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ABSTRACT

This research review focuses on the effects of early intervention on the preschool children of low-income families, examining studies of intervention programs begun in the 1960s through the present. It then relates this analysis to the new Georgia Prekindergarten Program. The interventions reviewed are grouped into four hierarchical categories based on their relationship to the children's: (1) microsystem, or immediate environment; (2) mesosystem, or connections among children's immediate settings, such as home and school; (3) exosystem, including the social settings that affect but do not contain the child, such as community agencies; and (4) macrosystem, or broad culture. The review concludes that many interventions undertaken since the 1960s have failed to address all four of these settings, and thus have had mixed success. By contrast, the review notes, the Georgia Prekindergarten Program is designed to provide a comprehensive program to intervene at all four levels of disadvantaged preschool children's environment. Contains 91 references. (MDM)

A REVIEW OF RESEARCH ON INTERVENTION WITH PRESCHOOL CHILDREN AND FAMILIES

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March 1, 1993

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A REVIEW OF RESEARCH ON INTERVENTION WITH PRESCHOOL CHILDREN AND FAMILIES

The history of early intervention in this country can be traced to the day nurseries of the middle to late 19th century, which were charity institutions run for children of immigrants and poor parents (Mccartney & Howley). However, it was not until the 1960's that planned intensive intervention efforts for low-income preschool children began. The time was right for the development of these programs because it had become widely recognized that socioeconomic inequalities within the United States threatened the well-being of the nation (Harrington, 1984). Critical issues which prompted ambitious social goals included the expansion of the civil rights movement and the broad-based War on Poverty. Thus, creative preschool program development mirrored wide public support for investing in human resources.

On the theoretical front, a growing body of research evidence began to raise questions about the widely-accepted assumption of an immutable, genetic base for intelligence. Hunt (1961) and Bloom (1964) emphasized the powerful influences of early experience on the development of cognitive competence. It was hypothesized that intellectually stimulating early experiences would facilitate the development of low-income children's cognitive abilities and would lead to enhanced academic performance. Thus, the major goal of the

early interventions was to offer quality early educational experiences designed to assure later school success. Causing much surprise and disappointment, results of early studies of these interventions indicated that while the early programs did produce short-term intellectual and academic gains, these gains were not maintained as the children progressed through school.

Perhaps one cause of the disappointing results was that these early programs were very limited in scope, with a focus on changing the child, or at the very most, helping the parents to change the child. With the premise that natural environments are major influences on human development, Bronfenbrenner (1974, 1989) theorizes that a complex social system influences children's development and functioning. He claims that any effective plan of intervention must address all ecological systems. According to his ecological theory, it is only by promoting the involvement of children, families, neighborhoods, and communities that a program of intervention might result in long-term beneficial effects.

Bronfenbrenner (1989) describes a series of nested influences (systems) in the order of their distance from the child, beginning with situations immediately surrounding the child and extending to a large and distant environment. The microystem refers to relations between the child and the immediate environment, for example, child and family or child and school. The mesosystem is defined as the connections among the child's immediate settings, that is, the connections between the child's home and school or home and playground. The exosystem refers to social settings that affect but

do not contain the child, e. g., community agencies. The macrosystem is the child's subculture or culture which includes broad ideology, laws, and customs. The macrosystem could be a subculture based on location, such as urban and rural, on ethnic-group identification, or on socioeconomic strata.

Each system affects the child's development and functioning. For young children, the major component of the microsystem is the family. A mesosystem variable found to influence cognitive development is the educational relationship between parents and school (Slaughter, 1983). The existence and availability of community support systems (Garbarino & Bronfenbrenner, 1976), an exosystem component, and the cultural context of the macrosystem also shape cognitive development. Since variables at the various levels influence children's functioning, intervention for low-income preschoolers which strengthen all systems of the ecological model should enhance their cognitive development (Zigler, 1985).

Recognizing the importance of these interrelated ecological influences on children's lives, the state of Georgia has designed a comprehensive program for low-income 4-year-olds which includes intervention into all systems of the environment. The broad objectives of Georgia's Prekindergarten Program include all systems that affect the child. These objectives include: developing a concerned and helpful community, delivering nutrition and health care, assuring the welfare and well-being of the family, effecting informed and understanding parenting, including early intellectual

and academic stimulation, and presenting a positive and developmentally appropriate educational program.

This review of research on the effects of early intervention on low-income children includes a discussion of research about each of the systems described by Bronfenbrenner as that particular system relates to Georgia's Prekindergarten Program. Beginning with the microsystem, the review will provide a description of the early compensatory education studies, research on Head Start, and evaluations of prekindergarten programs in other states. It will include a mesosystem variable--relations between the preschool and the family--by reviewing research on the effects of parent involvement in preschool programs. It will discuss the exosystem and macrosystem variables, even though the research on interventions into these broad subcultural and community variables is extremely scant.

THE MICROSYSTEM

EARLY INTERVENTION STUDIES (1960'S)

The first proponents of compensatory education began to conduct studies on the effects of preschool programs on low-income children in the 1960's. The major goal of these early intervention programs was to increase the children's potential for academic success. These early studies were located in both urban and rural areas in the Northeast, Southeast, and Midwest. Curricula were varied and were based on the Bank Street child development model, the Montessori method, methods based on Piagetian theory, the Bereiter-Englemann model, and models designed specifically for the

intervention (e. g., DARCEE). Delivery systems also differed among the programs. Some programs were conducted in centers (center based), others in the child's home (home based), and still others in a combination of home and center. During the 1960's there were 11 of these major investigations. A brief description of these programs follows.

1. Beller's (1974) nursery program in Philadelphia provided a center-based program with a child centered, traditional curriculum. Children who entered regular kindergarten or first grade classes without prior preschool experience served as a control group.

2. The Deutsch program (Deutsch, Taleporos, & Victor, 1974) was conducted in the public schools of New York City and included a parent center addressing parent needs and parents' relationships to the community. Children were randomly assigned to either an experimental or a control group, both of which were eligible to start kindergarten the following year.

3. Gordon (1973) focused on home intervention using a Piagetian curriculum. The parent education component was designed to enhance the self esteem of the mother and to strengthen the mother-child relationship. Children were randomly assigned to treatment and control groups. Treatment included weekly home visits.

4. The DARCEE project (Gray & Klaus, 1970) in Tennessee was conducted in centers and included a weekly home visit. Children were randomly assigned to treatment and control groups. The curriculum stressed intellectual growth.

5. The Karnes Preschool Project (Karnes, Zehrback, & Teska, 1974) compared the curriculum models of Game-oriented Activities for Learning (GOAL), a traditional preschool program, a Montessori program, the Bereiter-Englemann curriculum, and a community integrated program. GOAL was designed to enhance cognitive and language development; the Montessori curriculum stressed life and sensory experiences and language development; the compensatory curriculum of Bereiter-Englemann sought to remediate deficiencies of children in arithmetic, reading, and language; and the community integrated program enrolled low-income children into middle class preschools. Children were randomly assigned to one of the models, but no untreated control group was used.

6. In New York, Levenstein's (1974) home based project used weekly home visits to enhance both social and verbal interaction between mother and child. A structured, cognitive curriculum was designed with toys and books. No control group was used.

7. Miller and Dyer's (1975) study in Kentucky compared the curricula of Montessori, DARCEE, traditional nursery school, and Bereiter-Englemann. Children in different target sites were randomly assigned to programs within schools.

8. In Harlem, Palmer and Semlear (1976) compared a structured concept training program and a less structured discovery program. Children were randomly assigned to either the center-based treatment group or to a control group.

9. Weikart, Deloria, Lawser, and Wiegerink's (1970) center-based program in Michigan focused on a Piagetian curriculum aimed

at cognitive development. A weekly home visit was included, and children were randomly assigned to treatment and control groups.

