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ABSTRACT

To evaluate the Follow Through portion of the Planned Variation program (1967-1970) eight distinct approaches were studied. The approaches rest on differing philosophical and psychological premises and employ a variety of pedagogical strategies. A battery of 14 existing and specially developed measures were used to cover the cognitive area. Factors such as organization of classrooms, parent-child interaction, supervision, child performance data and diffusion effects were analyzed. Among the most important outcomes of the first year of this 3-year assessment study are (1) cataloguing the process of program implementation (2) describing classroom processes (3) establishing the scheme and instruments to be used for the second and third years of the study. The general conclusion of this document is that first year outcomes are encouraging but it is too early to assess with confidence the specific outcomes of specific program models. One fourth of the document consists of bibliographic references and appendixes detailing test instruments. A review and summary of this document is available as PS 004 917. (WY)

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Interim Report: First Year of Evaluation *May 1971*

Part II —

IMPLEMENTATION OF PLANNED VARIATION IN HEAD START

Preliminary Evaluations of Planned Variation in Head Start According to Follow Through Approaches (1969-1970)

Prepared for:

OFFICE OF CHILD DEVELOPMENT
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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PREFACE

As part of the continuing effort to explore systematically ways to provide children of economically impoverished backgrounds with early childhood education that may effectively contribute to their optimal development, a Head Start Planned Variation program was initiated in 1968 and became operational in the Fall of 1969.

The Planned Variation program refers to eight rather distinct approaches to preschool and compensatory education--each consisting of unique as well as common features--being applied by eight sponsors* in a variety of geographic and sociocultural settings around the country. These alternative approaches rest on differing philosophical and psychological premises and employ a variety of pedagogical strategies.

Most of the sponsors had first experimented with and developed their programs in experimental preschools for low income children, then modified them upward to apply to the Follow Through program, and now are completing the loop by modifying them downward again for the Head Start program. In this way a cluster of longitudinal studies of articulated compensatory efforts were initiated for children from approximately three through nine years of age. Stanford Research Institute is evaluating the overall project under contracts with the Office of Child Development and the Office of Education, Department of Health, Education, and Welfare. Concurrently, some of the sponsors also are evaluating their own models and programs.

The Head Start Planned Variation project's objectives are primarily twofold: (1) to assess the cumulative impact on participating children of a systematically coherent program from the preschool years through the early elementary school years and (2) to compare the short-term and long-term effectiveness of the various models.

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* For the project's second year, the number of sponsors has been increased to 12.

ACKNOWLEDGMENTS

The myriad details of planning and executing the first year of the Head Start Planned Variation Evaluation reflect the generous efforts of many people.

Without the cooperative efforts of the Office of Child Development, Head Start, and the Office of Education, Project Follow Through, this initial year of evaluation would have been impossible. Encouragement from Dr. Robert L. Egbert, Director of Follow Through, permitted the use of test and training procedures and computer programs developed at SRI in the Follow Through Evaluation Project. Indeed, SRI could not have undertaken the project had it not been for the integration of key plans by the Office of Child Development and the Office of Education.

Invaluable guidance and support were always available from Dr. Lois-ellin Datta, Chief, OCD Evaluation. Her appreciation for the vicissitudes of national evaluations, her skill in evaluation design, pupil measurement, and statistical analysis, and her commitment to the need for objective evidence on the impact of innovative programs had both an inspiring and a tempering effect on the project staff. Her guidance and detailed contributions to the evaluation design and to the contents of this report were ever prompt and substantive.

Dr. Jenny Klein, Senior Education Specialist, OCD, integrated the efforts of the sponsors and the communities, and the evaluation efforts were greatly eased by her enthusiastic cooperation and the manner in which she kept the educational efforts from being unnecessarily disrupted by the many evaluation activities. In this regard we are also appreciative of the efforts made by Juanita Dennis and Mary McLean of her staff.

In each of the 21 communities in which the evaluation activities occurred, the Head Start Director was the key person who facilitated the evaluation. Although short of time and resources, these Directors always found a way to support and assist the SRI data collection activities. Heartfelt thanks are extended to these dedicated men and women.

Throughout the period of this evaluation, the counsel of the program sponsors was generous. As experts in their fields and in evaluation procedures, their contributions to the project were substantial.

The consulting assistance given by Dr. Eleanor Maccoby of Stanford University is gratefully acknowledged. Dr. Maccoby was instrumental in formulating this evaluation report and shared without reservation her time and ideas. She did much to shape the style, content, and orientation of this report.

We acknowledge with gratitude Dr. Nancy Robinson's generous aid and the background material that she allowed us to use without special citation to her work. We also wish to give special thanks to Dr. Joan Bissell, Dr. Bettye Caldwell, and Dr. Frances Horowitz for the information that they sent to us and for permission to draw extensively from their papers.

The SRI project staff had the ultimate responsibility for this first year evaluation. Roles and responsibilities varied during the year and covered all the activities that were related to the design, field implementation, analysis, and reporting of the results. The SRI personnel who were involved in the project are listed below; the asterisk indicates those who were primarily involved in the preparation of this report.

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I INTRODUCTION

Every society and every social group within it educates, trains, and socializes its children in terms of the evolving needs of its socioeconomic system and its culture. Consequently, the institutions concerned with these developmental processes remain intimately tied to the societal needs. In a time of rapid change, however, the lag between the needs of the emergent new forms and the capability of the societal institutions to change in tandem to meet those needs results in the turbulence now evident within our society and around the world.

It is within this broad secular frame that the history of our child development premises and practises can be viewed. In a simpler time, it was not necessary to educate or train most or all of our people to function at a relatively high level of skill or abstraction. This is far less true today. Now, the symptoms evident in the push of our people demanding greater educational and economic opportunities and human dignity and the pull of the emergent post-industrial forms of the society reflect the inevitable requirement that our children receive adequate and appropriate (relevant) education.

The convergence of certain events and some seemingly disparate long-term trends culminated in the establishment in 1965 by the Federal government of Operation Head Start as one of several interrelated programs through which the recurring transgenerational cycle of poverty might be broken. Among the events, two are most salient: the 1954 desegregation decision of the United States Supreme Court and Sputnik. As communities attempted to act in accord with the Supreme Court's decision, a picture of the extent of the disparity of educational opportunities between the races began to be sharply etched. Also, it soon became apparent that the disparity affects various socioeconomic and ethnic groups as well.

No sooner had this begun to sink into the national consciousness than Sputnik's burst into the heavens shocked educators and concerned citizens alike into a closer look at our educational system. And what they found was sufficiently troubling to spur a reexamination of our schools.

Some of the related significant trends include: (1) our increasingly technological society that reduces the need for unskilled and semiskilled workers at a more rapid rate than ever before and demands ever larger proportions of highly trained manpower; (2) the civil rights movement and its demands for equality of educational and economic opportunity; (3) the role of the mass media, particularly in providing visible evidence of the growing disparity between the affluent and the poor; and (4) the accumulating evidence from biological and behavioral sciences research regarding the plasticity of the human organism and the importance of the early years of life in a child's development. The last is of most immediate concern and represents a shift from the view that human intelligence is genetically determined and is but minimally influenced by environmental circumstance.

These and other circumstances made it clear that the basic issue that the nation was called upon to address was how to achieve a better fit between the impoverished members of our society and the technological world we were busily expanding in order that all might share in the created abundance. Therefore, the War on Poverty was declared and the Office of Economic Opportunity (OEO) was established to experiment with and devise the means for winning that war. Experimental programs were launched at a number of levels, targeted to various populations and with a variety of approaches. As one of these programs, Operation Head Start reflected the faith that, if we begin early enough in the life cycle, we might prevent or ameliorate many of the problems that harness individuals to a life of poverty.

With the optimism and commitment that sometimes characterizes America, Operation Head Start was launched. The initial program involved only eight weeks of the summer in which Head Start would provide comprehensive services and an environment that would help meet the participating children's physical, social, emotional, and intellectual developmental needs and would provide some measure of assistance to their families as well. The eight-weeks experiment was a recognition of the need to compensate for multidimensional inadequacies in the children's skills, in their nutritional and physical condition, and in their life styles.

From the beginning, administrators and child development experts recognized that there was no large pool of trained early childhood personnel to man programs, nor proper facilities to house programs, nor equipment, nor administrative personnel, nor arrangements to facilitate the initiation of programs and the provision of necessary services. That there were few tested and well-developed approaches to meeting the needs of children with economically impoverished backgrounds--or even specific and cogent knowledge as to the dimensions of those needs--was equally recognized to be a major scientific and administrative challenge: a recognition that called, however, for action rather than immobility or delay until "further research" was completed.

The impact of Head Start--both manifest and subtle--on such institutions as the family, the school, public service organizations, health and welfare agencies, and the like, has been extensive (Kirschner 1970). New approaches to administration, to public service programs, and to training have been developed. Further, the field of early education has burgeoned in the effort to initiate, implement, and evaluate various approaches to compensatory education. For in 1965 there were no nationally well-established approaches to compensatory education. In effect, Head Start was creating and applying an almost wholly new dimension in early education: comprehensive curricula targeted to the needs of the economically and educationally disadvantaged.

Since that early period in Head Start's history there has been a realization, as we study the evaluation results, that we may have expected too much too soon. Yet the basic issue has never been limited to the question: can we raise the IQs of our children? We know the limitations of our instruments and that they measure but a segment of human potential. Rather the issue is: what learning environments and programmatic approaches will provide for the basic developmental needs of our children in order that each may realize his potential?

Though Head Start began as a summer program, it was known that prevention and amelioration of handicapping conditions required that the enrichment programs be extended over longer time periods. In 1967, full-year programs were initiated and, as funds became available, an increasing number of children attended these programs each year. Also, by 1967, Head Start and preschool research findings supported the feeling that in order to maintain the children's early gains, compensatory programs should be extended upward and downward. Therefore, Head Start initiated both Follow Through, which extends the program into the early elementary grades, and Parent Child Centers for children under three years of age.

It is as part of the ongoing effort, by both the scientific and practitioner communities, to discover those programmatic approaches that make for individual competence that the Head Start Planned Variation (PV) Program was initiated. The Head Start PV Program's objectives are primarily (1) to assess the cumulative impact on participating children of a systematically coherent program from the preschool years through the early elementary school years and (2) to compare the short-term and long-term effectiveness of the various program models. This report of the project's first year of operation documents the implementation phase of the programs and provides tentative findings of the first year's impact on the participating children and, where relevant, on participating parents and teachers.

