LONG-TERM EFFECTS OF QUALITY PRESCHOOL FOR DISADVANTAGED CHILDREN

THESIS

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By

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The eleven studies which comprise the Consortium for Longitudinal Studies were described in order to determine long-term effects of preschool education on disadvantaged children. Research methods and results of the studies were evaluated and compared. An historical overview details the sociopolitical milieu from the time the eleven studies began in the 1960s to the present. Theories which impacted the preschool movement in the 1960s were also discussed, particularly those which concern the development of intelligence, the importance of early education and environmental impact on the development of intelligence. Demographic data were used to describe disadvantaged children's needs for quality early intervention programs. The results of the eleven Consortium studies indicate positive long-term effects for disadvantaged children enrolled in quality preschool programs.
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CHAPTER I

INTRODUCTION

Background and Significance

One of the greatest challenges facing the nation in the late 1980s is that of educating its disadvantaged students.

While the American schools have generally provided middle- and upper-income youth with the intellectual tools necessary for success, they have commonly failed to cope effectively with the task of educating the disadvantaged youth . . . [and have] to an alarming extent . . . simply swept disadvantaged youth under the educational rug (3, p. 9).

In a recent report, the Committee for Economic Development (CED) urged the nation to "embark on a new wave of reform based on increased federal funding, local accountability and school programs that address the . . . needs of all at-risk children" (3, p. 9).

While a plan for major improvements in the development and education of disadvantaged children will not be cheap, unless changes are made, these children will continue to encounter the problems associated with poverty which plague the country today. These problems include increasing numbers of children placed in special education or retained in grade; the alarming high school dropout rate; the staggering numbers of teenage pregnancies; and the disturbing problems
of crime, delinquency and welfare subsistence (1, p. 114; 2, p. 9; 5).

In determining how to best meet the needs of disadvantaged children, it is important to examine past attempts to alleviate discrepancies between the population consisting of middle- and upper-income families and that of the low-income or disadvantaged population. There were some significant developments during the early 1960s in the types of programs made available for disadvantaged preschool age children. A number of theories emerged at that time which shed new light on the development of intelligence and the importance of the environment on intelligence during the early years. To examine these theories and programs and the longitudinal research which has subsequently been conducted on these programs will assist in determining what types of programs have been proven successful in achieving positive short-term and long-term effects.

Studies indicate that early intervention preschool programs, while not the total solution to breaking the cycle of poverty, can "narrow the existing gaps in educational opportunity through educationally significant improvements in children's performance and experience in the schools" (5, p. 77). Stickney notes that "it is somewhat ironic that cuts in compensatory education funding
have been suggested just as these programs are beginning to demonstrate long-term success" (6, p. 290).

The CED states their belief that improved education is essential for breaking the poverty cycle; however it is clear that the elimination of poverty will also require coordinated efforts by government, private agencies, and the business sector to provide training and jobs, supplemented by an improved public welfare system (3, p. 8).

"The care of American children and families is no longer the sole responsibility of the individual family, but rather is a responsibility shared by the family, community, and society" (4, p. 8). As Berrueta-Clement concludes, "the research demands prompt action to benefit the common good. We must be about the task" (1, p. 115).

The Problem

The problem of this study was to identify the short-term and long-term effects of quality preschool programs on the lives of disadvantaged children.

The Purpose

The purpose of this descriptive study was to summarize the longitudinal research that has been done since the early 1960s, and to determine the effects of these programs.
Research Questions

This study was conducted in answer to the following questions.

1. What was the political and social mood of the late 1950s and early 1960s which led to the interest in and establishment of early intervention programs for disadvantaged young children? What changes in social policy occurred during the 1970s and early 1980s which affected early intervention programs in the United States?

2. What theories and research placed a new emphasis on the early development of the child and on the role of the environment affecting that development?

3. What are the effects of the early intervention preschool programs conducted by the Consortium for Longitudinal Studies? What are the similarities among and differences between the eleven home-based, center-based, or combined home-center-based programs.

4. Given the positive long-term effects of quality preschool on the lives of the disadvantaged participants, to what population can this be generalized? Are the findings replicable in today's society, or are they based on the social and political milieu of the early and mid-1960s?

Definition of Terms

Early intervention.--Often used synonymously with the term "compensatory education," early intervention refers to
assistance programs developed for preschool-age children and their families designed to modify the course of early development so as to better prepare socially-disadvantaged children for public school.

Poverty.--The term poverty refers to a chronic condition characterized by a lack of money and material possessions, and the related stress and constraints. The terms "low-income" and "disadvantaged" are used interchangeably to denote the condition of poverty. "Cultural deprivation" and "social disadvantage" are related terms which may be used synonymously with poverty.

Limitations
The longitudinal studies selected were limited to those studies conducted since the early 1960s dealing with the short-term and long-term effects of preschool programs, most specifically those conducted by the Consortium for Longitudinal Studies.

Procedures
Educational Research Information Center (ERIC) searches were conducted in January 1987 and again in June 1987 in order to identify references needed to investigate early childhood intervention programs for disadvantaged children. Using the information obtained through the ERIC searches, references were identified to assist in describing the
researchers' site and sample, procedures and results of the eleven studies which comprise the Consortium for Longitudinal Studies. Information was also obtained which allowed the investigator to identify the sociopolitical milieu of the early 1960s and the theories which emerged during the 1960s influencing the establishment of educational programs for disadvantaged preschool children. From these readings evolved the answers to the research questions.
CHAPTER BIBLIOGRAPHY


CHAPTER II

SOCIOPOLITICAL BACKGROUND FOR EARLY INTERVENTION PROGRAMS

Introduction

Amongst western societies early educational intervention has been widely regarded as a powerful strategy for reducing the incidence of poverty, deprivation and underachievement and promoting the ideal of equal opportunity. The potential of preschool education has been singled out for particular attention, nowhere more so than in the USA, where Head Start became a major weapon of the "War on Poverty" initiated by Presidents Kennedy and Johnson in the early sixties and it continues to hold a place in the "safety net" social policy of President Reagan some 20 years later. It is consistent with a political philosophy which emphasizes individual achievement as the route to social mobility and national prosperity (16, p. 133).

What follows is an overview of the political and social mood of the late 1950s and early 1960s which led to the interest in, and establishment of, early intervention programs for disadvantaged young children in the United States. It recounts the changes in social programs during the 1970s and identifies present issues and concerns in the late 1980s regarding early intervention.

Poverty and Its Effects

From the mid-1950s through the 1960s, America experienced a period of social activism. "There was a growing realization that in the midst of prosperity, large
groups of Americans were impoverished" (3, p. 15). The poor constituted 25 percent of the total population—35 million Americans were poor (6, p. 162; 17, p. 4). These large groups of impoverished Americans were created, in part, by the mass migration of poor white and black families from rural areas to urban and industrial centers. During the 1950s, for example, 1,400,000 blacks from southern states moved to northern cities to replace the 2,000,000 whites who had fled to the suburbs (3, p. 15). Center-city schools were hit with an influx of children who had received poor schooling; children from southern black schools were at a particular disadvantage (3, p. 15).

Civil Rights Movement

At the same time, the civil rights movement was building momentum. Beginning in 1954, when the United States Supreme Court ruled that "separate but equal" public schools were unconstitutional, efforts began to integrate schools and other segregated public facilities. Martin Luther King, Jr., emerged as leader of the movement whose principal tactic became nonviolent civil disobedience (i.e., sit-ins and marches) (3, p. 16).

The inequality in housing, employment, education, and living conditions that the civil rights movement publicized was affecting not only blacks but other minorities and poor whites as well (17, p. 4).
The civil rights activism of the early 1960s built up broad social support among blacks and whites for racial and economic equality. Many believed that the critical issue of the day was to help more people fully participate in the generally prosperous society (3, p. 17).

King's famous "I have a dream" speech given at the 1963 March on Washington, was enthusiastically supported by many Americans. "There was a sense that this dream could be realized, . . . that the prosperous, enlightened United States could erase racial discrimination in the laws, in the schools and in the labor market" (3, p. 17).

Federal Involvement in Early Intervention

The early years of social activism forced federal involvement in problems that previously had been recognized as the responsibility of state and local governments (3, p. 17). During the Kennedy administration, much attention was focused on the alleviation of poverty. According to studies undertaken during his administration, poverty was widespread, and its consequences were threatening the nation's social and economic well-being (17, p. 4).

President Kennedy and the Democratic party proposed the Human Resources Development Act which included "the creation of Community Action Agencies at the municipal level, through which federal funds for anti-poverty programs would be channeled" (3, p. 17). Unfortunately, the Human Resources Development Act was not passed by Congress.
The Great Society

After Kennedy's assassination, President Johnson declared a "War on Poverty." However, the initial plans for Johnson's Great Society, based on the work of a Kennedy Task Force, overlooked young children (17, p. 37). The Economic Opportunity Act of 1964 created the Office of Economic Opportunity (OEO), which would be the major tactical weapon in what Johnson called the "unconditional war on poverty" (17, p. 37). Johnson stated that this war was "not only to relieve the symptoms of poverty, but to cure it; and above all, to prevent it" (17, p. 37).

The OEO, under the direction of Shriver, implemented a wide variety of programs intended "to mobilize the human and financial resources of the nation to combat poverty in the United States" (10, p. 26) including Community Action, Job Corps, Neighborhood Youth Corps, Upward Bound, VISTA, Adult Basic Education, Legal Services programs for the elderly poor and Project Head Start.

In the early 1960s, many leading educators and social scientists suggested that preschool education for poor children was a way to break the cycle of poverty, assuming a chain of cause and effect that linked family poverty to children's scholastic failure and subsequent poverty as adults (2, p. 95). For example, Farran, Haskins, and Gallagher stated in a report written for the United States
Bureau of Education for the Handicapped, that "poverty creates problems that interfere with the proper development of children" (7, p. 1). Farron and others contended that poverty's effect is so overwhelming to normal development that mild mental retardation is a frequent outcome" (7, p. 1). Factors contributing to the high incidence of mild mental retardation included health, social and psychological problems, e.g., inadequate nutrition and medical care, unemployed parents, substandard housing and limited financial resources.

Daily, the newspapers reported the problems of school dropouts, the high rate of functional illiteracy, the discouraging results of remedial reading classes and the lack of readiness of many first grade children. All this negative news pointed to the need to do something earlier, before the child entered school at age six (9, p. x).

Early Days of Head Start

During the early 1960s, Shriver, as Director of OEO, became aware of an early intervention research study, the Early Training Project, directed by Gray in Tennessee. Up until that time he had assumed, like most Americans, that one was born with a certain intelligence quotient and that "it was impossible to change the genetic makeup that determined IQ" (17, p. 50). But, Shriver stated, Gray's
studies (see Chapter IV) "showed that the right kind of intervention can raise a child's IQ that is as low as 60. They also showed that the proper kind of continuing intervention can really affect a person's social as well as intellectual development" (17, p. 50).

Armed with this information, Shriver assembled a group of "planners," some of whom were already serving in a variety of capacities on the Kennedy Foundation. Zigler recounts a summary by Shriver:

"So, we figured, we'll get these kids into school ahead of time; we'll give them food; we'll give them medical exams; we'll give them the shots or the glasses they need; we'll give them some acculturation to academic work--we'll give them (this is where the name came in) a HEAD START. . . . We did not want to start a program that took children away from their parents. . . . We felt that if these little children came to a school where in addition to a teacher there were parents from their own area, they wouldn't feel that they were suddenly being thrust into a totally alien environment. . . . Therefore, bringing the parents in was intended to be an immediately positive influence on the children, and also a start toward teaching the parents themselves" (17, pp. 52-53).

Zeigler points out that, on May 18, 1965, the White House made the following announcement:

President Johnson announced today that 2,500 Head Start projects which will reach about 530,000 children of the poor this summer in 11,000 Child Development Centers will be operated as part of the War on Poverty in every state of the Union. The program will cost $112 million. The centers will provide preschool training to prepare youngsters to enter regular school in the Fall. President Johnson said the program will "rescue these children from the poverty which otherwise could pursue them all their lives. . . . President Johnson emphasized that the program
is aimed to achieve the following: Strike at the basic cause of poverty; Assist the parents as well as the children; Assist children to face life; and Treat known (health) defects among the half million children (17, p. 69).

Those early days of Head Start were full of enthusiastic hopes for impoverished preschoolers. "As Head Start Centers opened on a few months' notice in 2,500 communities during the first summer, its hopes, and press releases, knew no bounds" (9, p. 10). Press reports called Head Start a "catch up program--implying that in eight weeks of summer it enabled the children of poverty to catch up with everything that middle-class youngsters had learned during that first six years" (9, p. 10).

