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**What is the importance of a prekindergarten program to  
achievement and school success for students in rural Chatham  
County, North Carolina?**

**McMasters, Linda Maness, Ed.D.**

**The University of North Carolina at Greensboro, 1991**

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WHAT IS THE IMPORTANCE OF A PREKINDERGARTEN PROGRAM  
TO ACHIEVEMENT AND SCHOOL SUCCESS FOR STUDENTS  
IN RURAL CHATHAM COUNTY, NORTH CAROLINA?

by

Linda McMasters

A Dissertation Submitted to  
the Faculty of the Graduate School at  
The University of North Carolina at Greensboro  
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of the Requirements for the Degree  
Doctor of Education

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Approved by



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APPROVAL PAGE

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LINDA MCMASTERS, Ed.D. What is the importance of a prekindergarten program to achievement and school success for students in rural Chatham County, North Carolina? (1990) Directed by Dr. Charles Achilles. 106 pages.

The primary purpose of this study was to evaluate the Early Adventures Program, a school-based prekindergarten in Chatham County, North Carolina. Twenty-five prekindergarten students were compared to an equivalent control group with no school-based prekindergarten experience after two to three years of schooling. Important factors studied include: academic achievement, school attendance, and teacher and parental judgments of school success.

The results of this study showed that achievement on reading and math sub-tests of the Comprehensive Test of Basic Skills (CTBS) and annual academic grades reported by the classroom teachers in reading and math revealed higher mean scores for Treatment than for Comparison students. Students in the Treatment group were not found to attend school more, to experience fewer retentions or special placements, or to experience fewer referrals to the principal's office for discipline. Parents and teachers rated Treatment and Comparison students as adjusted to school. Teachers indicted greater school success and leadership generally for Treatment students.

The results of this study support previous research indicating that high quality day care programs have a beneficial effect on the developmental status of high-risk preschoolers. Less research has been accomplished on middle and upper-income students or on heterogeneous grouping in prekindergarten. Clearly, more longitudinal research is needed to determine if early reading and math achievement skills continue

for such students over time. More qualitative research is needed to uncover important aspects of programs that are not easily quantifiable.



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CHAPTER I  
INTRODUCTION

Contemporary influences have made early education a public concern. In many households both parents work away from home. One out of every five families is headed by a woman. Half of American children in first grade will live with one parent by high school age (Boyer, 1987). North Carolina has the highest rate of maternal employment nationwide (North Carolina Department of Administration, 1985).

Fifty-three percent of upper and middle-class families used preschool programs in 1983 while only 29 percent of at-risk three- and four-year olds were enrolled. Parents who can afford the cost invest money in early education programs (Boyer, 1987). Internationally, wealthier countries have seen need to instruct their young, while poorer nations have not (Mialaret, 1976).

The Physical Task Force on Hunger has determined that children deprived of adequate nutrition during the critical years of brain growth risk cognitive deficits which restrict their later learning (Boyer, 1987). Bloom had determined that a child's intelligence grows as much during the first four years of life as it will in the next thirteen. At age four, at least 50 percent of a person's intelligence is highly flexible, after that the chances of raising intelligence diminish and more powerful forces are required to exact a given amount of change (Bloom, 1964).

Current programs may not meet the demands for our young. Federally sponsored programs such as Head Start serve 90 percent low-income children. (But not 90 percent of all low-income children.) The overall goal is to bring about social competence. There is no national curriculum. The group served by most Head Start programs has the disadvantage of a lower ceiling on learning (Morrison, 1984).

Many church-related programs have a cognitive, basic-skills emphasis within a context of religious discipline. Many programs are rigid (Greensboro Daily News, 1989).

Private, home-care programs have stringent physical requirements, but loose cognitive, developmental emphasis. Child-care givers often meet minimum educational standards (Grossman, 1985).

College and university demonstration programs are limited in number. These programs serve few families and children.

Critics continuously lambaste the current and continuing failures in education. Some representative complaints about education include drop-outs, low pupil achievement and an ill-prepared work force. There is a current push for measured achievement to make public school programs and educators accountable (Hodgkinson, 1988).

Can the public school offer a program that can make an important difference for the future? Is early education the intervention that can contribute to success?

Currently, many of North Carolina's education programs in the public schools are targeted at remediation. These programs include Chapter I, the Basic Education Plan (BEP), BEP Summer School, Drop Out Prevention

and Exceptional Children's Programs. A new early intervention with young children has potential to make an important difference in the children labelled at-risk; in improved readiness for school and in increased capacity to achieve.

Early intervention research is not new to the field of early childhood education. A few important studies include: Ypsilanti Perry Pre-School Project, 1962; Early Training Project, 1974; and Head Start, 1965-1989. Such efforts have been diverse, each with a different focus. They are well documented in the literature (e.g., Gray, 1974; Weikard, 1989; Seitz, Apfel, Rosenbaum and Zigler, 1983; and Reece, 1985).

A prekindergarten program was developed in 1985 at Siler City Elementary School, a public elementary school in Chatham County, North Carolina. The overall goal was to provide a positive, stimulating environment for young children whose parents needed or desired child care activities for their children.

The following basic assumptions about early childhood curricula were held by Siler City staff initially. Each idea is supported by characteristics observed in children ages 3-8 and by the position statement of the National Association for the Education of Young Children (NAEYC).

1. Play is an appropriate method of instruction. "Through play, children construct knowledge" (NAEYC, 9).
2. Children must have interesting materials to investigate.
3. There must be a sense of order and purpose in activities; a balance of freedom and security.



4. Activities will be child-centered. Teachers must question instead of telling.
5. The needs of the whole child are important (cognitive, physical, emotional and psychological).
6. Problem solving and social skills are learned.
7. Children do not need to be forced to learn; they are motivated by their own desires.
8. Developmentally appropriate programs are both age and individually appropriate (NAEYC, 1986).

In June 1986, the Chatham County Board of Education endorsed the Early Adventures Program (EAP), allowed use of a vacant school building and approved the time required of a school principal to consult and direct a full-day program for 22 three- and four-year old children.

The program began in the fall of 1986. The first EAP cohort will finish third grade in the 1990-91 school year. The present study evaluated the EAP through a documentation of the progress of participants through at least three years of schooling. Important factors that were studied included academic achievement, school attendance, and teacher and parental judgments of school success.

#### Statement of the Problem

There are data indicating critical need for publicly supported preschool education in North Carolina (North Carolina Department of Administration, 1985). Working parents who need child-care, services for their children who have greater capacity to learn at age 4, and even

increased numbers of at-risk children require further inquiry into state-supported prekindergarten programs.

If academic achievement can be improved and success in public school increased, early intervention with young children may be the most viable, cost-efficient approach to be considered as a means to improve education and pupil outcomes.

#### Purpose

The purpose of this study was to determine the effectiveness of a school-based prekindergarten program in Chatham County. The program was heterogeneous in grouping and the only program of its type in a school system in North Carolina according to Laura Mast, Early Childhood consultant to the State Department of Public Instruction (1990). Other school-based programs currently serve identified at-risk populations making them more homogeneous in scope.

Current interest in publicly supported child care gives this subject greater importance to school principals who may be faced with a new supervision responsibility in the future. Legislators must decide if an increasing force of working mothers requires that public schools be utilized to meet child-care needs and if children at ages three and four can be served by public education.

#### Objectives

The objectives of this study were to:

1. review recent available research and literature related to

preschool education for three- and four-year olds.

2. determine school success for the EAP group and equivalent comparison group using as data sources school records, teacher and parental judgment, and achievement results on the Comprehensive Test of Basic Skills (CTBS).
3. determine the value of the existing program for students, parents and the school community.

### Questions

Many Siler City Elementary staff believed that children in the EAP would experience greater success in the primary years than they would have without the program. They are unsure, however, given the changing nature of instruction if gains made immediately continue through school or if the gains "spiral down" and are not as evident by grade two. Answers to the following questions will help determine the effectiveness of the EAP at Siler City Elementary School.

The primary question is: Are there differences in school success in first and second grades between the EAP pupils and a selected equivalent comparison group? The following questions were addressed for the EAP group and the equivalent comparison group using data from grades one and two.

1. Are there differences between the groups in scores on the Comprehensive Test of Basic Skills (CTBS) administered at the end of grades one and two?

2. Are there differences between the groups in achievement as reported by progress reports from teachers?
3. Are there differences in attendance at school?
4. Are there differences in enrollments for special services and retentions as determined by special service and cumulative records?
5. Are there differences in behavioral disruption as noted by school behavioral reports?
6. Are there differences in adjustment to and preference for school according to parents and teachers?

### Methodology

#### Hypotheses

Given the evaluation questions which guide this study and data provided from a literature review, hypotheses have been developed for this study as follows: (Hypothesis 1 parallels questions 1 and 2.)

- H<sub>1</sub> As an indicator of school success for cohorts 1 and 2, the EAP group will exhibit a higher achievement record than the comparison group at the end of grades one and two. This will be evinced by the 1) CTBS scores and, 2) progress reports given by teachers.
- H<sub>2</sub> Attendance in kindergarten, grades one and two will be greater for EAP participants as compared to attendance for the equivalent comparison group.

- H<sub>3</sub> As an indicator of general academic success for cohorts 1 and 2, the EAP group will experience fewer retentions and special placements than the comparison group in kindergarten, first and second grades.
- H<sub>4</sub> As an indicator of school success for cohorts 1 and 2, the EAP group will experience fewer referrals to the principal's office for school discipline than the comparison group.
- H<sub>5</sub> As an indicator of school success, parents and teachers will evaluate EAP students as more adjusted and successful at school than students in the comparison group.

#### Design

To assess EAP's effectiveness and address the evaluation questions regarding school success, a comparison group was needed. This study employed a non-equivalent control group design. This quasi-experimental design is appropriate when subjects cannot be randomly assigned to treatment and control groups (Campbell and Stanley, 1966, Design Three).

This researcher assigned an intervention or treatment (T) and comparison group (C) for cohort one and cohort two. Using a static group design, the researcher tested for significance ( $p \leq .05$ , where appropriate) any differences found between the two groups.

Children for treatment or intervention (T) and comparison groups (C) were matched by chronological age, sex, race and educational completion level of parents.

### Sample

The sample for this study included 46 six- and seven-year olds enrolled in (1989-1990 school year) in Siler City Elementary School. Identified children were placed in one of two groups: an EAP intervention or treatment group (T) whose members attended 1-2 years of prekindergarten and a comparison group (C) of children who did not attend the EAP. Two cohorts of children were involved. In the spring of 1990, the point of measurement and comparison of results, Cohort 1 had completed second grade and Cohort 2 will have completed first grade.

The Treatment groups enrolled in EAP in August, 1986 (T<sub>1</sub>) and August, 1987 (T<sub>2</sub>). Enrollment was made by parents. Some parents came by recommendation and with financial support from the Department of Social Services and Central Carolina Community College.

The Control group consists of students at Siler City Elementary School matched with the (T) group by sex, race, and chronological age. The birth date of each child match is within three calendar months. Attention was given to the educational preparation level of parents. None of these children (C) has experienced a school-based prekindergarten program.

### Measurement Instruments

The Comprehensive Test of Basic Skills (CTBS) is used as a group achievement measure of math/reading competence by the County School system. Test results are designed to help teachers isolate areas of strength and weakness with regard to language facility in auditory

comprehension and verbal ability and to determine mathematical skills. The instrument was administered on a small group basis. Reliability estimate data available on this instrument (.94 to .97) are adequate for this research (Buros, 1978).

Test constructors were rigorous in steps taken to assure content validity. Little evidence exists concerning statistical validity of the CTBS with the exception of high correlations with the California Achievement Test, an achievement measure given across North Carolina to mandate retention of third, sixth and eighth grade students.

This descriptive inquiry included qualitative and quantitative facets. Questionnaire data from teachers and parents complemented "hard data" accumulated from school records and achievement testing.

From an analysis of all data, conclusions have been drawn as to continued need for the Early Adventures Program (EAP) and the additional need for publicly supported early childhood programs for three- and four-year olds in other North Carolina schools.

#### Analysis

Analysis includes Mann Whitney U-tests for scores by cohort. Attendance, retention and special education placements were recorded and compared for the treatment (T) and comparison (C) groups for grade levels, kindergarten, first and second. Behavioral disruptions reported to the principal's office were compared for both groups at grades one and two. Achievement as measured by CTBS results and annual progress reports by the teacher were compared for both groups at grades one and two. A

narrative reports questionnaire results from parents and teachers who indicated grade 2 students' preference for school and rate of success.