This chapter will present a brief history of early education, the theoretical considerations that undergird compensatory education, and a brief overview of the research findings relevant to the Head Start PV Program.

Brief Historical Background of Approaches to Early Education

The traditional source of a child's early education and his socialization has been the home and the family. However, over the centuries, there were those who viewed human development as a continuous process from birth onward, requiring more formal training for optimal development. They spoke of the importance of the earliest years of life and felt that early training was essential to the child's later development. To begin a child's education later, they believed, was to miss a valuable opportunity.

The Development of Nursery Schools and Kindergartens

Among the more recent of these proponents, Comenius (1582-1670) and Froebel (1782-1852) provided the rationale for the nursery school and kindergarten movement that developed in Europe and the United States. Three hundred years ago John Amos Comenius, a Moravian Educator and theologian, wrote a history of early child education in which he proposed that children spend the first six years of their lives in a "School of Infancy." In the early nineteenth century, Fredrich Froebel formulated the bases for present-day kindergartens, which emphasized the natural development of "the whole child," in his classic work, "The Education of Man." By the late nineteenth century, Froebel's work had gained the support of active groups in Europe and the United States. By 1868, a training institute for kindergarten teachers opened in Boston and, a few years later, the first tax-supported public kindergarten opened in St. Louis, Missouri.

Following in the same intellectual tradition, two women, Maria Montessori (1870-1952) and Margaret McMillan (1860-1931), focused their efforts on improving the performance of children of economically poor families by providing an enriched and structured learning environment. Montessori and McMillan can be considered among the progenitors of such programs as Project Head Start, which reflects our special concerns as a society for our disadvantaged children.

By the 1920s, colleges and universities sponsored child development laboratories and model nursery schools, concentrating on the years between birth and six. The child development theories and practices they generated were employed largely by privately funded nurseries and kindergartens for children of the middle and upper classes.

Day Care for Children of Economically Impoverished Families

Both Maria Montessori and Margaret McMillan rejected the theory, then current, that intelligence was not subject to modification. They developed programs that resulted in the dramatic improvement of the performance of poor children.

Maria Montessori felt that early training of children from the impoverished areas of Italian cities would improve their later school performance and help them become better human beings. She developed special methods of instruction and stressed cooperative social behavior, sensory training, manual skills, and explorative experiences. Despite her efforts to provide an enriched program for poor children, her ideas were adopted largely by middle-class Europeans and Americans. To this day, the Montessori preschool movement continues to grow and these schools bear her name.

In England, humanitarian Margaret McMillan founded the "open-air" nursery in the heart of London for children from two to seven years old and stressed the values of sunshine, fresh air, baths, food, sleep, natural play, and a low ratio of children to teachers. As a result of her efforts and those of Grace Owen, the Fisher Act, which established nursery schools in the English national school system, was passed in 1918.

Overview of Relevant Research

The salient theoretical considerations that underlie such intervention programs as Head Start include the belief in (1) the modifiability and flexibility of human intelligence and human functioning; (2) the significance of the early years of life in a child's development, which may or may not involve "critical periods;"* and (3) the singular

* A "critical period" refers to the hypothesis that if an organism has not had certain stimuli or experiences by a particular time period, certain responses will be absent from its repertoire.

importance of environmental quality in determining the child's affective and learning modes. However, the dominant view regarding human intelligence that prevailed until very recent times was that it was genetically determined and fixed and that, through a natural process of maturation, it would achieve its predetermined level. But there were early skeptics who tested this view. Among these, the work in the 1930s of the Iowa Child Welfare group (which included Skeels and Skodak) and the study by Dawe (1942), as well as the later work of Kirk and Strodtbeck, are notable examples. Interwoven within the brief descriptions given below of these early studies are the major theoretical formulations that undergird early intervention programs.

Development of Early Education Studies and Theoretical Formulations

The Skeels Study. In a period when intelligence was thought to be genetically determined and not subject to modification, Skeels' (and Dye 1939) classic study and its follow-up (Skeels, 1966) 21 years later represent a dramatic example of the effect of environment on intellectual capacity and on competence. His experimental group consisted of 13 children, aged 19 months and with a mean IQ of 64, who lived in an orphanage. The contrast group of 12 children had a near-normal mean IQ of 87 at seven months of age. The experimental children were moved out of the orphanage to a home for the mentally retarded and cared for by mentally retarded patients. These mentally retarded "mothers" gave them a good deal of affection, attention, and training and took great pride in the children's progress. By contrast, the other group remained in the overcrowded orphanage and received minimal attention from the staff. Two years later the experimental group had gained 28 IQ points and the controls had lost about the same amount. Eleven of the experimentals were placed in adoptive homes. In a follow-up study 21 years later, the two groups still showed dramatic differences: the experimentals had completed a median of 12 years of schooling, with four of them having attended college and one having received his degree, as opposed to a median of only three years of schooling on the part of the contrasts. All experimentals were self-supporting whereas, in the contrast group, four were institutionalized and unemployed and most of the others were employed in menial jobs. Although questions can be raised about the rigor of the experiment, the dramatically divergent results suggest rather strongly the enduring effects of early environmental intervention. Apparently, the warmth, close attention, and care that the mentally retarded women gave the experimental children, coupled with their subsequent placement in foster homes, represented a sustained intervention that resulted in lives of competence and relative autonomy.

Dawe's Institutional Training Program. Weikart (1967b) describes another early study in the period when intelligence was considered to be "fixed," which demonstrated the apparent effect of specific language training and enriched experiences on intelligence as measured by the Stanford-Binet. Although the sample was small--a carefully matched group of 22 orphanage children, with an extra child in the experimental group--the results showed a significant 15-point IQ differential between experimentals and controls, with experimentals increasing from 80.6 to 94.8 IQ points and controls losing from 81.5 to 79.5 IQ points. The children had spent a total of 50 hours over a 92-day period, mostly on weekends, in tutoring and small group discussion sessions as well as on excursions. According to Dawe, the children also showed improved language ability that included asking intellectual questions and making critical and analytic remarks.

Kirk's Early Education of the Mentally Retarded. According to Weikart (1967b), it was Kirk's (1958) five-year preschool study of 81 mentally retarded children drawn from institutions and the community that provided the impetus for present-day preschool education. The etiology of the children's mental retardation was due to organic impairment or "cultural deprivation" or both. For one to three years the children in the experimental group were tutored in terms of specially designed individual programs based on a careful diagnosis of their specific mental disabilities. Following this, they entered first grade or special classes in public schools. The immediate impact of this preschool program was an 11.7 IQ rise on the part of the community experimental group. The community control group had increased 6.9 IQ points at the end of the first year of public school. The ability to raise the IQ scores of mentally retarded children added greater credence to the emerging view that intelligence was subject to modification.

Strodtbeck's Reading Readiness Project. Whereas most of the early studies in this country involved mentally retarded or orphaned children, Strodtbeck's (1963) study involved five groups of poor black boys. The treatment for two of the groups was the traditional nursery school approach whereas the program for three groups was somewhat more structured, with emphasis on verbal interaction. There was a small, but clear difference in IQ points for the groups in the more structured treatment over the more permissive groups. Strodtbeck's work represents one of the few early comparative studies (Weikart 1967b).

Hunt's Theory on Intelligence. In 1961 Hunt's provocative work on "Intelligence and Experience" appeared. Hunt had inferred from the accumulating evidence from both animal and human studies that the development of intelligence is based on the interaction between genetic potential and the nature and quality of environmental circumstance. Hunt (1967b) mentions these studies among others: (1) the work of Johannsen (in 1909) who distinguished between the genotype and phenotype and described the phenotype as a product of genetic endowment and circumstances experienced; (2) animal studies that have revealed that the structural and chemical development of the brain and the animal's learning ability both seem to be affected by the quality of the early environment; (3) human infant studies that appear to reduce the time of appearance of such behaviors as eye-hand coordination and blink-response as the result of a more stimulating environment; (4) the concept of the hierarchical nature of intelligence, as based on the quite different approaches of Piaget (1936) in early child development, of Gagné (1966) on adult problem-solving, and of Ferguson (1954, 1956) and Humphreys (1959, 1962) in factor analysis; and (5) the cross-cultural studies of Wayne Dennis (1966) in 50 settings around the world that seem to demonstrate that life circumstance has a highly significant impact on tested intelligence.

Bloom: The Rate of Development. Benjamin Bloom's (1964) conclusions that the rate of development--particularly intellectual development--is greatest in the early years of life and reaches relative stability by age 12, and that it is most easily modifiable during the period of its most active growth add credence to the belief that early intervention may produce desirable results. This is consistent with Hunt's (1961) earlier observation that a variety of investigations indicate that the longer an organism lives in a given set of circumstances, the harder it is to alter their influence either on its developing anatomy or on its behavorial modes. The issue of "critical periods" in human development has not been established. However, Bloom and Hunt, and Freud before them, appear to agree that there is an "optimal" time of development on many dimensions and that it is in the early years of life.

Hebb: The Effects of the Quantity and Quality of Experience. Hebb's theory (1949) and Freud's work on affective development, as well as the evidence from studies of differential child-rearing patterns between middle-class and lower class families, suggest that the quantity and quality of the child's experiences may affect his cognitive style and response repertoire in an educational setting and in other settings. Hebb's seminal work on "The Organization of Behavior" (1949) advanced the theory that there are two stages of learning: in the first stage the quantity and quality of an organism's early perceptual experience will determine the amount that is stored in a neurological bank; then, in turn, the second learning stage will depend on the quantity and quality of the bank account for its efficiency and level of operation.

This theory may shed some light on the fact that, although children from economically impoverished backgrounds may be able to function with some competence within their immediate milieu, at school entrance they are not so well equipped in cognitive, verbal, linguistic, perceptual, and attentional skills as their middle-class peers. Also, they seem to require a more adequate self-concept and motivation for learning. To understand the apparent divergence between middle-class and lower class children, a number of investigators have conducted comparative studies of child-rearing patterns between classes and among racial and ethnic groups. These include studies of English families by Bernstein (1960, 1961); of Israelis by Smilanski (1961, 1964); of blacks by Davis (1948 and with Havighurst, 1946) and by Hess and Shipman (1965, 1969); and of Puerto Ricans by Lewis (1966). Regardless of the cultural variations, these investigators have found distinct differences in child-rearing patterns between socioeconomic classes. The findings from all these studies have suggested that appropriate compensatory education programs may prevent or ameliorate many of the conditions that appear to hamper the children's competence. As a result, investigators have mounted intervention studies to test the effectiveness of their various approaches, either independently or under Head Start sponsorship.