Lady Bird Johnson, Honorary Chairperson of Head Start, recollects that, in February 1965, when asked what we hoped to get out of the Head Start program--

we, the government; we, the people . . . hoped for fewer dropouts from school thirteen years from now, for children able to grow up with a prospect of being responsible citizens--taxpayers, not tax eaters. The program was insurance for a smaller welfare role, but again and again I emphasized that eight weeks was a drop in the bucket, a flash in a lifetime (17, pp. 45-46).

In August 1965, at the end of the first summer's program, President Johnson announced that, because of its success, Head Start would be placed on a year-round basis. New, year-round centers for some 350,000 young children were funded immediately with many more started the next five years (9, p. 27). "Unfortunately, what could be
conjured up on a crash basis in the summer, when schools were empty and teachers free, proved almost impossible to reproduce” during that first winter (9, p. 27). Head Start focused the public's attention on the importance of lower staff-child ratios, the need for specialists at the preschool level, the need for parent involvement and the lack of adequate day care in the United States (9, p. 24).

The early days of Head Start were, however, not without its problems. Many programs ran into difficulty finding space that local health departments would approve for young children. Other difficulties encountered were lack of trained teachers, curriculum, equipment and money (9). Problems withstanding, Head Start continued to grow. The enrollment peaked in 1966 when 725,000 children were served, 25 percent of whom were enrolled in full-year programs (3, p. 22).

Evaluation of Head Start

In the late 1960s and early 1970s, evaluative research was conducted to determine whether preschool compensatory education programs, particularly Project Head Start, had been successful in increasing the intelligence quotient and academic performance of disadvantaged children (15, p. 1). Among the most noted research projects was the Westinghouse-Ohio report (1969). Although some lasting gains were found for some groups of children, particularly for urban black
children, this report concluded that "any cognitive and affective gains from the Head Start experience had largely disappeared by the time the children reached the second and third grade" (8, p. 12). Even though Project Head Start had many components, the chief focus of the research by Westinghouse was on cognitive gains. The Westinghouse authors recommended that the summer-only Head Starts be phased out (3, p. 21).

Other evaluative research was conducted by Jensen (1969) who concluded that "compensatory education has been tried and it apparently has failed" (3, p. 22). The results of the Coleman Report on Equality of Educational Opportunity (1966) determined that individual differences in academic achievement were related more to family variables, such as socioeconomic status and parent education, than to measures of school quality (3, p. 23). The message given by the Coleman Report was that compensatory education was not as effective a form of intervention as other social programs might have been.

These reports, then, in 1969, served to provide support for President Nixon's plan to change the "operational" status of Head Start to "experimental"—rather than serving all eligible children, Head Start needed only to serve a small proportion of eligible children (3, p. 22). At the same time, the national priorities had shifted to the war in Vietnam and away from social action (3, p. 23).
Shift in Social Policy

Because of the escalating cost of the Vietnam War, many of the Great Society's programs had to be compromised. By the late 1960s and early 1970s, Head Start was the only program out of the "package of programs that was the Great Society's trademark" which remained; all others had been "largely dismantled" (17, p. 295). In 1970, upon the recommendation of the Westinghouse Report, only one-half of the summer-only Head Start programs which requested funds received them (3, p. 22). There followed a dramatic decrease in Head Start enrollment. By 1977, 350,000 children were being served and 95 percent of those children were enrolled in full-year programs (3, p. 22).

During the 1970s, early childhood education for low-income children became less popular. Things gradually tightened up both economically and philosophically so that early intervention programs barely survived the early cuts in social programs introduced by the Reagan Administration (2, p. xvi).

In September of 1981, President Reagan, in a televised appeal to endorse further domestic cuts, stated that "despite the best of intentions, social programs 'have not succeeded in their purpose.' Costly reforms 'didn't eliminate poverty or welfare dependency!'" (13, p. 287). Unfortunately, Reagan's views on social intervention were shared by many in the American public (13, pp. 287-290).
Zigler, in his book, *Project Head Start*, summarizes:

The effectiveness of Head Start and the validity of the social, political and intellectual theories on which it was based are still hotly debated. Those issues are further complicated because in the early 1960s both the theories and the programs were distorted and oversold: politicians and the press read into them promises to end all poverty and ignorance. When these inflated expectations were not met, it became fashionable to dismiss the theories associated with the War on Poverty and Head Start (17, p. 3).

Federal decision makers continue to discuss substantive changes in funding and programs for Head Start (12, p. 3). Changes have been proposed to discontinue funding for children birth to age three, restrict Head Start to a half-day program for four-year-olds and negate the role of supportive and health services as integral components of Head Start's education program (12, p. 8). While funding continues for Head Start, only one in five eligible children can be enrolled (4, p. 8). Instead of the ideal envisioned by the "planners" in the 1960s of "nearly 2 million children and some 70,000 teachers, Head Start has stabilized at around 400,000 children with about 70,000 paid staff, including aides and cooks" (4, p. 8). According to the most recent (1987) Program Information Report from Head Start, 451,732 children are now being served at a cost of $1,102,442,000.00 (14).

Among early intervention programs, Head Start has been the most "visible national experiment which has affected everyone in early childhood education and child development"
Project Head Start has been referred to as "the country's biggest peacetime mobilization of human resource and effort" (1, p. 344).

Research Question 1. What was the political and social mood of the late 1950s and early 1960s which led to the interest in and establishment of early intervention programs for disadvantaged young children? What changes in social policy occurred during the 1970s and early 1980s which affected early intervention programs in the United States?

In summary, the 1960s were a time of social activism in America. The American public recognized that something must be done to alleviate poverty which was becoming particularly widespread in urban centers and rural areas of the United States. With the Civil Rights Movement came the involvement of the federal government in the recognition of racial, educational and economic injustices. When Head Start was proposed as one of Lyndon Johnson's Great Society programs, some persons probably believed that early education would prove a panacea for the social ills of the nation. In retrospect, it was naive for anyone to believe "that any single program would serve to cure the extensive and complex problems of poverty and discrimination society was experiencing" (5, p. 81). Gordon stated in 1979 that "we continue to go through a cycle of selecting a cause
and designing a single solution to problems in spite of our knowledge that life is complex and there are no simple answers" (11, p. 77).

In the late 1960s, as the Westinghouse Report caused Project Head Start to come under fire, national priorities were shifting from social activism to the war in Vietnam. During the 1970s, early childhood education programs for low-income children became less popular and funding for many intervention programs was drastically cut. Head Start and other early intervention programs continue to function to the present day, but not on the grand scale as was once envisioned by the Great Society of the 1960s. They must constantly seek alternative funding as the government provides less and less money for education, in general, and early intervention programs, in particular.
CHAPTER BIBLIOGRAPHY


CHAPTER III
THEORETICAL AND RESEARCH BACKGROUND OF
PRESCHOOL INTERVENTION PROGRAMS

Introduction
While an educational program specifically designed for the early childhood years was proposed less than 200 years ago, concern for the young child's development extends back to early Greece, Rome, and Palestine (13, p. 15). Even the idea that early educational experiences could help low-income children enter the public school on a more equal footing with their middle-class peers is not new (3, p. 2). There have been, however, some significant research findings over the past fifty years that have changed the way society looks at intelligence, at how and when children learn, and the role that the environment plays in the development of intelligence. Research also suggests that early intervention can have dramatic effects on the subsequent cognitive and behavioral development of children whose environment is less rich than that of more economically advantaged children.

Chapter III addresses a brief history of early childhood education, a comparison of earlier views on intelligence and development (fixed intelligence quotient)
with later studies presenting evidence for environmental effects on the development of intelligence and behavior. A summarization of theories that emphasized the importance of early development and an examination of environmental effects on the intelligence quotients of low-income preschoolers (environmental deprivation) is included.

The Early Days of Early Childhood Education

Early childhood education has been present in the United States for over a century. While the history of European and American nursery schools and settlement houses is relevant, it is important to understand that those programs differed dramatically from the programs that developed in the 1960s. The child care programs in the early 1900s were designed primarily to free parents for work. The nursery schools which flourished from the 1920s through the 1950s were established to offer educational advantages to the children rather than to provide custodial care only. But the early childhood programs which began in the 1960s, many of which were experimental laboratories, emphasized the cognitive development of low-income children. These cognitively oriented preschool programs are the focus of this study.

European Influences

The idea of using child care or early education as a social reform, to alleviate social problems, is a theme
well-known to early childhood historians (3, p. 2; 6, p. 71). During the Industrial Revolution of the eighteenth and nineteenth centuries, European philosophers Rousseau (1712-1778) and Pestalozzi (1746-1827) were concerned with education of the poor. Pestalozzi developed a home for paupers and a school for refugees. Pestalozzi also believed that children should be directly involved in their schooling and suggested methods which would appeal to the senses (8, p. 551). Early childhood programs are still using many ideas from these eighteenth-century philosophers.

Froebel (1782-1852), founder of kindergarten, had a naturalistic philosophy. He recognized the value of play and of the child's self-activity. In 1816, Owen established an infant school in Scotland. Oberlin founded a nursery school in France in 1833. Creches were organized in Austria in 1847; in Spain in 1855 and in Russia in 1864. The McMillan sisters organized the first English nursery school in London in the early 1900s. Their schools and writings were inspirations for American Schools (8, p. 554; 13, p. 196).

Montessori (1870-1952), Italian medical doctor and psychologist, centered her work around training deprived children (8, p. 554). In 1907, she established the Casa di Bambini in Rome for disadvantaged children in the basement of a slum apartment house (3, p. 2). Stressing self-help and cleanliness, Montessori designed numerous tasks and
encouraged children to learn those tasks in a designated sequence (8, p. 554). She also developed an individualized approach and stressed sensory training (3, p. 2).

Montessori felt that one should never insist on teaching when the child did not respond readily (11, p. 111). Nearly all nursery schools and kindergartens, and many day care centers today, emphasize Montessori's idea of self-help and the development of independence (8, p. 554).

American Roots

The first child care program in the United States, given the lengthy title of "Nursery for the Children of Poor Women in the City of New York," opened in 1854. Working women were able to leave their infants, toddlers and preschoolers there for as long as twelve hours a day. The child care center took "custody" of the children while immigrant, poor and destitute mothers went to work in factories or elsewhere. "Custodial child care" has since been a term associated with low quality care. In the meantime, more affluent Americans began organizing nursery schools and kindergartens for their children creating a two-level standard of quality, one for the poor, another for the elite, which still exists to some extent today (8, p. 555).

The first kindergarten in the United States was opened in Wisconsin in 1856 for German-speaking children. The first kindergarten for English-speaking children opened in
Massachusetts in 1860, and the first public-supported kindergarten was established in Saint Louis in 1873 (8, p. 555).

During the late 1880s and 1890s, an increase in the number of kindergarten centers coincided with a major reform movement in America (13, p. 197). Kindergarten was incorporated into many of the settlement houses established in the major cities to alleviate the distress of the poor in urban slums (13, p. 197). "The kindergarten was believed to provide hope for an improved future generation . . . it swept across the country as part of the vision of fostering the perfectibility of man and society" (13, p. 197). However, it was not until 1929 that kindergarten began to be incorporated into the public schools (13, p. 196).

At the turn of the century, America entered the Progressive Era. Reforms in every arena were sought; in the political, economical, social and educational spheres. Dewey (1859-1952), who emerged as a prominent figure during the Progressive Movement, was a philosopher of social reform, of growth, change, and experimentation in societies and their schools (6, p. 72). "Dewey came to American education as a critic . . . deeply concerned over the failure of the schools to reach whole segments of the public and as a humanist deeply troubled by routinized procedure, that seemed to stifle individuality and stultify growth"
The cornerstone of progressive education was that the teacher organized a play-and-projects curriculum and encouraged each child to think rather than to conform (6, p. 72). Dewey's theory centered on the activity learning child or "learning by doing." Play was, to Dewey, a means of educative growth. A new kindergarten curriculum which became well established by the mid-1920s reflected the contributions of Dewey and fellow leaders in psychology and philosophy, Hall and Thorndike (13, pp. 47, 90, 93).

From 1913 to 1915, the Montessori school enjoyed a brief period of acceptance in America. Approximately 100 Montessori schools were opened. Interest faded rapidly, however, as her ideas ran against other trends gaining prominence in the United States, "for example, the intelligence testing movement, which assumed a fixed intelligence and the psychoanalytic movement of Freud, which emphasized psychosexual, rather than cognitive development" (11, p. 122). It was not until the late 1950s that the Montessori school became fashionable again. The American Montessori Society was established by Rambusch in 1962, when she also established a training school for American Montessori teachers. Rambusch added a number of modern materials to the American Montessori schools; such as clay, easels, tape recorders, and other new materials, "Americanizing" the Montessori approach. Soon controversies began to develop
between the American Montessori Society and the Association Montessori Internationale, whose members were trained by Montessori personally. When Montessori died in 1952, her son Mario took over her work (11, pp. 112, 114, 115, 122).