10. The Woolman (1971) project in New Jersey was a center based program which focused on reading and language skills, social interaction, and motivation for attaining goals. Administered in conjunction with the state of New Jersey, the project assigned children to an experimental group and to a state-selected control group.

11. In Connecticut, Zigler and Valentine (1979) investigated the effects of an experimental group of Head Start children with a non-Head Start control group.

Although some of the programs were designed to promote social, emotional, and motivational growth, in addition to cognitive development, few instruments were available to measure areas outside the cognitive and academic realm. Thus, the investigators mainly used standardized achievement and intelligence test scores as the criterion by which they measured the success of the intervention. Despite differences in curricula, delivery system, amount of time devoted to the intervention, or the age of the children served, all the 1960's programs produced very similar results: a short term gain in IQ and achievement by the participating children and then a gradual decrease to the point that the participating and the comparison children were about equal. Since their interest was in the effects of compensatory education, the early researchers either did not intervene or intervened weakly into the systems influencing children other than

the microsystem (the school or the family). Thus, with the goal of increasing the children's potential for academic success, the early interventions narrowly focused on educational programs for the children, the family, or both, without efforts to intervene in the community or other systems affecting the children's development.

EARLY HEAD START STUDIES

Although the results were not yet published, the preschool intervention programs served as models for Head Start, which began as six- to eight-week summer programs in 1965. An evaluation of the summer 1965 program was undertaken but was unwieldy and difficult to manage and interpret. Although his advisors advocated using a smaller sample, Shriver, the director of the Office of Economic Opportunity, insisted that the evaluation include all the half million children in the program. Zigler stated that Dr. Julius Richmond, the first director of Head Start, told him, "if there were one thing he would re-do about that first summer of Head Start, it would be to put more time into the design of a manageable national sample. That way we would have had data representative of the population served but of a size that was possible to digest and understand" (Zigler & Muenchow, 1992, p. 50).

Two of the first studies of children in the Head Start summer program, indicated that Head Start had produced significant initial IQ gains (cited in Zigler & Muenchow, 1992). While these findings led to much optimism about Head Start's ability to effect cognitive changes, some psychologists (Zigler & Butterfield, 1968) cautioned that the IQ gains did not reflect alterations of cognitive

structure but rather changes in motivation and the emotional factors in learning. Nor did they believe that the worth of these programs should depend on their producing cognitive change. They concluded that these programs should be assessed on how well they foster general competence rather than on how much they succeed in developing particular cognitive abilities alone.

Studies in which children in the summer programs were followed into the public schools indicated that the cognitive gains were not permanent. The results of one study of New York children who had participated in Head Start in the summer of 1965 indicated that these children scored higher in "readiness to enter school" than did a similar group of low-income children who had not attended Head Start. However, after six to eight months in public school, there were no significant differences between Head Start and non-Head Start children on an achievement test (Wolff & Stein, 1966).

In 1966, a national study, Equality of Educational Opportunity, was released (Coleman, et al., 1966). The conclusion was that the major factor affecting pupil performance in school was the socioeconomic status of the home and that there was little schools could do to reverse poverty-induced educational handicaps. The findings were interpreted to mean that compensatory education for preschool children was not likely to be effective.

The Westinghouse Learning Corporation in conjunction with Ohio University (Cicirelli, 1969) completed a large-scale follow-up evaluation of Head Start graduates of both summer and full-year programs when they were in first, second, or third grade. Only

well-known standardized tests were used to measure cognitive effects. No measures of attitude and motivation were analyzed. Thus, again the focus was on standardized cognitive measures. The study concluded that the Head Start program had no long-term positive effects on children's ability to succeed in school. However, the scientific validity of the study was questioned (Campbell & Erlebacher, 1975). One problem was that the study was not a true experiment but was conducted retrospectively, with a control group set up three years after the program began.

At this point, there is a voluminous body of Head Start research. Fortunately, several comprehensive reviews have been written. In an early review, Datta (1973) examined a number of studies that had been conducted in the first five years of Head Start. In summarizing findings across studies, she concluded that Head Start produced large and significant short-term gains in general ability and learning readiness and that the length of time attended was positively related to the final level of achievement. However, this acceleration is not sustained after the children enter public school. Hertz (1977) in a review of federally supported early childhood programs draws the same conclusion: immediate gains are found, but they "wash out" within a few years after the end of the program.

Datta (1973) pointed out that children cannot be expected to continue to accelerate in schools that provide fewer individual and family services than were received in Head Start. This pattern of findings was also interpreted by other researchers and policy

makers to mean that the public schools were unable to continue to support the gains that Head Start, which was more relevant to low-income children, had achieved. This led to recommendations for change in the way public schools attempted to educate low-income children. Several researchers have since shown that variations in the quality of public schools are related to low-income students' performance (Rutter; Comer, Cited in Zigler & Muenchow, 1992), and Coleman's (1987) later findings that parochial schools are superior to public schools in forming a partnership with parents and the community to reduce school dropouts suggests that alterations in the public school program might facilitate low-income children's performance.

Zigler and Muenchow (1992) pointed out that the root problem with the research and evaluation in the early years of Head Start was that the investigators did not know what to measure. They stated, "Public health researchers might have assessed the number of measles cases prevented, or the reduction in hearing or speech problems. Sociologists might have looked at the number of low-income parents who obtained jobs..." (p. 51). They lamented that the psychologists who designed the research had a very narrow focus, with researchers relying on standardized tests, most frequently IQ tests, to assess the program. Limiting the assessment to these measures failed to consider that Head Start was designed to function as a comprehensive child development program, not just an educational program, with its inclusion of physical health and parental involvement making it unique.

FOLLOW-UP STUDIES (EARLY INTERVENTION RESEARCH)

The conclusion that early intervention produced immediate intellectual and achievement gains but had no long-term effects became well accepted until the Consortium for Longitudinal Studies at Cornell University (Lazar & Darlington, 1982) pooled and reanalyzed the data of the 11 early intervention studies. This consortium also coordinated a follow-up in 1976 and 1980 of the original subjects who then ranged in age from 10 to 17 years. The findings of the follow-up indicated that through the seventh grade the children who had attended the preschool programs were significantly less likely to have failed a grade in school or to have been placed in special education classes than the controls. Although no differences were found between the two groups on IQ, program children scored better than controls on math and reading achievement through the third grade and better on math through the fifth grade. A caution in generalizing these results to other programs is expressed by Condry (1983), who pointed out that these programs were closely supervised and carefully documented in ways that Head Start programs generally were not, and the content of the intervention itself was carefully monitored, directed, and evaluated.

One of the consortium studies, the Perry Preschool Project (Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984), has continued to follow its subjects. That study found that children who attended the "high quality" preschool program to be more likely to graduate from high school, to enroll in college, to

score above average on a test of functional competence, and to be employed than those who did not attend. As teenagers, the experimental subjects were also less likely to become pregnant or to be arrested. These results are from a well-funded, closely supervised preschool with substantial involvement from early childhood professionals with graduate training.

Goldring & Presbrey (1986) reanalyzed the original data from eight of the early intervention studies. They used the statistical technique developed by Hedges (1982) for effect size analysis. This technique was used to compute an overall effect size across all studies. They examined the outcome variables of fourth grade reading and math achievement test scores, IQ scores, and percent of underachieving students, defined as children who had a special education placement, failed a grade, or dropped out of school. These variables were analyzed at grades ranging from third to twelfth. They were able to analyze math and reading achievement for six of the studies. On math achievement, the overall estimate of the effect size, the weighted mean, was .25 of a standard deviation higher for participants in the preschool programs than for non-participants. The reading achievement effect size was .19 of a standard deviation higher for those children who had attended the interventions. Five of these studies collected follow-up data on children's IQ scores when they were in third through fifth grades. Children who had participated in preschool programs measured .42 of a standard deviation higher than children who had not participated. The four studies that collected information on children's IQ scores

in grades seven through 12. The overall effect size for IQ was too small to be significant. Goldring & Presbrey (1986) concluded that although the individual studies indicated no lasting effects of the preschool intervention, the combined results indicated that early interventions positively influenced the variables of math and reading achievement, even across diversities in preschool programs.