<u>Enriched Nursery Curricula with Cognitive and Language Components</u>. In the late 1950s these findings may have contributed to the independent decisions of several investigators in three separate geographical locations to begin plans for a new generation of experimental studies targeted to the economically and educationally disadvantaged. Meanwhile, Hunt's work had appeared, as well as the findings of other investigators (see above) that added theoretical weight to the cogency of the effort. By 1962 the projects were operational and included: Gray and Klaus' Early Training Project, DARCEE (1965), in Murfreesboro, Tennessee, for black children; Deutsch's Preschool and Early Elementary Education Project, IDS (1965), for a largely black population in New York City; and Weikart's Perry Preschool Project (1964) in Ypsilanti, Michigan, for black children diagnosed as mentally retarded because of "cultural deprivation."

The three projects used differing but carefully designed nursery school programs, with the addition of structured language and cognitive development components as important elements in the programs. The Gray and Klaus program also included home visits and the Weikart program entailed home teaching once a week. The three programs reported significantly higher IQ scores for the experimental groups over controls and the DARCEE and Weikart programs indicated higher initial achievement results as well.

These studies provided early and clear evidence that improved functioning can obtain from carefully designed programs with language and cognitive components. According to Weikart (1967b), other investigators who explored cognitive development in early childhood education during this same period include Kugel (1963); Fouracre (1958); Moore and Anderson (1960a, 1960b, 1960c); Fowler (1962); and Blatt (1962).

Operation Head Start

In 1963, President Kennedy's Panel on Mental Retardation proposed a national program of intervention to prevent mild retardation traceable to impoverished circumstances. A large number of children coming from the lowest socioeconomic groups were known to be educationally handicapped because of poor health care and inadequate learning experiences in early life.

Subsequently, a panel of experts headed by Dr. Robert Cooke, Pediatrician-in-Chief of Johns Hopkins Hospital, drafted a detailed report proposing a child development program for the 5.8 million children under six years of age who were living in poverty. This report, delivered in February 1965, became the springboard for Head Start and included the following objectives:

- Improving the child's physical health and physical abilities.
- Helping the emotional and social development of the child by encouraging self-confidence, spontaneity, curiosity, and self-discipline.
- Establishing patterns and expectations of success for the child that will create a climate of confidence for his future learning efforts.
- Increasing the child's capacity to relate positively to family members and others while strengthening the family's ability to relate positively to the child and his problems.

- Developing in the child and his family a responsible attitude toward society and fostering constructive opportunities for society to work together with the poor in solving their problems.

- Increasing the sense of dignity and self-worth within the child and his family.

Since Head Start is simultaneously both a massive social experiment and a social action program, it is highly visible and subject to frequent review for its effectiveness. Grotberg (1969, pp 2,3) discusses the issues and problems involved in providing early definitive answers as to the program's effectiveness.

> "In any experiment, the first observations of experimental consequences do not afford an over-simplified choice between abandoning the experiment as a failure or perpetuating it rigidly as a success. Instead, discoveries serve to redirect efforts along alternative routes, to focus attention in new directions, to generate new ideas for further experimentation. Further, it would be unreasonable to expect immediate definitive answers about program alternatives and their success, since these answers must necessarily be preceded by investigations which establish the major dimensions of variation in people, programs, and consequences which need to be evaluated. Since more than forty years of research related to these basic questions have still not produced definitive answers (Hunt, 1961; Fuller, 1960; Sears and Dowley, 1963; Swift, 1964; and others), Head Start's research program cannot be expected to provide answers in just a few years. But there are several particular difficulties associated with the conduct of research on early childhood development and education which legitimately account for this relatively slow rate of progression. Some are essentially conceptual problems, associated with formulating clear ideas and theory and learning to ask the proper questions for research investigation. Others are methodological problems, associated with difficulties in measuring attributes of very young children and programs which deal with them. A third category of research difficulties might be labeled logistical problems, in that ideally planned investigations are often not feasible with 'real' children, 'real' families, and 'real' educational programs. And, finally, in any kind of research there are interpretational problems which stem from the fact that data are not always unequivocal, and observations usually permit several alternative interpretations."

Despite these difficulties, Head Start research and evaluation has proceeded to initiate, promote, and fund: (1) surveys through the Census Bureau in a representative sample of Centers, primarily to determine the extent of compliance with Head Start guidelines; (2) research studies for development of measuring instruments, on pilot and demonstration projects, on various aspects of child development, and on methodology for translating pilot and demonstration projects to the field; (3) national evaluation studies (beginning with the first summer program in 1965) to assess a variety of programmatic approaches to determine the bases for the observed changes on participating children and their families; and (4) a longitudinal study, still in process, of a sample of children three-and-one-half years through the third school grade in four geographic areas (Datta, 1969).

Many studies of summer Head Start programs showed that the children had achieved a significant increase on ability measures but typically were not up to national norms. Investigators (Jensen and Kohlberg, 1966; Beller, 1967; Bittner and Rockwell, 1968; Nalbandian, 1968) reported the full-year programs also showed a significant increase but were still below national averages; whereas Alexander (1968) and Faust (1968) found that in the 1967-68 programs, the children reached the national average on the Stanford-Binet. Preliminary data from national studies also showed an elevation from an average IQ score of 86 during the first two weeks of Head Start to an average IQ score of 103 (Datta, 1969) after about 40-weeks experience in the program.

There was some evidence that Head Start children also showed changes in attitudes, motivation, and social behavior (as based on teacher ratings) and more socially appropriate behavior in a variety of situations (Datta, 1969).

Specialized Preschool Curricula

Bereiter and Englemann's Academically Oriented Preschool. Noting that children of low income families, especially black children, lacked many of the school-valued skills common to middle-class children, Bereiter and Englemann (1966) structured a preschool program with clearly specified goals and curricula specifically designed to goal achievement. The task-oriented curricula consisted of training in linguistic and numerical skills, using verbal instruction, imitation, and reinforcement. Fifteen 4-year-old children from black, "culturally deprived" homes spent 20 minutes each day learning each subject by rote and then applying the knowledge in analogous situations of increasing difficulty.

The children showed gains on the Stanford-Binet Scale that brought their IQs from the low 90s to over 100. They had been 18 months below average on the ITPA at the beginning of the program, but by the end of the second year the whole group was approximately up to average. However, the children were not up to the level of middle-class children in the logical use of language. After the preschool year the children's reading scores were at the beginning of first-grade level and the arithmetic scores were at the beginning of second-grade level. By the end of kindergarten the reading scores were at mid-first-grade level on the average and the arithmetic score was at mid-second-grade level.

The key sentence in the last paragraph relates to the fact that the children were below middle-class children in their ability to use language in a logical way. This raises the issue as to whether skill training alone allows the child to comprehend and understand what he has been taught in a sufficiently broad way to be able to apply it flexibly and appropriately. This breadth may become more critical as the child advances through the grades.

Bushell: Behavior Analysis Program and Risley: Reinforcement Contingency Program. Both Bushell and Risley successfully employ Skinnerian behavior modification or operant conditioning techniques to elicit desired behavioral objectives. This is a unique approach to preschool education.

Bushell uses systematic reinforcement procedures to teach children the academic skills of language, reading, writing, and arithmetic, as well as the appropriate social skills. Appropriate behavior is rewarded immediately with tokens and praise. The earned tokens can be used by the child to "purchase" snacks and art and for stories, recess, and the like. The amount of tokens given out also serves to check the teacher's behavior because, if the child has received too few tokens, she must reexamine her teaching to discover the reason. Parents are also used as behavior modifiers (Maccoby & Zellner, in press).

Risley uses operant reinforcement techniques in his preschool language training program. The 15 black children receive verbal and food reinforcement. There was a substantial rise in correct responses when the children learned that they could obtain preschool materials only if they respond correctly. When the contingencies were removed, there was a drop in correct responses but they remained substantially above previous levels (Parker, 1970).

Sprigle: Learning to Learn. Much of Sprigle's approach to early education is derived from Piagetian concepts and their extensions by Inhelder and Flavell. Assuming sequential cognitive development--from motor to perceptual to symbolic--Sprigle (Parker, 1970) feels that as the child proceeds through these stages, he perceives relationships between his actions and his experiences and thus becomes aware of the objects in his world. In this way he learns how to learn. Sprigle has conducted studies with four- and five-year-old children, both from lower and lower middle socioeconomic class families. Five groups of children were involved in the study: two experimental groups of lower and lower middle socioeconomic class children, two groups that had the traditional nursery school curriculum, and one group that had no preschool experience. The four groups with preschool experience achieved ability scores at national norms or slightly above, with the lower middle socioeconomic group being somewhat higher, whereas the no-preschool group was well below national norms (83 IQ) (Parker, 1970).

Various Curricula Approaches. Additional approaches are being studied by different investigators. Among these are the EDC "discovery" approach, whose prototype is the British Infant School, and the Bank Street School, which is concerned with many dimensions of the child's development. Bank Street's "discovery" model includes infusion of symbolic skills in real life situations as important aspects of the child's learning environment. Both these programs provide a rich environment with committed and involved teachers who help the child in his multifaceted development (Maccoby and Zellner, in press).

Nimnicht, McAfee, and Meier use an eclectic approach based on Montessori, Deutsch, and O. K. Moore. They stress intellectual development and a positive self-image as essential goals. Programs by Karnes, Hodgins, and Teska use a highly structured psycholinguistic approach with "culturally deprived" children. Palmer, Robison, and Sapon all use language and cognitive components. Hodges, McCandless, and Spiker developed a structured, diagnostically based kindergarten curriculum in an effort to increase the intellectual, language, motor, and socioemotional abilities of their 82 Appalachian children (Parker, 1970).

Comparative Studies Implemented

With the increasing proliferation of approaches to early education, it became apparent that studies should be mounted to compare their effectiveness. As a result, several groups began comparing three to five distinct approaches in 1967-68. The principal investigators of these comparative studies include Weikart, Karnes, Miller and Di Lorenzo.