### Limitations

Static group design has both limits and strengths. It is easy to assume that one thing causes another simply because it occurs prior to the other (Post hoc, ergo propter hoc fallacy). This study did not seek to determine causes. Even with a systematic inquiry, the researcher did not have direct control of independent variables because their manifestations had already occurred or because they were not manipulable (Kerlinger, 1973).

In the case of a prekindergarten evaluation, it is impossible to manipulate independent variables such as parental support or family crises that probably affect school success for a student. Teacher assignment in all grades after prekindergarten affects school success for students, but is randomized for all and is not manipulable for this study. Inferences about relations among variables were made as well as conclusions that respect the inherent weakness or lack of control of certain independent variables. Use of an "equivalent comparison group" is one step to add strength to the analyses, but this step does not overcome weaknesses of non-experimental design.

The unit of analysis was the individual pupil. This is a methodological weakness for it implies that pupil outcomes are independent of teacher (and school) effects, an assumption seriously questioned by such concepts as effective teaching research and even



"effective schools" work (Brewer, 1985). Costs and sample size limit the use of a more rigorous design and analysis.

Achievement testing is not regularly done in Chatham County until the third grade. Therefore, parental permission was gathered to administer the Comprehensive Test of Basic Skills as an achievement measure. Testing of young children is always suspect. The results represent one point in time and may not present the student's best effort or actual knowledge. Immaturity and attention span affect motivation and test outcomes.

Bias is highly possible in the evaluation of any self-initiated program. Because of this, the researcher included a more objective second party in the appraisal of data. This was accomplished by use of an assistant outside the system.

Results of this study would be more useful if they may be generalized to other publics, other elementary schools in other communities. According to Kerlinger, development and analyses of hypotheses strengthen research. Negative findings may advance knowledge and point to other fruitful further hypotheses or lines of investigation (Kerlinger, 1973).

#### Significance of the Study

In 1990, there were 156 school-based prekindergarten classes in North Carolina educational administrative units. Over 2500 at-risk three- and four-year olds were served by diverting Chapter I funding previously spent on school-age children. Charlotte-Mecklenburg County

had 35 classes (North Carolina Department of Instruction, Division of Support Services, 1990).

The Early Adventures Program (EAP) is open to all Chatham County parents on a first-come, first-serve basis. Tuition is paid by parents, federal dollars (PL 99-457) for handicapped three-, four- and five-year olds or Title XX dollars through the Department of Social Services.

An evaluation of the Early Adventures Program participants should reveal how successful this early intervention program can be in making a significant difference in early school success. An examination of the literature provided background as to recommended curriculum for young children and shed some light on the successes of other intervention programs.

It was not until the 1960s that educators began to recognize a need to tailor educational programs to student need if they were to succeed. Up until this time, the blame for failure was placed on the child or his family (North Carolina School Board Association, 1989).

Prekindergarten is another opportunity to tailor education to meet society's new needs and to benefit young learners when their capacities are greatest. It is not enough to tighten standards for educational outcomes; we must also provide an intervention to ensure every child a reasonable chance for success. Our schools must create winners instead of being selecting, rejecting devices (Hodgkinson, 1988).

Definition of Terms

- Academic Success -** A child is considered successful if she (he) has not been retained or placed in special services and if school records, test results and teacher judgments indicate performance at the norm or better for children of comparable age.
- At-Risk or High-Risk** Personnel in the North Carolina Department of Human Resources, Division of Health Services (1986) define environmental risk affecting biologically sound children as: "early experiences including maternal family care, health care, opportunities for expression of adaptive behaviors and patterns of physical and social stimulation that are sufficiently limiting to the extent that, without corrective intervention, they impart a high probability for delayed development (p. 5)."
- Developmentally Appropriate Practices -** Teaching strategies that indicate a knowledge and understanding of child development theory.
- Prekindergarten experience -** One to two years of experience in a ten-month, developmentally appropriate, school-based setting for three- and four-year olds with an adult-child ratio of about 1:10.

### Organization of the Study

This study is an attempt to determine the value of a school-based prekindergarten program for its participants. The dual program goals are remediation and prevention. The EAP effort remediates social or academic gaps. As preventative for some, the program circumvents initial failure.

Chapter One is a rationale for the study and a discussion of the design. Chapter Two provides a review of the literature on three- and four-year education and a review of current related research that is significant. Chapter Three describes the methodology. Chapter Four provides data analysis for the prekindergarten intervention. Chapter Five offers conclusions, discussion and recommendations concerning public school programs for preschoolers in North Carolina.

This research may help to determine the effects of multi-age grouping on young children. A variety of models of behavior and levels of social, intellectual and academic competencies are available in EAP. In this rich educative environment, a diverse range of competencies should give rise to opportunities to resolve conflict, to lead, to share, to tutor and to strengthen life-long skills of getting along with others.

CHAPTER II  
REVIEW OF THE LITERATURE

Policy makers, educators and parents have begun to debate the need for publicly-funded, universal preschool programs. This debate has been fueled by concern that current public education is failing the at-risk, the growing number in the underclass, the need to incorporate women into paid employment and concern about present and future productivity or international competitiveness and the changing work force (Kamerman, 1989; Harris, 1989).

Hardly a day passes without some coverage by broadcast or print media on the issue of early care and education. Legislators are passing bills to enhance availability and quality of services (Mitchell, 1989).

Early intervention is viewed as a remedy for social problems. As opposed to whether we should serve young children and their families, today we are asking how and where (Harris, 1989).

Some questions addressed by current research initiatives are:

1. Can we reduce risk of failure for America's children by early intervention? Is America at risk?
2. Who is shaping policy for early childhood education and care for our young?
3. What philosophy of preschool curriculum optimizes development of young children?
4. What school, community partnership is necessary?

5. What are the earlier intervention projects that are significant? What are their results?

Can we reduce risk of failure for America's  
children by early intervention?

A two-year old scribbles with a crayon and babbles at the composition. Could it be that he is reading? Literacy experts believe that literacy skills appear early in childhood.

Charles Read has been instrumental in discussion of emergent literacy from the nursery. Read found that three-year olds could spell words in an unconventional way, but with a sophisticated grasp of language (Wells, 1989).

Another researcher, Zelta Goodman, found that typical twos (i.e., two-year olds) believe that adults read pictures in a book. With no understanding of letters, words or sentences, they understand a story and that adults get stories from books.

Half of all three-year olds and 80% of fours begin to read as they respond to ads or brand names such as Captain Crunch or McDonalds. Even with mistakes, they understand the connection between print and ideas (Wells, 1989).

The idea that literacy begins to emerge in the cradle is different from those views holding literacy development must wait maturation. Many educators like Mabel Morphett and Carleton Washburne (1929) have supposed that it is best to postpone literacy instruction until age six or until the child is ready to read and write (Wells, 1989; Kagan, 1978).

This new concept of literacy makes us rethink the education of our children. Those supporting this view believe that literacy skills require a literate environment from birth and plenty of nurture and encouragement. The child begins to absorb primitive literacy skills as if by osmosis. These beginnings help teachers to build stronger foundations in the public school (Bruner, 1956; Wells, 1988). In the context of social dynamics, psychologists, educators, and parents have agreed on out of home care and the importance of the early years.

Comenius suggested that a child's early years be best spent at mother's knee. Other educators (e.g., Pestalozzi, Frobel, Montessori), by contrast, recognized that young children could be educated early with appropriate materials and instructional practices (Bigge, 1964).

Introduction of the education of young children started in the U.S. and Europe toward the end of the 19th century as a means of caring for children of the poor or of immigrant mothers. After World War I, social workers directed day care programs for children from families with social problems (non-married or delinquent mothers, abusive parents). Shortly before World War II, various early childhood projects were initiated at the University, by private and church-supported efforts and cooperative nursery schools to enrich play and social opportunities for middle-class children. The larger society perceived this service as elaborate child-care rather than education (Joffe, 1977; Elkind, 1989).

True recognition of early childhood education came in the 1960s by broader publics with the Russian launching of Sputnik. For a first time, the adequacy of public education's math and science instruction was

questioned. The civil rights movement also revealed a poor quality of education for minority children (Elkind, 1989).

Since the women's liberation movement began, there has been little question that out-of-home care must be provided so that middle-class women can work outside the home (Ravitch, 1983). Bruner (1956) suggested that you could teach any child any subject at an early age if you taught the child the subject in an intellectually responsible way. Other psychologists (e.g., Bloom, 1964) argued that a child attained half of his/her intellectual ability by age four, and Hunt (1970) has spoken about the malleability of intelligence and the possibilities of altering I.Q.

T. Berry Brazelton, a respected Professor of Pediatric Medicine, reports that doctors know by nine months if a child is likely to do well in school, just by observing as the child approaches very simple tasks, like playing with blocks (Harris, 1989). Recent brain research tells us that in the last trimester before birth we already have in our heads 10 billion neurons, or a life supply. Interconnected with synapses by 18 months, our central nervous system is highly developed. What early care a child receives makes a big difference in how she/he learns. Of course, what a woman does in pregnancy is highly important. Smoking cigarettes, drinking alcohol or taking drugs can be deleterious (Harris, 1989).



Is America at risk?

More than 25 years ago, America declared a war on poverty but our nation's children are worse off than ever. This wildfire rages around us out of control. According to the U. S. Census Bureau, the Americans most likely to be poor are those age three and under, 23.3%. Nearly one-fourth lack medical, nutritional and early learning assistance. Certainly they are condemned to physical and psychological deficits for a lifetime. It's no wonder that 11% end up in special education because of cognitive and developmental problems. Over the last 10 years children labeled learning disabled increased 140% to 1.9 million kids (Reed & Sautter, 1990).

More than 12.6 million youngsters or nearly 20% of all children under 18 are poor. One in five American children go to bed cold, sick or hungry. One white child in seven is poor; four out of nine black children are poor; and three out of eight Hispanic children are poor. Desperate conditions beyond their control make the rhetoric of equal opportunity a hollow or impossible dream (Bowman, 1989; National School Boards Association, 1989).

The War on Poverty has been lost by decreasing our anti-poverty offensive, cutbacks in Great Society programs by the Nixon, Ford and Reagan administrations, and spiraling inflation. Children have received lower priority than the elderly. By 1990, 90% of the elderly received benefits of Social Security, cost of living adjustments through Medicaid, housing assistance and other federal and state supports (Reed & Sautter, 1990; Mundy, 1989).

The Carnegie Council on Adolescent Development reports that between the ages of 10 and 15 youth are extremely volatile. For the poor, the tension is greater since these youth are besieged by school failure, substance abuse, economic stress, pregnancy. One fourth of black males have problems with correctional authorities. Given a future of perpetual low paying jobs, many choose drug trade. Growing up without hope is cruel. More than 10,000 children in our country die each year as a result of the poverty they endure.

U. S. Census figures indicate that nearly half of heads of households are employed (Comer, 1988; Mehren, 1988). Full-time work at minimum wage leaves a family \$2,500 below the poverty line, and 42% of families are headed by employed females working full time.

In 1989, the U. S. Department of Labor revealed that 23,000 minors were working in violation of Fair Labor Standards. Too many teens are working too many hours in unsafe conditions. This work is done to survive instead of trying to buy designer labels. Many are homeless and have had to drop out of school (Chafel, 1990).

From 1986-1988 children born to drug exposure quadrupled with 375,000 total cases. Adding concern for abuse or neglect and foster care increases requirements for mental health counseling. Poverty is more than a social rejection; it is a plague that weakens and destroys. Many lose hope, positive self-esteem or any belief that they can achieve (Holland, 1988; N.C. Department of Administration, 1985).

According to Children's Defense Fund estimates (1987 figures), the cost to eliminate poverty in families is \$26.874 billion; among all

persons, \$51.646 billion. If we chose to eliminate poverty, the cost would be 1.5% of the total expenditures of federal, state, and local governments (Davidson, 1990; Reed & Sautter, 1990).

We have chosen to expend \$1 billion daily at war in the Middle East. Will we write the checks to guarantee a new tomorrow for the poor? (Holland, 1988)

Who is shaping policy for early childhood  
education and care for our young?

The difference between care and education of young children has plagued specialists in early childhood for years (Brandt, 1986). Now intense questions about both have fueled state policy during the 1980s with great chance that federal action will soon follow in the 1990s.

The two functions, care and education, are inextricably bound. Good early childhood development requires both. Parents want programs that children enjoy now and that will get them off to a good start in their school careers. Convenience in location and affordability are also strong considerations (Day, 1986; Avery, 1988).