LATER HEAD START RESEARCH

A major meta-analysis of earlier Head Start studies also used the technique of combining results from several studies and analyzing the effect size (McKey, Condelli, Ganson, Barrett, McConkey, & Plantz, 1985). In terms of cognitive effects, this meta-analysis indicated that Head Start had a positive immediate effect on the cognitive development of children. A significant gain was shown by each individual measure (IQ and readiness tests) as well as a global cognitive measure, indicating that "Head Start has large and meaningful effects on cognitive performance when measured immediately after the program" (McKey, et al. 1985, p. III-9).

In regard to long-term effects on cognitive measures, the meta-analysis led to the conclusion that "while Head Start children continue to score higher than controls on cognitive measures, the magnitude of the effect is not educationally meaningful. Once the children enter school, there is little difference between the scores of Head Start and control children. The effect size declines gradually and reaches no differences in the third grade. There is, however, a high degree of variability in these findings" (McKey, et al., 1985, p. III-11).

In addition to cognitive test measures, other indicators of school success were analyzed. Using the three studies that provided information on school success, McKey, et al. (1985) obtained results from their meta-analysis that were similar to those produced by the Consortium for Longitudinal Studies (the follow up of the 11 original early intervention studies). One of the studies in the analysis was conducted by McDonald and Monroe (1981) in Rome, Georgia. They compared the school records of 18-year-olds who had graduated from Head Start in 1965 with a comparable group who had not attended the Rome Head Start program in 1965. Head Start graduates were superior on almost all measures. Comparing the percentage of each group who graduated from high school, 50 percent of Head Start participants and 33 percent of non-Head Start children had graduated. For grade repetition, 51 percent of Head Start and 63 percent of non-Head Start students had repeated a grade. For special education placement, 11 percent of Head Start and 25 percent of non-Head Start students had been placed in special education classes. The other studies produced similar long-term results, indicating that school success was more likely for Head Start participants than for students who had not attended Head Start.

The conclusions concerning cognitive and academic measures from meta-analyses of Head start studies are: in terms of cognitive measures a positive, educationally meaningful immediate effect is found, but this drops to essentially no effect in subsequent years. However, other measures of school success (retention, special

education placement, and graduation) indicate that Head Start participants are superior to non-Head Start students.

Since Head Start was designed to be a comprehensive program, it had as its purpose to influence areas of children's lives other than the cognitive one. More than 30 studies have reported data on the health impact of Head Start. Research consistently shows that children attending Head Start were more likely to get medical and dental examinations, speech and developmental assessments, nutrition evaluations, and vision and hearing screening. Several studies also presented strong evidence that Head Start meals provide up to 50 percent of the nutrients recommended for preschool children and that Head Start children have higher intakes of protein, calories, and other essential nutrients than children with similar backgrounds who do not attend Head Start (McKey, et al., 1985).

In addition to whether Head Start per se produces gains, another important question is to what extent particular program characteristics within the Head Start context make a difference. One such program characteristic is curriculum. Although there is considerable variability, with wide differences in content, teaching approach, and materials, the curricula reported in the Head Start literature are grouped into four categories: traditional (open education, humanistic) operant (academically oriented) cognitive (Weikart and DARCEE models) and Montessori. The Head Start planned variation study (Stanford Research Institute, 1971) and research by Miller and Dyer (1975) are the two major curriculum

comparisons. The results of both studies indicated that academic curricula were most effective in promoting particular academic skills immediately. However, over time the planned variation study found no significant differences among the curricula, but the Miller study found the Montessori and the DARCEE programs to produce the most positive effects in the middle school years.

Another program characteristic is class size. The results of the few studies comparing different class sizes are inconclusive, but they suggest that differences in class size within the limitations permitted by Head Start produce no educationally meaningful results (McKey, et al., 1985). However, the National Day Care study (Smith & Spence, 1980) indicated that children in classes of 12 had greater gains than children in classes of 24.

SCHOOL-BASED PROGRAM EVALUATIONS

In increasing numbers state and local boards of education are developing prekindergarten programs to aid low-income children and families. For most of these programs evaluations either have not been conducted or have not been reported.

The state of Louisiana began providing funds in 1984 for the delivery of services to low-income 4-year-olds. Termed the Model Early Childhood Program (Rachal, 1992), the project entered its eighth year of operation during the 1992-93 school year. Since its inception, a total of 8945 children at risk of being insufficiently ready for regular kindergarten classes have been served. The purpose of the program i· to improve the readiness of these children.

All the participating families during the 1990-91 school year had incomes below $15,000, with 72 percent having incomes below $10,000. A minimum of 33 percent (25,643) of the 4-year-old population in Louisiana was considered to be at risk for school failure during the 1990-91 school year. Of this population, 73.5 percent received some type of early intervention during the 1990-91 school year. Head Start served 41.5 percent; Chapter 1 provided for 16.6 percent; special education programs included 8.1 percent; the Louisiana Model Early Childhood Program served 6.8 percent; other programs served 0.4 percent. Despite these various programs, 26.6 percent of the eligible children were not served at that time.

In 1991, the evaluator (Rachal, 1992) compared the third, fourth and fifth grade state-administered achievement test scores of former participants in the Model Early Childhood Program with those of the entire population of children at their grade level. Based on the 1990-91 Louisiana Educational Assessment Program scores obtained at both the third grade and the fifth grade levels, former participants generally performed as well as the entire population tested in mathematics and language arts.

The fourth-grade children were compared on mathematics, reading, language arts, and total test battery scores of the California Achievement Test obtained in 1990-91. Again, the mean scores were the same for the former program participants and for the grade four population as a whole.

Since the total population of children to whom the participants in the Model Early Childhood Program were compared

included children who were not from low-income families, the program for at-risk four-year-olds was considered successful. The longitudinal data related to the Model Early Childhood Program in Louisiana indicated the positive influence of early intervention through the early school years (Rachal, 1992). While the program seemed helpful at the level of the microsystem, the long-term effects of the intervention remain to be explored; and the reliance upon standardized measures alone may, in fact, limit the findings related to the overall efficacy of the program.

The state of South Carolina established a statewide preschool program in 1984 for 4-year-olds judged to be at high risk for later academic difficulties. The program employed the High/Scope Preschool Curriculum (Hohmann, Banet, & Weikart, 1978), a cognitive developmental curriculum based on Piagetian principles. Barnett, Frede, Mobasher, and Mohr (1987) conducted a statewide study using data on all children who were enrolled in first grade in 1985. As a supplementary strategy, they studied more intensively a sample from 11 schools. This sample consisted of 4-year-old children who entered the program and a comparison group of their peers who were on the waiting list.

In the first series of analyses the entire statewide sample was used. This sample consisted of all children who were in first-grade in 1985, those who had attended and those who had not attended the initial year of the 4-year-old program. In the several analyses that were computed the independent variables were treatment (program participation or no-program participation), age,

gender, and ethnicity. The dependent variables were compensatory class placement after school enrollment, scores on the Cognitive Skills Assessment Battery (CSAB) (Boehm & Slater, 1981) at 6 years of age, whether the CSAB score indicated the child was ready for first grade, and scores on the Basic Skills Assessment Program (BSAP) reading and math tests in the spring of first grade. Findings indicated that children who had attended the preschool program were significantly more likely to score above the readiness cut off on the CSAB. Compensatory class placement was lower for the preschool group. There were no significant differences between the program participation and the no-program participation groups on the scores of the CSAB or BSAP.