From 1920 to 1930, the number of nursery schools in America increased dramatically from 3 to 262 schools (13, p. 59). The educational programs in these nursery schools emphasized Dewey's philosophy of "learning by doing" and the curricula of the McMillans and Montessori (3, p. 3).

Also in the 1920s, a number of laboratory or training schools, many of which are still in operation, were established by American universities and colleges for the purpose of child study. These laboratory schools were established for teacher training and as research units, in addition to providing child care (3, p. 3). Most of the nursery schools and laboratory schools established in the 1920s served middle-class children.

In 1926, Patty Smith Hill founded the National Association of Nursery Education (NANE). In 1964, the professional association became known by its present name, the National Association for the Education of Young Children (NAEYC) (6, p. 77).

In the 1930s, some 3,000 nursery schools were established by the federal government to benefit unemployed
teachers and young children of unemployed workers (13, p. ix). "Maturation" and "readiness" were terms that permeated early childhood education literature in the 1930s, 1940, and 1950s (12, p. 60). Gesell's developmental maturational approach had a profound impact on the nursery school of the 1940s and 1950s. Most noted for his "ages and stages" approach to child development, Gesell contended that all children exhibited certain behaviors at certain stages and that there were certain age-appropriate behaviors. Through approximately thirty years of observational research, Gesell devised a series of norms to describe characteristic behaviors of children (9). These norms, based on middle-class children, were popularized in a number of ways; for example, a series of teacher training films was produced characterizing particular ages and entitled "Terrible Twos and Trusting Threes," "Frustrating Fours and Fascinating Fives," and similar age-related films (13, p. 58).

By the 1950s, many postulates of analytic theory (based on Freud's work but drastically revised) were superimposed on Gesell's maturational position to bring about a new unified view (13, pp. 141, 146).

In the late 1950s and early 1960s a number of experimental preschool programs for low-income children were established. Several of these programs were associated with college and university child development or early
childhood education programs. A number of these experimental programs are discussed in Chapter IV.

**Early Views on Intelligence**

During the late 1800s and early 1900s the notion of intelligence as being "fixed" at birth was brought into the American stream of thought by psychologists Cattell and Hull (7, p. 28). Their belief in fixed intelligence had its conceptual roots in Darwin's (1859) theory of evolution (7, p. 27). In this view, a child's level of intelligence is set at birth and later experiences have relatively little effect on the IQ. Except in rare and unusual cases, intelligence could not be increased or lowered. The genes endow the child with a certain amount of the fundamental power of the mind, and little if anything can be done to change the situation (5, p. 27).

James and Thorndike also believed that "man's absolute achievements can be affected by environment and training, but his relative achievements can be accounted for only by original capacity" or heredity (13, p. 27).

The whole idea of measuring intelligence or the intelligence quotient (IQ) was part of an effort to build a science of education and to transfer the use of scientists' precise measuring instruments to educational problems (13, p. 8). In France, Binet and Simon had devised an "intelligence scale consisting of a series of problems of graded difficulty, each corresponding to a norm of a specific
mental level" (13, p. 72). A strong intelligence testing movement in America followed, led by a group of influential psychologists, most notably, Terman of Stanford. Terman's revised version of Binet's scale, named the Stanford-Binet, established the use of the "intelligence quotient" (IQ)--the ratio between mental and chronological age (13, p. 72).

"Thorndike and his students set about using the scale idea for measuring achievements in arithmetic, spelling, reading, language ability--even handwriting and drawing" (13, p. 73). Several universities, especially the University of Chicago, became centers of test development. By 1918, over 100 standardized tests designed to measure achievement in a variety of subject areas existed. The idea of fixed intelligence was so widely accepted that "most of the general textbooks written before World War II tended to present the view that the IQ is essentially constant because intelligence is fixed" (13, pp. 72-73).

Environmental Influences on Intelligence

During the early 1960s, while in the social and political arena the War on Poverty was being waged, another war, albeit an undeclared war, was raging in the field of education. On one side, was the "Establishment" which concerned itself primarily with children's social and emotional development; on the other side were the "Innovators" or the cognitive group, including psychologists, linguists,
sociologists, mathematicians, computer technicians and philosophers, concerned with how young children learned to think (11, pp. 2-3).

It was this new group of "mind builders" who debunked the myth of fixed intelligence. As early as 1952, Combs stated: "The intelligence of an individual will be dependent upon the richness and variety of perceptions possible to him at a given moment." Bloom, analyzing the effects of environment on intelligence, concluded that "intelligence development is in part a function of the environment in which the individual lives." The most conclusive evidence supporting the importance of environmental influences on intelligence came from Hunt, who proclaimed: "The assumptions that intelligence is fixed and that its development is predetermined by the genes is no longer tenable" (13, pp. 82-83).

Piaget emerged as the hero of the cognitive psychologists. Although Piaget began studying children in the 1920s, his work was largely ignored until the 1960s. Because of America's concern for the problems of the poor, society turned to education for answers (13, p. 153). The assumption was that something could be done about a child's intellectual effectiveness by the nature of experiences provided for him. Piaget's work embraced this point of view. His cognitive Development Theory integrated environmental influences with genetic development (9).
Gordon concludes:

We are shifting in psychology from a notion that intelligence is fixed and immutable and unchangeable to the notion that we can do something about a youngster's intelligence by the nature of the opportunities for experience we provide for him. . . . We conceptualize that intelligence is behavior, and behavior comes under environmental control just as much as it comes under biological genetic control and therefore, intelligence is changeable (13, p. 83).

Importance of Early Education

Prior to the 1960s, educators and parents' motto was "don't push" young children intellectually. Since intelligence was supposed to be fixed at birth, "deliberate stimulation or guidance of the intellect during the earliest years was either useless or harmful" (11, p. 33).

But in 1962, Hunt stated: "Some of our most important beliefs about man and his development have changed or are in the process of changing" (7, p. 26). One of those beliefs which had changed was the belief in fixed intelligence. Another belief that was crumbling was that of preverbal and early childhood experience as being unimportant.

According to Hunt, Freud attributed much importance to the early years. He even "proposed a hypothesis concerning the nature of the kinds of experience important for later development" (7, p. 44). Piaget recognized infancy's sensorimotor stage as being an integral part of the educative process (13, pp. 154-155). Bloom's widely quoted conclusion that "in terms of intelligence measured at age
17, about 50 percent of the development takes place between conception and age 4" (12, p. 287). Bruner, Director of Harvard's Center for Cognitive Studies, stated that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development" (11, p. 44).

The new mind builders wanted to provide deliberate stimulation of the child's intellect almost from the moment of birth (11, p. 34).

For years educators, including Froebel, Rousseau, Gesell, Frank and many others had recommended that more attention be given to the education of infants. Now, under the new impetus of new conceptions of cognitive growth, programs for infants become a reality. Education had reached down to the earliest days of life (13, p. 154).

Deutsch also recognized the importance of Piaget's pre-operational stage, stating that "it is at this three-four-year-old level that organized systematic stimulation, through a structured and articulated learning program, might most successfully prepare the child for the more formal and demanding structure of school" (7, p. 84).

Clearly, the cognitive psychologists understood that children are eager to teach themselves, they have an urge to make sense of their world, and "all children can learn--much more, much sooner" (7, p. 12; 11, p. 33).

Pine states:

According to the cognitive psychologists, an individual's achievement in life depends largely on what he has been helped to learn before the age of
The child's intelligence grows as much during his first four years of life as it will grow in the next thirteen, they point out. During this period of extra rapid growth, the environment exerts its most powerful effect (11, pp. 30-31).

Environmental Effects on IQs of Low-Income Children--Environmental Deprivation

Changes in social priorities placed new demands upon early childhood education in the 1960s. The heightened interest in alleviating the condition of the poor propelled an examination of school learning where there existed visible differences in the level of school achievement between the children of the affluent and the children of the poor. Social reform could only come from attacking the bases for these differences in the early years, it was believed. Educators and psychologists, many formerly uninterested in Early Childhood Education, were drawn into the search for programs to increase the intellectual and academic performance of these children, labeled "disadvantaged" (13, p. 2).

During the 1960s much evidence was presented detailing the academic problems of disadvantaged young children. Deutsch found that slum children differed from their middle-class peers in several areas; they possessed a narrower range of language, displayed a lack of attention, had poor auditory discrimination skills, and appeared to need more small-group or individual instruction (11, p. 133). Kohlberg "noted that an obvious fact about the disadvantaged is their defect in attention, due to an environment of constant distractions" (11, p. 127). He also observed ten disadvantaged children whose IQ, after three months in a Montessori program, jumped seventeen points (11, p. 127). Bloom noted that "the effects of cultural deprivation were
the same throughout the world, punishing Negroes, Puerto Ricans, working-class Englishmen and Yemenites with equal ferocity" (11, p. 35). Bloom also hypothesized that the long-term overall effect of living in a culturally deprived as against a culturally abundant environment is likely to be 20 IQ points--an enormous difference in terms of society's and the school's expectations. . . . The 20-point IQ difference is, in terms of a slum child's development, spaced as follows: from birth to four years of age, 10 IQ units; from four to eight years of age, 6 IQ units; from eight to seventeen, 4 IQ units (7, p. 4).

The implication was that by the time slum children reached nursery school or primary school, they would already be several IQ points behind their middle-class peers. Bloom referred to this group as culturally disadvantaged or culturally deprived "because we believe the roots of their problem may in large part be traced to their experiences in homes which do not transmit the cultural patterns necessary for the types of learning characteristic of the schools and the larger society" (2, p. 4). It is important to note that the term "culturally deprived" does not mean that persons from lower socioeconomic homes are deprived of a culture. Bruner points out, while theirs is a culture of poverty, they still have "a rich culture, intensely personalized and full of immediate rather than remote concerns" (10, p. 28).

Researchers compared the "hidden curriculum" that existed in middle-class homes with that of low-income homes and found vast differences. Hechinger noted that children
may be typed intellectually by their parents' economic status. He explained that in middle-class homes, parents are generally responsive to their child's language and their questions, whereas in lower socioeconomic homes, the child who is passive, who is quiet, who does not ask lots of questions, is "good," passivity is rewarded (7, pp. 2-3).

Bereiter states: "With no known exceptions, studies of three-to-five-year-old children from lower socioeconomic backgrounds have shown them to be retarded or below average in every intellectual ability . . . disadvantaged children typically score 5-15 IQ points below average" (1, p. 4).

Research Question 2. What theories and research placed a new emphasis on the early development of the child and on the role of the environment affecting that development?

Once it was established that (1) IQ is not fixed at birth, (2) the environment has a profound impact on the development of intelligence, (3) much learning takes place during infancy and early childhood, and (4) disadvantaged children do not perform as well on IQ tests as do middle-class children, recommendations were made in the 1960s to provide preschool intervention for disadvantaged (culturally deprived, culturally disadvantaged, low-income) children. Feldman, citing Deutsch's study undertaken at the Institute for Developmental Studies, indicated that cognitive,
perceptual and language skill deficiencies found in school-age children from disadvantaged homes might be reversible if enrichment programs could be offered at a preschool level. Thus, it would be possible to prevent the progressive academic failure of children from disadvantaged urban areas (7, p. 97).

Bruner proposed a "structured, systematic preschool environment and retraining program which would compensate, or attempt to compensate, for the deficiencies in the slum environment" (7, p. 85). Hunt supported this idea by suggesting the development of educational settings for culturally deprived children that would provide experiences that compensate for what they missed at home (7, p. 53).

Bloom recommended that "nursery schools and kindergartens should be organized to provide culturally deprived children with the conditions for their intellectual development and the learning-to-learn stimulation which is found in most favorable home environments" (2, p. 17). Hunt claimed that "it is reasonable to hope to find ways of raising the level of intellectual capacity in a majority of the population . . . through better management of young children's encounters with their environment" (11, p. 46). He was excited that educators were planning to utilize preschool experiences as an antidote for cultural deprivation and social disadvantage (7, p. 25).
Hechinger concludes:

... if deprivation starts to build up at an early age and progressively limits and eventually blocks entry into the mainstream of society, then an early start must be made to offset the lack of parental teaching, care and mind-molding (7, p. 6).


CHAPTER IV

THE CONSORTIUM FOR LONGITUDINAL STUDIES


RESULTS

Introduction

In the 1960s, thousands of early childhood programs were organized. They were an expression of the desire for service attached to the great mood of social reform that crested in the latter part of the decade. National Head Start initiated in the summer of 1965, was simply the most visible of such programs. Less visible, but of growing importance, are the small number of scientifically designed early intervention studies that began during the sixties (23, p. 77).