Immediate Impact of Early Education Studies

A quick review of Table 1's column labeled "Program Effects" and the "Immediate Impact" column of Table 2 provides a rather clear picture of the available results on these selected programs. In almost every case, and rather dramatically in some of of them (e.g., Weikart), there is improvement of the experimental groups over the contrast groups. In some cases, the contrast groups have also improved (Weikart, Wave 0 and Wave II; Karnes et al.) but other contrast groups have lost ground (Dawe, Kirk, Strodtbeck, Deutsch, DARCEE, Weikart). The "Achievement and/or Other Gains" column of Table 2 also indicates improvements (Head Start, DARCEE, Weikart, Sprigle, Bereiter-Englemann). Thus, the immediate impact of the programs lives up to the hopes of the many dedicated people involved, both participants and workers.

Long-Term Effects

However, it is also clear that over time these early gains are not maintained in most of the studies that have retested their groups at a later time. This has not been invariably true. The DARCEE (Gray and Klaus, 1970) experimental groups maintained a significant difference* in IQ scores over central groups even through the fourth grade--seven years after the beginning of their preschool experience. Weikart (1966a) also found that Wave 0 maintained its gains on the California Achievement Test and the Gates Reading Test at the end of the first grade. For many of the Head Start programs, however, upon school entrance, the accelerated rate of development is not sustained. By the end of the first year of school, the non-Head Start children equal Head Start children (Datta, 1969).

As explanations of these results, it is possible to differentiate three phenomena: a "leveling" effect, a "catch-up" effect, and a "fade-out" effect. The leveling phenomenon seems to describe the fact that the rate of gain evident in the initial spurt of the children in the experimental preschool programs "levels" off or does not continue its accelerated course. The catch-up phenomenon describes the fact that by the end of the first year of public school (whether in kindergarten or in first grade), children without preschool experience also seem to have an "initial spurt" by which they appear to be "catching up" with the children with preschool experience. Usually both these phenomena are occurring

* This was true despite the fact that the pattern of IQ scores of all groups appeared to peak over time and then decline.

Table 1

MORE RECENT RESEARCH DEVELOPMENTS IN EARLY EDUCATION*
(Selected Programs)

Investigator or Program	Study Group	Programmatic Focus	Program Effects: Experimental Group IQ	Program Effects: Contrast Group IQ
Skeels: 1939, 1960	Mentally retarded infants	Radical and sustained intervention	102 (after 2 yrs)	66 (after 2 yrs)
Dawe: 1942	Twenty-three orphanage children	Fifty hours language tutoring and excursions	80.6 to 94.8†	81.5 to 79.5
Kirk: 1958 Community group	Mentally retarded	Language intervention	72.5 to 83.7	75.8 to 75.2
Institutionalized group			61.0 to 73.0	57.1 to 49.9
Strodtbeck: 1958	Low income children‡	13-week Reading Readiness		
		Structured curriculum	94.3‡	89.0‡
		Permissive curriculum	86.0‡	85.0
Deutsch: 1962	Low income	Enrichment nursery (innovations)	98.9 to 103.9†	99.0 to 92.0
DARCEE: 1962	Low income	Enrichment-parent education	88.5 to 95.5†	86.7 to 81.7
Weikart:				
Wave 0: 1962-63	Low income and mentally retarded	Cognitive (Piaget)	78.4 to 91.1†	75.0 to 82.2
Wave I: 1962-63			79.1 to 90.6†	78.3 to 77.8
Wave II: 1963-64			80.5 to 100.9†	79.4 to 82.9
Wave III: 1964-65			79.6 to 94.4†	81.0 to 81.2
Head Start: 1965 on	Largely low income			
Summer		Began as enrichment nursery	Improved but below norms	
Full year		Multiple approaches	Improved but below norms in most cases	
Bereiter-Englemann: 1964	Low income	Prescripted language development	low 90s to over 100	No control group
Risley: 1966	Low income	Behavior modification	Improved	No data
Sprigle: 1965	Low income and lower middle income	Learning to learn	104 to 112	Traditional group 90 to 107 No Preschool 83
Educational Development Center	Low income	Discovery	Data unavailable	
Bank Street School	Low income	Discovery	Data unavailable	
Karnes, Teska, Hodgins	Low income	Psycholinguistic	96.0 to 110.3	94.5 to 102.6

* Sources of information on which the table is based are found in the text, along with name of investigator or program.

† Observed difference between groups is significant.

‡ Children tested three months before preschool as own controls.

Table 2

IMMEDIATE IMPACT AND LONG-TERM EFFECTS OF SELECTED EARLY CHILDHOOD PROGRAMS, BY PROGRAMMATIC FOCUS[*]

Program Focus (investigator or program title)	Immediate Impact: IQ	Immediate Impact: Achievement and/or other gains	Long-Term Impact: IQ	Long-Term Impact: Achievement and/or other gains
Head Start (variety of programs: Deutsch type)				
Summer	Improved[†] (below norm)	Improved	Most faded	Improved[‡]
Full year	Average[†]		Most faded	
General Enrichment (Deutsch)	Average[†]	n.a.	n.a.	n.a.
(DARCEE)	Average[†]	Average[*]	Seven years later. Significant difference between groups[†]	Some faded[§]
Cognitive (Weikart: Waves 0, 1, 2, 3, 4)	Average[†]	Significant improvement	Average (Waves II, III)[†]	Maintained gains (Wave 0)
Diagnostic (Hodges, McCandless, Spiker)	Average[†]		Average	
Ameliorative (Karnes)	Average[†]		No significant difference	
Learning-to-Learn (Sprigle)	Above average	Generally above average	Above average[§]	Significant difference[§]
Language (Bereiter-Englemann) 1964	Above average[†]	Above average[†]	No data	No data
Behavior Modification (Risley)	Improved	Significant improvement[§]	n.a.	n.a.

[*] Sources of information for table are found in text along with the name of the relevant investigator or program.

[†] Difference between experimental and contrast groups is significant.

[‡] Source: Weikart (1967); Grotberg (1969).

[§] Information received from telephone conversation with investigator.

n.a. = not available.

simultaneously: the experimental group is leveling off while the contrast group is catching up. Therefore, the initial spurt of the group without preschool experience is not as high as that achieved by the experimental children--rather the slope of the curve is flatter and the final level reached is typically not high.

Whereas the leveling-off phenomenon describes a slowing of the rate of gain of the experimental children after their first year in public school and the catch-up phenomenon describes the initial spurt of the control children after their first year of public school experience, the fade-out phenomenon describes an actual loss of gain or a deterioration in IQ or achievement scores. The fade-out phenomenon has only been evident in longitudinal studies that tested the children at the end of second or third or even fourth grade.

On the basis of the study results, it is also possible to distinguish the effects of the different phenomena on IQ and academic achievement. Typically, though not invariably, catch-up occurs in both IQ and achievement scores. Again typically, but not invariably, leveling-off occurs in academic achievement whereas fade-out occurs in IQ levels.

A number of explanations have been suggested for the catch-up or leveling-off phenomena. Datta (1969) summarizes them essentially as follows:

- One-time impact. This explanation suggests that a new environment stimulates children to improve no matter whether they first experienced the stimulation in Head Start, kindergarten, or first grade.

- Class norms. The teacher tends to concentrate on the less advanced members of the class, e.g., the non-Head Start students, in order that the whole class may progress. This suggestion is supported by a finding in one study (Wolff and Stein, 1967) that gains are maintained when 50% or more of the class attended Head Start, whereas the gains disappear when 20% or less are Head Start graduates.

- Peer group influence. This may proceed in either of two directions: Head Start children may stimulate the non-Head Start children or Head Start children may relax as they find themselves more advanced and not continue to perform at elevated levels (the Wolff and Stein findings may be applicable in this explanation also).

- Learning cycles. This suggestion assumes that learning occurs in spurts, followed by plateaus, and that therefore the non-Head Start children are in their "one time, any time" growth spurt wherever the Head Start children are in a plateau period.

- Factors in the school system. This suggestion includes the idea that the teacher may not have sufficient time and energy to meet the Head Start child's needs when she has 30 children in her class. Another possibility is that the curriculum may not be sufficiently articulated to the child's Head Start experience or to his developmental needs.

Any of these or other explanations are plausible, but none have been supported by systematic evidence. At present, it appears that there is an immediate impact of Head Start on the children's development. What the factors are that cause the impact, whether the gains can be maintained, whether there is a natural pattern of fluctuation in developmental processes, and which programmatic strategies will both promote and sustain developmental gains are questions that remain unanswered. The Head Start PV Program, which is described in detail in the next chapter, has been developed to promote understandings that may help us to achieve our goal of providing to each child the resources that will contribute to his optimal development.

II HEAD START PLANNED VARIATION PROGRAM

The Head Start PV program follows naturally from the earlier efforts to achieve better understanding of the effects on children of Head Start and other preschool programs. Although results have been somewhat variable, in general, many of the initial educational gains exhibited by children in the preschool experimental programs, including Head Start, were not maintained in the early elementary school grades. The reason or reasons for the apparent loss of momentum are not known at present. However, one of the objectives of the Head Start PV program is to discover whether a coordinated program of compensatory education for children from prekindergarten through the third grade will succeed in maintaining and/or even accelerating gains on a number of dimensions.

Only by initiating a set of carefully designed and well-controlled experimental programs and extending them over a sufficient period of time can answers be achieved to such issues as whether initial gains will endure; what kinds of approaches or teaching strategies are effective with which children in what kinds of situations; whether seemingly successful specific programmatic elements are actually useful in a comprehensive sense; what are the effects of various teacher modes and approaches; and what benefits--either short-term or long-term--do parent instruction and combined teacher-parent involvement achieve?

In addition, the particular usefulness of the PV program is its attempt to deal with diversity. Head Start programs exhibit variability on almost every dimension: on programmatic philosophies, approaches, techniques; pedagogical strategies; ethnic and racial composition of children; class size; teacher background; parent involvement; geographical setting; and the like. It is possible that no single programmatic pattern or approach is appropriate for all our young children. The diversity that colors the fabric of our nation may not yield to the straightjacket of only "one way." To examine systematically this important issue, PV seems a most cogent approach because it provides an opportunity, in a relatively well-controlled manner, to discover whether a single approach or multiple approaches or different approaches with different children are most effective in the long run. Thus, a program that begins with children at about three-and-one-half years of age and moves coherently with them through the third grade appears to hold some promise of providing urgently needed information--despite the many obstacles and difficulties in both implementation and assessment.