Throughout the 1970s, attempts to pass federal legislation failed. Child care funded publicly through social services was considered only as protective for abused, neglected victims or as an employment support for the very poor. Commitment of funds for Head Start and preschool provisions of the Education for the Handicapped Act (earlier P.L. 94-142 and recently, P.L. 99-457) were to assist at-risk populations only (Gallager, 1989).

Federal support over the last decade has declined in real dollars and has been consolidated into the Social Service Block Grant. Head Start dollars have received modest increases and a provision of the tax code that benefits middle class families - the Dependent Care Tax Credit and employer-sponsored Dependent Care Assistance plans expend \$4 billion annually.

States have become the initiators and program funders of early childhood programs, especially for the at-risk. While serious federal cuts have been made in the 1980s, a few states increased overall funding to more than compensate for the loss of federal funds. National leaders are the states of New Jersey, Michigan, Maine, Kentucky and Florida (Kamerman, 1989).

In the last five years, even greater commitments have been made. Between fiscal years 1985 and 1990, Vermont's financially subsidized child-care has nearly tripled. The state's share in expense has risen from 40% to 60% while the federal government waits.

The number of states funding child care has quadrupled in this past decade. In 1989, 31 states had appropriated funds for state-initiated prekindergarten programs or directed contributions to Head Start. These part-day programs for at-risk four-year olds operate full-year, mostly through state departments of education. Half of the states permit other community agencies to administer. State-funded prekindergarten and Head Start contributions amount to \$300 million annually from these 31 states (Mitchell, 1989; Caldwell, 1988).

Federal legislation for preschool is being rekindled. Recent early education child care bills include: the Act for Better Child Care (ABC), Smart Start and Child Development and Education Act, or the Hawkins Bill. To date, none has passed. Two bills including provisions of early care and education did pass: The Elementary and Secondary School Improvement Amendments for 1988 re-authorized Chapter 1 and created Even Start, a \$50 million parent-child program to improve adult literacy and offer early education to children ages one through seven. It also allowed Chapter 1 migratory education to include three- and four-year olds.

The second bill, Family Support Act of 1988, called the welfare reform bill, changed receipt of Aid to Families with Dependent Children (AFDC) to require parents to work or attend job training. An uncapped fund for child-care was provided for recipients.

Clearly the national spotlight is on children under five. The National Governor's Associations' Task Force on Children supports current investments in health and education of the young to build our nation's future international competitiveness. Early childhood-care and education may be top issues for the future. Major child-care bills have been reintroduced in the 101st Congress, each representing a different approach to providing federal assistance for early care and education: Their messages are:

1. Smart Start proposes \$500 million to fund full-day, year-round child development programs for 4-year olds provided by public or non-sectarian non-profit agencies. Requirements for training, curriculum, child/adult ratio and group size are addressed. The

Department of Education would administer the program with input and some regulation by the Department of Health and Human Services.

2. ABC proposes \$2.5 billion to improve child care from infancy through adolescence. Funds go directly to parents and to programs. Day care homes, public schools and for-profit organizations are eligible. Head Start would expand as well as part-day public school programs. Staff training and recruitment of new child care providers are major components (Mitchell, 1989).
3. Hawkins Bill amends Head Start to full-day, year-round service and opens service on a sliding scale to parents above the poverty line. Secondly, the Elementary and Secondary Education Act is amended to allow public schools to provide part-day, developmental programs to four-year olds and to offer before and after-school programs for elementary students. Fees would be charged on a sliding scale. Finally, it supports all provisions of ABC but encourages employer-assisted child care (Hawkins, 1989).

Each of these bills contains elements to promote parental choice, to define quality, promote continuity, and encourage coordination. There is a real need for federal action as a model for state policy-makers to emulate as they continue to develop early childhood policies. All community institutions should share some responsibility for making

available the highest quality early childhood programs (Mitchell, 1989; Willer, 1990).

What philosophy of preschool curriculum optimizes  
development of young children?

Adolf Hitler proposed that indoctrination with Nazi propaganda during the first six years of life would make any child a willing soldier for the rest of his/her days. Shinichi Suzuki opened the world of music to young children by the Suzuki mother-tongue method of teaching violin. Suzuki declares that if a child hears good music from birth and learns to play, she/he will develop as well sensitivity, discipline and endurance (Biber, 1984; Grilli, 1987).

A child's intelligence grows as much during the first four years of life as it will grow in the next thirteen. At age three, a child can learn any language, perhaps several, better than any adult. As adults, we choose to stifle or develop these talents (Bloom, 1964).

Some psychologists are concerned that children will be pressure cooked or hurried (Elkind, 1987). This perspective questions parental ability and common sense. The extent to which children become intelligent and successful is determined long before compulsory attendance age. The inherited genetic characteristics of the child set a broad framework within which intelligence will develop. Heredity sets the limits, while environment determines the extent to which the limits will be achieved. If Bloom is correct, that 80% of a child's

intelligence occurs by age eight, then early intervention is the right approach (Bloom, 1964).

Lasser says that 7,000,000 children can't be wrong. As Chairman of the Board of Advisors of Children's Television, he observed how much children under five could learn from Sesame Street (Biber, 1984).

In the 1980s, a great deal of attention has focused on the quality of early childhood programs. The National Association for the Education of Young Children (NAEYC), the nation's largest professional association of early childhood educators, believes that high quality, developmentally appropriate programs should be available for all children. Developmental appropriateness is based on knowledge of how young children learn.

Curriculum derives from many sources such as the knowledge base of various disciplines, society, culture and parent's desires. Developmentally appropriate programs are both age and individually appropriate; that is the program is designed for the age group served and implemented with attention to the needs and differences of the individual children enrolled (NAEYC, 1986).

Within the developmental philosophy of education, learning is seen as a creative activity. Play is used as the method of instruction. The job for teacher is not direct instructor but facilitator of learning (Cheever, 1986).

Children have interesting, concrete materials to investigate. Materials are fun, thought provoking, and open-ended (blocks, paint), but not over-complicated and overstimulating (Chenfeld, 1988).

There is a sense of order, safety and purpose in activities (Elkind, 1987). There is a hum of talk and laughter. Activities are child-centered, rather than teacher-centered. Teachers question,



occasionally offer suggestions, but are best at listening. They realize that three- and four-year olds must use language to become fluent.

The needs of the whole child are met. The intellectual growth of a child is important, but not more than social, emotional, creative and physical growth of the child. This allows the school to become an extension of the home. (Chenfeld, 1988; Marzollo, 1990).

Children benefit from a combination of structure and freedom. The teacher's art is modeling behavior based on respect for others, so that children observe and emulate this approach. A balance of rest and active movement is provided with both inside and outside experiences (Marzollo, 1990; Chenfeld, 1988; Day, 1986). Piaget (1950) put the aims of education from a developmental perspective this way:

The principal goal of education is to create men who are capable of doing new things, not simply repeating what other generations have done - men who are creative, inventive and discoverers. The second goal of education is to form minds which can be critical, can verify, and not accept everything that is offered. The greater danger today is of slogans, collective opinions, ready made trends of thought. We have to be able to resist them individually, to criticize, to distinguish between what is proven and what is not. So we need pupils who are active, who learn early to find out by themselves, partly by their own spontaneous activity and partly through material we set up for them; who learn early to tell what is verifiable and what is simply the first idea to come to them (Ripple, 1964).

#### What school and community partnership is necessary?

Restructuring is this era's contribution to schools. Altering the balance of power within districts and schools suggests that teachers, parents and communities will be more involved. Children, families and

community members must actively enter into decisions that affect education (Kagan, 1987; Bowman, 1989).

"They don't care," is the chief complaint made by dropouts. Teachers complain about unmotivated students. Parents complain that educators only want their help when the kids are acting up. All are pointing to the importance of relationships. Relationships that are poor hinder student learning and development, adult commitment and support.

James Comer, professor of psychiatry at the Yale Child Study Center calls for teachers to serve as parent surrogates. The attention once given to non-academic thoughts, fears, concerns and problems did not detract from teaching basics, he suggests. In fact, he believes because of a teacher's concern, interest and enthusiasm, that many of us learned academic material that had no intrinsic or obvious value other than for a grade (1988).

Children need more adult guidance than ever and receive less. Two working parents, less time with parents, more family stress, conflict and divorce are but a few reasons. Some parents are young and inadequate in raising children. There are less extended family, social network and community support for parents and children.

The children who tend to succeed academically and behaviorally have received good experiences prior to school; their parents' values and attitudes are similar to those held by school people. Their parents make an effort to support school activities.

Children without this support need the teacher in alliance with their own parents more than other children. The schools must take the

first step (Holland, 1988; Mitchell, 1989).

Two promising efforts are related to early childhood education: the family resource and support movement and early care and education collaborative. In both efforts, schools are key levers to shape service in child development, to enhance families and in seeking improvement of social services delivery. Both movements can be rooted in or outside the school (Kamerman, 1989). Both have been propelled by changes in our social fabric, changes that leave family members stressed, isolated and poorer than ever. Services rendered include: parent education, job training, respite care, employment referrals and health, emotional support services for children and adults.

Today, nearly one-third of the states provide parent education as an important part of early childhood education. Because educators have recognized parents' significant influence on their children, they must seek innovative ways to recruit their partnership in education (Mitchell, 1989; Kagan, 1987). Such empowerment of individuals improves adults' and children's lives.

Two characteristics distinguish current family resource and support programs from past efforts:

1. Family support is considered necessary for all families but must be individualized, adaptive and flexible.

2. Equalitarian relationships between parents and school staff members are stressed. Mutual respect for recognized experience and skill results in better planning and execution of program. Family resource and support services have demonstrated that collaboration works. The

schoolhouse doors have opened wider; educational practices are more responsive to student, family and community needs.

Early Care and Education Collaboratives work to access health, welfare and social services for children and families. Goals of collaborating agencies include:

1. Insuring quantity and quality of available services
2. Insuring more equitable service distribution
3. Minimizing expenses
4. Addressing shortages in staff and space
5. Equalizing regulations across all early childhood programs
6. Improving staff training
7. Insuring continuity of children's services (Kagan, 1989)

Community-wide data collection, short and long-term planning and participation in advocacy efforts are important to this network. An example of this type collaborative is New Jersey's Urban Prekindergarten Program which links Head Start, child care and the schools. More efforts are expected as pieces of federal and state legislation call for such establishment with funding for child care and education. Tighter resources and growing needs make cooperation and collaboration a necessity. As problems transcend in situations, so must solutions. Restructuring schools will require such consideration.

Edward Zigler has proposed a plan known as Schools for the 21st Century. This plan also uses the public school to provide an array of on-site and outreach services for children and families (Kameran, 1989).

In-school services include high quality care and education for children ages 3 - 12. Before-school and after-school activities are offered to children 6 - 12. Outreach includes: provision of service to expectant new parents and for their children, birth - age three. Referral for day care providers, guidance, training and home visitation promote children's development until school entry.

What are the earlier intervention  
projects that are significant?

What are their results?

Many ideas discovered through research support educational intervention with young children. Most results have been accomplished with at-risk populations.

Significant gains have generally been noted for preschoolers with a control group catching up academically by second grade (Featherstone, 1986; Miller, 1976; Caldwell, 1987). More research is needed on children aged eight to eighteen to determine continuous achievement beyond the third grade slump. The effects are not in test scores, but often in children's ability to meet teachers' expectations and to avoid being labeled failures.

Four reviews of significant studies are provided to acknowledge the results of intervention studies to date. They are divided appropriately by population being addressed. The first two studies reviewed are major research efforts with low-income/high-risk children. Both demonstrate the positive efforts of preschool programs throughout childhood and

adolescent years and on into early adulthood for participants. These studies are Head Start and Ypsilanti Perry Preschool Project.

### Head Start

From the 1950s through the 1970s, psychologists and educators began serious study of the effects of early intervention on human development (Bloom, 1964; Bronferbrenner, 1974, Gray, 1974). Some suggested that preschool education might be the way to disrupt poverty and create a lasting positive effect on young lives. This brief intervention in the formative years could inoculate children against the ravages of their environments. Educators believed that raising children's IQs was the way to guarantee school achievement, confidence, motivation and positive social skills (Zigler, 1979).

Head Start began in Lyndon Johnson's administration in 1964 with passage of the Economic Opportunity Act. The main purpose of this act was to break generational cycles of poverty by providing educational and social opportunities for children from low-income families. Head Start was implemented during 1965. Approximately 100,000 children in 300 counties were enrolled for a six-week summer session. The program is now run year-round (Mundy, 1989).

