequently call for transportation by someone other than the parent. The supplemental child care needs of families must somehow be met, and the quality of these services will have a significant effect on the children we are raising.

New Hope for Young Children at Risk

High-quality early childhood programs offer new hope to children at risk. With the help of these programs, they can avoid to some extent the school failure that may otherwise plague their lives. Since school failure is at the root of many of our social problems, preventing it can benefit our society as well as the children involved. The research and experience of the past two decades has given us the knowledge we need to make these programs work. All that we need is the political will to invest the necessary resources to serve all children at risk of school failure and the abiding commitment to do the programs well—with proper staffing, sufficient attention to child and family needs, and a well-implemented child development curriculum.□

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