A series of analyses on the supplementary sample, which consisted of 4-year-olds who either had entered or had been on the waiting list for the 4-year-old program were conducted for each of the 11 schools. The dependent variable was The CSAB score. The independent variables were the preschool treatment (attended program or on waiting list), age, and score on the Developmental Indicators for the Assessment of Learning, Revised (DIAL-R) (Mardell-Czudnowski & Goldenberg, 1983), a preschool screening test in the areas of language, motor development, and concepts. The evaluators stated that although the preschool group scored higher on the CSAB in 9 of the analyses, in only 3 of the 9 cases was the preschool effect statistically significant above the .05 level. Two of the regression analyses favored the waiting-list group. Despite the finding that only 3 of the 11 analyses yielded a significant

preschool effect, the evaluators concluded that the South Carolina preschool program had been effective for the state as a whole. It is likely that the results would have been more dramatic if the South Carolina program had not been limited to an educational component for children with no reported efforts to influence family or community change.

The evaluation of the Austin, Texas Independent School District prekindergarten consisted of two studies (Christner & Baenen, 1988). In the first study limited English proficient (LEP) kindergarten students who had been enrolled in a prekindergarten were compared to children who had not attended prekindergarten (Christner & Baenen, 1988). During the school years of 1981-82, 1982-83, and 1983-84, achievement growth, retention rates, special education referrals, and LEP status were examined for the three cohorts of former prekindergarten students. On the reading, language, and mathematics subtests of the Iowa Test of Basic Skills (ITBS), no significant differences were found between students who had attended prekindergarten and those who had not attended. There was no evidence that the prekindergarten group had lower rates of special education placement or higher exit rates from special education, nor was there consistent evidence that the prekindergarten program resulted in fewer retentions. The prekindergarten students exited LEP status less often than did the comparison group of non-prekindergarten children.

In the second study prekindergarten students from both a

low-income and a LEP group with other students in the school district at the same grade levels. Data were obtained for former prekindergarten students enrolled during the 1980-81 school year. Three prekindergarten programs were in operation that year including those of Title VII, Title I Migrant, and Title I. After screening students to find the lowest achievers, Title I used a locally developed curriculum. The migrant program accepted all migrant students and used a curriculum different from that of Title I. Title VII screened students for primary language acquisition and then randomly selected LEP students and included two English role models. Title VII used the same curriculum as that of the migrant program.

Comparison of the three groups of former prekindergarten students and other students in the school district at the same grade levels indicated that the former Title I students were the least likely to be retained while the former Title VII students were the most likely to be retained. The special education placement rates were lower for the former migrant and Title VII student than they were for the rest of the school district; rates were about the same for former Title I children as they were for the rest of the school district children. The former migrant and Title VII students were more likely to be in a LEP program than were the former Title I students or the school district children. The former prekindergarten students were more likely to be currently served by the Chapter I program than were the school district children.

Christner and Baenen (1988) stated that the difficulties in finding an adequate comparison group limited the usefulness of their conclusions. They also cited as difficulties related to longitudinal comparison the limitations of time and resources, changes in procedures for data collection, constantly changing programs, high student mobility, and amount of time spent in instruction in English and Spanish. The Austin prekindergarten program was an educational attempt without intervention directed to the family or community.

The San Antonio Independent School District is required by the state of Texas to provide a prekindergarten program for at-risk preschoolers. At the time of the evaluation the school-based Prekindergarten Intervention Program (SKIP) was conducted on a half-day basis and served 17 percent of the kindergarten population. It emphasized activities and instruction which would prepare children for the school environment in nine major areas: self-concept, perceptual and motor skills, oral language, mathematics, science, music, art, social studies, and nutrition.

Parents signed an agreement when their children entered the prekindergarten program which sought to assure their participation in training sessions at the school and in volunteer activities regularly throughout the year. A specific curriculum, the Bowdoin Method, was used as the basis for the parent training sessions and for suggested activities to be used at home. The major goal of this program was to develop skills, attitudes, and understandings which enable parents to be more effective as partners in their child's

education. The program includes books, cassette tapes, and filmstrips emphasizing both the cognitive and affective domains.

An evaluation of the program was conducted during the 1984-85 school year (Office of Evaluation, 1985). Comparisons were made of the academic performance of former program and non-program children when they were in the first, second, and third grades. Information from report cards was used to measure academic performance (reading grades), behavior, and work habits. Overall, this report-card information indicated that no significant differences occurred between the non-program children and the children who had been in the prekindergarten program.

The evaluators stated that interviews elicited positive responses about the prekindergarten program and its effects on the children's future school performance even though the statistical results did not verify the statements (Office of Evaluation, 1985). While the program attempted to intervene with both the children and the families, the emphasis was on the children. The lack of parent involvement may be the reason for the lack of program success. The parent education component was found to be poorly implemented and sporadic in nature. Home visitation was not done unless there was prolonged absence or failure to comply with the contractual agreement. Teachers reported that the parental component of the program was not very successful. Some said that few parents participated in the program. Others indicated that many parents were involved at the beginning and then lagged behind as the year progressed.

A problem with the evaluation is that only one instrument--the report card--was used to measure the outcome. Even though the prekindergarten program had broad goals, the measure of success was limited to grades, which are known to be unreliable. If other measures had been used, they may have shown that the program had a positive influence in broader areas.

The state of Hawaii tracked the 1985-86 cohort of the Pre-kindergarten Education Program (PREP) graduates as they entered and completed kindergarten in the 1886-87 school year (Heath & Plett, 1988). A comparable randomly selected group of children without this preschool experience served as a comparison group. Fall and spring test scores were compared for the Peabody Picture Vocabulary Test-Revised (PPVT) (Dunn & Dunn, 1981) and the Missouri Kindergarten Inventory of Developmental Skills (KIDS) (Ferguson & Carlson, 1978). The PPVT-R is a test of vocabulary; the KIDS examines number concepts and auditory, paper and pencil, language, visual, and gross motor skills.

Results indicated that the PREP graduates began their educational careers with a significant educational advantage over the comparison group. At the beginning of kindergarten in the fall of 1986, they achieved higher test scores on the PPVT-R and on the number concepts, auditory skills, paper and pencil skills, language skills, and visual skills of the KIDS. In addition to scoring higher than the comparison group, The PREP children achieved higher test scores upon entering kindergarten than the total population of children statewide. In the spring of 1987 at the end of

kindergarten, the PREP children scored higher on KIDS number concepts, auditory skills, language skills, and visual skills. No data were available for the gross motor skills of the KIDS or the PPVT-R at that time. Even though the PREP children outperformed their fellow kindergartners in the state of Hawaii, they were still at considerable disadvantage relative to children of their age nationally (Heath & Plett, 1988). Limited to the microsystem level of intervention, the findings from the PREP children relate to short-term effects of the program and rely only upon standardized instruments as measures of effectiveness.

The Chapter 1 preschool (prekindergarten) program in the Portland, Oregon Public Schools, designed to provide educational experiences for low income children, was described by Yagi (1986). Enrollment in the program was voluntary; and eligibility for participation was based on age, residency requirements, family income, number of parents and siblings, and an appraisal of the child as educationally disadvantaged. A total of 160 children in classes of 20 each attended classrooms in which two half-day sessions were held each day. Each classroom was staffed with a certified teacher and an aide. The program was so popular that a waiting list was maintained, and vacancies were filled without delay. Daily activities included story time, large and small motor development activity, and academic skill development activities.