The overall goal was to bring about a greater degree of social competence in disadvantaged children or everyday effectiveness in dealing with environment and responsibilities in school and life. This social competence was to take into account the interrelatedness of cognitive and intellectual development, physical and mental health, and nutritional and

other factors that enable one to function optimally. Head Start goals provide for:

1. The improvement of the child's health and physical abilities.
2. The encouragement of self-confidence, spontaneity, curiosity and self-discipline which assist in the development of the child's social and emotional health.
3. The enhancement of the child's mental processes and skills with particular attention to conceptual and verbal skills.
4. The establishment of patterns and expectations of success for the child, which creates a climate of confidence for his present and future learning efforts and overall development (Reece, 1985).

There is no national Head Start curriculum although activities are generally typical of nursery school or kindergarten programs. These activities stress following directions, listening and becoming accustomed to routines and materials of learning. Major emphasis is given to health care and parent, community involvement.

The first blow to Head Start was performed in 1969 by the Westinghouse Learning Corporation which revealed that IQ gains from Head Start children dissipated by third grade. This research comparing Head Start kids with a non-Head Start control on standardized tests in grades 1, 2 and 3 was heavily critical, but since then dozens of studies have confirmed also the short-term effects on achievement by Head Start.

Objections to the Westinghouse research from Head Start loyalists concerned a lack of randomization, problems in design and lack of documentation on type and quality of programs included. Despite

criticism, results of this research reduced funding for Head Start from \$350 million in 1967 to \$316 million in 1968.

The Consortium for Longitudinal Studies at Cornell University compared selected educational outcomes for low-income children participating in preschool in 1960s with follow-up data in 1976-77. Their conclusion was that preschool affected low-income children in ways relevant to school performance but not necessarily related to cognitive abilities. The IQ gains for six-year olds did not continue but achievement gains did. Children from Head Start were less likely than similar non-Head Start youngsters to be 1) retained, 2) identified for special education and 3) classified as underachievers. Early educational experience positively affected later school performance independently of the effects of early background measures.

Preschool programs also were found to have positive effects on parents. Lazar and Darlington (1982) found that mothers of Head Start graduates, unlike mothers of children in the control group, expected more of their children occupationally than the children expected of themselves; their children's school performance also was more satisfying. If parents convey concern and confidence in their child's ability, then children are likely to score more satisfactorily at school even if not on an achievement measure (Featherstone, 1986).

A more recent evaluation of Head Start looks more broadly and imaginatively at the way preschool might improve children's prospects. In 1982, Irving Lazar and Richard Darlington followed up on 11 experimental preschool programs serving poor, minority children. They



found that teachers were often annoyed by the curiosity Head Start fostered which had a depressing effect on the children and perhaps their test scores in elementary school. Teachers reported that these kids were noisy and demanding. They didn't sit down quietly; they asked too many questions. Parents as well were presumed to be more uppity as they expected to be a part of their child's education (Mundy, 1989).

Becker and Gersten found that Head Start participants continued to show higher achievement in reading, math and science if continued intervention or the follow-through program followed pupils in grades 1 - 3. However, if the intervention did not continue into intermediate grades, low-income pupils lost ground to middle-class peers (Chafel, 1990).

Philadelphia School District personnel reported in 1982 that their prekindergarten Head Start raised achievement for 2100 low-income students to exceed national achievement norms at K-3 in math and at K-2 in reading. The participants' scores exceeded or equaled district scores for a control group of children from varied socio-economic levels.

Head Start is serving 20,000 kids in 1990, but fewer than one third of the children eligible. Probably it is influencing children's attitudes and behavior in school more than it is influencing their test scores (Lazar, 1982). If Head Start is adequately funded in the future, low-income children have a greater chance of competing with middle-class peers and receiving an equal educational opportunity.

Lisbeth Schorr (1988) defines it well,

When three- to five-year old children are systematically helped to think, reason and speak clearly; when they are provided hot

meals, social services, health evaluations and health care; when families become partners in their children's learning experiences, are helped toward self-sufficiency, and gain greater confidence in themselves as parents and as contributing members of the community, the results are measurable and dramatic (Schorr, 1988).

### Ypsilanti Perry Preschool Project

The Ypsilanti Perry Preschool Project began in 1962 as an academically oriented program and was modified to a more developmentally appropriate orientation (Ripple, 1964). Children attended preschool for 12.5 hours per week for 30 weeks a year. A conference or home visit with the mother was conducted for one to five hours per week.

All children selected were age three and four, black, had IQs of 60 - 90 and were from low-income families. The 123 children were randomly assigned to one of two groups: those selected to attend and those not selected. This study was an experiment to assess the longitudinal effects of a two-year preschool program on educationally and economically disadvantaged families. Weikart replicated the treatment five times.

The first group received only one year of preschool. The following groups received two years of preschool in half-day sessions, five days a week. Teachers conducted teaching sessions with parents 90 minutes per week. Interview data about members of the sample were collected between ages 3 and 19. Parent interviews were collected when participants were ages 15 and 19 and from IQ and school achievement tests given at age 14. Intelligence tests were administered to participants from ages 3 to 10 and again at age 14. School achievement tests were given annually from

ages 7 to 11 and at age 14. Kindergarten through third grade teachers completed two child-rating scales. Examination of public school records kindergarten through grade 12 completed the researchers' school assessment.

The Stanford Binet Intelligence Scale, the Leiter International Performance Scale, the Peabody Picture Vocabulary Test, the Illinois Test of Psycholinguistic Abilities, the California Achievement Test, several parental attitude measures and teacher ratings completed the testing battery.

Weikard and Schweinhart (1974) claim that by age 19 the experimental participants were significantly better off than the controls: 67% of them versus 49% of the controls were high school graduates; 50% versus 32% reported themselves to be employed; and 31% versus 51% had ever been arrested. The rate of teen pregnancy was 67:100 for the preschoolers as opposed to 117:100 for the controls. Rates of welfare usage were lower for experimentals and subsequent employment was higher. Easing of such social and economic problems translated into savings for tax payers. The preschool children received higher scores on cognitive abilities than did controls, by 12 IQ points at the end of kindergarten and five points at the end of first grade. There was no difference by grade three (Mundy, 1989).

Increased school achievement during elementary and middle school years was reported for preschoolers. Higher scores on California Achievement Test, 19% special education identification versus 39% of the control group and increased motivation from teachers and self-reporting

at age 15 revealed that the experimental group placed a higher value on education with aspirations for college or vocational education (Schweinhart and Weikart, 1980). Fifty-one percent of parents of experimental-group children versus 28% control parents expressed pleasure with the educational system and their student's performance at age 15.

In an economic analysis of costs and benefits, Weber, Foster and Weikart found that benefits far outweighed costs of such intervention. The undiscounted benefits were \$14,819 per child while the cost of the intervention was \$2,992 per year per child representing a 248% return on the original investment. Approximately 75% of the initial cost was in teachers' salaries, supplies, building maintenance and support staff. Public education saved \$3,353 because experimentals needed fewer or no years in special education or less retention. A total of \$10,798 per child was estimated in increased lifetime earnings based on projected educational level in the 1970 census (Granger, 1989).

These longitudinal data represent the most comprehensive research on the effects of preschool education for low-income children. Showing cost benefit is a first in preschool research.

The effects of poverty are pervasive. No simple intervention can eliminate the impact of environmental deprivation or change children whose parents are relatively understimulating. There is evidence, however, that preschool can compensate or positively affect the lives of our children. The benefits then are personal and societal (Featherstone, 1986).

Two further significant studies have been accomplished with the

general population and are worthy of consideration. They are the Evaluation Study of The California State Preschool Program (Goodlad, 1975) and a British Longitudinal Study of the Effects of Parenting Style and Preschool Experience on Children's Verbal Attainment (Wadsworth, 1985).

#### California State Preschool Program

In 1965, the California Legislature appropriated funds for a state-wide preschool program to be partly federally funded. The program was based on the belief that educational interventions for young children improved school performance, motivation and productivity. The Legislature voted in 1973 (AB451) to require a study of the Preschool Program to determine whether to provide further funding for the program.

The study involved 35,286 children at 148 selected elementary schools in educationally disadvantaged areas throughout California. It was conducted by the Center for the Study of Evaluation (CSE) at UCLA.

For their study, CSE selected kindergartners, first graders and second graders who had participated for at least one year in the State Preschool Program. Their scores were then compared with scores of two groups of children: those who had received no preschool and those who had attended a Children's Center program. The CSE evaluators selected a representative state-wide sample of agencies operating State Preschool Programs. They chose 42 agencies in cities ranging from Redding to San Diego. Heavily represented were the population areas of Los Angeles and San Francisco, the state's leading population areas. Researchers went

through class rosters selecting all Preschool graduates on whom there was evaluation information and picked an equal number of children who had received no preschool training. The final sample contained 1,180 kindergartners who had been enrolled in the Preschool Program and 1,148 who had not; 977 first grade graduates and 974 who were not and 714 second graders who had attended the program versus 712 who had not. In addition, three more samples were selected of children who had been enrolled in a Children Center program: 146 kindergartners, 94 first graders and 66 second graders.

The researchers administered one special test to the children. Other data were assembled from scores on tests already administered to all California school children and current teachers' rating sheets. First grade performance was measured by scores on the California Entry Level test to measure immediate recall, letter recognition, auditory and visual discrimination, and language development. Second graders were assessed on the Cooperative Primary Test in Reading. The test required skills in reading words, sentences and paragraphs.

To assess motivation, the Attitude to School Questionnaire for students (devised at CSE) was used and school attendance records were appraised in all three grades. Productivity was defined as students' devotion to accomplishing tasks and was measured by a teacher judgment scale per student.

On the vast majority of tests of performance, motivation and productivity, the researchers found no significant differences between the scores by preschool graduates and the scores of their classmates.

The only exceptions were:

-On the Cooperative Primary Test in Reading, the preschool graduates scored significantly less well than students not attending preschool.

-Kindergarten students who were preschoolers were absent a significantly greater proportion of the fall semester than classmates attending the Children Center Program. There was no significant difference at other grades.

In an effort to discriminate between preschool types, the researchers asked administrators of the preschool agencies to rank five goals and purposes for preschool programs in order of relative importance. Twenty emphasized pre-academic skills, 11 emphasized socialization and 11 emphasized attitudes to school and learning.

On almost all measures of performance, motivation and productivity used, there was no significant difference from either of the three categories of preschool. In both kindergarten and first grade, children attending a preschool emphasizing socialization were absent less often than centers emphasizing pre-academic or attitudes to school and learning. There was no difference in grade two.

This study required accomplishment in one year, therefore requiring an after-the-fact research design. The researchers agree that their results may not be due solely to the influences of the various preschool experiences, rather than to differences in the initial educational capacity of the children. Because of this, the researchers agreed that the lack of significant differences between groups could be viewed as

more generous to preschool program given the initial population (Goodlad, 1973).

#### British Longitudinal Study

Parents are consistently a strong influence on their children. Therefore, the educational level of the parents is a strong predictor of both IQ and reading skill. Parents giving the best care in infancy tend to give their children more encouragement in school (Kagan, 1989; Griesel, 1986).

This study used data derived from a cohort of children born in England, Wales and Scotland in March of 1946 (N = 5,362). The parenting styles of cohort members were studied from the time members' children were four years old. Tests given when these second-generation children were eight assessed abilities of children in vocabulary, reading and sentence completion.

Contacts were made with the original cohort of 5,362 children born in 1946 at intervals of two years or less in infancy, childhood, adolescence, and at intervals of approximately five years in adult life. Additional data were collected from teachers and school nurses. In adulthood, information was obtained from self-reporting and community nurses. Information gathered included facts on home and family circumstances, education, occupation and health.

In the second-generation study, interviewers talked with mothers on a wide range of psychological, medical and social information, to make comparison of health, use of preschool, and to evaluate school



facilities, verbal attainment and parenting practices. Data on second-generation children at four included information about how children spent time, need for parental discipline, children's habits, dreams, health, family structure and a personal assessment of the mother-child relationship. This interview preceded British compulsory education which begins at four and five.

The tests administered when children were eight included: reading or decoding words, sentence completion and vocabulary comprehension. These tests had been administered also to original-cohort parents when they were age eight. Tests were made generation fair by updating words of comparable difficulty. Additional information that had been collected during parents' own childhood included their education attainments, their teachers' rating of their productivity, and grandparents' ultimate educational attainments.