These "studies about the effects of intervention . . . designed with the careful selection of subjects, the existence of appropriate control groups, the precision of implementation and the sophistication of measurement to qualify as research" (5, p. 15), are the studies conducted by the Consortium for Longitudinal Studies. All of the eleven studies present evidence about what happened to the children involved when they subsequently attended public school. These studies describe and evaluate the effects of early intervention.

History of Consortium for Longitudinal Studies

The Consortium for Longitudinal Studies was established in 1975, in response to serious problems facing Head
Start. Early in the 1970s, controversy emerged about whether or not to expand or even continue Project Head Start, since evaluation results were not making a clear-cut case for the long-term benefits of the program (6, p. xii). As the problems reached the critical stage in 1973, the Research and Evaluation Division of the Office of Child Development, later the Administration for Children, Youth and Families (ACYF), funded several studies which would examine long-term effects of early intervention and patterns of intervention at different periods of time. The Consortium for Longitudinal Studies was one of many projects funded in 1976 (6, p. xii).

The members of the Consortium had become friends and professional colleagues during the 1960s and 1970s and met with each other at various professional meetings or symposia on preschool programs, especially Head Start (6, p. xii). Prior to their involvement in the longitudinal effects of preschool project, each member had independently conducted experimental preschool research (16, p. 12). By the time funding had been provided for their projects, "the group had organized and agreed upon a strategy for determining the long-term impact of preschool programs" (6, p. xii). They agreed to pool their research efforts and to attempt to re-establish contact with the original participants in their independent studies for tests and
interviews (16, p. 12). Original data from the 1960s were combined with follow-up data collected in 1976-1977 to be analyzed by an independent research group at Cornell University. Cornell's Irving Lazar was selected as principal investigator for the project. As he had been one of the earliest consultants to the Office of Education and Director of Child Development Services for the Appalachian Regional Commission, the group agreed he had the necessary skills for the job.


Evaluation of the Eleven Studies

What follows is an evaluation of the eleven studies which comprise the Consortium for Longitudinal Studies. The researcher(s), purpose, site and sample, procedures and results regarding long-term effects of preschool intervention are identified for each study. While each sample has its idiosyncratic characteristics, there are many points of similarity within the group. All projects shared a broad general goal—to enhance the educability of disadvantaged
young children. The particular goal of this study was to provide a definitive answer to the question of whether carefully designed early intervention programs did show measurable effects over time (11, pp. 72-73).

The Early Training Project: 1962-1980

The researchers were Susan W. Gray, Barbara K. Ramsey and Rupert A. Klaus, of George Peabody College for Teachers of Vanderbilt University.

The purposes were (1) to determine whether there are enduring effects of early intervention, (2) to investigate the relationship between early indicators of school success and actual school success in final years of school, (3) to examine the question of stability in intellectual performance, (4) to study the influence of sex of the participant on performance, (5) to observe parental attitudes over time, (6) to make school a more attractive and successful experience for participants, and (7) to bring participants somewhat more in line with the expectations for performance of the typical public school (6, pp. 34-35; 11, p. 71).

For their site and sample, Gray, Ramsey and Klaus followed a group of low-income, black children in Tennessee. All children were born in 1958. There was a total of forty children randomly assigned to one of two experimental preschool groups, or to one local control group (twenty children) who received no preschool. In addition, a
comparison group (twenty children) with similar socio-economic characteristics, but residing in a nearby small town (Town B), was also selected as the distal control group. Town A had a total of sixty children and Town B had twenty children, making a total of eighty participants (24, p. 57).

Between 1962 and 1965, both experimental groups attended ten weeks of preschool during summers prior to entrance to first grade. One group attended for three summers while the other group attended two summer sessions.

During winter months, mothers of the experimental group were visited once a week for one hour. The first experimental group received two nine-month periods of parent training, while the second group received only one nine-month training period.

The curriculum goals of the Early Training Project's preschool program emphasized both affective and cognitive development. Teacher-directed activities were carefully sequenced, implemented, and evaluated to foster the acquisition of language, cognitive and perceptual skills. Delay of gratification, identification with achieving role models, interest in school-type activities, and persistence were attitudes shaped within instructional activities (24, p. 57).

Follow-up testing and interviewing was done in two phases: phase one extended from 1966 to 1968, while phase
two began in 1975 and extended into 1980. At the beginning of the second phase, most of the participants were completing high school, and by the end of the period a few children were in their third or fourth year of college.

The results of this study are as follows.

1. On individual IQ tests, some significant effects of the program were in evidence through the fourth grade. Achievement tests showed significant differences through second grade but not through the fourth grade. In the eleventh grade, no significant differences were found.

2. No significant differences on tests of the affective domain were found. On personal-social adjustment, however, high school counselors' ratings favored the female experimental group.

3. The number of special education placements for the experimental group was significantly smaller than that of the control group.

4. Among females, the experimental group tended to maintain a higher grade-point average.

5. All except one of the control females who became pregnant in high school dropped out, whereas all but one of the pregnant experimental females graduated.

6. Experimental females appear to be both more decisive and more realistic in their aspirations and expectations than the experimental males and the control males and females (6, 11, 15, 17, 24).

The researchers were Lawrence J. Schweinhart and David P. Wiekart of High-Scope Educational Research Foundation.

The purposes were (1) to reveal the effects of early intervention on disadvantaged children, (2) to test the hypothesis that intervention has a positive effect on how children do in school, and (3) to equip high-risk children with improved abilities to cope with the demands of schooling.

The study was conducted with children born in Ypsilanti, Michigan, between the years of 1958 and 1962. The children entered the project in five waves. Each wave of children was a year younger than the preceding wave, with the oldest child born in 1958 and the youngest one born in 1962. Each year, children in the sample for that year were assigned either to the experimental group or to the control group in such a way as to equate groups on the basis of initial cognitive ability, sex ratios, and average socioeconomic status. All members of the sample, for a total of 123 children, were black. There were 58 children in the experimental group and 65 in the control group. The two criteria for selection were that (1) parents of participants reported a low socioeconomic status, and (2) the children's IQs were in the range between 70 and 85. Parents in the
sample had an overall median of 9.4 years of school. Less than one in five had completed high school. About one-half of the families were single-head families. In two out of five families, no one was employed. Those who were employed were unskilled workers. Half of the families received welfare assistance. Each household had more than twice the number of people than in the typical American household.

The children in the experimental group attended a group preschool 12½ hours a week, weekday mornings, and were visited along with their mothers at home 1½ hours a week. This routine was maintained for about 30 weeks a year, from mid-October through the end of May. The experimental group in Wave 0 (first group of 4-year-olds) received the program for one school year, and the remaining waves for two school years.

Each year four teachers were responsible for twenty to twenty-five children, with a teacher-child ratio of one to five or six children.

During the study, a curriculum model emerged—the Cognitively Oriented Curriculum. The curriculum features Piaget's theories of child development—emphasis on classification, seriation, number, space, and time, as well as on the active learning of the child.

Data were (and will be) collected in five phases. Phase one coincided with the operation of the program,
from 162 to 167, during which time the five waves of children moved through the preschool program. Phase two follow-up began tracking the children (and their parents) into elementary school through the third grade or up to age eight. Phase three extended the follow-up of the children and their families from age eight to age fifteen. Phase four continued the focus on the longitudinal development of the study participants, now young adults, through school departure and subsequent experience at age nineteen. Phase five, now in progress, will follow the subjects into adulthood, through age twenty-six. Their life patterns will have stabilized; they will have formed clear patterns of family functioning, employment, use of welfare assistance, crime and social behavior. When complete, phase five will provide a cost-benefit analysis of the economic value of the preschool program (3, p. xiv).

The immediate effects of preschool on school success were as follows. Early education improved the participants' performance on IQ tests during and at the end of the preschool experience. IQ difference between treatment and control groups had diminished by second grade—it was no longer statistically significant. Early education led to increased academic achievement among the subjects throughout the elementary and middle-school grades. By fourth grade, treatment children were less likely to have
been placed in special education or retained in a grade
than control children. Preschool attendees also had fewer
school absences than the control group.

Later effects of preschool on school success were as
follows. Through secondary, experimental children received
better marks and had fewer failing grades than the no-
preschool subjects. Experimental children spent less time
in special education and were less likely to be classified
as mentally retarded than control subjects. At age nineteen,
the persons who had attended preschool scored higher on the
Adult Performance Level Survey than those who did not. They
also expressed more favorable attitudes toward high school.

Preschool's effects on early socioeconomic success
were as follows. Early education led subjects to higher
levels of employment, less unemployment, and higher earnings
by age nineteen. They had higher median incomes than the
no-preschool group, and also reported being more satisfied
with their jobs. Subjects who had attended preschool were
more likely to be supporting themselves and reported
receiving less public assistance than the control group.

Preschool's effects on social responsibility through
early adulthood indicated that fewer of the preschool
subjects had ever been arrested and they had a lower total
number of arrests. Preschool education led the preschool
group to fewer pregnancies and births than the no-preschool
group (1, 3, 6, 17, 23).
The Gordon Parent Education Infant and Toddler Program 1966-1978

The researchers were Ira Gordon (deceased), R. Emile Jester, and Barry J. Guinagh of the University of Florida.

The purposes were to (1) enhance the development of infants, (2) sustain a combined home visit and home learning approach using paraprofessionals as the educators of parents who would in turn teach their children, (3) develop intellectual and personality stimulation material that could easily be taught to the mother by paraprofessionals and that the mother could teach her infant, and (4) investigate the long-term effects of such a program on the intelligence of children from economically disadvantaged backgrounds.

A series of three intervention programs are incorporated into the Gordon Parent Education Infant and Toddler Program—Infant Stimulation Through Parent Education (PEP), Early Child Stimulation Through Parent Education (PEP 2), and A Home Learning Center Approach to Early Stimulation (HLC).

The projects were conducted in a twelve-county area in north central Florida. About half of the families lived in Gainesville while the remainder lived in rural settings or very small communities.

The criteria for inclusion in the study were that the family was classified as "indigent" on hospital records, there was no history of mental illness or retardation in
the mother and it was a single birth with neither breech nor Caesarean delivery nor major complications to either infant or mother.

The first sample, consisting of 206 mothers and infants born between June 1966 and January 1967, was named the pilot group. Another sample of 131 consisted of infants born between June 1967 and September 1967 and their mothers. These two samples were referred to as the original sample, with a total size of 337; 80 percent black and 20 percent white families. By the time of the follow-up study, 90 percent of the sample were black and 10 percent were white because some whites dropped out of the program. So much attrition had occurred in the program, that by the time the children were eleven years of age, the total number remaining was ninety-nine.

The core of the treatment was a weekly home visit with the mother and her infant by a paraprofessional educator. During the visit the mother was taught an activity that she was expected to do during the week with her infant. Gordon and others designed their own basic curriculum based on Piaget's theory of cognitive development, ideas from laboratory studies with children, and scales of infant development by Bayley, Gesell and Cattell. The activities developed were later published in Child Learning through Child Play (1972) and Baby Learning through Baby Play (1970).
Parents were recruited to be the parent educators, or paraprofessionals. They were trained for five weeks before the program began. Once the project began, the paraprofessionals began to attend weekly inservice training for the duration of the program. Ten families were assigned to each parent educator. They visited each family once a week to teach the mother a learning activity. The paraprofessionals met with their supervisors once a week to discuss cases and select the next week's activities for each case.

The mothers and their children were evaluated both during and after the intervention phase of the program. Testing and interviews were done annually during the program for purposes of summative evaluation. Children were evaluated weekly by the parent educator. The Griffiths Scale, the Bayley Scales of Infant Development, the Stanford-Binet, and the Wechsler Intelligence Scale for Children were the tools used to evaluate the children throughout the course of the project. Once children entered public school, standardized achievement tests (the Metropolitan Achievement Test, the Comprehensive Test of Basic Skills, and the Stanford Achievement Test) were also administered. The Classroom Behavior Inventory was completed by the teachers of the project when the subjects were eight years old. The mothers were evaluated using
Gordon's *How I See Myself* Scale and the Social Reaction Inventory, and the home environment was evaluated by the paraprofessionals using the Home Environment Review. Training and qualified graduate students conducted the intelligence tests.

The effects on the children and mothers who participated in the Gordon study are as follows. The intelligence tests administered among the groups for the first two testings at ages one and two showed no significant differences. By the time the Binet test was used when the children were three years old, differences were apparent between treatment and control groups. The differences favored children who had been in the treatment for all three years, two consecutive years, or the third year only. These differences were maintained until the children reached ten years of age. The longitudinal children scored the highest, the Home Learning Center children the second highest, and the controls, third. Tests seemed to indicate that the longer the intervention, the more the IQ is effected. Similar conclusions were drawn regarding achievement tests and special education placement. The socioemotional and personality data relating to the mothers and children did not show such differences. Even when there were some small differences between treatment and control mothers during the intervention, wherever these differences occurred they faded
shortly after the intervention ceased. Intervention into the lives of disadvantaged infants results in reliable performance for as long as eight years after the intervention (6, 9, 10, 17).