A follow-up study of prekindergarten students of 1984-85 was conducted in the spring of 1986 when they were at the end of kindergarten (Yagi, 1986). A non-prekindergarten comparison group

of kindergarten students was used. Kindergarten teachers of the former prekindergarten and comparison students were asked to rate each student's achievement in ability to remain on task, language skills, numerical concepts, small motor skills, large motor skills, and social skills. Students were to be rated below average (1-2), average (3-4), or above average (5-6); and mean ratings were calculated for the prekindergarten and comparison groups for the six skill areas. T-tests indicated no significant differences between the two groups on specific skills. Yagi concluded that there were no differences in the kindergarten performances of the children who had attended the Portland prekindergarten program the previous year and the comparison group who had not attended.

Several problems may account for the findings of no differences between groups. The program was designed as a method of intervention at the microsystem level alone, so that the intervention was not comprehensive. Also, the exclusive outcome measure was teacher ratings, which may not have been reliable. At any rate, such a limited outcome measure may have restricted the findings.

The California State Department of Education (1988) has developed a comprehensive preschool program. Although a report of the outcomes has not been found, a description of an instrument which the evaluators use to document that each component of the program is indeed being implemented has been published. The instrument is apparently in use, but the report did not contain the results of the documentation.

The state of Virginia has also developed a program for 4-year-olds (Miller, Eads, & Sawyers, 1990). A report has been presented which describes a collaborative effort between the evaluation and the program implementation. Actual program outcomes were not reported.

Although several other state-supported preschool programs are known to be in operation, reports of their evaluations have not been forthcoming. It is likely that most of these programs are too new to have had the time to complete an evaluation.

Two conclusions can be drawn from the reports that are available about the school-based programs. First, the programs seem much more limited in scope than does Georgia's program. Little mention is made about family intervention, and no program report indicates that community intervention is involved. Second, in all cases outcome measures have consisted only of cognitive or school achievement assessments of the children. No family outcome measures have been described.

The Mesosystem

Several home and family variables have been shown to be important to cognitive development. Early home environment, a microsystem variable, has been shown to be related to early school performance (Bradley & Caldwell, 1984); parental beliefs, values, and behaviors have been found to be related to both the level of school achievement (Okagaki & Sternberg, 1991) and the areas in which children achieve (Stevenson & Lee, 1990; Stevenson, Lee, & Stigler, 1986). Because a mesosystem characteristic, the

educational relationship between parents and the preschool or school, has been viewed as important for effecting change, preschool programs have attempted through parent intervention to modify home environments, attitudes, values, and behaviors of low-income families. Parent programs would seem to be particularly important for low-income parents, since maternal education and family income have been shown to be related to child development knowledge and parenting skill (Stevens, 1985).

Research has been conducted on the effectiveness of parent training for modifying parental attitudes, expectations, and values. Several studies have indicated that such training is successful with middle income families using a group format (Dumas & Wahler, 1983; Lochman & Brown, 1980). However, studies of the effects of parent training on low-income families have produced mixed results. Wahler (1980) found that low-income parents improved in attitudes and interactions with their children during the training, but the improvement was not maintained at follow-up assessments. In contrast, Mischley, Stacy, Mischley, and Dush (1985) discovered that parental training produced significant improvements in parenting skills with low-income families and that these new skills were maintained six months following treatment. Although most intervention studies have not assessed changes in parental attitudes and behaviors, Segal's (1985) evaluation of the Ready-for-School Project, a home visiting program for 3- and 4-year-olds was an exception. The goal of this program was for home visitors to help parents to learn skills that would enable them to

become effective teachers of their children. The intervention changed some parents' attitudes. Parents who initially viewed their role as that of a disciplinarian later viewed their role as that of a teacher.

The more relevant research to the Georgia Prekindergarten program addresses the effect that parent involvement or parent training has on child behavior; that is, it studies the use of parents as instruments of intervention. This research has included two types of parent involvement. They are center based, in which parents are encouraged to become involved in the education of their children while the children are attending centers, and home-based, in which parents receive support and instruction from trained home visitors. In the former, the focus is on the teacher, with parents becoming supplemental. In the latter, the focus is on the parent, with the teacher or trainer becoming supplemental. Home visitors may be nurses, social workers, teachers, other professionals, or paraprofessionals. The more professional training the home visitor has, the more likely the curriculum involves direct parent training as opposed to partnership (McCartney & Howley, 1991). The question of which role is more effective--teacher or partner--has not been studied.

The home-based early intervention programs which have been evaluated are typically started when the child is very young. One early program, The Florida Parent Project (Gordon, 1971) used trained parent educators who worked with the mother for two years, beginning when the child was an infant. Another widely known home-

based program was designed by Phyllis Levenstein and her colleagues for children between the ages of 2 years and 4 years of age.

Program success typically has been defined as a significant difference between treatment and comparison groups on an intelligence test. McCartney and Howley (1991) have computed and presented the effect size for the 12 extant evaluations of the strictly home-based programs. They found great variability among the programs with respect to treatment effects. Effect sizes ranged from .007 to .75. They concluded that "no definitive conclusions can be made concerning the efficacy of home-based intervention on IQ" (p. 188). However, it has been pointed out that other outcome measures are important, such as school success as measured by special education referral, attendance, grade retention, and teacher evaluations; self esteem; and quality of parent-child interaction.

The Yale Child Welfare Research Program (Seitz, Rosenbaum, & Apfel, 1985) provided a combination home-based and center-based program in which family support and pediatric care began when the children were born. The investigators used several outcome measures in addition to IQ. When the children were 12 years of age a follow-up study revealed that the intervention group had less school absenteeism and better school adjustment scores than the control group.

The Parent-Child Development Centers implemented during the 1970's provided a wide array of services for low-income families including classes in nutrition, arts and crafts,

assistance in budgeting, peer support groups, and medical care. From a longitudinal evaluation of the center programs, Dotecki, Hargrove, and Sandler (1983) found that participating mothers exhibited positive interactions with their children and that the children demonstrated enhanced cognitive skills to a greater extent than a control group of mothers and children up to one year after the program ended. Baker and Brightman (1984) have suggested that parents must be taught directly those specific skills needed to enhance their children's development in the cognitive domain.

The Mother-Child Home Program (Levenstein, 1974) was developed to help low-income mothers prepare their children for the demands of school. Using toys and books to promote verbal exchanges, parents are assisted by home visitors in offering intellectually stimulating materials and experiences to their children.

DeVito and Karon (1984) followed students from the Mother-Child Home Program through eighth grade. They found that the program fostered positive effects in kindergarten, as the participating children outperformed a control group on measures of cognitive performance. In first and second grades, no significant differences were evident between the experimental and control groups. Mixed results characterized the third through fifth grades; third grade participants outperformed the comparison group while there were no significant differences between the experimental and control groups in fourth and fifth grades. In grades six through eight, the former program students significantly outperformed the comparison group on all measures. Examination of results relative

to subject matter seemed to indicate that achievement of former participants in later years was better in reading and language arts than in math. DeVito and Karon (1984) concluded that the Parent-Child Home Program was successful in enhancing and sustaining cognitive development for participating children. Data from the Mother-Child Home Program were included in the meta-analysis conducted by the Consortium for Longitudinal Studies (Lazar & Darlington, 1982), which concluded that such programs had lasting effects on school competence.

Relevant to the Georgia Prekindergarten program is the intensity hypothesis offered by Ramey and his colleagues (Ramey, Bryant, & Suarez, 1985). The intensity hypothesis states that the intensity of an educational treatment, where intensity is defined as the time and types of contact with a child, is directly and positively related to intellectual development in high-risk children. Comparing children in a center-based program, children whose parents were visited trimonthly by a paraprofessional, and a control group, they found that the center-based treatment had the greatest effect on IQ, the home-based treatment had the next highest effect, and the control treatment had no effect. They concluded that the parent education alone was "not an intervention of enough intensity" to have an impact on IQ.