The modal time spent at state preschools was two - four days a week. The modal age for starting preschool was 36 months and the modal length of time spent in attendance was 18 months. In comparison of the two generations, there was a considerable increase in the percentage of children receiving some kind of preschool experience: 13.1% for first generation to 81.9% for their children (Osborn, 1986). Socio-economic status for first generation parents whose children went to preschool was not significantly different from the status of those whose children did not. A higher rate of working mothers during the postwar period and more equitable availability of preschool made the likely difference thereafter.

In the second generation, 87% of children of non-manual class families used day care facilities as compared to 68.4% of children from manual-class homes. The achieved educational level of parents using preschool for their children was also interesting; 71.6% of non-user parents as compared to 41.8% of user parents, had completed their education without gaining minimum qualifications at the end of compulsory schooling at age 16. The parents choosing preschool for their children were more likely to be better educated.

Through interviews with parents of four-year olds, the researchers determined that mothers who made use of preschool had relatively high levels of interaction with their children. Although they had more worries about discipline, they were less punitive, more affectionate, more stimulating and imaginative in coping with their child's boredom, or excitability.

The findings of this study were:

1. That the greatest increases in the use of preschool were being made by families with better education and higher socio-economic status. Data about the lives of parents before the index child was born show that those experiencing upward social mobility as a result of education were more likely to use preschool for their child when they became parents. This heightened the demand for preschool services.

2. Preschool attendance had a beneficial effect on children's verbal scores. However, once the effect of mother's educational level was considered, the power of preschool attendance and the mother's

stimulating behavior during early years seemed to play a relatively small part in explaining differences in verbal attainment scores.

3. Preschool attendance was found beneficial in raising verbal scores of eight-year olds whose mothers were relatively understimulating when the child was age four. Here also mother's education was the most powerful agent reported.

4. Finally, children of mothers who had the best education and lowest achievement were most likely poor and in need of extra attention and care that preschool may have provided.

This study was done to support preschool as an intervention technique and to support its availability in Britain. Russell (1926) believed that universal preschool could, in one generation, blend the classes in society. This remarkable study covering two generations of childhood was certainly large enough to contain a wide variation in parental educational achievements and childrearing practices. Although preschool was an independent and significant predictor of verbal attainment, its power was minimal when compared to mother's education. Preschool attendance was of little significance in predicting better scores for understimulated children. If preschool is to benefit American children, it probably must be publicly funded and compulsory.

In review of the literature, four educational dissertations from American universities were found that add insight. They are briefly reviewed here by author.

James Yonally, 1972

A study in Kansas compared the social adjustment and academic achievement of children who had attended preschool with those who did not. The sample was not disadvantaged. Ten classes of public kindergarten and ten classes of second graders were randomly selected for inclusion. Teachers ranked students' social adjustment. The Metropolitan Readiness Test was used to compare academic achievement in kindergarten. Eight sub-tests of the Stanford Achievement Test were used to compare second graders' academic achievement. Parents reported by questionnaire preschool attendance.

Mean scores were computed for each group and differences tested for statistical significance by use of the Fisher t Test. The .01 level of significance was used as acceptance of each hypothesis.

Findings of the study were:

1. Kindergarten students with preschool scored significantly higher than the control group without preschool in both academic and social adjustment.

2. Second-graders with preschool scored significantly higher than the control group on four sub-tests of the Stanford Achievement Test (word meaning, paragraph comprehension, science, social studies and word study skills). There were no differences between scores on spelling, language and math. In grade two, there was no significant difference between the two groups on social adjustment rankings by teachers.

Conclusion: Preschool experience makes for better kindergarten students but this advantage is lost by second grade except in academic

areas dependent on reading.

Robert Givens, 1984

This study was designed to determine relationships between reading achievement and behavior of first, second and third graders who attended or did not attend preschool. Specific attention was given to sex.

The 90 students at the three grade levels were selected from 23 elementary schools in Compton District. Reading scores from the California Achievement Test, form C, were obtained as were teachers' ratings of students' behavior.

For each grade level, a mean score was obtained. A two-way ANOVA was computed per grade level and a significance level of .05 was used to test hypotheses.

Results were:

1. Students attending preschool scored significantly higher in reading and achievement across all grades.
2. There was no significant difference between sexes in achievement.
3. There was a significant difference in the behavioral rating for grade two preschool students.

Karin Matusek Randolph, 1986

This study investigated whether intensive preschool development and educational experiences offset the reported age disadvantage of the chronologically young child. School data were collected on 144 fourth

and sixth grade students in reading and math achievement who entered kindergarten in 1978-1979. The average scores for the youngest third of the children based on their age at the time of entrance to kindergarten were compared with those of the oldest third in order to differentiate clearly children who were at the oldest and youngest ends of the enrollment continuum. All students were upper middle class.

An analysis of covariance (ANCOVA) was used, followed by post hoc testing to analyze the data. The following variables were studied: mental ability (the covariate), age category and type of preschool (independent variables) and fourth and sixth math and reading achievement scores (dependent variables).

Major findings were:

1. Older children with the most preschool did significantly better in reading in fourth grade.
2. Older children with the most preschool scored significantly higher as a group on mental ability measures.
3. By sixth grade, younger children begin to catch up academically as shown by the lack of significant difference in reading and math between older and young students in this grade.

Donald Meyerhoff, 1986

The researcher analyzed an Iowa public school district's full-day preschool program serving all four-year old children. Age, sex, and Chapter 1 eligibility were factors considered. The Boehm Test of Basic Concepts was used as a pre-post test instrument.

Differences analyzed by sex were not significant statistically. Age and eligibility provided a statistically significant difference at the .05 level.

Conclusions:

1. High-risk (Chapter 1-eligible) children make greater relative gains in preschool than low risk children.
2. Older children make greater gains on the pre-post tests than do younger children.
3. Younger Chapter 1-eligible children made significantly greater gains than did Chapter 1 non-eligible children for the same age and sex groupings.

Being in a high-quality day care program has a beneficial effect on the developmental status of high-risk preschoolers according to research. Academic and social problem-solving skills are developed to help kids deal effectively in their environment (Anooshian, 1984; Avery, 1988; Berreuta-Clement, 1984; Davidson, 1990; Holden, 1990). Without this strategy, such children are at risk of failing to meet the standards of public education before they have a chance to benefit fully from the opportunities of public education (Schweinhart and Barnett, 1984).

Less research has been accomplished on middle and upper income students. Research does support greater inclination of these parents rather than low-income parents to choose child care and education for their children (Wadsworth, 1985). The dissertations studied from American universities generally concluded that early achievement gains for this population were lost by second grade (Yonally, 1972; Miller,

1976; Caldwell, 1987). Givens (1984) concluded that reading comprehension skills continued for such students over time. Clearly, more research is needed.

Applied research that has both quantitative and qualitative data could advance the early childhood movement. Qualitative research uncovers important aspects of a program that are not easily quantifiable. The character, nature, and meaning of a program may not be discerned by merely crunching numbers (Kerlinger, 1986).



## CHAPTER III

### METHODS

#### Overview

This is a study to determine the effectiveness of a school-based prekindergarten program, the Early Adventures Program (EAP) in Siler City, North Carolina. The study required selection of a control group that met particular criteria. In this chapter, the sample, measures and methodological procedures are described. Hypotheses are reviewed.

#### Subjects

Subjects for this study include 46 six- and seven-year olds who were students at Siler City Elementary School. Identified children were placed in one of two heterogeneous groups: an EAP participant group who attended one - two years of prekindergarten (T) and a comparison group (C) of children who did not attend EAP. Cohort 1 finished second grade in Spring, 1990, and Cohort 2 finished grade one in Spring, 1990.

The intervention group enrolled in EAP in August, 1986 (T<sub>1</sub>) and August, 1987 (T<sub>2</sub>). Some received financial assistance from the Department of Social Services and others from Central Carolina Community College.

The comparison group consists of first and second grade students who did not attend EAP. Some had no formal preschool experience and some may have attended another child care or prekindergarten experience that was

not school-based. It is anticipated that the curriculum therefore was not age and individually appropriate.

The comparison group students were matched with the (T) group by sex, race and chronological age. The birth date of each child match is within three calendar months. Some attention was given to match equal educational preparation level of parents.

### Design

To assess EAP's effectiveness and address the evaluation questions regarding school success, a comparison group is needed. This study employed a non-equivalent control group design, or Design Three. This quasi-experimental design is appropriate when subjects cannot be randomly assigned to treatment and control groups (Campbell and Stanley, 1966).

This study assigns an intervention or treatment (T) and comparison group (C) for cohort one and cohort two (see Figure 1). Using a static group design, the researcher tested for significance ( $p \leq .05$ , where appropriate) any differences found between the two groups.

Table 1

Sample Configuration by Cohort		
	EAP Intervention	Comparison
Cohort 1/Grade 1	T <sub>1</sub> n = 11	C <sub>1</sub> n = 10
Cohort 2/Grade 2	T <sub>2</sub> n = 12	C <sub>2</sub> n = 13

Children for treatment or intervention (T) and comparison groups (C) were matched by chronological age, sex, race and educational completion level of parents.

#### Limitations

Static group design has both limits and strengths. It is easy to assume that one thing causes another simply because it occurs prior to the other. This study will not seek to determine causes. Even with a systematic inquiry, the researcher will not have direct control of independent variables because their manifestations have already occurred or because they are not manipulable (Kerlinger, 1973).

In the case of a prekindergarten evaluation, it is impossible to manipulate independent variables such as parental support or family crises that probably affect school success for a student. Teacher assignment in all grades after prekindergarten affects school success for students, but is randomized for all and is not manipulable for this study. Inferences about relations among variables will be made as well

as conclusions that respect the inherent weakness or lack of control of certain independent variables. Use of an "equivalent comparison group" is one step to add strength to the analyses, but this step does not overcome weaknesses of non-experimental design.

The unit of analysis will be individual people. This is a methodological weakness for it implies that pupil outcomes are independent of teacher (and school) effects, an assumption seriously questioned by such concepts as effective teaching research and even "effective schools" work (Brewer, 1985). Costs and sample size limit the use of a more rigorous design and analysis.

Achievement testing is not done in Chatham County until the third grade. Therefore, parental permission was gathered to administer the Comprehensive Test of Basic Skills as an achievement measure. Testing of young children is always suspect. The results represent one point in time and may not present the student's best effort or actual knowledge. Immaturity and attention span affect motivation.

Bias is highly possible in the evaluation of any self-innovated program. Because of this, it is necessary to include a more objective second party in the appraisal of data. This was accomplished by use of an assistant outside the system.

Results of this study will be more useful if they may be generalized to other publics, other elementary schools in other communities. According to Kerlinger, development and analyses of hypotheses strengthen research. Negative findings may advance knowledge

and point to other fruitful further hypotheses or lines of investigation (Kerlinger, 1973).

### Hypotheses

Given the evaluation questions which guide this study and data provided from a literature review, hypotheses have been developed for this study as follows: (Hypothesis 1 parallels questions 1 and 2.)

- H<sub>1</sub> As an indicator of school success for cohorts 1 and 2, the EAP group will exhibit a higher achievement record than the comparison group at the end of grades one and two. This will be evinced by the 1) CTBS and, 2) progress reports given by teachers.
- H<sub>2</sub> Attendance in kindergarten, grades one and two will be greater for EAP participants as compared to attendance for the equivalent comparison group.
- H<sub>3</sub> As an indicator of general academic success for cohorts 1 and 2, the EAP group will experience fewer retentions and special placements than the comparison group in kindergarten, first and second grades.
- H<sub>4</sub> As an indicator of school success for cohorts 1 and 2, the EAP group will experience fewer referrals to the principal's office for school discipline than the comparison group.
- H<sub>5</sub> As an indicator of school success, parents and teachers will evaluate EAP students as more adjusted and successful at school than students in the comparison group.

### Instruments

The measures used in this study were:

1. Comprehensive Test of Basic Skills (CTBS)
2. Teacher Questionnaire on Student Behavior
3. Parent Questionnaire on Student Behavior

#### Comprehensive Test of Basic Skills

The Comprehensive Test of Basic Skills (CTBS) is used in the Chatham County Schools to identify academically gifted students in the elementary grades. It is used as a measure of math and reading competence. The test results are designed to help teachers isolate areas of strength and weakness with regard to language facility in auditory comprehension and verbal ability and to determine mathematical skills. Form U, (Levels C and D), is a test of reading, language and math. This form gives more complete information for purposes of measuring verbal and math achievement for students accomplishing three years of schooling.

The CTBS was used in the present research to test small groups of children. Cohort 2 students were tested together and Cohort 1 students tested together. Mixture of both T and C students gave the students no clue of their identification for this study. It is more likely that they felt that they had been referred for academically gifted identification which was likely a positive reason for taking the test.