A Comparison of Five Approaches for Educating Young Children from Low-Income Homes 1965-1980

The researchers were Merle B. Karnes, Allan M. Shwedel, and Mark B. Williams, all of the University of Illinois, Urbana Campus.

The purposes were (1) to determine the extent to which each of the five preschool programs prepared young disadvantaged children for public school, and (2) to determine which of the five programs' approach best accomplished the task of preparing disadvantaged youths for public school.

The study began in 1965 and was conducted in Champaign-Urbana, Illinois. Of the children in the study, 67 percent were black and 33 percent were white. There was no control group for this study; only experimental children were enrolled in one of the five types of preschool: (1) Traditional Nursery School Program, (2) Community-Integrated Program, (3) Montessori Program, (4) Ameliorative Program, and (5) Direct-Verbal Program. Both the Ameliorative Program, developed by Karnes and her associates, and the Direct-Verbal Program were highly structured programs.
The criteria for enrollment were that the families had to be judged economically deprived by public aid, the children had to be four years old by the first of December to ensure that they would be eligible for kindergarten the following year and they must not have attended a preschool previously. Final eligibility was determined on the basis of detailed home interviews on family background.

Children were recruited in two waves. Wave I children were enrolled in the 1965-1966 school year, and Wave II children were enrolled in 1966-1967. All eligible children were administered the Stanford-Binet Intelligence Scale. On the basis of these IQ scores they were then stratified into three groups (high, middle, and low). Class units of fifteen subjects each were then constituted. Each group was comprised of five subjects (one-third) from each of the three IQ strata, and class units were, therefore, comparable in terms of mean IQ. Units also contained comparable race and sex distributions—approximately 67 percent black and 33 percent white, and approximately 50 percent male and 50 percent female. Each class unit was then randomly assigned to one of the five interventions for one year. In 1979, Karnes and her associates decided to constitute a post hoc no-treatment comparison group using a method devised to minimize experimental bias. Fifty-eight subjects were deemed eligible. Data collection
revealed that a number of the fifty-eight subjects had to be disqualified. A total of twenty-four remained in the control group.

Data were collected in three major phases. During Phase One, data were collected from kindergarten through fourth grade (1966-1971). The Stanford-Binet Intelligence Scale, Illinois Test of Psycholinguistic Abilities, Metropolitan School Readiness Test and the California Achievement Test were administered by public school psychologists at the end of kindergarten, first grade, and second grade. Wave I subjects were also tested at the end of third grade. The Frostig Developmental Test of Visual Perception was administered during and after the preschool year.

Phase Two included data collected from 1976 to 1978. Almost 75 percent of the subjects were located for Phase Two. The following tests were administered in several stages over the two-year period: Parent Interview; Youth Interview; School Record Form, all designed by the staff of the Consortium for Longitudinal Studies; Wechsler Intelligence Scale for Children; Stanford-Binet Intelligence Scale; Comprehensive Test of Basic Skills; Locus of Control; and the "Arousal Seeking Tendency Instrument."

Phase Three represented data collected in 1979 through 1980. During this phase, the newly formed control groups'
data were collected using the 1979 Youth Interview and the 1979 School Data Form, designed by the Consortium. The new control group was also administered the Wechsler Adult Intelligence Scale. All subjects were paid for interviews and tests.

The results of the study are as follows. Children of varying intellectual abilities from low-income families profited markedly during the time they were enrolled in a preschool program. The largest gains in intellectual and verbal functioning were observed among children who participated in the Ameliorative and Direct-Verbal Programs, with similar but smaller gains for children in the Traditional Program. Gains in intellectual functioning were also observed among those children in the Montessori and Community-Integrated Programs, but gains in verbal functioning were not observed.

After children from the five preschool groups entered primary school, gains in general intellectual and academic functioning began to wear off. By third grade, IQ scores were declining for all five groups, and a reading achievement test showed that only the group which had been enrolled in the Ameliorative preschool was at grade level and two groups (Direct-Verbal and Traditional) were already reading below grade level. By the end of second grade, IQ differences among the five preschool groups were no longer
statistically significant. By the time the students graduated from high school, marked differences among the groups were no longer apparent. Children from the Montessori, Ameliorative and Traditional Programs performed the best in school. Background variables such as sex, preschool IQ, and parents' educational level exerted a small but lasting influence on school achievement. The data did not specify conclusively which aspects of a preschool program are critical for long-term success. Karnes and others concluded that one year of preschool is not enough to ensure high levels of school success over time among children from low-income families, however the participants who attended one of the five quality preschool programs tended to perform in school at a slightly higher level than those who never had the opportunity to attend (2, 6, 17).

The Louisville Experiment: A Comparison of Four Programs 1968-1982

The researchers for the Louisville experiment were Louise B. Miller and Rondeall P. Bizzell of the University of Louisville.

The purposes were (1) to determine whether and in what respects the four programs would actually have different characteristics when classroom events were closely monitored during implementation, (2) to determine whether the
four programs would have different effects on the children at the end of the implementation year, i.e., whether the goals of the more academic programs would be accomplished in IQ and achievement and those with broader goals would be reached in areas such as motivation and classroom behavior, and (3) to determine whether achievement in later years would be best predicted by early academic success or by the early acceleration of other types of development, such as attitudes and non-academic characteristics.

The four experimental programs (Bereiter-Engelmann, DARCEE, Montessori and Traditional) were implemented within the ongoing Louisville Head Start program. The areas of the city used for the experiment were largely populated by blacks, and were areas where unemployment was high, income was low and housing ranged from fair to substandard. These areas provided most of the dropouts in the city schools.

There were 214 children enrolled in the four experimental programs during the 1968-1969 school year--100 males and 114 females. Sixty-four children were enrolled in the Bereiter-Engelmann program, thirty-three in the Montessori program, sixty-four in the DARCEE program, and fifty-three in the Traditional program. About half of the children's families were on welfare. Fathers were living in 39 percent of the households. Most families lived on approximately three thousand dollars per year and 90 percent were black.
During the kindergarten year, some of the experimental children attended a follow-through program called Work-Spend. The remainder of the experimental children attended regular kindergarten.

The thirty-four children, eighteen males and sixteen females, were similar in demographic characteristics to the experimental group with the exception of two factors--more children in the control group had both parents living in the household and more were white.

During the 1968-1969 school year, the 214 experimental children were enrolled randomly in one of the 4 experimental programs within the Louisville Head Start program. Two of the programs were small group programs that used didactic methods to develop foundational skills necessary for school, Bereiter-Engelmann and Darcee. The content was academic.

The Montessori and Traditional programs were oriented toward long-term development and did not involve group instruction. The Montessori program was more structured than the Traditional program, which emphasized social and emotional development. The Montessori program was also more cognitively-oriented than the Traditional one.

All but two of the teachers were regular Head Start teachers. The two Montessori teachers were imported from Fairleigh Dickinson University. All teachers attended program training the summer before the experiment began and
all fourteen remained with the program for the entire school year.

Data collection from prekindergarten through second grade (1968-1972) consisted of five ten-minute videotapes which were obtained on each teacher throughout the year. At the end of the school year, the tapes were analyzed using the Bales instrument which categorized all teacher behavior during teacher-child interaction. There were also five sessions of two hours each in each class during the year of videotaping in order to assess the group.

During the preschool year the Stanford-Binet, the Preschool Inventory, the Cincinnati Autonomy Test, the Behavior Inventory and the Early Childhood Embedded Figures Test were administered to the children. A sample of six children from each class was also given an arithmetic test designed for the Bereiter-Engelmann Program (B-E), the Basic Concept Inventory, also designed for the B-E program and a test named the Parallel Sentence Production. All tests except the Preschool Inventory were readministered each year through second grade. Achievement tests were given in kindergarten (Metropolitan Readiness Test) and in first and second grades (California Achievement Test). All tests were administered by research staff, advanced graduate students, and psychologists, with the exception of the Behavior Inventory which was completed by classroom teachers and aides.
Data were later collected from the subjects between the sixth and eighth grades (1976-on). Instruments used in the follow-up from 1976 onward were selected by the Consortium. IQ testing was done (alternating use of the Wechsler Intelligence Scales for Children (WISC) and the Stanford-Binet each year) in addition to data collection regarding the students and their families, school achievement, grades, retentions and assignment to special education.

The results during prekindergarten were as follows. The four programs did differ in a number of ways in actual classroom behavior of both teachers and children. In respect to classroom structure, two treatments emerged; one was teacher-directed, fast-paced and group-oriented (B-E and DARCEE), and the other was child-centered, slow-paced and individualized (Montessori and Traditional). As a whole, the experimental children were higher on the Stanford-Binet, Preschool Inventory, persistence and curiosity than controls. Experimentals improved more on Preschool Inventory (achievement) and on curiosity. Females were higher on the Stanford-Binet while males were higher on curiosity and they improved more on the Cincinnati Autonomy Test Battery. The B-E and DARCEE programs improved performance in academic areas, DARCEE also effected motivational measures; Montessori improved inventiveness and curiosity; and Traditional program children were high in verbal-social participation.
The results during kindergarten were as follows. Most children who entered the Word-Spend Follow-Through program continued in this program through grade three. Work-Spend children scored higher on the Metropolitan. B-E children were the most adversely affected by going into regular kindergarten while the DARCEE children were the least affected. IQs had declined in all programs, but more steeply in B-E.

Results at the end of first grade indicated that the experimentals were still superior to controls on achievement (California Achievement Test) and the Work-Spend group's achievement tests were no longer significantly superior to experimentals.

At the end of second grade, all experimentals were below national norms on achievement. Over the four-year period, IQ declined in all groups, but the decline was steeper for B-E children and for females in the four program groups.

Results of testing between the sixth and eighth grades indicated no significant differences between program and control children on either IQ or achievement except for one mathematics achievement subtest in seventh grade on which controls were higher. In both seventh and eighth grades only a very small number of the experimentals (18 percent) were at or above the national norm's fiftieth
percentile. Almost half of those who were achieving in the middle school were from the Montessori preschool program. Females were generally superior to males on the Stanford Achievement Test battery. Overall, the Montessori program seemed to produce the greatest long-term effects; didactic (Bereiter-Engelmann) instruction proved to be the least effective in determining school success (2, 6, 17, 19, 20, 21).

The Harlem Study: Effects by Type of Training, Age of Training, and Social Class (1964-1977)

The researcher for the Harlem study was Francis H. Palmer, with the Academy of Senior Professionals at Eckerd College.

The purposes of Palmer's study were (1) to determine whether one early intervention program had durable effects on subsequent school performance, (2) to determine if minimal intervention (two hours weekly) would have durable effects, and (3) to determine whether intervention at age two was more effective than at age three and whether effects were more discernible among lower-class children than middle-class children.

Harlem, New York, was the site for the Harlem Training Center. The potential subject pool was formed from birth records meeting the following criteria: both parents black, birth weight over five pounds, not a multiple birth,
mother's age between fifteen and forty-five, mother not a drug addict nor in advanced state of syphilis, no indication of abnormality in child at birth, and residing at birth north of Eightieth Street in Manhattan. After conducting interviews and initial assessments, three subsamples emerged: the Alpha group consisted of sixty lower-class and sixty middle-class three-year-olds and the Beta group consisted of thirty lower-class and thirty middle-class two-year-olds. The Alphas were then split into two groups: the "Training" group and the "Discovery" group. Thirty middle-class and thirty lower-class two-year-old children became the treatment group or the concept "Training" group, and thirty middle-class and thirty lower-class two-year-old children were placed in the Participating Control ("Discovery") group. Thirty middle-class and thirty lower-class two-year-old children were placed in the nonparticipating control group. Sixty three-year-old children (thirty each middle-class and lower-class) were also placed in the concept "Training" group. Sixty three-year-old children (thirty each middle-class and lower-class) were placed in the "Discovery" (participating) control group. The sixty two-year-old children served as controls for the three-year-old group as well. In total, there were 120 concept "Training" (treatment) children, 120 "Discovery" (participating) controls and 60 nonparticipating controls, equalling
240 subjects. Only male subjects were used in this study.

Palmer states,

In general, girls in elementary schools have higher IQs and higher reading and arithmetic achievement scores. To include both sexes would introduce another variable in the research design. . . . In Harlem, boys do not do as well as girls and get into more trouble. For that reason, boys were studied rather than girls (6, p. 207).

The sixty two year olds and the sixty three year olds enrolled in the concept Training group, taught two hours per week for fifty minutes over seven months of instruction, received instruction based on a curriculum devised to teach specific concepts using specific procedures. The two year olds received their instruction in 1966, the threes in 1967.

The sixty two-year-old children and the sixty three-year-old children enrolled in the participating control group attended the center with identical schedules, procedures, and staff but were not exposed to the concept Training curriculum.