The Exosystem

Bronfenbrenner (1974) argued that early childhood and parental intervention cannot exist in a vacuum, that without supporting

social structures, interventions cannot be effective. Zigler and Freedman (1987), writing about Head Start, also indicated that community intervention, in addition to parental intervention, was necessary to a successful program.

The community support system, an exosystem variable, includes people and institutions that influence the family. Formal institutional agencies, such as those related to the areas of health, nutrition, housing, child care, adult literacy, continuing education, job training, employment services, and transportation, seek to improve the relationship between the person or family and environment. The support system may assist in helping with tasks and responsibilities, in transferring goods and services, and in transmitting needed information (Moroney, 1987). Support services appear to be beneficial in fostering the development of children through the diminishing of family distress, provision of resources and information, and the promotion of families' self-acceptance, positive attitudes, and parenting skills.

By eliminating duplication and overlap within and between organizations, formal social support systems may function more effectively (Streeter, 1992). A case study was conducted of a program which attempted to coordinate and increase the accessibility of support services. During a nine-month period, 80 agencies cooperated in designing a resource directory for distribution within the community; an afternoon latchkey program was implemented; and continued funding was secured from a foundation for further program development. Residents reported

greater satisfaction with local support services. Families reported greater awareness of and utilization of health and educational services for their children.

An inverse relationship has been established between perceived social support and psychological stress (Barrera, 1986; Cohen & Wills, 1985). Those families reporting higher levels of social support tend experience less stress, to be more supportive of their children, and to spend more time engaged in activities with them, thereby fostering the development of their children (Heller & Swindle, 1983). Programs designed to improve prenatal, childbirth, and early childhood supports for low-income families have reported preventive effects (Olds, 1980; Olds, Chamberlin, Henderson, & Tatelbaum, 1985). For example, a family support program for poor unmarried mothers 19 years of age or younger assigned a home health visitor (a registered nurse) who began visiting during pregnancy and continued weekly visits for two years following childbirth. Results indicated a significant preventive effect on child maltreatment among the young mothers in the program. Their rate of child maltreatment was four percent, compared to 19 percent for a comparison group. The young mothers also described their children in more positive terms, and their children had fewer hospital emergency-room visits for ingestion and accidents than did the comparison group (Olds et al., 1985). The findings are in keeping with the suggestion that effective support systems facilitate positive individual development (Garbarino & Bronfenbrenner, 1976).

The Macrosystem

The macrosystem refers to a person's culture or subculture. It includes the language, ideologies, behaviors, attitudes, values, and shared experiences of a group of people (Bennett & LeCompte, 1990). It also encompasses structured relationships reflected in institutions, social status, and ways of doing things. Cultural diversity exists both across and within each society. Within society groups individuals constitute a subculture distinguishable from other groups by reason of ethnicity, socioeconomic status, age, gender, religion, or geographic locale.

The cultural or subcultural context has a powerful influence on the behavior, attitudes, and values of its members (Baden & Maehr, 1986). Also, beliefs about which skills are important for children to develop are different for various cultural groups and are related to children's school performance. Okagaki, Sternberg, and Divecha (1990) examined parental beliefs about child rearing and intelligence in families whose children attended the same school in California but who were from different cultural groups: Anglo-American, Cambodian, Filipino, Mexican immigrant, Mexican-American, and Vietnamese. Parents born in the United States emphasized developing creative skills over general problem-solving skills for their children; the immigrant parents considered promoting problem-solving skills to be as important or more important than developing creative skills. Okagaki et al. (1990) found that the importance of verbal skills to parents' conceptions of intelligence was positively associated with the performance of their children in school. In contrast, the importance of social

skills to parents' conceptions of intelligence was negatively associated with the cognitive performance of their children in school. Thus, low school performance of children of some ethnic groups may be related to a characteristic (in this case, valuing social skills over problem solving) which the subculture reinforces.

In an ethnographic study, Heath (1983) described three communities in the United States in which children are rarely required to answer questions from adults. Because these children did not ordinarily take the role of information-providers, questions from adults (e. g. questio that teachers might ask) led to confusion among the children.

Chronic poverty has been described as having its own cultural characteristics which influence families and children (McLoyd, 1990). Poverty seems to be a more important determinant of parenting than ethnicity. Economically disadvantaged families of different ethnic groups in the United state have similar child-rearing attitudes and behaviors. McLoyd, in an extensive review, stated:

> "Numerous studies of both black and white adults, employing both interview and observational methods, report that mothers who are poor, as compared to their advantaged counterparts, are more likely to use power-assertive techniques in disciplinary encounters and are generally less supportive of their children. They value obedience more, are less likely to use reasoning, and

more likely to use physical punishment as a means of disciplining and controlling the child. Lower-class parents are more likely to issue commands without explanation, less likely to consult the child about his or her wishes, and less likely to reward the child verbally for behaving in desirable ways. Poverty also has been associated with diminished expression of affection and lesser responsiveness to the socioemotional needs explicitly expressed by the child" (p. 322).

Findings that children in low-income families are more susceptible than middle class children to developmental and behavioral problems (Fuchs & Reklis, 1992) could be related to differences in these child rearing attitudes and behaviors. Poverty has been linked to a variety of socioemotional problems in both black and white children of varying ages. Longitudinal research indicates that children in families with financial stress have higher rates of identified problem behaviors (Takeuchi, Williams, & Adair, 1991) and that adults are prone to negative life events such as child abuse, divorce, and unemployment (Elder, Nguyen, & Caspi, 1985; Hernandez, 1988; Pelton, 1981).

In low-income communities, family instability, crime, addiction, and illness are common. In such communities, the high incidence of school dropout, delinquency, teen pregnancy and childbearing, and financially impoverished single-parent families negatively impact the development of children (Wilson, 1987). Parental attitudes and interactions with their children are

affected by the combination of economic stress, environmental forces, and critical life events, such as unemployment (Sameroff, Seifer, & Zax, 1982; Wahler, 1980; Webster-Stratton & Hammond, 1990). These attitudes and interactions also influence the physical, emotional, and cognitive development of children.

CONCLUSION

With the development of the Georgia Prekindergarten Program for 4-year-olds, the State Board of Education proposes to provide a comprehensive program designed to intervene at all ecological (environmental) levels of low-income children's and families' lives. Georgia's Prekindergarten Program appears to be unique among the school-based programs in the nation, in that its goals are to assure that broad child and family health, nutritional, social, and educational needs are addressed; to facilitate the design of community services that are responsive to families and children; and, concomitantly, to have an indirect effect on alleviating the misery and distress resulting from poverty.

If our society is to flourish, the poverty cycle must be broken. The Georgia Prekindergarten Program directly addresses this problem by requiring that its projects (sites) work with the community social structure to assure that families are offered opportunities and help in furthering their education, obtaining job training, and finding employment. If successful, these efforts will interrupt the poverty cycle at this point in time for the families. The required agency collaboration designed to facilitate service availabilty and accessibility should relieve the family distress

caused by an inability to meet health, nutritional, and social needs. As a result, parents should be able to relate to their children in a more relaxed and positive manner, thus affecting the children's self esteem, socioemotional well-being, and learning potential. In addition, the overriding purpose of providing these very young, impressionable, and malleable children an educational opportunity is to prepare this new generation to contribute to breaking the poverty cycle through its own achievement and productivity.

The evaluation of Georgia's Prekindergarten Program has two purposes. The first is to describe the community, family, and child intervention in such a way that it can be replicated in new sites and in other states. The second purpose is to assess the outcomes by using broad measures of community, family, and child well-being.