The CTBS was administered by a special education teacher acknowledged by the students for this teaching. This teacher serves Siler City Elementary School on a regular basis. Her expertise in

administering such tests routinely and her demonstrated rapport with students made her an appropriate source for this task.

Test constructors were rigorous in steps taken to guarantee content validity of the CTBS. This test is highly correlated with the California Achievement Test which is currently given to all third, sixth and eighth grade students in North Carolina to measure achievement and determine need for retention at each grade level. Buros (1978) gives reliability data on the CTBS as (.94 to .97) which is highly adequate for this research.

#### Teacher Questionnaire on Student Behavior

A questionnaire was developed to measure teacher judgment of the individual behavior of identified children in the study. The treatment group was identified specifically and questions asked about the presumed value of the intervention for each student participating. The Control group student questionnaire reflected the same personal interest in behavior and related school success but did not identify the student as a group member.

The school cumulative records for students contain achievement reports from teachers denoting academic grades, math reading and language assessments. This data was used to determine teachers' judgment of educational achievement for all study participants.

#### Parent Questionnaire on Student Behavior

A questionnaire was developed to ascertain whether each child in the

control group had child care or prekindergarten prior to school entry. Other questions were drafted to determine specific parental judgment of general behavior, school adjustment and related success issues.

The questionnaire for the treatment group specifically identified the child's involvement with EAP and asked parents specific questions related to school success, behavior and overall adjustments to school. As an extra item, parents were asked if they would enroll another child in EAP.

#### Other Data Collection

Hard data collected from school records for each study participant includes: attendance for 2 - 3 school years (kindergarten - current grade), any enrollments for special education services, any retention at grade level, and any behavioral disruptions reported to the principal's office for attention.

#### Procedures

This study required a post hoc, quasi-experimental research design. Mean scores were computed for each group, T and C and differences tested for statistical significance by use of the Mann Whitney U-test (See Table 2). The .05 level of significance was used as acceptance of each hypothesis. Chi-square tests were done to determine association between group membership and teacher-given annual grades in reading, math and conduct.



Table 2

Analysis of U-tests for Scores by Cohort	
Cohort 1	Cohort 2
Grade 2	Grade 1
T <sub>1</sub> vs. C <sub>1</sub>	T <sub>2</sub> vs. C <sub>2</sub>
Combined T <sub>1</sub> + T <sub>2</sub> vs. C <sub>1</sub> + C <sub>2</sub>	

Study results may not be due solely to the influences of preschool experience alone. The individual educational capacity of each child, the amount of parental support and the "luck of the draw" in getting the most competent teachers could make a significant difference in academic, behavioral results as supported by many researchers (Hoepfner, 1975; Fink, 1975; Goodlad, 1984).

Qualitative data from parents and teachers will have strong influence in final judgment of EAP value for students. Service providers often continue efforts because of perceived need and because they receive evidence of appreciation.

Annual evaluation by parents has been accomplished since 1985. Recommendations have substantially improved the care and education components of the program. Parents have been involved as volunteers and resource presenters insuring an increased adult-child ratio and offering new curriculum ideas. Our service to children has been shaped while families have been enhanced and improvement in service delivery has been accomplished.

## CHAPTER IV

### RESULTS

The data were analyzed in several ways depending on the hypothesis being tested. Comparison data are illustrated in table format. Questionnaire data are reported on the questionnaire form used for each selected group, teachers or parents. Statistical analyses include Mann Whitney U-tests done to make comparisons in two ways: between the treatment and comparison groups in each cohort and in combination, comparison group against intervention group.

Chi-square tests were done to determine association between group membership and annual grades given by teachers in reading, math and annual grades given by teachers in reading, math and conduct.

Chapter 4 is organized in the following manner. Demographic information is presented on the treatment and comparison groups. Each hypothesis is stated. All descriptive or statistical information follows. Finally, a summary of questionnaire findings is presented.

The sample included 46 six- and seven-year olds enrolled in 1989-90 school year at Siler City Elementary School. The Early Adventures Program (EAP) information or treatment group (T) attended 1-2 years of prekindergarten and a comparison group (C) did not attend the EAP.

The comparison group was selected from the grade-level population at Siler City Elementary and was matched with the T group by sex, race and chronological age. Finally, attention was given to the highest educational attainment level of parents.

Table 3 reports the number of students by race and sex in the treatment and comparison groups. Ten children in the sample were black and 16 were female. Twice as many parents of boys chose preschool and only one of every three children in the treatment group was black.

Table 3

Number of Students in the Treatment (EAP)  
and Comparison Groups by Race and Sex

	Male				Female				Total
	T <sub>1</sub>	T <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	T <sub>1</sub>	T <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	
Black	3	2	3	1	-	-	-	1	10
White	3	8	2	8	5	2	5	3	36
Total	6	10	5	9	5	2	5	4	46

T<sub>1</sub> = 11  
T<sub>2</sub> = 12

C<sub>1</sub> = 10  
C<sub>2</sub> = 13

Table 4 shows the match of students by chronological age. The birth date of each child match is within three calendar months.

Table 4

Number of Students in the Treatment (EAP)  
and Comparison Groups by Birth Date

Birth Date	T <sub>1</sub>	T <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	Total
June - December, 1981	3	-	2	1	6
January - June, 1981	6	-	5	1	12
June - December, 1982	2	3	3	1	9
January - June, 1983	-	5	-	6	11
June - December, 1983	-	4	-	4	8
Totals	11	12	10	13	46

Table 5 reports the highest educational level attained in each family. Note that more parents with higher education levels have chosen a school-based prekindergarten program for their child than parents without college education. This likelihood has been supported by other research (Wadsworth, 1985).

Table 5

Number of Students per Cohort by Highest Parental  
Education Level

Education Level	T <sub>1</sub>	T <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	Total
Grades 1-8	-	-	-	-	0
Some high school	-	2	3	3	8
High School Diploma or GED	5	3	3	5	16
Trade/Voc. School	-	-	-	2	1
Some college	3	-	-	3	6
Two-Year Degree	1	1	3	-	5
Four-Year Degree	1	5	1	1	8
Grad/Professional Degrees	1	1	-	-	2
Totals	11	12	10	13	46

### Hypothesis 1

As an indicator of school success for Cohorts 1 and 2, the EAP group will exhibit a higher achievement record than the comparison group at the end of grades one and two. This will be evinced by 1) Comprehensive Test of Basic Skills (CTBS) and 2) progress reports by teachers.

### CTBS

Because of the small sample size, non-parametric statistics were used. The Wilcoxon Test or Mann Whitney U-test is an analysis done on ranks of T to C students. Z is computed to determine probability. The significance level for all analyses was  $P < .05$ .

Preliminary U-tests revealed no significant differences in CTBS standard scores in reading and math for the treatment and comparison groups. All mean scores were higher for T than C as predicted. For combined T versus C, the T group clearly reached a significance level of 0.0343 in reading and 0.0062 in math. Table 6 illustrates data for math and reading tests of the CTBS for grades one and two.

Table 6

Means, Standard Deviations, U Values and Significance  
Levels Reported for Comparison and Treatment Groups

	C <sub>1</sub>	T <sub>1</sub>	C <sub>2</sub>	T <sub>2</sub>	Combined C	Combined T
<b>CTBS-Reading</b>						
X	8.95	12.86	10.92	15.25	19.304	27.695
SD	-1.41620		1.44531		21161	
Prob > Z	0.1567		0.1484		0.0343	
SD	14.1		18.335		45.365	
<b>CTBS-Math</b>						
X	7.72	12.77	10.61	15.58	17.522	28.239
Z	-1.87551		1.68178		-2.73480	
Prob > Z	0.0607		0.0926		0.0062	
SD	13.06		18.135		43.87	

In first grade for Cohort 2, the mean math score for the comparison group (n=13) was 7.72. The same mean score for math in the treatment group (n=12) was 12.77.

In second grade for Cohort 1, the mean math score for the comparison group (n=10) was 10.61 and the mean score for the same in the treatment group (n=11) was 15.58.

The mean math score for combined treatment groups ( $T_1 + T_2$ ) (n=23) was 28.23 while the mean for the combined comparison group ( $C_1 + C_2$ ) (n=23) was 17.52.

Reading scores on the CTBS were consistently higher for the treatment groups. In Cohort 1, second graders in the comparison group (n=10) accomplished a mean score of 10.92. The mean treatment group (n=11) score for the reading sub-tests of vocabulary and comprehension was 15.25. The mean comparison group in Cohort 2 in first grade (n=13) scored 8.95 while the mean treatment group (n=12) score was 12.86.

Overall in combination, the mean comparison group (n=23) score was 19.3 and mean treatment group (n=23) score was 27.69 in reading.

#### Teachers' Progress Reports

As another measure of achievement, the annual academic grades reported by the classroom teacher for each student per group in Reading and Math are illustrated in Table 7. Chi-square tests were not determined to be valid for comparison on grade-level groups using the full range of grades because the cells had expected counts of less than 5 in some cases. However, for combined treatment (n=23) and combined



comparison (n=23) groups, the probability of a higher reading grade for the treatment group was 0.003 ( $\chi^2 (1, N = 46) = 8.712, \underline{p} = .049$  or  $\underline{p} < .05$ ). The same held true in math with a probability reported of 0.055 ( $\chi^2 (1, N = 46) = 3.696, \underline{p} = .055$  which is significant by the standard stated.

Grades were combined for analysis into a table comparing grade levels and combined groups.

Hypothesis 1 is accepted. For Combined T versus C, achievement in reading and math is higher for the treatment group as evinced by CTBS results and teachers' progress reports.

Table 7

## Chi-Square Analysis of Reading and Math Achievement

READING	
T <sub>1</sub> v C <sub>1</sub>	$\chi^2 (1, N = 21) = 3.884 = \underline{P} = .049$
T <sub>2</sub> v C <sub>2</sub>	$\chi^2 (1, N = 25) = 3.884 = \underline{P} = .025$
Combined T v C	$\chi^2 (1, N = 46) = 8.712 = \underline{P} = .003$
MATH	
T <sub>1</sub> v C <sub>1</sub>	$\chi^2 (1, N = 21) = 2.386 = \underline{P} = .122$
T <sub>2</sub> v C <sub>2</sub>	$\chi^2 (1, N = 25) = 1.470 = \underline{P} = .225$
Combined T v C	$\chi^2 (1, N = 46) = 3.696 = \underline{P} = .055$

### Hypothesis 2

Attendance in kindergarten, grades one and two will be greater for EAP participants as compared to attendance for the equivalent comparison group.

### Attendance

John Goodlad found in the California State Preschool Study that prekindergarten had a negative effect on attendance in kindergarten for the intervention group in 1973. There was some speculation that the children were tired of school. In the present study, attendance for the T group is better than for the C group in kindergarten, but is even by second grade. Students with higher absenteeism tend to score less well academically by their teachers' reports of progress. Table 8 charts attendance for each cohort by grade level, and totals. Hypothesis 2 is not accepted by these results.

Table 8

**Attendance Record per Grade Level by Treatment  
and Comparison Cohorts**

Days Absent	KINDERGARTEN					GRADE 1					GRADE 2			TOTAL	
	T <sub>1</sub>	T <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	Total	T <sub>1</sub>	T <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	Total	T <sub>1</sub>	C <sub>1</sub>	Total	T	C
0 - 3	4	4	2	3	13	5	4	3	3	15	2	2	4	19	13
4 - 9	3	7	6	3	19	2	7	6	4	19	5	5	10	24	24
10-15	1	1	2	1	5	2	1	1	5	9	4	3	7	9	12
16-20	2	-	-	5	7	2	-	-	-	2	-	-	0	4	5
21-30	1	-	-	1	2	-	-	-	1	1	-	-	0	1	2
<b>Totals</b>	<b>11</b>	<b>12</b>	<b>10</b>	<b>13</b>	<b>46</b>	<b>11</b>	<b>12</b>	<b>10</b>	<b>13</b>	<b>46</b>	<b>11</b>	<b>10</b>	<b>21</b>	<b>57</b>	<b>56</b>

Via questionnaire, parents reported that children in neither group were tired of school (See also Appendices 1 and 2, Pages 94-95.)

### Hypothesis 3

As an indicator of general academic success for Cohorts 1 and 2, the EAP group will experience fewer retentions and special placements than the comparison group in kindergarten, first and second grades.