The sixty non-participating two year olds, obviously, did not participate in either program described above.

Data were collected from 1966 to 1969 using a total of twenty-one assessment tools; some standardized tools, some borrowed, some comprised of a combination of elements of existing measures, and some were devised by the staff. Tests were administered at ages 2 years 0 months, at 2
years 8 months to 3 years 0 months; at 3 years 8 months and again at 4 years 8 months.

Additional data were collected between 1973 and 1978 during the subjects' elementary school years. The Harlem project lost funding when the subjects were five years old and received none until 1975 when it obtained a grant. Even so, data collection for grades three and four was limited. In 1975, central records of the school system were obtained for all fifth-grade students and those who had been retained in fourth grade. The subjects were then contacted and paid ten dollars each for reporting to the Harlem Research Center, taking the Wechsler Intelligence Scale for Children and for being interviewed. Sufficient funds were not available to test the entire sample of subjects ages ten and twelve.

The Harlem study's results indicate that two types of training at age two and three produced significant effects on subsequent arithmetic, reading and IQ scores and on being retained in a grade. The two treatments, concept Training and Discovery, did not have consistent differential effects. The concept Training curriculum was more strongly related to avoiding retention in a grade by grade nine, but both treatments were effective toward that end. Age of training made no discernible difference in the Harlem study either. The author concludes that the age of treatment is
not as important as the level of development of the child. Some children respond to treatment best at age two, but some are more responsive at age three. The key is to find the best program for the child at the right developmental stage (i.e., J. McVicker Hunt's "problem of the match").

The Harlem study does show that minimal intervention can produce durable effects. Palmer notes that the effects are not only durable, but as widespread and significant as other Consortium studies which have provided many more hours of intervention. Of the programs in the Consortium, the Harlem study had significantly less parental input-involvement than the average program, but its effects were as positive as the other programs (6, 12, 14, 17).

The Mother-Child Home Program of the Verbal Interaction Project 1967-1987

The researchers were Phyllis Levenstein, John O'Hara, and John Madden of Adelphi University.

The purposes were (1) to guide parents to help children escape the adult consequences of poverty by preparing them to utilize fully the valuable resource of public education and (2) to test the Mother-Child Home Program's effectiveness in preventing school disadvantage.

The Verbal Interaction Project (VIP) is located in Nassau County, a Long Island suburb of New York. Nassau County is one of the wealthiest counties in the country.
Located within the county were pockets of poverty where many families lived at or below the poverty level.

Criteria for sample selection were (1) eligibility for low-income housing, (2) residence in rented housing, (3) occupation less than skilled, (4) neither parent with an education above high school, and (5) child's testability in English. Most participants were black, reflecting black overrepresentation in these poverty areas.

The Mother-Child Home Program (MCHP) was piloted from 1965 to 1966 with twelve subjects showing positive verbal effects. Under the direction of VIP, the first full study of the MCHP began in 1967. It continued for twelve years with a total of 653 mother-child dyads. The first six of the ten cohorts (1967-1972) were in a quasi-experimental research design. The subsequent four cohorts (1973-1976) were in true experimental research designs in which individual dyads were randomly assigned to treatment variations. The children were between two and four years of age during treatment.

The MCHP was based in the child's home, with twice-weekly, half-hour home sessions over two school years. The number of sessions was geared to the mother's needs, with a maximum of forty-six sessions per year. Home visitors ("Toy Demonstrators") were specifically trained to conduct weekly or semiweekly home play sessions with mother and
toddler around gifts of toys and books named Verbal Interaction Stimulus Materials (VISM). The method avoided didactic, intrusive instruction and aimed to foster the child's intellectual ability to deal with later academic tasks, while strengthening family relationships.

There were two treatment variations, one-year groups, and two-year treatment groups, and a comparison control group. Three groups which entered in 1967 received one year of treatment. Three groups, entering in 1968 through 1970 received two years of treatment and the comparison groups--two groups recruited in 1967 and one in 1970--received no treatment.

The children were pretested at approximately two years of age, again at four years of age upon program completion and again in a follow-up test at age eight, when in grade three. All mothers were pretested through an interview to acquire demographic information. VIP devised an interview form for this purpose. The Cattell Infant Scale of Intelligence and the Peabody Picture Vocabulary Test (PPVT) were administered to the children.

At age four the Stanford-Binet was administered to the children and the PPVT IQ was also obtained. Parental skills of the mothers were rated using the Maternal Interactive Behavior Scale (MIB). The MIB was developed at the VIP. Videotaping was also done at the project office as part of the posttesting procedure.
At the third-grade follow-up, the Wechsler Intelligence Scale for Children (WISC), the Wide Range Achievement Test (WRAT), a VIP-designed instrument, and the Child Behavior Traits (CBT) were administered to the children. Data were collected by VIP staff, in the dyad's home or by the child's teacher at school.

Test results indicated that mathematics and reading achievement scores were related to the amount of treatment received--those with one year of treatment scored sixty-three points higher than the control group on the WRAT, and those with two years of treatment scored 9.75 points higher than the control group on the same measure. Advancement in grades and teachers' judgement regarding the presence of severe academic problems were also related to participation in MCHP. The results are statistically and educationally significant in the measures of one of the program's original goals, that of reducing school disadvantage.

At grade three, the IQ scores of the control and the treatment groups were not significantly different. The results do indicate that IQ differences at age four predicted achievement test differences and, probably, better performance in school at age eight; according to both teachers' and administrative criteria. Again, the data provide direct evidence of success in meeting aims of reduction of school disadvantage.
The MCHP can be reliably provided as a coherent, inexpensive, minimal intervention program in a wide variety of settings and across an extended period of time, according to the researchers (6, 17, 18).


The researcher was Myron Wollman, with the Institute of Educational Research in Washington, D.C.

His purposes were (1) to determine if socially and environmentally disadvantaged children with severe English language deficits (but no neurological defects) who experienced the Micro-Social Learning Environment for an average of twenty-four months for 2.5 hours per day would perform as well in elementary school as the general population of children in the school system; (2) to assess gains of children with experience in the Micro-Social Learning Environment on standardized tests such as the Wechsler Intelligence Scale for Children, the Peabody Picture Vocabulary Test, and the Goodenough Intelligence Test; and (3) to help children develop the language base, reading skills and social behavior required to meet teacher and curricular expectations required for success in the typical first grade. These were (a) the knowledge of 2,000 words in seven language areas, (b) the ability to read 300 words, (c) the ability to interact with others easily and naturally
as a subordinate, peer, and superordinate, and (d) the ability to maintain progress and restrain impulsive behaviors and aggression in the face of barriers to achievement.

The Micro-Social Learning Environment (MSLE) study was conducted in Vineland, New Jersey. The criteria for selection were: (1) children of parents classified as migrant workers, (2) children should be free of known neurological or sensory defects, and (3) children should be at least thirty-six months of age. Of the initial 135 children in the MSLE, 123 (91 percent) were in a low-socioeconomic level and of these, 66 families (54 percent) were on welfare. Twelve of the children enrolled were from middle-income families with mean yearly income of $10,141.00. The mean yearly income for the 123 migrant families was $4,997.00. More than half of the children spoke Spanish as their primary language and 55 percent of the children could not speak English at all. There was no equivalent control group. It was decided to compare program children with the general school population.

For this study, an abandoned supermarket was converted into three classrooms, a playroom and administrative offices. Each classroom was divided into two parts, the Modular Learning area and the Life Simulator area. The classrooms were also equipped with one-way mirrors and microphones to allow observation by parents and staff.
The program was scheduled for twelve months per year. Each classroom held thirty children and was used for two classes per day of 2.5 hours each. A twenty-minute snack break was built into each 2.5 hour session.

Four teachers rotated responsibilities every two months; three of them taught at a time and the fourth served as Center Administrator. A Staff Training Guide as well as in-service training were provided to all teachers.

Parents were expected to participate as a parent aide one day per month. They were encouraged to observe at any time and to attend school meetings.

The curriculum was divided into four skill "pools"—the Behavior Pool, the Speech Pool, the Reading Pool, and the Related Content Pool. The behavior, speech and reading skills were developed in the Modular area via workbooks and paired-partner learning. As children completed their workbooks at one module, they moved to the next. The movement in space was a socially visible sign of progress.

The Life Simulator area was designed for more active learning. It was supplied with games, toys, art materials and dramatic play materials. Its purpose was to provide three-dimensional objects, as opposed to pencil-paper activities in the Modular area, which would increase the realism of language.

The MSLE was, in essence, a life simulation approach adapted to the preschool environment and designed to
ensure that children from lower socioeconomic backgrounds learned, in a stage-by-stage fashion, the language, behavioral control, social interaction skills, and motivation to meet the standards of the typical first-grade classroom.

Evaluation data were collected in three phases: (1) preprogram; (2) during the program; and (3) the 1976 follow-up, when most of the subjects were in the fifth or sixth grade. Five types of data were collected: standardized test data (WISC, PPVT, Goodenough Intelligence Test and the Learning Effectiveness Scale); school competence data; parental evaluations, teacher evaluations and professional educator evaluations.

After eight months in the program, the results of three standard criterion measures (WISC, PPVT, and the Goodenough) indicated that children obtained substantial and statistically significant gains. Data obtained from the school system after the MSLE study was completed showed no significant difference in the rates of retention between participants and their peers in the public school. When comparing only Hispanic-surnamed children in the school system with the MSLE participants, 62 percent of the former had been retained whereas only 32.8 percent of the MSLE participants had been retained in a grade.

Woolman concludes that (1) the MSLE children showed significant gains in standard tests of language and
intelligence, (2) the MSLE children progressed through the school system as well as the general population of children, and (3) the Hispanic children with Micro-Social experience performed significantly better in school than Hispanic children lacking MSLE experience (6, 17).


The researchers were Victoria Seitz, Nancy H. Apfel, Laurie K. Rosenbaum and Edward Zigler, of Yale University.

Project Follow Through was implemented in 1967 and was designed to continue where Project Head Start ended. Early results from Head Start showed a decline in IQ after intervention. Studies indicated that disadvantaged children needed more than one or two years in Head Start. They needed continual support into elementary school. Thus, Follow Through programs were made available for disadvantaged children from kindergarten through the third grade.

The purpose of this particular Follow Through study, the New Haven Study, was to evaluate the long-term (post-program) effects of the program on the children who attended it.

This study, which began in 1967, was conducted in New Haven and Hamden, Connecticut. The study can be regarded as two studies with similar methodology but somewhat different samples. Wave I had sixty-eight children
attending Follow Through (FT) kindergartens and seventy-two children attending regular non-Follow Through (NFT) kindergarten. All the children lived in New Haven and were either from economically disadvantaged families—defined as follows: (1) lived in low-income housing, (2) parents had no more than a high school education, and (3) parents were employed as semiskilled or unskilled workers, or were unemployed—or from middle- and upper middle-class families who resided in suburban areas near New Haven. Approximately half of the children were from disadvantaged homes, the other half from advantaged homes. Wave II children met the same criteria as the children in Wave I. The initial sample consisted of sixty-five low-income children attending FT kindergarten. The difference between the two waves was that with Wave I, data collection at grade three did not include data on children who had been retained in kindergarten, first or second grades. Wave II collected data on all children (FT and NFT) who were third grade-age, whether they were actually in the third grade or not. Additional control groups (NFT) were sought for third-grade data collection for both Waves I and II. The NFT children were recruited from other New Haven and Hamden elementary schools.

The Follow Through program was conducted by the schools of New Haven and Hamden, Connecticut, and was
physically located in a school in Hamden. The curriculum and guiding philosophy were selected following consultation with parents and was based on an educational model identified with the Bank Street College of Education. The FT classes were composed of no more than twenty children with at least two full-time staff, head teacher and assistant teacher, so that the staff-child ratio was no larger than one-to-ten.

The features that most markedly distinguished the FT program from the programs in NFT schools were the emphasis on social-emotional development, the individualized rather than group-oriented approach, and the emphasis on learning how to learn through concept mastery. It should also be noted that all children were bussed in for the FT program.

Intelligence and achievement tests were administered to both Follow Through and non-Follow Through children of Wave I until the end of grade three. Subsequent testing was done at grades six, eight, ten, and twelve. In twelfth grade, the children were also interviewed and their school records were examined.

Wave II children were also tested during their attendance at Follow Through. They received follow-up testing at the third, fourth, fifth, seventh, and ninth grades. At the eleventh grade, the FT and NFT children were interviewed and their school records were examined. At the
time this was reported, in 1983, the Wave II children were in the twelfth grade and the authors were in the process of obtaining their twelfth-grade performance records.