In PV, children begin in the Head Start program and then move into the coordinated Follow Through program. Program Follow Through was launched by Head Start in 1967 in the effort to discover whether educational innovation in the early primary grades would serve to maintain the earlier gains. This program was funded on a smaller scale than Head Start and was experimental in its approach. Some of the children in Follow Through classrooms (50% minimum) had been previously enrolled in Head Start programs, but some had not been, permitting an assessment of the contribution of the preschool experience in grade-school performance. The fundamental similarity of the objectives of PV and Follow Through can be seen in the description in Maccoby and Zellner (in press) of Follow Through's assumptions and goals:

> "[Follow Through] is based on the assumption that we do not know very much about why our public schools have failed to produce an acceptable level of academic achievement in millions of youngsters growing up in the big cities and rural backwaters of our nation. The Follow Through program has been open to innovation. People with a wide range of ideas about how classroom procedures (or, for that matter, whole school systems) might be modified so as to teach these children more effectively have been encouraged to apply for modest Follow Through funds to try out their programs."

The pilot work for implementing the Head Start PV program began in 1967-68, and in the fall of 1969 a group of sponsors were ready to direct a set of experimental classrooms. Maccoby and Zellner describe what is meant by a sponsor:

> "A program sponsor is a professional person, an educator or psychologist, who may or may not be associated with a university. On the basis of a specific educational philosophy, he works out a curriculum and a set of teacher-training procedures and takes responsibility for seeing that his procedures go into effect in a given set of classrooms. He also takes responsibility for the continued training and supervision of the teachers and for monitoring the children's progress throughout the life of the program. Some sponsors direct classrooms in widely scattered locations. One sponsor, for example, has put his program into effect in schools on several Indian reservations in the South and Southwest and, in addition, supervises classrooms in Los Angeles, Baltimore, Newark, and in several smaller towns and cities in North Carolina, Georgia, Iowa, Indiana, Texas, New Mexico, and Alaska. Several large cities have more than one sponsor operating classrooms in different parts of their large school establishment. Some sponsors are interested in trying out their educational procedures with a

variety of ethnic groups, in order to compare the effectiveness of different procedures in different settings; others prefer to concentrate their work with a single population group."

Helping children achieve the competence that would ensure their success in school is one of several concerns of Project Head Start. The Follow Through program is specifically concerned with their school success per se. Since its initiation, the work of Follow Through sponsors has been viewed as a set of experiments in compensatory education. As such, it combines the goals of increasing the levels of academic achievement among children from low income families with the objectives of discovering what educational techniques are most effective with these children. By "effectiveness" is meant both short-term gains in what the children learn and longer term gains in motivation and underlying skills and attitudes relevant to school success. Continuing assessment of program effectiveness has been built into both Head Start and Follow Through from the beginning. In Follow Through, groups of children being taught by different sponsors are compared with one another, and sponsored classrooms are also compared with unsponsored classrooms in comparable schools--in other words, with a comparison group of children receiving whatever program of primary school education is traditional in their own school system.

In the fall of 1968, the national office of Head Start decided to extend the concept of PV downward to children of preschool age. They requested eight of the Follow Through sponsors, whose programs represented a wide range in educational philosophies and classroom techniques, to develop curricula and classroom procedures suitable for younger children and to put them into practice in preschool classrooms in locations where they had ongoing Follow Through programs that appeared to be working well. Actually, most of these Follow Through sponsors had first developed their programs for preschool children and then had been requested to extend them upward to the early elementary grades. Now they were completing the circle by extending downward to the preschool level again.

Objectives of the Head Start Planned Variation Program

The Head Start PV Program is an attempt to compare the relative short-term and long-term effectiveness of the various coordinated educational approaches and to assess the impact of the five-year time span. The hope is that, by bringing children into a program early and keeping them there for this period of time, they will benefit from the cumulative effects of the programs. It is felt that longer exposure should both maximize the total impact of a program and make it possible to assess long-term and slow-developing effects. By this kind of assessment it may be possible to determine which program or programs are effective in achieving Head Start goals for the psychological aspects of the child's development.

The task of assessment of the first year's effort breaks down into two major parts:

1. To measure the degree and kind of model implementation achieved in the target classrooms.

2. To measure the impact of the program on the children enrolled.

These two assessment objectives have different weights over the life of the project. In the first year the issue of implementation is paramount. Gradually the focus will shift to assessment of pupil outcome.

Additional long-term objectives of the Head Start PV program are to determine: the effects of a comprehensive learning environment on the participating child; the immediate and long-term impact of the various models; whether the early effects of any or several or all models fade and, if so, when, or whether they are enduring through the third grade; and whether there are particular age periods that are optimal in terms of the effectiveness of any single approach, or several, or all approaches.

<u>Overall Head Start Planned Variation Program Design</u>*

The first year of the Head Start PV Program, 1969-70, was a relatively small pilot effort with two objectives: to document the issues attendant on the implementation of the eight models in the 16 target communities and to obtain baseline data, as well as to gather preliminary data on the children's cognitive and socioemotional development. The experimental design involves a comparative study of the development of two groups of children and their families: (1) those in the sponsor's programs with (2) those in regular Head Start classes in the same or a similar community.

Three waves of children, one for each of three years (1969-70, 1970-71, 1971-72) will be studied in the same communities. Following the pilot year, the program will be expanded to 11 sponsors in 30 communities. The implementation phase will continue in the second year but the main emphasis will be on child effects. The third year will concentrate on determining

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* Source: <u>Head Start Planned Variation Study.</u> September, 1970. Washington, D.C.: Office of Child Development, USDHEW.

what type of program is most beneficial to what kind of children at which age period. This last year will also entail a summary report that will include a cost-benefit analysis of the different models and will incorporate measures of the variables involved in the implementation, process, and developmental aspects of the program as they related to the children and their families and to staff.

The children are to be observed five separate times, as well as periodically in the follow-up phase that includes the upper grades. The observation periods are early in their Head Start experience, at the close of the Head Start year, and at the end of the first, second, and third grades. Though most of the experimental Head Start children are expected to move into their sponsor's Follow Through programs, a sizeable group are expected to move into the regular school classes. Also, although most contrast Head Start children are expected to move into regular school classes, a sizeable group will move into sponsored Follow Through classes.

The Sponsors and Their Models

The following descriptions of the eight models* will provide a clearer picture of the tone, emphasis, manner of operating, and so forth of each of the models. They are reproduced here with the permission of the authors, Maccoby and Zellner (1970). The descriptions are of the models as they initially applied to Follow Through, but they are also applicable to the extensions of these models into the Head Start PV.

The EDC Approach

David Armington, Sponsor
Educational Development Center, Newton, Massachusetts

"Perhaps the essential feature of Armington's EDC approach is an emphasis on self-development, and this holds for teachers and schools as well as for children. Much of the program's inspiration is drawn from the revolution in British Infant Schools. Each class is encouraged to develop its own personality by being responsive to the needs and interests of the children and the talents and style of the teacher.

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* See Appendix A for separate bibliographies relevant to each of the models.

"A fundamental educational aim is for children to assume responsibility for their own learning. There is a rich environment of materials for children to explore. They are encouraged to initiate activities, be self-directing, and become intensely involved in their interests. Typically, there is a variety of activities going on, much of them interdisciplinary. The time schedule is flexible, permitting children to learn according to their individual rhythms of engagement and disengagement. The theme of self-management also finds expression in a social environment of cooperation where children work together and learn from one another.

"The teacher is seen as a responsive, insightful human being who likes children and enters into their growth, not as someone who directs or is a sideline spectator, but as a guide who is constantly involved. Her objective is to get the children involved in things that are relevant to them. The EDC program prescribes no one way to do this. It is an environment in which all things are potentially legitimate, even, at times, workbooks and programmed learning, although reliance on a structured. 'prepackaged' curriculum is strongly resisted.

"The content of what is taught is strongly influenced by local conditions and objectives. It is believed that skills like reading and writing develop more surely if they are not treated as academic exercises but are taught in rich environments that stimulate the children's imagination and thought and foster their desire to communicate. All forms of expressive representation, in the arts and in movement as well as in language, are considered valid and important.

"An important component of the EDC approach is an advisory team, whose task is to help school systems put this philosophy of education into practice and to help teachers learn to regard themselves as researchers and experimenters in the classroom. The team works by responding to the demands of a situation: It does not tell people what to do; it tries to help them do what they want and to extend what they are capable of doing."

The E-B or Engelmann-Becker Program

Wesley Becker and Siegfried Englemann, Sponsors
College of Education, Department of Special Education
University of Oregon
Eugene, Oregon 97403

"The E-B program starts with the premise that disadvantaged children are academically behind middle-class children; in order to catch up, they must learn at a faster rate than middle-class children are learning. This reasoning leads Engelmann and Becker to the position that the primary concern of a compensatory program is to teach academic skills, and teach them rapidly.

"At least one hour a day is spent on academic skills--twenty to thirty minutes each on reading, arithmetic, and language. Many procedures are used to train and ensure the attention of the children. The use of reinforcement is a key element of the program. Children are smiled at or praised for correct performance, and there is a conscious effort to make these 'social reinforcers' contingent on the child's accomplishing the academic tasks set out for him. The teacher sits with four to six children and leads them in a quickly paced lesson of questions and responses. The materials are programmed so that the children will not encounter tasks that are too difficult. The teacher receives continuous feedback on the performance of the children. Later skills in the curriculum depend on mastery of earlier skills, so the teacher makes sure that each skill is thoroughly mastered before she moves on to the next.

"The E-B curriculum is carefully planned to facilitate the acquisition of generalized response systems that will apply to a whole set of problems. For example, the children learn the sounds that letters stand for and this enables them to read words they have never seen. The concept of an "average" is taught using a fulcrum and a set of weights that balance around the fulcrum. By stressing the relationship between a fulcrum and an equal sign, the children can generalize among multiplication, average, and lever problems. Paying attention to a task is also regarded as a generalized response set that can be reinforced and learned.

"Engelmann and Becker believe that children will learn if they are taught well and there is a payoff for learning. No distinction is made between intrinsic and extrinsic motivation. While they recognize that it is important for children to want to learn, the assumption is that this motivation can be taught and one should not rely on its automatic presence or wait for it to develop spontaneously.