#### Retentions

Retention data are presented in Table 9 for the comparison groups and the treatment groups. In kindergarten, .043% of the T group (n=23), and .087% of the C group (n=23) were retained.

**Table 9**

**Number of Students Retained at Grade Level**

Grade Level	T <sub>1</sub>	T <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	Total
Kindergarten	1	-	-	2	3
Grade 1	2	-	-	1	3
Grade 2	-	-	-	-	0
Totals	3	0	0	3	6

In grade one .043% of the comparison group and .087% of the treatment group were retained. There were no retentions in second grade for either group. Over the project, three pupils in T and three in C were retained. There was no difference.

Four students in the treatment group were identified for special services as compared to one child in the comparison group. Two children

were identified in EAP for speech and language services. Let's Talk, a program support service funded by PL 99-457 provided a full-time speech and language therapist for identified children. The other identifications were made in grade one for the treatment group. One child was identified as learning disabled and another academically gifted. Both identifications are premature for general school experience. Most identifications of this nature come in second grade or after. In these cases, an early school intervention likely exposed the children sooner to their advantage. One child in the comparison group was identified for speech and language services in kindergarten. Early identification is advantageous to children in either group. Special placement data are illustrated in Table 10.

Hypothesis 3 is not accepted as EAP students did not experience fewer retentions and special placements than the comparison group in kindergarten, first and second grades.

Table 10

Special Identification for Comparison and Treatment Groups

Label	T <sub>1</sub>	T <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	Total
Speech and Language	-	2	-	1	3
Learning Disabled	1	-	-	-	1
Academically Gifted	1	-	-	-	1
Totals	2	2	-	1	5

Hypothesis 4

As an indicator of school success for Cohorts 1 and 2, the EAP group will experience fewer referrals to the principal's office for school discipline than the comparison group.

Information on behavior has been presented in two ways: first, a conduct grade was indicated for each child by the teacher at the current grade level. A chi-square analysis compared T and C students in each grade category. Data were then combined to evaluate total comparison and treatment groups. Results are found in Table 11. Grades were represented as A, B, C and D for chi-square purposes. Chi-square probability ( $P = .929$ ) showed that there was no difference between the groups.

Table 11

Chi-Square Analysis of Conduct Grades given by Class  
Teachers for Treatment (EAP) and Comparison Groups

CONDUCT	
T <sub>1</sub> v C <sub>1</sub>	$\chi^2 (1, N = 21) = 1.314 = \underline{P} = .518$
T <sub>2</sub> v C <sub>2</sub>	$\chi^2 (2, N = 25) = 2.249 = \underline{P} = .325$
Combined T v C	$\chi^2 (2, N = 46) = 0.148 = \underline{P} = .929$

In Table 12, the number of student referrals to the principal's office for discipline is presented. Two more children were reported from the treatment group. Also, two children from the treatment group received more severe punishment which resulted in after-school detention and a follow-up parent conference. Hypothesis 4 is rejected.



Table 12

Number of Students per Group Referred  
to the Principal's Office for Discipline

	T <sub>1</sub>	T <sub>2</sub>	Total T	C <sub>1</sub>	C <sub>2</sub>	Total C
1988-89						
1st Offense	1	-	1	2	-	2
2nd Offense	-	-	0	-	-	0
3rd Offense	-	-	0	-	-	0
More than 3 offenses	-	-	0	-	-	0
Total Referrals	1	0	1	2	0	2
1989-90						
1st Offense	1	1	2	2	-	2
2nd Offense	1	1	2	2	-	2
3rd Offense	1	1	2	-	-	0
More than 3 offenses	-	-	0	-	-	0
Total referrals	3	3	6	4	-	4

T<sub>1</sub> = 11 (EAP students)  
T<sub>2</sub> = 12

C<sub>1</sub> = 10 (Comparison students)  
C<sub>2</sub> = 13

### Hypothesis 5

As an indicator of school success, parents and teachers will evaluate EAP students as more adjusted and successful at school than students in the comparison group.

### Parent Questionnaire

Parents responded to a ten-item questionnaire related to school success. The first five items were the same on both parent forms (comparison and treatment). In all cases except one (Question 4), parents reported happy students who were adjusted to school, liked the teacher and were academically successful. On Question 4, parents were asked about school phobia. Twice as many parents reported this problem for the comparison group.

Questions 5-13 were designed specifically to gather information about the elementary school program for comparison parents and to appraise the prekindergarten experience for the treatment group. The last question for comparison-group parents determined early day-care or prekindergarten experience as a follow-up check on preliminary data. The treatment group parents were asked if they would recommend EAP to another parent.

Appendices 1 and 2 present the questionnaires with parental results. The school results as well as EAP results are favorable.

Comparison group parents agreed that their children were happy, had many friends and liked school. Two parents questioned whether their children were academically successful and eight questioned their

students' leadership. Four out of 23 reported school phobia. Fifteen students in the comparison group had no prekindergarten experience while eight had attended other child care options (see Appendix 1).

Parents having children in the treatment group disagreed that prekindergarten had made their children tired of school. They reported the learning period as valuable with no later adjustment problems to kindergarten. Only one parent was unsure about recommending the EAP to another parent (see Appendix 2).

#### Teacher Questionnaires

Each current teacher of a student in Cohort 1 and or in Cohort 2 was asked to complete a questionnaire. The questionnaires for the T and C groups were identical except for two differences: 1) Question 8 for the comparison group asked the teacher to note any identification for special education services and for the treatment group, the teacher was asked if she felt that the prekindergarten experience was a significant benefit to students academically and socially in school.

Teachers of students in the comparison group reported three cases of school phobia as did parents of this group. Only two students were reported to have problems with peers. Leadership potential was questioned for 11 out of 23 students and five were reported as tired of school. Twenty-one children were rated as happy and academically successful.

Twenty-two students in the treatment group were identified as happy and adjusted. Three were reported to have many behavior problems. Nine

students were identified as followers instead of leaders. Five were reported as tired of school, while teachers agreed that 15 out of 23 had benefited from the prekindergarten experience.

Questions nine and ten allowed teachers to make recommendations for individual students and to compliment them. In responses to Question 9, two students were recommended for academic challenge in the comparison group while five were given the same recommendation in the treatment group. Three children in the comparison group were recommended for structured classroom placements while only one in the treatment group was identified as not following directions. Praise was recommended for equal numbers in each group as a good reward while three students in the treatment group received a recommendation to spend more time with children.

On question ten, "What is the best thing about this child?," classroom teachers were less responsive about comparison-group students than about treatment-group students. In cases, the teacher was concerned about retention, motivation or behavior. "Good," "sweet," "gets along well with peers" and "eager to learn" as comments about the comparison group are less complimentary than the remarks made about treatment students (creative, high achiever and enthusiastic learner). Whatever the reason, these particular treatment students prompted their teachers' greater willingness to write about them; twenty-nine compliments were received in the comparison group and 50 in the treatment group.

Parents and teachers of T and C students rate their children as adjusted to school and successful. Teachers reported 13 T students to be

school leaders versus nine in the comparison group. Narrative remarks by teachers also indicate greater school success for T students.

Hypothesis 5 is partially accepted. Teachers see EAP students as more successful after three school years. Parents have not determined this. There is a possibility of a sleeper-effect in early intervention (Odom, 1988) that the effects on children cannot be seen until long after the intervention program has ended.

CHAPTER V  
SUMMARY AND DISCUSSION OF RESULTS,  
LIMITATIONS OF THE STUDY AND RECOMMENDATIONS

Discussion of Results

The primary purpose of this study was to evaluate and assess the Early Adventures Program (EAP), a school-based prekindergarten in Chatham County, North Carolina. This program serves a heterogeneous group of three- and four-year olds. The curriculum is developmental, enhancing children's social, physical and intellectual development. The program is supported by regular supervision, daily planning by teachers and in-service training for staff.

Placement of a prekindergarten program within a public school facility has been advantageous. Available space, administrative support, an intact food services program and media availability make the placement cost effective. Federal funding provided through Public Law 99-457 places a full-time speech and language teacher who works with all children in large and small groups to develop language skills. Mainstreaming of identified handicapped children with higher functioning children is of benefit to both sets of children. Good modeling and appreciation of differences in others are two immediate gains.

Findings from longitudinal research support early intervention efforts prior to kindergarten (Consortium for Longitudinal Studies, 1983; Schweinhart and Weikart, 1987). If effective preschool interventions help at-risk children to succeed in school and avoid later problems such as retentions and special placements, we can keep these students in

school (Lazar and Darlington, 1982). Further, reduction of teen pregnancy, juvenile delinquency and increased employment will decrease the rate of welfare dependency (Schweinhart, 1987).

The High/Scope Foundation predicted that preschool intervention at a cost of \$5,000 per child per program year yielded benefits to taxpayers of approximately \$28,000 per participant. This is an excellent financial investment. It is likely that less money would be needed to fund remedial programs like Chapter I and Basic Education Program Summer School if equal monies were spent on an early intervention for young children. It is also possible that less per capita would be expended publicly due to alcoholism and other substance abuse, crime, unemployment and welfare. The quality of life could be improved with a more educated citizenry. Preschool is far cheaper than later incarceration.

Preschool is universally available in Europe, not limited to children with special needs. Preschools in Europe are not specifically available for children whose mothers work outside the home or for deprived children, though these children are included.

Preschool experience is viewed as advantageous to healthy cognitive and social development. There is a strong belief that children not experiencing this opportunity are likely to be ill-prepared for later education. There is no debate between the child care education issues and who should administer such programs: social welfare or education departments. Both involvements have seemed essential to the total program.

### Summary Findings of EAP Study

Hypotheses were developed for this study. Each is reviewed here with a summary of EAP findings.

H<sub>1</sub> As an indicator of school success for cohorts 1 and 2, the EAP group will exhibit a higher achievement record than the comparison group at the end of grades one and two. This will be evinced by the 1) Comprehensive Test of Basic Skills (CTBS) and, 2) progress reports given by teachers.

A small sample size required that data be combined to treatment (T) versus comparison (C) to determine probability of significance in achievement on the CTBS and on progress reports by teachers; Mann Whitney U-tests revealed no significant differences in comparison on grade level. However, combined T achievement clearly reached a significance level of  $\underline{p} = .0343$  in reading and  $\underline{p} = .0062$  in math over C groups in achievement on the CTBS sub-tests. Based on a  $\chi^2$  analysis the T Combined groups also excelled in comparison to C groups in both reading ( $\chi^2 (1, N = 46) = 8.712 = \underline{p} = .003$ ) and math ( $\chi^2 (1, N = 46) = 3.696 = \underline{p} = .055$ ). The treatment group was academically advantaged in reading and math by involvement in EAP.

H<sub>2</sub> Attendance in kindergarten, grades one and two will be greater for EAP participants as compared to attendance for the equivalent comparison group.

There was no discernable difference in attendance by T (57 absences) or C-groups (56 absences) on or across grade levels. Two years in



prekindergarten did not have a negative effect on T students in EAP. Parents reported that children in neither group were tired of school by questionnaire (see also Appendices 1 and 2).

H<sub>3</sub> As an indicator of general academic success for cohorts 1 and 2, the EAP group will experience fewer retentions and special placements than the comparison group in kindergarten, first and second grades.

There was no difference in retention data for comparison and treatment groups. Six students were retained at grade level, three in each group.

Early social intervention exposed four special needs students in the T group. Only one child in the comparison group had been identified by second grade. Longitudinal data will indicate if comparison students required more school experience to determine special needs identification. This EAP exposure seems to benefit students in identification of special needs.

H<sub>4</sub> As an indicator of school success for cohorts 1 and 2, the EAP group will experience fewer referrals to the principal's office for school discipline than the comparison group.

Chi-square analysis of grades A, B, C and D showed that there was no significant difference between T and C groups in conduct grade indicated by class teachers ( $\chi^2 = (2, N = 46) = 0.148 = \underline{P} = .929$ ). More students

in the treatment group were referred to the principal's office for discipline and the disciplinary consequences were more severe because of repeated offenses.

H<sub>5</sub> As an indicator of school success, parents and teachers will evaluate EAP students as more adjusted and successful at school than students in the comparison group.

Parents and teachers reported students in both the comparison and treatment groups to be happy and adjusted to school. There was greater question about school leadership for comparison students by parents and teachers. Teachers' comments about students in the EAP were more complimentary and indicated greater achievement potential than those made about comparison group students (see Appendices 5 and 6, pages 98-99).