Results of the Follow Through study indicate that an extensive period of school-based intervention during the child's first few years of school can have measurable lasting effects for at least some groups of children. For Wave I boys and Wave II girls, general information scores were significantly higher for FT children than for NFT children several years after intervention have been completed. The Wave II girls also showed lasting effects of the early program on their mathematics achievement for at least six years after leaving Follow Through.

A consistent finding in both waves was that the FT group whose scores were superior to those of their NFT controls revealed their superiority in the areas of mathematics, general information and the Peabody Picture Vocabulary Test.

The results of this study do not indicate a "fade-out" of Follow Through effects on general information six to seven years after intervention. "Fade-out," particularly on IQ results, is a problem most longitudinal studies dealing with disadvantaged preschoolers have had to face.

At the time this study was reported in the larger Consortium for Longitudinal Studies Report, the data were
still being gathered for Wave II. Plans were to analyze the results and to look at other variables (i.e., teenage pregnancy, career plans, delinquency and other social competencies) to truly assess the results of both Head Start and Follow Through on the lives of the disadvantaged youth in this particular study (5, 6, 17, 25, 27).


The researchers for the Philadelphia Study were E. Kuno Beller of Freie Universität Berlin, Federal Republic of Germany with Robert Davis, Bonny Fatell, David Graham, John McNichols, Sidonia Roy and Marcene Root.

The purposes of the study were (1) to assess the impact of preschool on socioemotional developments of subjects and (2) to determine which children benefit in what way from more or less preschool experience.

The Philadelphia Study was begun, in 1963, in an urban slum area of North Philadelphia. The criteria used to identify eligible children were children born in 1959 (between the ages of 3 years 7 months, and 4 years 6 months); and children without serious mental or physical handicaps. Four schools in North Philadelphia opened a nursery program for fifteen four-year-old children each. The sixty children were randomly selected for enrollment. Ninety percent
of the children were black and all came from low-income families. When the nursery group went to kindergarten the next fall, there were fifty-six of the original sixty remaining. The formation of a kindergarten control group was necessary to compare the non-nursery group to those who had been in the nursery group. The kindergarten or non-nursery group was composed of fifty-three children with similar demographic backgrounds.

Since kindergarten was not compensatory at that time, only approximately 40 percent of the Philadelphia families sent their children to kindergarten. Therefore, when the original nursery children entered first grade, another control group emerged--fifty-two children who had not attended the nursery program or kindergarten. At the end of first grade, there was a total of 163 study participants. This "original sample" included the nursery treatment group and the two control groups.

Three intelligence tests were administered to the children at the time of entry into the study--nursery, kindergarten or first grade. They were the Stanford-Binet, the Peabody Picture Vocabulary, and the Goodenough Draw-A-Man tests. Results showed no significant IQ differences among the three groups when each began its school experience. Demographic data were collected via interviews at the beginning of the program and were updated in 1976.
In 1975, after joining the Consortium for Longitudinal Studies, attempts were made to contact original participants. For the 1976 follow-up, the researchers were able to collect complete data on 107 of the original participants. For the 1977 follow-up, data for 117 participants were collected. Eighty percent of the original three groups (after the first grade) were located, but only 72 percent were able to be used for follow-up of attrition and lack of complete school records.

The nursery program was concerned with fostering the children's curiosity for discovery, stressing personalized handling of children by teachers and gearing to meet each individual's readiness needs. The content of the program concentrated on language, auditory and visual discrimination, listening and paying attention, conceptualizing, gaining information about their environment, motor coordination and control, and self-esteem. The program was child-centered.

Classes operated four days a week. On the fifth day, the teachers were engaged in in-service training, making home visits, and working closely with parents, home-school coordinators, the social worker, and other school personnel. Each nursery classroom had one head teacher and one assistant teacher, both with college degrees. The head teachers also had previous early childhood teaching experience, but the assistant teachers did not.
A social worker and four home-school coordinators were employed to offer social service to the parents and children. A health program was instituted to secure physical examinations, immunizations, and treatment.

The philosophy of the kindergarten program was the same as that of the nursery program. However, the teacher-child ratio increased from one-to-fifteen to one-to-twenty-five and the program was conducted five days a week for four hours a day.

The first-grade classrooms were regular formal schooling programs. There tended to be less individualized, need-oriented teaching and more group teaching; that is, more achievement- and product-oriented.

The three aptitude or intelligence tests, the Stanford-Binet, PPVT and the Goodenough, were administered annually from the time of project entry through the fourth grade. To assess achievement, class records were collected each year which included teacher comments, grades, and other information. "Attitude" and "motivation" were assessed by the child's classroom teacher at the end of the first and second grades.

A major and unique aspect of the Philadelphia study was the assessment of effects of preschool on social, motivational and emotional development.

In the fourth and tenth grades, the Piers-Harris Self-Concept Scales were administered to participants.
In the eleventh grade, the Career Maturity Inventory Attitude Scale was administered.

Piaget's moral dilemma stories were used in the fourth and tenth grades to assess the participants' moral reasoning abilities and moral judgement.

The preschool effect on motivation was assessed in the first grade and again toward the end of high school via a selected series of motivational variables which were studied and discussed. The participants were then interviewed and observed to ascertain levels of motivation. The Jackson Personality Research Form was also used in the high school motivation assessment.

Ego development was measured in the eleventh grade by means of the Loevinger Sentence Completion Test. The instrument used to assess a specific ego function was Kagen's Matching Familiar Figures Test. It was administered in the fourth and eleventh grades.

Results indicated that intellectual aptitude, assessed annually from preschool to the fourth grade, was significantly affected by length of preschool up to the last assessment--the earlier they entered, the greater the results.

The effects of preschool experience were substantially greater on girls than on boys in most areas investigated. Length of preschool had significant effects on school grades...
for girls from first to fourth grade. None of the effects of preschool on the self-concept of boys reached significance. Preschool tended to raise nurturance and achievement significantly in girls but not in boys.

The impact of preschool on the development of moral judgement generally was sustained by the intactness of the family and the employment of parents, but was less apparent in children of unemployed or single parents.

Positive effects of teacher comments on the child's academic progress from first to eleventh grade were marginally significant for children with longer preschool.

The relationship between preschool experience and less retention in a grade reached significance among children with employed parents.

With regard to intellectual aptitudes and academic achievement, the findings of this study are similar to others in the Consortium for Longitudinal Studies.

The IDS Program: An Experiment in Early and Sustained Enrichment 1961-1981

The researchers were Martin Deutsch, Cynthia P. Duetsch, Theresa J. Jordan and Richard Grallo of the University of New York.

The purpose of the study was to determine if early, sustained, and systematic intervention can exert a positive influence on the growth of school-related skills and attributes.
The children described in this study attended the Institute for Developmental Studies (IDS) early enrichment classes in Central and East Harlem, New York. The enrichment program, established in 1961, was the forerunner of what later became the national Head Start effort and a pilot program for Follow Through. Over the course of its seven-year duration, it served 1,200 children as well as their parents and teachers. It addressed the cognitive growth and social-emotional adjustment of minority children from poverty backgrounds. It was implemented in New York's Harlem community and extended beyond the school setting into homes and neighborhood centers.

The IDS program involved both male and female black children ranging in age from four to nine years. Both experimental and control or comparison participants were from low-socioeconomic backgrounds.

Each year, a new pool of participants was formed. From this pool, children were randomly selected and assigned to experimental and control groups. The following criteria had to be met: (1) the child met the New York age requirement for entrance to public school kindergarten the following September (four years old); (2) the parent had to assume responsibility for bringing the child to school; (3) both parents and the child were English-speaking; (4) the child was in good health, exhibiting no abnormalities;
(5) the child had no severe emotional or behavioral problems that could be detected at the time of observation; and (6) the child was in the low-socioeconomic classification as defined by the institute's SES scale.

The experimental group was randomly selected and given enriched schooling from prekindergarten through third grade. The control group first encountered formal schooling in kindergarten or, in some cases, first grade. At various points during the program, other sets of comparison groups were formed. They were not recruited, but simply began school when a corresponding experimental and self-selected, original control group was entering the same grade level.

The first "wave" of experimental children was admitted to the IDS prekindergarten classes in 1963. Starting in September of 1963, and in each successive Autumn for seven years, a new group or "wave" began the enrichment program. Normally, each IDS prekindergarten class began with seventeen children.

The IDS early enrichment program was designed to address four critical need areas of success: perceptual discrimination, language proficiency, mastery of key concepts on which later learning was predicated, and development of a positive self-concept. The curriculum was child-centered and individualized. Child abilities were matched with method of instruction.
The IDS staff consisted of teachers, assistant teachers, curriculum specialists, and supervisors whose work was coordinated by a curriculum director. On-going inservice training for all staff was provided.

Parents were involved in the program via home visits. The Parent Center, staffed by IDS social workers, was also established by IDS in 1966 and assisted parents with problems relating to housing, welfare, health and education.

Throughout the duration of the IDS early enrichment program, a series of cognitive, personality, life experience, and demographic measures were obtained for both the control and the experimental groups. The twenty-one separate assessment tools were used at different times during intervention and follow-up measurements.

During the first five years of the program, yearly measurements of ability and achievement were administered to the IDS participants. Demographic information and indicators of parental expectations were obtained shortly after a child was enrolled. Information on self-perception was collected at several points during the program's duration, but not annually. Trained IDS staff administered all instruments except the Metropolitan Achievement Tests, which were teacher-given.

Three sets of follow-up investigations were conducted in 1976-1978; 1979; and 1980-1981. All follow-up
interviews and tests were conducted on an individual basis at the IDS offices. No group testing procedures were used. Participants received compensation for time spent in research activities, as well as for transportation between home and testing site. Interviews of participants' parents in the 1976-1978 follow-up investigation were conducted by telephone.

Initial program evaluations revealed that experimental children performed significantly better than their comparison counterparts on the following achievement, aptitude and personality measures: Stanford-Binet Intelligence Scale, Peabody Picture Vocabulary Test, Lorge-Thorndike Intelligence Test, Metropolitan Achievement Tests, Reading Prognosis Test, Illinois Test of Psycholinguistic Abilities and the Brown-IDS Self-concept Scale. Repeated administration of the Stanford-Binet and the PPVT provide examples of the marked differences between the experimental and control groups, and the patterns of positive change that characterized the experimental children.

Follow-up investigations conducted in 1976-1978 and in 1979, when most program participants had reached adolescence, affirmed the critical link which exists between early enrichment intervention and various aspects of individual life. Twenty-eight case studies were conducted in 1979 using IDS program participants as subjects.
The case studies were undertaken primarily to investigate further the group findings in the ongoing longitudinal study: to identify and understand individual life courses in the children who had received the intervention. Common themes emerged from the case studies. Participants reported that the church, extended family contacts and long-term parent support groups played a central role in providing support and direction to their families in difficult times. In addition, each participant reported that it was critical that some "encouraging adult" had faith in his or her ability to achieve. This "encouraging adult" was often a teacher who proved to be caring, helpful and involved. Participants also frequently pointed to an academic achievement or school-related event when asked what they were most proud of in their lives. The case study subjects and their parents consistently indicated the importance of information about child development and educational principles that was offered by the early intervention program.

The most recent follow-up conducted in 1980-1981, investigated the issues in psychosocial development as program participants made transitions to adulthood. For example, sex differences began to emerge during the 1981 follow-up, particularly in the area of self-concept. The relation between the scores on a set of self-concept
measures and the participation in the early intervention program remained significant for the boys but not for the girls. The authors hypothesized that the boys were more likely than the girls to receive continued reinforcement for the competencies, curiosity and independence when they moved from the intervention classrooms into the regular classrooms (2, 6, 12, 17).

Research Question 3. What are the effects of the early intervention preschool programs conducted by the Consortium for Longitudinal Studies? Compare the similarities among and differences between the eleven home-based, center-based or combined home-center-based programs.

Although the eleven early intervention studies which comprise the Consortium for Longitudinal Studies are not by any means identical, their primary goals were similar: to enhance the educability of young children, and to provide a definitive answer to the question of whether carefully designed early intervention programs did show measured effects over time.

It can be seen in the eleven previously described Consortium studies that a number of variables affected the long-term effects. The research design, the type of curriculum used, the rate of attrition, the extent to which parents were involved, and the length of the intervention, all were factors in determining the outcome of these early intervention programs.
Those programs which established both experimental and control groups from the beginning of their studies, the Perry Preschool Project, the IDS Program, and the Early Training Project, as examples, were clearly able to obtain more accurate results than those programs which had no control groups as in the Micro-Social Learning Environment study, or programs which tried to add control groups after the study was already underway as in Karnes' Five Approaches study.