"The E-B program places particular emphasis on remedying language deficiencies. The children in the program have difficulty, for instance, in using articles, conjunctions, prepositions and small verbs; they do not seem to know the meaning of 'not' or of relational terms such as 'between' and 'under'. The language training program, rather than concentrating on the social and expressive uses of language, teaches the concepts used in logical thinking, reading, and arithmetic. The other uses, it is believed, will develop incidentally. Likewise, Engelmann and Becker reason that it is not necessary to make a special effort to raise the self-esteem of the children; they believe that high self-esteem will be a by-product of competence."

The Behavior Analysis Program

Donald Bushell, Jr., Sponsor
Department of Human Development, University of Kansas, Lawrence, Kansas

"Bushell's Behavior Analysis Program uses systematic reinforcement procedures to teach children the skills they need to compete effectively in school. These include skill in taking the social role of the student (knowing when to talk and when to be silent, staying with assigned tasks, and responding appropriately to praise), as well as the academic skills of language, reading, writing, and mathematics.

"Bushell holds that an effective system of reinforcement makes the reward contingent on improved academic or social behavior. Typical rewards in his program include recess, snacks, art, and stories. For maximum effect, reinforcement must be delivered immediately, but since the immediate delivery of a story, for example, might terminate rather than strengthen the behavior on which it is contingent, a token economy has been instituted in some classrooms. Tokens (along with praise) can be dispensed immediately, contingent on appropriate behavior, and they can then be exchanged for preferred activities when these are available.

"Bushell does not see the token system as precluding the possibility that learning in itself can be rewarding for a child. The tokens are only used to support the child's early efforts until he reaches a level of mastery that will allow him to enjoy, and be reinforced by, his new skill.

"The teacher's role is that of a behavior modifier. If a child has earned too few tokens, the teacher knows something is wrong. She has not been paying sufficient attention to the child, she has assigned a task that is too difficult, or the available activities are not adequate reinforcers for that child. Thus, the token system checks the teacher's behavior as well as motivates the child's.

"In this program parents are hired to function as behavior modifiers. Two parents participate in each classroom for five to seven weeks and then train two other parents to replace them. In addition to introducing positive reinforcement procedures to the parents, this practice substantially reduces the teacher-pupil ratio and correspondingly increases the reinforcement density possible.

"In Bushell's program the progress of each child is monitored as closely as possible, and each child is encouraged to progress at his own maximum rate. To identify progress it is necessary to know both where the child started and where he is going. By emphasizing programmed instructional materials that allow for individualized instruction, the teacher can easily monitor individual rates of progress."

The Bank Street Program

Elizabeth Gilkeson, Sponsor
Bank Street College of Education
New York, New York

"The Bank Street approach is concerned with many dimensions of each child's development. Learning and development are seen as intertwined, for if learning is to be more than superficial, it must be pursued by the child on behalf of his own development. The teacher is regarded as highly important in the learning-development process, since it is she who helps the child become aware of his world. She sensitizes him to his experiences, to sights, sounds, feelings, and ideas. She functions for the child as a consistent adult whom he learns to trust. At Bank Street it is believed that the learning of specific skills should not take place independently of healthy emotional development. A program that concentrates only on cognitive development would be doomed, since children, especially disadvantaged children with their frequently chaotic histories, need first of all to be able to trust in the predictability of the school environment and to learn the effects of their own actions within it. Only then are they able to persist at all and profit from their work. The child must also be able to relate his in-school learning to his out-of-school learning, which requires mutual planning with parents.

"Bank Street treats the classroom as the child's workroom, where he is free to investigate objects and explore various media. He makes choices and carries out plans. He works individually or undertakes cooperative projects. It is a stable, ordered environment. The teacher introduces activities and plans events, but her teaching is in terms of the individual child's response. She teaches diagnostically and plans individualized follow-up. She points out and elaborates on a child's experiences. The planned activities originate from classroom themes (organizing chores, cooking, block building) and later extend to community themes (food marketing, traffic control, sources of water). Academic skills are learned in the context of a relevant, engaging classroom life.

"In this program language development is seen as including the development of interpersonal communication in addition to its role in cognitive development. Verbal communication is part of and a continuation of the child's experiences in communicating with people. Language as related to cognitive development also has it precursors, and these include the knowledge that the child has already acquired of the world and experiences he has had with things that stand for other things. Language, written and spoken, surrounds the child in the classroom, and the program's objective is that he will learn it as a useful, pleasurable tool."

The Florida Project

Ira Gordon, Sponsor
Institute for Development of Human Resources,
College of Education, University of Florida
Gainesville, Florida

"Gordon's position is that if an intervention program is to be successful, it must start early (preferably during infancy), and it must include the home environment, especially the mother, in addition to the child.

"The language of disadvantaged children often shows a lack of comprehension of abstract and casual relationships. The children are impulsive and distractable; they have a low self-esteem. Gordon feels that these deficits are related to the fact that the children's mothers do not provide models of abstract thinking for them; the mothers have difficulty organizing their own existences and create disordered homes for their children; and they, too, have low self-esteem and feel they have little control over their own fate. It is not enough to change the way the school teaches the children; one must also change the way their mothers teach them.

"In Gordon's program teaching occurs in both the home and the school and is coordinated by a paid parent educator who comes from the same population as the children's mothers. The parent educator is trained by the program personnel. In the classroom she functions as a teacher's aide. She then takes into the home the tasks that are taught in the classroom and instructs the mother in how to teach them to the child. The mother thus learns that education occurs in the home. She learns what kinds of child activities she should encourage, and she learns, as she observes her child learn, that her actions can have an effect and that she can be successful.

"While curriculum is not standardized across the classes in this program, there is an orientation toward the theories of Jean Piaget. The children learn to arrange items in series, to classify and to name. Tasks related to Piagetian stages are progressively sequenced and are demonstrated in a variety of contexts. For example, a systematic attempt is made to enumerate all the ways the toys and objects in the classroom can be used. Then the child is helped to discover and explore the alternatives himself, thus learning to be experimental rather than repetitious. The teacher or aide constantly uses language to accompany the child's actions. The child needs to hear the words that describe what he is doing if he is to become expressive himself. The parent educator and teacher are also encouraged to participate in curriculum design, especially in devising methods for dealing with the difficulties of individual children. Gordon's program makes no deliberate attempt to shape the child's behavior through the use of incentives. Mastery, it is felt, is its own reward."

The Tucson Early Education Model

Marie Hughes and Ronald Henderson, Sponsors
Arizona Center for Early Childhood Education,
College of Education,
University of Arizona
Tuscon, Arizona

"According to Marie Hughes and Ronald Henderson, the Mexican-American children for whom their program was originally developed are deficient in both Spanish and English, have little experience in manipulating objects, and have little sense of time as an ordered sequence of events (many have difficulty narrating a sequential tale, or planning a sequence of actions). The objectives of the program include remedying these deficiencies.

"The Tucson curriculum is kept flexible. Teaching elaborates on and explores what is already salient for the children--their environment and their current interests. There is relatively less emphasis on which items are taught and on the transmission of specific content, and more emphasis on 'learning to learn'."

"The teacher is to be at the service of the child to help him in his learning. She does not insist that he perform as she wishes and, rather than criticize him when he is wrong, she capitalizes on what he has done well and helps him to perform correctly. When she praises him, she lets him know that he progressing. The child is encouraged to use all available sources for learning: The classroom environment is there to be explored. One program objective is that the children learn to cooperate with each other in their work.

"Hughes and Henderson emphasize language training, but it is not taught word by word in formal lessons. The program's philosophy is that if language is made useful, and if language and the written word surround the child, he will easily learn. The children's stories are recorded and the class's experiences are set down in illustrated books. When they start to write on their own, their work is displayed with the mistakes left unaltered. Direct correction is felt to discourage communication; providing language models (the teacher, books) for the child to imitate will serve to correct mistakes as the child progresses.

"The Tucson philosophy is that the child does not have to be forced, or even requested, to learn. It is believed that if the environment is sufficiently interesting it will of itself, and without any prodding from the teacher, 'demand' that the child learn.

"The program encompasses four main objectives: (1) language competence, including labeling and concept development; (2) an intellectual base of other skills necessary for learning, including the ability to attend, to recall, to organize, to choose, and to imitate; (3) a motivational base, including positive attitudes toward school and learning, the ability to persist, and the expectation of success; and (4) societal arts and skills, which include language and mathematics as well as social cooperation. Ideally, these goals are developed simultaneously in activities that are meaningful for the child. For example, a teacher who is making ice cream with a small group of children is teaching how to sequence, new words, new concepts, and new technical and social skills. She is also developing the children's attitudes toward learning."

The Responsive Model

Glen Nimnicht, Sponsor
Far West Laboratory for Educational Research and Development
Berkeley, California

"In his program, Nimnicht would like to help develop individuals who have both the ability to solve problems on their own and the confidence to attack them. To this end, his program concentrates on enhancing the child's intellect, his sense of autonomy, and his self-concept.

"The classroom environment is structured so that as the child freely explores it, he will make discoveries from which he will learn. For example, by experimenting with the programmed typewriter (originally devised by O. K. Moore), the child learns to read and write; at the same time he is learning to find answers to problems by himself. Nimnicht favors 'autotelic' activities: that is, activities that are self-rewarding and do not depend upon rewards or punishments that are unrelated to the activities themselves. Nimnicht also feels 'responsiveness' is important: The environment in which these activities take place should be responsive to the child--it should respond when he is interested in learning and give him immediate feedback from his problem-solving attempts. Similarly, the teacher is trained to be responsive to the child. She guides him in response to his expressions of interest and helps him find answers, but avoids giving them to him. When she thinks it is appropriate to teach a particular concept or bit of knowledge, she does so by making use of and elaborating on what the child is interested in.

"In addition to problem solving and concept formation, Nimnicht's curriculum stresses sensory and perceptual acuity, which is considered an important part of cognitive development. The assumption is that disadvantaged children often come from crowded and noisy homes where their sensory experience is largely undifferentiated. In contrast, the classroom fosters sensory and perceptual discrimination through its orderliness and the tasks it contains. The child can focus on activities and can see and hear without distractions. The teacher further differentiates the environment for the child by providing verbal mediation to help him understand in words what he is perceiving.