#### Comparison of EAP Results to Earlier Studies

Findings from the EAP study support findings previously noted in a review of the literature. They include:

1. Preschool affects positive school achievement. These effects may be short term. (Yonally, 1972; Lazar, 1982; Schweinhart and Weikart, 1986; Gray, 1982).
2. Preschool programs have positive effects on parents. Parents choosing preschool tend to be better educated and hold higher economic status. (Lazar and Darlington, 1982; Featherstone, 1986; Kagan, 1989; Griesel, 1986).

3. Teachers are often annoyed by preschool graduates as these students are more talkative and familiar with school routines (Lazar and Darlington, 1982).
4. Preschool attendance was found beneficial in raising children's verbal scores (Yonally, 1972).
5. With middle-above average population, preschool makes for better kindergarten students, but the advantage is lost by second grade except in reading (Yonally, 1972).
6. Children attending preschool score significantly higher in reading across all grades. There is no significant difference between the sexes in achievement (Givens, 1984).
7. Older children with the most preschool do significantly better in reading (Matersek, 1986).
8. High-risk (Chapter 1-eligible) children make greater gains in preschool than low-risk children (Meyerhoff, 1986).

#### Limitations of the Study

This study did not seek to determine cause. The researcher did not have direct control of such independent variables as parental presence, nurturance and educational experiences prior to age three. Randomized teacher assignment in all grades after prekindergarten had an effect on learning, but was not manipulable for this study. Findings may have been different with change in either condition.

Sample size and cost limited a more rigorous design and analysis. Any intervention program without benefit of state or grant monies starts

small in most cases.

The unit of analysis was individual children. The testing of young children is always suspect. The child's best effort or actual knowledge may not have been presented. Pupil learning is not independent of teacher and the rest of the class. Appraisal of students in mixed groups including both treatment and comparison students was advantageous. The requirements of equivalent chronological age, sex and race was another step to add strength to the analysis.

Bias is highly possible in a self-innovated program. Small gains can cause undue optimism encouraging commitment to programs whose validity is not established. Selection of two assistants to screen children, receive questionnaires and assist in statistical analysis may have helped guarantee objectivity.

Qualitative data received from questionnaires were useful. High return and important participation from parents and teachers added a useful dimension. Opinions and attitudes of people are indispensable in studying relations among variables. Closed and open items were included to enhance participation.

### Recommendations

#### Recommendations for Siler City Elementary Personnel

1. Continue EAP for parents and young children as child care and education.
2. Continue heterogeneous grouping to the advantage of all children.

3. Continue to emphasize a developmentally appropriate curriculum.
4. Increase adult-child ratio as soon as possible (1 adult - 8 children) to increase individualized support to young learners.
5. Increase parental involvement to enhance families and to improve social services delivery. Services could include: parent education, respite care and health and emotional support services to adults.
6. Seek additional funding sources to enhance program.
7. Follow these cohorts into the upper grades to see if benefits remain, increase or decrease. This opportunity for an easy-to-do longitudinal study should not be lost.

The goals of this schooling are to help children live their three-four-year old lives with richness and vigor, to appreciate and nourish their energy, their imagination, their curiosity, their sociability, and their creativity.

Recommendations to policy makers and child care administrators based on review of Early Childhood literature and research

1. Develop a comprehensive national policy to improve and expand quality child care services for American children and their families.
2. Improve prospects for disadvantaged children by fully funded child care and education, not as an expense but as an excellent investment, one that may be postponed only at a much greater

cost to society.

3. Provide preschool programs that cover enough hours each day (and year-round) that give parents opportunities to be involved while balancing work and family responsibilities. This requires choice. Parents deserve choices that reflect the cultural diversity of our nation and the differing values and needs of families.
4. Research supports parent education and involvement in early childhood programs. Information on effective parenting practices should be available to all parents. Head Start has included parents by employment, home visits and in important decision making about the program. Such efforts have paid off in substantial interest and support. Better educated parents can better acquire community services to support family needs (food, shelter, medical services), another reason to consider their involvement.
5. In-home assistance for first time low-income parents of high-risk infants must be provided. Community and religious organizations could assist and support children who have absentee parents or that live with guardians. Such stimulation and nurturance may eliminate unnecessary handicaps and provide security and reassurance to children and parents.
6. States must assume a greater share of funding for children's programs and decrease reliance on federal funding. Federal programs supporting low-income children and families have

received drastic cutbacks since the Gramm Rudman Act of 1985. Head Start has experienced losses in revenue. Service to 10,462 children per year or 18% of those eligible is a serious violation to those in need (Rivest, 1987).

7. Political motivation is needed to invest necessary resources to serve our children well. Proper staffing, determined certification, commitment to developmental curriculum and required interagency networking as components of legislation will benefit children and adults. Development of state and local structures through which public and private agencies work together will support young children.
8. The turf war between the Departments of Public Instruction (DPI) and the Departments of Human Resources (DHR) must be resolved. Progress has been delayed on child care and early education legislation with a debate over who should control the administration of an intervention program in some states. Important questions regarding program focus, placement and staffing have been halted. Opponents of public school control fear that prekindergarten will get a first-grade curriculum. Further, the Day Care Associations fear that they will be going out of business. Innovative organization may find ways to combine "private" day care in public facilities or use of public personnel in private facilities to the benefit of both groups.
9. Research and evaluation must be done on an adequate basis. Past research has shown that evaluators have looked only for changes

in achievement and intelligence. School success, motivation and self-esteem are important variables that must be evaluated in the future.

10. Accreditation standards must be met in all developmental and educational programs regardless of where they are housed. Teacher credentialing, staff/child ratio, staff development and parent involvement are important components.
11. Establishing a mechanism for state intervention when school districts make no progress in caring and educating at-risk children effectively is a must. High expectations guarantee better performance. Tolerating poor performance makes little educational or economic sense.
12. Reduce class size in kindergarten and the lower grades to one teacher per 14 students. Overwhelming evidence supports greater gains in achievement and improved behavior for students with more time for teacher to student interaction and less reteaching (Indiana Department of Education, 1986; Achilles, 1989).

These recommendations are bold. But excellence doesn't come easily. We must guarantee that more youth develop the basic skills they need. Communities are able to play a role in developing responsible citizens for the future. There is no way to sway those of conscience from a course they feel they must travel.



### Recommendations for further research

More time should be spent in study of programs for children under five. Comparison studies to evaluate the difference between homogeneous, at-risk programs (Chapter I prekindergartens, Head Start) and those serving heterogeneous groups of children would give instructive information to legislators, departments of public instruction, and administrators. For which students is homogeneous grouping appropriate?

Longitudinal studies are rare in the literature and more need to be accomplished. Weikard has shown successfully that the greatest benefits are increased attendance in school, fewer special placements, reduction of teen pregnancy, juvenile delinquency, and increased employment. More research will likely cue improved attitudes about provision for our young.

Program types, academic versus developmentally appropriate models, need further study. Parental values and cultural diversity currently require both emphases. The public deserves to know which is best for young children.

If we are to realize President Bush's Educational Summit goal, that by 2000, all children will come to school ready to learn, then we must determine goals and strategies that guarantee a chance for every child. More qualitative studies on school success indicators are needed to balance the many more quantitative studies in the literature that have only addressed academic achievement.

SUMMARY

As a nation, we cannot tolerate the myth that only 50% to 60% of our children are capable of academic achievement. We must believe that not all talents are inborn, but that they must be created.

The first five years are the most important to a child's development. 80% of the information a child will absorb during his entire life is learned at this time (Bloom, 1964). Humans, like other animals, are resilient creatures and survive under a variety of conditions. The point certainly is that how we raise our children is serious. In 1983, only 29% of at-risk 3- and 4-year olds were enrolled in preschool.

In today's world with constant changes and increasing instability we find:

- ...one child in four living in a single-parent household
- ...half of our black children in the U.S. living with mothers only
- ...70% of our nation's women now in the work force
- ...10% of public school children lacking supervision before and after school.

We must act now. When parents are absent, the larger community must step in as extended family. More parents are having greater difficulty rearing their children as they, themselves were reared, even if they desire to do such. Our national child care and educational practices must accommodate families and protect our young. Providing for its young is a requirement for any successful human society. A society failing at this responsibility cannot survive.

## Appendix 1

Parent Questionnaire  
Comparison Group

	<u>Agree</u>	<u>Don't Know</u>	<u>Disagree</u>
1. My child looks forward to school and is a happy student.	22	-	1
2. My child has many school friends.	21	2	-
3. My child likes his/her teacher.	23	-	-
4. It has at times been difficult to get my child to come to school.	8	-	15
5. I feel my child is successful academically.	21	2	-
6. My child is successful at school and is a leader.	15	7	1
7. My child adjusted easily to kindergarten with no tears or fears.	19	-	4
10. Was your child in day care or a prekindergarten program? If so, please name.			
<u>No</u>	<u>Yes</u>	<u>Rainbow</u>	<u>Suits</u>
<u>Hillbrook</u>	<u>Other</u>		
15	8:	1	1
		2	4

## Appendix 2

Parent Questionnaire  
Treatment Group

	Agree	Don't Know	Disagree
1. My child looks forward to school and is a happy student.	23	-	-
2. My child has many school friends.	21	2	-
3. My child likes his/her teacher.	23	-	-
4. It has at times been difficult to get my child to come to school.	1	-	22
5. I feel my child is successful academically.	21	1	1
6. I believe the prekindergarten experience was a valuable learning experience for my child.	22	-	1
7. Prekindergarten made my child tired of school by the kindergarten year.	-	-	23
8. I believe that kindergarten was only a time of play with no real learning opportunities.	-	-	23
9. Adjustment to kindergarten was easier as a result of pre-kindergarten experience.	20	2	1
10. I would recommend the pre-kindergarten program to another parent.	22	1	-
11. I believe the prekindergarten program is developmentally appropriate.	23	-	-
12. My child is successful at school and is a leader.	17	4	1
13. My child liked prekindergarten.	20	-	-

## Appendix 3

**Teacher's Questionnaire  
for Comparison Students**

	<u>Agree</u>	<u>Don't Know</u>	<u>Disagree</u>
1. This child is happy and adjusted.	21	1	1
2. This child has been school phobic this year.	3	-	20
3. This child is academically successful.	21	-	2
4. This child has many behavior problems.	1	-	22
5. This child gets along well with peers.	21	-	2
6. This child is a leader.	8	3	12
7. This child is tired of school routine.	3	2	18
8. This child hasn't (has) been referred for special services.	Has: 2    Has not: 21		
9. The thing I would recommend for this child is:	See Appendix 5		
10. The best thing about this child is:	See Appendix 6		

## Appendix 4

Teacher's Questionnaire  
for Treatment Students

Agree      Don't Know      Disagree

1. This child is happy and adjusted.	22	-	1
2. This child has been school phobic this year.	5	1	17
3. This child is academically successful.	21	-	2
4. This child has many behavior problems.	3	-	20
5. This child gets along well with peers.	22	-	1
6. This child is a leader.	14	4	5
7. This child is tired of school routine.	3	2	18
8. The prekindergarten experience helped this child by early exposure to concepts and a group of children.	15	8	-
9. The thing I would recommend for this child is:	See Appendix 5		
10. The best thing about this child is:	See Appendix 6		

**Appendix 5****Question #9**

Recommendations made for individual students in the Comparison Group:

- Praise is needed to make him/her feel successful. (3 students)
- Challenge this child. (2 students)
- This child will likely be retained later. (1 student)
- I have referred this child for academic giftedness. (1 student)
- This child needs a structured classroom setting next year. (3 students)

Recommendations made for individual students in the Treatment Group:

- He doesn't always follow directions. (1 student)
- Challenge this mind. (4 students)
- His strong math reasoning deserves attention. (1 student)
- Freedom to choose learning activities in a relaxed setting would be ideal. (3 students)
- Praise is a good reward for this child. (2 students)
- This child needs to spend more time with peers. Much time has been spent with adults. (3 students)
- Try to involve the parent. (1 student)

**Appendix 6****Question #10**

Attributes reported for children from the Comparison Group included:

- Nice manners (3 students)
- Good conduct (2 students)
- Gets along with peers (6 students)
- Positive attitude (3 students)
- Sense of humor (3 students)
- Eager to learn (7 students)
- Good worker (1 student)
- Sweet (1 student)
- Artistic (1 student)
- Attends to details (1 student)
- Leader (1 student)

Characteristics reported on the Treatment Group children were somewhat different:

- High achiever (7 students)
- Good group member (7 students)
- Adjusted or well-rounded (10 students)
- Positive attitude (8 students)
- Confident as a leader (4 students)
- Enthusiastic learner (6 students)
- Creative (2 students)
- Good conduct (6 students)



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