The majority of the studies emphasized the importance of well-trained staff and a low staff-child ratio. Various curricula, however, were utilized in the studies, some with greater success than others. Although didactic, teacher-centered, fast-paced, and group-oriented programs such as the Bereiter-Englemann approach were successful as demonstrated by the Karnes and Miller studies, in producing short-term IQ gains, it was found that the child-centered approach to teaching produced the long-term positive effects on the participants. Traditional nursery school and Montessori programs which emphasized self-concept, language, visual and auditory perception, social and emotional development and individualized instruction proved to produce greater results. The High-Scope approach used by the Perry Preschool Project is an example of a child-initiated curriculum.
The attrition rate was another factor which affected the data collection efforts of the various programs. The Perry Preschool Project experienced the least attrition, providing the researchers with the most accurate information possible. The researchers maintained contact with 100 percent of their original participants through 1980. The Gordon-Jester project was most affected by attrition. In the 1976 follow-up, the researchers were able to contact 34 percent of their original subjects. By 1980, only 31 percent of the original participants could be reached for follow-up testing (6, p. 418).

The length of intervention also appeared to play an important part in the subjects' IQ gains. The minimum intervention among the studies was one year as in Karnes' Five Approaches study and Miller's Louisville Experiment. Most programs provided two years of preschool intervention as in the Mother-Child Home Program, the Perry Preschool Project and the Early Training Project. Gordon-Jester's Parent Education Infant and Toddler Program which provided two and three years of intervention, indicated that the longer the intervention, the greater the IQ gains. All studies within the Consortium emphasized that it would take more than eight weeks in the summer preceding entrance to elementary school to give disadvantaged preschool-age children a "head start."
The three types of programs utilized within the eleven studies were either (1) home-based, (2) center-based, or (3) combined home-center-based. In all three approaches, the parents of the participants were an integral part of the programs. Whether parents participated once a month at the school as in the Micro-Social Learning approach or were instructed in the home, as in Gordon's Infant and Toddler program or the Mother-Child Verbal Interaction approach, parents were involved in their child's learning. Even in programs where parents were not actually assisting in the classroom or being instructed to teach their infants and toddlers in the home, regular home visits were conducted to assure that there would be adequate communication between the home and the school, as in the Perry Preschool Project, the Early Training Project and the IDS study.

Each study in the Consortium clearly demonstrated positive effects of their program on the participants throughout childhood and the adolescent years. By 1980, the participants of four studies (Beller, Gray, Karnes, Weikart) had reached the age of high school completion (26, p. 138). Some of the researchers will continue to follow their subjects into adulthood. For example, the Perry Preschool program, which is acknowledged as the program which has provided "the most comprehensive data on the
effects of preschool education for low-income children" (13, p. 6), is currently tracking their subjects into adulthood, through age twenty-six (13, p. xiv).

According to the Consortium's principal investigator, Irving Lazar, analyses across the studies indicated the following.

1. Preschool programs increase individual scores on standard intelligence tests, and these increases remain statistically significant for a three- to four-year period after the preschool experience.
2. During most of the elementary school years, arithmetic and reading achievement scores of program graduates are higher than those of controls.
3. Preschool graduates are less likely to be placed in special education or remedial classes than are their controls; they are more likely to meet the ordinary requirements of the schools and to graduate from high school.
4. Preschool graduates have higher self-esteem than their controls. Their parents have higher occupational aspirations for them than do control parents or the children themselves. The program graduates have higher occupational aspirations and expectations than do their controls and these are predictive of their actual attainments.
5. Indirectly, the preschool experience increased labor market participation in late adolescence and the early adult years (6, pp. 461-462).

Beller expressed frustration that "investigators have continued to rely on one or another IQ test coupled with one of the standardized academic achievement tests as their main criteria in the evaluation of early intervention programs." Since the participants in most programs experienced an IQ "fade-out" after third or fourth grade, many of the researchers must have shared his concern. Beller recommends that the investigators "assess attitudes toward learning and
motivation to meet intellectual challenge" instead of relying solely on the intelligence quotient test, to judge effects of the program (6, p. 334). It is clear that even with the drop in IQ after intervention ceases, there continued to be other positive outcomes years after intervention. This "sleeper effect" is well-demonstrated by the four studies whose participants have completed high school—the Weikart, Beller, Karnes and Gray study participants. These children who began preschool "at risk" because of economic and cultural disadvantage, later indicated that their motivation to stay in school and their positive attitude toward school was directly related to their participation in the intervention programs.

Woodhead refers to "a somewhat simplistic, if mysterious, causal pathway between (1) the preschool program, (2) the short-lived cognitive benefits, and (3) the emerging effects on school competence" (26, p. 139). Schweinhart carries this pattern of effects one step further:

The pattern, as we see it, is as follows. Preschool education provides children with a kind of cognitive interaction with their environment which they would not otherwise experience. As a result, they enter school with greater cognitive ability and, from the beginning, they do better in school. They know that their school achievement is greater; those around them know it as well. They are more committed to school and assume a role consistent with their greater school success. Teachers, parents, and peers acknowledge and reinforce this role, and it persists throughout their school careers. Eventually, they reap the rewards of greater commitment and success in school. They are less involved in school discipline problems and delinquent behavior. We predict that they
will have higher educational attainment, find employment in higher-status jobs, and be more productive economically (23, p.5).

Research Question 4. Given the positive long-term effects of quality preschool on the lives of the disadvantaged participants, to what population can we generalize? Are the findings replicable in today's society, or are they based on the social and political milieu of the early and mid-1960s?

Woodhead emphasizes that all the authors of the Consortium studies have stressed limitations on generalizing long-term effects of intervention programs to other populations. He points out that potential benefits cannot necessarily be assumed for today's children, whose circumstances are probably a substantial improvement on those that were typical of America's black urban poor of the early 1960s (26, pp. 142-143).

Gray, of the Early Training Project, supports Woodhead's premise by stating that "on measures we share with the rest of the Consortium, our findings tend to be somewhat similar, which suggests we can generalize cautiously, to populations of low-income young people, largely black, in the eastern part of the country" (11, p. 74).

Schweinhart adds that because our research [Perry Preschool Project] has been widely publicized, people sometimes misapply it for their own purposes. . . . It's been said that our research proves that day care works, but it doesn't show that . . . it shows that day
care--specifically good day care for low income children--can work. The findings can't be
generalized across the board (4, p. 17).

The effectiveness of any intervention program depends
upon such factors as the degree of disadvantage in the
children, the composition of the group, the focus of the
teacher, the style of program (teacher-directed versus
child-initiated) and the cognitive demands of the program.
According to the Consortium for Longitudinal Studies
researchers, a cautious conclusion would be that while
program effectiveness may be linked to a number of variables,
"there do appear to be potential long-term benefits to a
broad range of disadvantaged children, those groups that
are a perennial cause of concern to teachers, parents, and
school systems" (26, pp. 143-144).

That the American public would misuse, misinterpret
and, in effect, overgeneralize the positive effects of early
intervention was a concern of educators and advocates of
young children in the 1960s and remains a concern today.
In the 1960s, Hunt worried that middle-class parents would
see the positive results of the early intervention programs
designed for the low-income disadvantaged population and
use the idea of early education to keep up with the Joneses
through their children. Hunt was also concerned that they
would push their children too hard to learn (12, p. 48).

In 1987, a strong professional advocate, Elkind,
supports Hunt's concerns and points out how theories that
emerged in the 1960s to improve conditions of low-income children have been adopted by middle-class parents and become the rationale for miseducation of many young children today (7, p. 11). He cites programs which promise to teach infants how to read or do mathematics as one example of this miseducation. "Parents . . . believe that their child who is 'reading' flashcards at age two is a budding genius. But they will be disappointed in the end. Unfortunately, making a task easier does not make children brighter" (7, p. 9).

In summary, researchers and educators are cautious to generalize the long-term effects of early intervention programs to populations other than to the disadvantaged, low-income, and often minority, population
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CHAPTER V

SUMMARY, FINDINGS, CONCLUSION, IMPLICATIONS
AND RECOMMENDATIONS

Summary

This study, which was descriptive in nature, was conducted to summarize selected longitudinal research that has been done since the early 1960s regarding early childhood intervention and to determine the effects of these programs on the lives of disadvantaged children. The sociopolitical milieu of the 1960s was examined in order to establish the context in which these early intervention programs were established.

Research and theories which emerged in the 1960s on the development of intelligence, the importance of early education, the impact the environment has on the development of intelligence and the understanding that the IQ is not fixed at birth but is malleable, were summarized.

Those programs selected for evaluation were the eleven studies which comprise the Consortium for Longitudinal Studies. The researcher(s), the site and sample, procedures and results of each study were evaluated and compared. The issue of generalizability of the long-term effects was also examined.
Findings

The following findings result from this study.

1. Government sponsored and experimental early intervention programs were established in the early 1960s during a period of heightened social activism. These preschool programs, created in response to the problems of poverty and cultural disadvantage, sought to enhance the educability of disadvantaged young children so they would enter elementary school on a more equal footing with their middle-class peers.

2. Awareness of early education was heightened during the 1960s as new theories on the development of intelligence emerged: the IQ was no longer thought to be fixed at birth, but was malleable; the environment plays an important role in the development of intelligence; and much learning takes place during infancy and early childhood.

3. Evidence generated from longitudinal studies indicates that early high quality intervention can enhance the educability of disadvantaged children and can also improve the lives of these children and their families.

4. The long-term effects of early intervention programs cannot be generalized to populations other than to the disadvantaged, low-income, and often minority, population.
Conclusion

This conclusion, drawn from the findings of this study, is limited to the studies selected for evaluation, namely the Consortium for Longitudinal Studies.

High quality intervention during the preschool years can have positive, long-term effects on the lives of disadvantaged children. These effects are related not only to IQ gains, but also to motivational and attitudinal changes which occurred in the participants as a result of the intervention. These changes in attitude and motivation are responsible for the subjects requiring less special education, having higher self-esteem and completing high school more often than those who did not receive preschool intervention.

Researchers within the Consortium have tracked participants through graduation from high school and predict that "they will have higher educational attainment, find employment in higher-status jobs, and be more productive economically" (5, p. 5).

Implications

Many of the problems that were associated with poverty in the 1960s still exist in the 1980s. Newberger states that "currently, 25 percent of all young children, 47 percent of black children, 40 percent of Hispanic children, and 10 percent of white children, are born and spend some
portion of their years in poverty" (1, p. 34). According to Halpern, current figures show that approximately 50 percent of all poor families with young children are headed by females, as compared to 20 percent in 1960 (1, p. 35). Masnick adds that "some 20 percent of white children, 35 percent of Hispanic children, and 50 percent of black children younger than six live in households where there is no employed parent" (1, p. 35).

The trend of increasing proportions of single-parent families is expected to continue nationwide. "Single-parent families are particularly at risk of poverty. Many single mothers work at low-income jobs. Even their full-time employment may not carry their families above the poverty line" (4, p. 3). Similar problems with disadvantaged children exist in many states, particularly those with high minority populations.

By the year 2000, the workforce will be older, more female, and will consist of more disadvantaged persons. Minorities will be a larger share of new entrants into the labor force. Immigrants will represent the largest share of the increase in population since the first World War (3, pp. xiii, xx). For example, by the year 2010, Texas is projected to have a minority population of close to 50 percent (2, pp. 2-3).

In addition to the problems of unemployment, increases in minority population and the alarming number of
single-parent, usually female headed, families is the lack of adequate day care. Many families in need of day care for their children cannot afford appropriate services and "children in inadequate care are subject to long-term risks that may lead to difficulties in school, troubles with the law, and relatively low chances of employability" (4, p. 12).

The implications are that currently there are many disadvantaged children and families in the United States who are at risk. Since future demographic information suggests that those numbers will be even greater as the United States approaches the twenty-first century, the needs of the disadvantaged will also be greater. More early intervention programs of high quality will be needed so that the children of poverty will be able to enter elementary school having had at least one year, if not two or three years, of preschool. Studies have shown that quality early intervention programs are successful in the short-term in increasing the IQ and in the long-term in providing disadvantaged children with the attitudes and motivation to stay and to succeed in school. Their success is our success. The children of today will make up the workforce of tomorrow. The more successful they are in school, the better chance they have of finding gainful employment when they finish school. The whole country can benefit indirectly from
early intervention programs. Programs that could decrease unemployment, teenage pregnancies, and juvenile delinquency are an excellent investment in the future.

Recommendations
The following recommendations are made for future implementation and are based upon the findings, conclusion, and implications of this study.

1. It is recommended that funding be made available for operating funds for model preschool programs in poverty-stricken neighborhoods.

2. It is recommended that professional educators in states with growing minority and economically disadvantaged populations examine states' responsibility to this group and develop, support, and improve compensatory education programs for preschool-age children.

3. It is recommended that educators become more socio-politically active to direct such legislation for disadvantaged families and children-at-risk.

4. It is recommended that programs for disadvantaged preschool-age children be improved and expanded to meet current and future educational needs of this population in communities across the nation.
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