REFERENCES

Baden, B. D., & Maehr, M. L. (1986). Confronting culture with culture: A perspective for designing schools for children of diverse sociocultural backgrounds. In R. Feldman (Ed.), The Social Psychology of Education: Current Research and Theory (pp. 289-309). NY: Cambridge University Press.

Baine, D., & Starr, E. (1990). Generalization of learning: An essential consideration in early childhood education. ERIC Documents, No. ED 323030.

Baker, B., & Brightman, R. (1984). Training parents of retarded children: Program specific outcomes. Journal of Behavioral Therapy & Experimental Psychiatry, 15, 255-260.

Barnett, W. S., Frede, E. C., Mobasher, H., & Mohr, P. (1987). The efficacy of public preschool programs and the relationship of program quality to efficacy. Educational Evaluation and Policy Analysis, 10, 37-49.

Barrera, M., Jr. (1986). Distinctions between social support concepts, measures, and models. American Journal of Community Psychology, 14, 413-445.

Beller, E. K. (1974). Impact of early education on disadvantaged children. In S. Ryan (Ed.), A report on longitudinal evaluations of preschool programs. Vol. 1 (DHEW Publication No. OHD 74-24) Washington, DC: Office of Child Development.

Bennett, K. P., & LeCompte, M. D. (1990). How schools work: A sociological analysis of education. NY: Longman.

Berrueta-Clement, J., Schweinhart, L., Barnett, W., Epstein, A., & Weikart, D. (1984). Changed lives: The effects of the Perry preschool program on youths through age 19. Ypsilanti, MI: High/Scope Educational Research Foundation.

Bloom, B. (1964). Stability and change in human characteristics. New York: Wiley.

Boehm, A. E., & Slater, B. R. (1981). Cognitive skills assessment battery. Hagerstown, PA: Teachers College Press.

Bradley, R. H., & Caldwell, B. M. (1984). The relation of infants' home environments to achievement test performance in first grade: A follow-up study. Child Development, 52, 708-710.

Bronfenbrenner, U. (1974). A report on longitudinal evaluations of preschool programs. vol. 2: Is early intervention effective? (DHEW Publication No. OHD 74-25). Washington, DC: Office of Human Development.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. American Psychologist, 32, 513-531.

Bronfenbrenner, U. (1979). The ecology of human development: Experiments by nature and design. Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), Annals of Child Development(Vol. 6, pp. 187-251). Greenwich, CN: JAI Press.

California State Department of Education. (1988). Center-based preschool-age program quality review instrument. Sacramento, CA: California State Department of Education, P.O. Box 271.

Cicirelli, V. G. (1969). The impact of Head Start: An evaluation of the effects of Head Start on children's cognitive and affective development. Athens, Ohio: Ohio University, and New York: Westinghouse Learning Corporation.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. Psychological Bulletin, 98, 310-357.

Coleman, J. S. (1966). Equality of educational opportunity. Washington, DC: U.S. Department of Health, Education and Welfare.

Condry, S. (1983). History and background of preschool intervention programs and the consortium for longitudinal studies. In the Consortium for Longidtudinal Studies (Ed.) As the twig is bent. Hillsdale, New Jersey: Lawrence Erlebaum Associates.

Datta, L. (1966-1969). The effects of Head Start classroom experience on some aspects of child development: A summary report of national evaluations. (HS200094).

Deutsch, M., Taleporos, E., & Victor, J. A. (1974). A brief synoposis of an initial enrichment program in early childhood. In S. Ryan (Ed.), A report on longitudinal evaluations of preschool programs. Vol. 1 (DHEW

Publication No. OHD 74-24.) Washington, DC: Office of Child Development.

DeVito, P. J., & Karon, J. P. (1984). Final report, parent child home program. MA: Pittsfield Public Schools, Chapter 1, ECIA.

Dokecki, P., Hargrove, E., & Sandler, R. (1983). An overview of the Parent Child Development Center social experiment. In R. Haskins & D. Adams (Eds.), Parent education and public policy (pp. 80-111). Norwood, NJ: Ablex Publishing.

Dumas, J. E., & Wahler, R. G. (1983). Predictors of treatment in parent training: Mother insularity and socioeconomic disadvantage. Behavioral Assessment, 5, 301-313.

Dunn, L. M., & Dunn, L. M. (1981). Peabody Picture Vocabulary Test-Revised Manual. Circle Pines, MN: American Guidance Service.

Elder, G. H., Nguyen, T. V., & Caspi, A. (1985). Linking family hardship to children's lives. Child Development, 56, 361-375.

Ferguson, J. L., & Carlson, T. A. (1978). Missouri kindergarten inventory of developmental skills (K.I.D.S.), technical report. Columbia: Missouri Statewide Testing Service, University of Missouri-Columbia.

Fuchs, V. R., & Reklis, D. M. (1992). America's children: Economic perspectives and policy options. Science, 255, 41-46.

Garbarino, J., & Bronfenbrenner, U. (1976). The socialization 6 moral judgment and behavior in cross-cultural perspectives. In T. Lickona (Ed.), Moral development and behavior. NY: Holt, Rinehart, & Winston.

Goldring, E. B., & Presbrey, L. S. (1986). Evaluating preschool programs: A meta-analytic approach. Educational Evaluation and Policy Analysis, 8, 179-188.

Gordon, I. (1971). Early child stimulation through parent education. In I. Gordon (Ed.), Readings in research in developmental psychology (pp. 146-154). Glenview, IL: Scott, Foresman.

Gordon, I. J. (1973). The Florida parent education early intervention projects: A longitudinal look. Gainesville: Institute for Development of Human Resources, University of Florida.

Gray, S. W., & Klaus, R. A. (1970). The early training project: A seventh year report. Child Development, 41, 909-924.

Harrington, M. W. (1934). The new American poverty. New York: Holt, Rinehart, & Winston.

Heath, S. B. (1983). Ways with words. NY: Cambridge University Press.

Heath, R. W., & Plett, J. D. (1988). Do KS/BE preschools help Hawaiian children succeed in the public schools? Honolulu: Center for Development of Early Education.

Hedges, L. (1982). Fitting categorical models to effect sizes from a series of experiments. Journal of Educational Statistics, 7, 119-137.

Heller, K., & Swindle, R. W. (1983). Social networks, perceived social support, and coping with stress. In R. Felner, L. Jasoner, J. Moritsuger, & S. Farber (Eds.), Preventive psychology: Research and practice in community intervention (pp. 87-103). NY: Pergamon.

Hernandez, D. J. (1988). Demographic trends and the living arrangements of children. In E. Hetherington & J. Arasteh (Eds.), Impact of divorce, single-parenting, and stepparenting on children (pp. 3-22). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hertz, T. (1977) The impact of Federal early childhood programs on children. Washington: Office of the Assistant Secretary for planning and evaluation, DHEW, 1977.

Hodges, W. L. (1993). The development of modern early childhood education. In Price, G. & Bloch, M. N. Essays on the history of early education. New York: Ablex Publishing Co.

Hohmann, M., Banet, B., & Weikart, D. (1978). Young children in action. Ypsilanti, MI: High/Scope.

Hunt, J. M. (Ed.). (1972). Human intelligence. New Brunswick, NJ: Transaction Books (distributed by Dutton).

Karnes, M. B., Zehrback, R. R., & Teska, J. A. (1974). The Karnes preschool program: Rationale, curricula offerings and follow-up data. In S. Ryan (Ed.), A report on

longitudinal evaluations of preschool programs. Vol. 1. (DHEW Publication No. OHD 74-24.) Washington, DC: Office of Child Development.

Lazar, I., & Darlington, R. (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).