"Another assumption in Nimnicht's program is that disadvantaged children, as compared with middle-class children, have suffered in the quantity and quality of their interaction with adults. There is less contact, and that which does occur is of poorer quality because the parents themselves are uneducated and often psychologically defeated. Nimnicht is consequently very concerned that his program instill in the children not only the learning skills they will need but also the positive self-concept that will allow them to expect and work toward mastery. He avoids using methods that will undermine this goal. Extrinsic reinforcers are not used because it is believed that they inevitably imply differential reward--a gold star for one child is equivalent to differential punishment or a failure experience for another child. Nimnicht's autotelic system is based, rather, on the principle of intrinsic motivation. A child learns because he wants to."

The Cognitively Oriented Approach

David Weikart, Sponsor
High/Scope Educational Research Foundation
125 N. Huron
Ypsilanti, Michigan 48197

"Weikart's program focuses on three major concerns: the curriculum, which is cognitively oriented; the teacher, who is encouraged to take an active and innovative role in developing a program for her class; and the home, where teachers encourage the mothers to promote the cognitive growth of their children.

"The curriculum is derived from the theories of Piaget: Conceptual development is understood to move from the simple to the complex and from the concrete to the abstract. The child progresses from the motor level of abstraction, where he learns to use his own body to experience concepts, to the verbal level, where he learns to label what he is doing or experiencing, and finally to the symbolic level, where through familiarity with objects and object representations he develops the skills necessary to think abstractly. Self-concept is one of the most important concepts the child learns. The teacher can assist him in this learning by treating him as an autonomous individual who can make choices for himself. The teacher also demonstrates language uses for the child by labeling, using prepositions, interpreting actions, and explaining causal relations.

"Weikart believes that teachers can be effective only when the supervising staff has respect for them. He recognizes that without the teachers' cooperative participation even the very best curriculum is doomed. Within the Weikart program the teacher has the acknowledged right to design her own program for her own class, developing goals and methods through interaction with other teachers and through critical evaluation and guidance from the supervising staff.

"In addition to the classroom curriculum, home training is seen as a necessary part of the program. The mother usually has command of the language and the concepts necessary to teach her child, but she needs to be encouraged to use her intellectual skills in talking to the child and in becoming involved in his cognitive growth. The teacher suggests tasks for the mother to present to the child and ways in which the mother can more effectively teach him."

Summary

It is seen that the programs differ, both in their objectives and the recommended means of achieving them. All the programs seek to foster language development, but some sponsors do so through very detailed teaching concepts and sentences and some sponsors rely more on providing an environment in which children are encouraged to communicate. The primary goal for other sponsors is to transmit academically relevant cognitive skills.

Most sponsors agree that it is important to foster emotional well-being and a sense of self-worth or self-esteem in the children. For some programs this emotional well being is an end in itself. In other programs self-esteem is thought of as a necessary intermediate step that is of interest primarily because it is instrumental in producing cognitive gains.

Some programs attempt to develop the growth of intrinsic motivation in children. Their sponsors believe that, if tasks are properly presented, learning will be its own reward and that it is unnecessary and indeed, undesirable to use external reinforcement such as praise or tangible rewards for learning. In other programs, the use of external reinforcement is an integral part of the teaching program and is thought of as an effective means for developing the motivation to learn. One program is unique in its effort to reinforce and instruct the mother as the teacher of the child (in contrast to the child-oriented curricula of the other sponsors), which this sponsor feels may result in greater and more enduring effects on the child. This approach involves a combined teacher-parent impact on the child that may prove to be rather powerful and, if so, may redirect our efforts to a much closer relationship with the home. Further, the possible value of this approach lies in its "spin-off" aspect to siblings and to other children in the community. Detailed contrasts between programs, in terms of their philosophies, theories of learning and motivation, and objectives, are presented in Maccoby and Zellner.

III EVALUATION OF THE HEAD START PLANNED VARIATION PROGRAM

In July 1968, Stanford Research Institute was selected to conduct a nationwide evaluation of Project Follow Through for the U.S. Office of Education. At the time of the decision to extend some of the Follow Through programs into Head Start, SRI had already done extensive work in selecting and developing measuring instruments that would reflect the varying objectives of the program sponsors, eight of whom became the nucleus of the Head Start PV Experiment.

Furthermore, SRI had assembled a large field staff and organization for the testing effort in Follow Through, and the sites where this testing was being done included a number of the communities in which Head Start was inaugurating the PV programs; therefore SRI was employed to conduct the evaluation of the impact of the Head Start PV program.

Evaluation will continue during the life of the sponsored PV programs. In the later phases of the project, it will be possible to assess the cumulative impact of preschool Head Start and early elementary-grade Follow Through experiences within individual programs. During the first year of the project, however, assessment must of necessity be more limited. The first year's assessment work is thought of as developmental in that measures had to be adapted or developed to show both how well a sponsor's model had been put into effect and how great an impact the program had had on the children. Evaluation objectives during 1969-70 were:

1. To measure the degree of implementation of the sponsor's model.

2. To provide base line data on children and others participating in the program for purposes of measuring change in later phases of the program.

3. To analyze the kind and degree of change in pupil performance and skills that occurred during the first year and to estimate how much of this change could be attributed to the child's participation in a sponsored Head Start program.

The national leadership of Follow Through and Head Start intends that the first-year evaluation data shall be maximally useful to program sponsors in their efforts to improve the implementation of their respective programs. Extensive and publicly disseminated comparisons among programs can be destructive at the early phases of an experiment such as this. Although data on interprogram comparisons have been obtained during 1969-70, they are reported sparingly in the present report and interpreted with caution. Identifying differential effects among sponsors and associating these effects with program characteristics are ultimate purposes of the longitudinal experiment that begins with Head Start and ends with the third year of Follow Through.

General Plan of the Evaluation

The selection of a control group has been a crucial problem in every evaluation of compensatory education. (Cohen, 1970; Campbell and Erlebacher, 1970; Light and Smith, 1970.) Evaluation usually asks: "Is intervention effective?" And the answer usually depends on what the intervention is compared with. For Head Start, eligible applicable children who were not selected to participate in Head Start and who did not participate in any other program would be expected to develop least and hence increase the likelihood that the intervention would be found effective. The "ideal" experimental design from the standpoint of research rigor would be to work with a list of applicants for a Head Start program, choosing part of the list at random for inclusion in the program and using the remainder as an untreated control group. In practice, it is seldom possible (and possibly not even ethnically desirable) to allow certain children access to Head Start opportunities and to deny these opportunities to others who live in the same communities and are equally deserving and equally eager to participate. If a control group is taken from eligible children in the same community whose families have not applied for PV Head Start, the control group children will differ from the Head Start participants in a variety of known and unknown factors, including both socioeconomic factors within the poverty guidelines and less tangible matters such as the parents' interest in their children's education. Because of these problems, in some studies comparison groups have been chosen from other communities in which no Head Start program exists, but the rapid proliferation of Head Start Centers has made it increasingly difficult to locate communities that are similar to the target communities in all important respects save the absence of a Head Start program. Indeed, it is difficult to get adequate data for determining the important characteristics that should be similar for treated and control communities.

Another frequently used design compared experimental programs with ongoing programs. If the ongoing programs are themselves effective, the experimental intervention must be very powerful indeed to show "an effect."

It was impractical for SRI in the first year to study untreated comparison children. Recognizing the stringency of the criterion of effects, comparisons were made between the PV Head Start classes (those supervised by the eight sponsors whose models have been described above) and other Head Start classes not so sponsored. These comparison classes may be effective in upgrading the cognitive skills of the children enrolled in them; indeed, their directors and teachers are dedicated to achieving this very outcome. Hence, to demonstrate overall effectiveness of the PV programs in comparison with the unsponsored control groups, the PV programs must produce greater gains than are found among children who may also be gaining appreciably. The overall sponsored-unsponsored comparison, then, is a very exacting test of whether PV programs have any effect over and above that of Head Start generally. Perhaps more revealing in the long run will be the comparisons among sponsors, which will show the particular kinds of effects produced by particular kinds of educational approaches. Furthermore, change scores (comparisons of year-end performance with entry, or baseline, levels) will be available for both the sponsors and their comparison groups, thereby making it possible to determine whether both the sponsored programs and the comparison programs were producing gains.

In later program years, non-Head Start control children and ethnically matched middle-class comparison children are to be included in the study, wherever possible. These groups will eventually permit assessment of child development in PV against both "low" and "high" effective change groups.

One objective of the evaluation is to determine whether a given sponsor's program has differential effects, depending on the nature of the community in which it is established, i.e.,--is the program replicable in different communities? A prior question is whether it is more difficult to implement a given program in one kind of community than in another. With these questions in mind, the sampling for the first year's evaluation entailed studying two different sites for each sponsor. In most cases, the pairs of sites in which each PV program was implemented consisted of one urban and one rural or small town. For a number of sponsors, one of the sites studied was southern and the other northern, thus providing opportunities to make some regional contrasts.

As the PV program advances into the second year (1970-71), each sponsor will have expanded into two additional communities and will maintain the program in all four locations through the third year. Such a programmed implementation scheme acknowledges the likelihood of uneven and possibly incomplete assimilation and expedition of the planned variation models, provides for expansion in the second year, and permits an orderly accommodation of the program implementation to the exigencies of each community. Thus the third year of planned variation is expected to be a smooth-running one with maximum effectiveness.

Similarly, the evaluation activities--and even the evaluation plan--are expected to be modified on the basis of the first-year experiences. Assessment procedures and techniques that are retained for the third-year evaluation will have been substantive survivors of intensive field work and analytic criticism.

Design of the Evaluation

A simplified evaluation scheme consists of (1) children in Head Start PV programs during the preschool year who will participate in Follow Through under the same sponsor the following year either in kindergarten or in first grade, and (2) children who participate in a regular (i.e., unsponsored) Heat Start program for the preschool year and continue into a kindergarten or entering-first-grade that is not influenced by Follow Through. Since it is impractical to guarantee the type of program that the children will experience in school, it is reasonable to expect some of the Head Start PV children will also enter non-Follow Through classes and some of the children participating in unsponsored classes during the Head Start year will enter classes in the Follow Through program. Thus four groups can be identified that must be considered:

Group	First Year Head Start Program	Second and Later Years School Program
1	Sponsored	Follow Through
2	Sponsored	Non-Follow Through
3	Unsponsored	Follow Through
4	Unsponsored	Non-Follow Through

Follow Through is collecting data on children in the PV sites (sponsored and unsponsored) as they enter school and in later years. Post hoc comparisons must be made cautiously; however, these data will permit comparisons of sponsored, regular Head Start, and no-program children in the first and later years of public school.