Levenstein, P. (1974). VIP children reach school: Latest chapter. (Progess report, 1973-1974, Follow-up study of the mother-child home program.) Freeport, NY: Verbal

Levenstein, P. (1988). Messages from home: The mother-child home program and the prevention of school disadvantage. Columbus: Ohio State University Press.

Lochman, J. E., & Brown, M. V. (1980). Evaluation of dropout clients and of perceived usefulness of a parent education program. Journal of Community Psychology, 8, 132-139. Interaction Project.

Mardell-Czudnowski, C. D., & Goldenberg, D. S. (1983). Developmental indicators for the assessment of learning-Revised. Edison, NJ: Childcraft.

McDonald, M. S., & Monroe, E. (1981). A follow-up study of the 1966 Head Start program, Rome city schools. Rome, Georgia.

McCartney, K., & Howley, E. (1991). Parents as instruments of intervention in home-based programs. In L. Okagaki & R. J. Sternberg (Eds.), Directors of development: Influences on the

development of children's thinking (pp. 181-202). New Jersey: Lawrence Erlbaum Associates.

McKey, R. H., Condelli, L., Ganson, H., Barrett, B. J., McConkey, C., & Plantz, M. C. (1985). The impact of Head Start on children, families, and communities: Final report of the Head Start evaluation, synthesis and utilization project. (DHHS Publication No. 90-31193). Washington, DC: U.S. Government Printing Office.

McLoyd, V. C. (1990). The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development. Child Development, 61, 311-346.

Miller, A. K., Eads, G. M., Sawyers, L. C. (April, 1990). Evaluation and program implementation: Collaboration during a three-year pilot project. Paper presented at the annual meeting of the American Educational Research Association, Boston.

Miller, L. B., & Dyer, J. L. (1975). Four preschool programs: Their dimensions and effects. Monographs of the Society for Research in Child Development, 40(5-6, Serial No. 162).

Mischley, M., Stacy, E. W., Mischley, L., & Dush, D. (1985). A parent education project for low-income families. Prevention in Human Services, 3, 45-57.

Moroney, R. M. (1987). Social support systems: Families and social policy. In S. Kagan, D. Powell, B. Weissbourd, & E. Zigler (Eds.), America's family support programs (pp. 21-37). New Haven: Yale University Press.

Office of Evaluation (1985). Pre-kindergarten evaluation report. San Antonio, TX: San Antonio Independent School District.

Okagaki, L.,& Sternberg, R J. (Eds.). (1991). Directors of development: Influences on the development of children's thinking. New Jersey: Lawrence Erlbaum Associates, Publishers.

Okagaki, L., Sternberg, R.J., & Divecha, D.J. (1990, April). Parental beliefs and children's early school performance. Paper presented at the annual Meeting of the American Educational Research Association, Boston MA.

Olds, D. (1980). Improving formal services for mothers and children. In J. Garbarino, S. Stocking, & Associates (Eds.), Protecting children from abuse and neglect. San Francisco: Jossey-Bass.

Olds, D., Chamberlin, R., Henderson, C., & Tatelbaum, R. (1985). The prevention of child abuse and neglect: A randomized trial of nurse home visitation. Rochester, NY: Department of Pediatrics, University of Rochester.

Palmer, F. H., & Semlear, T. (1976). Early intervention: The Harlem study. In R. Liebert, R. Poulus, & G. Marmor (Eds.), Developmental Psychology. NY: Prentice-Hall.

Pelton, L. H. (1981). Child abuse and neglect: The myth of classlessness. In L. Pelton (Ed.), The social context of child abuse and neglect (pp. 23-38). NY: Human Services Press.

Rachal, J. (1992). A six-year longitudinal study of the sustained effects of early childhood education on the kindergarten through fifth grade performance of program graduates. Louisiana Department of Education.

Ramey, C., Bryant, D., & Suarez, T. (1985a). Preschool compensatory education and the modifiability of intelligence: A critical review. Current topics in human intelligence, 1, 247-296.

Ramey, C., Bryant, D., Sparling, J., & Wasik, B. (1985b). Educational interventions to enhance intellectual development: Comprehensive daycare vs. family education. In S. Harel & N. Anastasiow (Eds.)., The at risk infant: Psychological, social, and medical aspects (pp.75-85). Baltimore, MD: Paul H. Brookes., (1983)

Sameroff, A. J., Seifer, A. J., & Zax, M. (1982). Early development of children at risk for emotional disorders. Chicago: University of Chicago Press, for Society for Research in Child Development.

Segal, M. (1985). A study in maternal beliefs and values within the contest of an intervention program. In I. Sigel (Ed.), Parental belief systems (pp. 271-286). Hillsdale, NJ: Lawrence Erlbaum Associates.

Seitz, V., Rosenbaum, L., & Apfel, N. Effects of family support intervention: A ten year follow-up. Child Development, 56, 376-391.

Slaughter, D. (1983). Early intervention and its effects on maternal and child development. Monographs for the Society for Research in Child Development. 48(4, Serial No. 202).

Smith, A. & Spence, C. (1980). National day care study: Optimizing the day care environment. American Journal of Orthopsychiatry, 50,(4).

Stanford Research Institute. (1971). Implementation of planned variation in Head Start: Preliminary evaluations of planned variation in Head Start according to follow through approaches (1969-1970).

Stevens Jr., J. (1984). Child development knowledge and parenting skill. Family Relations, 33, 237-244.

Stevenson, H. W., & Lee, S. (1990). Contexts of achievement. Monographs of the Society for Research in Child Development, 55 (1-2, Serial No. 221).

Stevenson, H. W., Lee, S., & Stigler, J. W. (1986). Mathematics achievement of Chinese, Japanese, and American children. Science, 231, 693-699.

Streeter, C. L. (1992). Redundancy in organizational systems. Social Service Review, 66, 97-111.

Takeuchi, D. T., Williams, D. R., & Adair, R. K. (1991). Economic stress in the family and children's emotional and behavioral problems. Journal of Marriage and the Family, 53, 1031-1041.

Wahler, R. G. (1980). The insular mother: Her problems in parent-child treatment. Journal of Applied Behavior Analysis, 13, 207-219.

Webster-Stratton, C., & Hammond, M. (1990). Predictions of treatment outcome in parent training for families with conduct problem children. Behavior Therapy, 21, 319-337.

Weikart, D., Ledoria, D., Lawser, S., & Wiegerink, R. (1970). Longitudinal results of the Ypsilanti Perry preschool project. Monographs of the High/Scope Educational Research Foundation. Ypsilanti, MI: High/Scope.

Wilson, W. J. (1987). The truly disadvantaged. Chicago: University of Chicago Press.

Wolff, M., & Stein, A. (1966). Study I: Six months later, A comparison of children who had Head Start, Summer 1965, with their classmates in kindergarten. A case study of kindergartens in four public elementary schools, New York City. Washington, DC: Research and Evaluation Office, Project Head Start, Office of Economic Opportunity.

Woolman, M. (1971). Learning for cognition: The micro-social learning system. NJ: New Jersey State Department of Education.

Yagi, K. (1986). ECIA Chapter 1 early childhood education program in the Portland public schools. 1985-86 evaluation report. OR: Portland Public Schools, Research and Evaluation Dept.

Zigler, E. (1985). Assessing Head Start at 20: An invited commentary. American Journal of Orthopsychiatry, 55, 603-609.

Zigler, E. & Butterfield, E. C. (1968). Motivational aspects of changes in IQ test performance of culturally deprived nursery school children. Child Development, 39, 1-14.

Zigler, E., & Muenchow, S. (1992). Head Start: The inside story of America's most successful educational experiment. New York, NY: BasicBooks, HarperCollins Publishers, Inc.

Zigler, E., & Valentine, J. (Eds.). (1979). Project Head Start: A legacy of the war on poverty. NY: Free Press.