Although the children entering the Head Start PV programs (the sponsored groups) were not to have had prior Head Start or equivalent experiences, it was reasonable to anticipate that in some instances this would not be the case. In addition, in some locations a few classes were not expected to continue in the sponsored program when they advanced to kindergarten or entering first grade. It was also expected that some children could progress to a Follow Through class that had a sponsor different from the one in Head Start. Since the children in the first-year evaluation may have arrived with prior Head Start or equivalent experience or no prior experience and participated in either a sponsored or unsponsored program, the subject of this evaluation could represent six conditions. Depending on whether a child was destined for Follow Through with the same or different sponsor or a non-Follow Through class, 15 separate groups are in contention for the follow-up evaluation at the end of the second year. Table 3 shows the combinations of programs that are represented. The shaded areas are groups that were not tested this year. The proliferation of conditions that can occur as the children progress to the second and third year in school are not shown but will become increasingly important in the pursuit evaluations in Follow Through with respect to the problems associated with attrition of children who leave the schools currently in the Follow Through evaluation or enter the programs of different sponsors as a result, generally, of family moves.

The utility and ramifications of the movement of children through the various possible program combinations can be indicated briefly. Those children who have had no prior Head Start or equivalent experience, who participated in a sponsored program in 1969-1970, and who will not be in Follow Through in 1970-71 (Group 1.1.3) may ultimately provide a test of the durability of gains when preschool programs are not followed up in primary school. The effect of Head Start experience before the current evaluation can be examined in Groups 2.1.0 and 2.2.0. Chapter VIII of this report reports on some of these effects. The comparability of equivalent Head Start experience (Groups 3.1.0 and 3.2.0) is a worthwhile examination, but it is beyond the data available in this first-year interim report. The accumulative effects of replacement sponsors can be examined with Groups 1.1.2, 2.1.2, and 3.1.2. However, the pursuit of any of these and other questions is severely hampered by the nonrandom assignment of programs to communities, children to programs, children to classes, and teachers to programs.

Table 3

COMBINATIONS OF PROGRAMS

Prior Experience 1968-69	First-Year Evaluation Period 1969-70	Subsequent School Year 1970-71
1.0.0 No HS or equivalent	1.1.0 HS, sponsored	1.1.1 Ft - Same sponsor 1.1.2 Ft - Different sponsor 1.1.3 NFT
	1.2.0 HS, Unsponsored	1.2.1 FT 1.2.2 NFT
	1.3.0 HS equivalent	1.3.1 FT 1.3.2 NFT
	1.4.0 No Hs or equivalent	1.4.1 FT 1.4.2 NFT
2.0.0 HS	2.1.0 HS, sponsored	2.1.1 FT - Same sponsor 2.1.2 FT - Different sponsor 2.1.3 NFT
	2.2.0 HS, unsponsored	2.2.1 FT 2.2.2 NFT
	2.3.0 HS equivalent	2.3.1 FT 2.3.2 NFT
	2.4.0 No HS or equivalent	2.4.1 FT 2.4.2 NFT
3.0.0 HS equivalent	3.1.0 HS, sponsored	3.1.1 FT - Same sponsor 3.1.2 FT - Different sponsor 3.1.3 NFT
	3.2.0 HS, unsponsored	3.2.1 FT 3.2.2 NFT
	3.3.0 HS equivalent	3.3.1 FT 3.3.2 NFT
	3.4.0 No HS or equivalent	3.4.1 FT 3.4.2 NFT

Legend: HS = Head Start
FT = Follow Through
NFT = Non-Follow Through
= Not Tested in 1969-70.

Participants in the First-Year Evaluation

Sponsored Communities

The Office of Child Development (OCD), Head Start, selected eight of the more widely implemented Follow Through programs and offered one to each of two communities in which the program already existed in the early school grades under Follow Through support. The Head Start Centers that were so approached could either accept or reject the offered program but could not use an alternate.* The locations in which the Follow Through program sponsors elected to offer their programs to Head Start were not picked randomly; rather they generally reflected a sponsor's preference for areas in which implementation of his program was progressing without untoward difficulty. The sponsors and the communities in which the programs were accepted are shown in Table 4.

Comparison Groups

Within the Head Start PV communities, it was next necessary to identify with and coordinate a set of comparison groups that would satisfy certain requirements of comparability. In five instances it was impossible to locate comparison classes in the communities in which Head Start PV was being implemented, since all Head Start classes in these PV communities were sponsored. The communities affected and the off-site comparison communities are as follows:

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* Before each community accepted one of the Follow Through sponsored programs, meetings and information exchanges occurred that allowed each community to examine carefully and extensively the approaches, philosophies, methods, and expected outcomes of each program before deciding that a particular program was responsive to its needs. It seems reasonable to assume that the acceptance of the Head Start PV program in a given community indicated a compatibility between the local desires and the program of the sponsor already operating in the Follow Through program.

Table 4

HEAD START PLANNED VARIATION SPONSORS AND COMMUNITIES

Model	Sponsor	Communities in 1969-70	Communities to be Added in 1970-71
Nimnicht	Glen Nimnicht, Far West Laboratory, Berkeley, Calif.	Cleveland, Ohio* Duluth, Minn.	Buffalo, N.T. Fresno, Calif. Salt Lake City, Utah Tacoma, Wash.
Tucson	Ronald Henderson, University of Arizona, Tucson, Ariz.	LaFayette, Ga. Lakewood, N.J.	Lincoln, Neb.
Bank Street	Elizabeth Gilkeson, Bank Street College, New York City, N Y.	Tuskegee, Ala. Wilmington, Del.	Boulder, Col. Elmira, N.Y.
Engelmann-Becker	Siegfried Engelmann and Wesley Becker, University of Oregon Eugene, Ore.	East St. Louis, Ill. Tupelo, Miss.	E. Las Vegas, N. Mex.
Bushell	Don Bushell, University of Kansas, Lawrence, Kansas	Oraibi, Ariz. Portageville, Mo.	Mounds, Ill.
Weikart	David Weikart, High/Scope, Educational Research Foundation Ypsilanti, Mich.	Ft. Walton Beach, Fla. Central Ozark, Mo.	Greeley, Col. Seattle, Wash.
Gordon	Ira Gordon, University of Florida, Gainesville, Fla.	Jacksonville, Fla. Chattanooga, Tenn.	Jonesboro, Ark. Houston, Tex.
EDC	David Armington, Educational Development Center, Newton, Mass.	Washington, D.C. Johnston Co., N.C.	Paterson, N.J.

* Discontinued after the fall 1969 testing.

Sponsor	Head Start PV Community	Off-Site Head Start Comparison Community
Nimnicht	Duluth, Minnesota	St. Cloud, Minnesota
Tucson	LaFayette, Georgia	Albany, Georgia
Tucson	Lakewood, New Jersey	Jersey City, New Jersey
Bushell	Oraibi, Arizona	Acoma, New Mexico
Weikart	Ft. Walton Beach, Fla.	Penascola, Florida

There were two criteria for selection of comparison Head Start classes. First, the Head Start classes should not be actively influenced by the Head Start PV program against which they would be compared, e.g., diffusion* due to sharing the same facilities and other factors should be minimal. Second, the children should be scheduled to enter non-Follow Through public schools the following year so that they could continue to be used as comparisons in the follow-up studies. A few comparison classes however, were expected to progress to Follow Through schools in fall 1970 (Portageville, three classes; East St. Louis, two classes; and Tuskegee, two classes) since these were the only available schools. In Chattanooga all three classes were slated for Follow Through schools but with a different sponsor. In analyzing 1969-70 data, the future condition of the children with respect to their participation in Follow Through has been ignored. The long-term evaluation design will attempt to use the variations in follow-up conditions to assess the value of preschool as contrasted to primary school intervention. The PV program is scheduled to expand through the third year and to include at least four communities for each sponsor. Thus there will be an augmentation of the number of children who (1) begin in sponsored Head Start classes and progress to regular school and (2) emerge from regular Head Start classes into Follow Through programs.

* It was recognized from the beginning of the evaluation that some information exchange in the form of talk and materials was likely. Since it was impractical to prevent the flow of selected information, procedures were instituted to account for the exchanges, if they occurred. The teacher inquiries, for example, provide a convenient means for determining certain kinds of diffusion; details are given later in Chapter IX.

IV MEASURES AND PROCEDURES

Basis for Selection of the Measures

What precisely should be measured in the evaluation study? The different sponsors had different objectives and, as noted earlier, the 1969-70 evaluation was aimed at answering two questions:

1. How well did a sponsor succeed in putting his model into effect?

2. What was the impact of the program, if well implemented, on the children?

Answering the second question involved observation and testing of the children. What measures should be used? A given test could favor a given sponsor because it tested for outcomes that were the direct focus of his teaching efforts and would be unfair to another sponsor who was aiming for different objectives and whose children therefore might not have learned the tested-for contents at all or might have learned them only incidentally and in a fragmentary way. In addition, Coller and Victor (undated) have commented on the need for a battery of inventories that sample the child's abilities across a wide spectrum of behavior. Caldwell (1967) has made a similar statement, adding that such tests must be easily administered by relatively untrained personnel. These two admonitions bear out the intentions of Head Start to ensure that evaluation programs contain great breadth of measurement in spite of the fact that the available measures are less than perfect.

In August 1969 an intensive orientation and planning conference was held with the eight Follow Through PV sponsors who would be participating in Head Start. The primary purpose of this initial conference was to review potentially useful measures for the first-year evaluation of PV in Head Start. The eight sponsors agreed that the following approach was reasonable: There were certain outcomes, such as improved language skills, that were direct objectives of all of the programs and should be tested. In addition, the test battery should include measures relevant to the major objectives of each of the sponsors so that each would have a chance to demonstrate effectiveness in those areas of the child's development on which his efforts had been primarily focused. The eight sponsors were interested in discovering whether their own programs had side-effects that were related to the objectives of other sponsors' programs, and hence wanted to know how their children performed on the entire battery of tests, including both tests that were directly relevant to their own programs and tests that were peripheral.

In practice, it proved to be easier to find (or develop) instruments to measure some program objectives than others. Measures existed for verbal ability, IQ, and certain other academically relevant cognitive attributes. But sponsors' objectives called for the assessment of certain noncognitive attributes as well, including:

1. The child's self-concept (self-esteem or sense of self-worth, including pride in his own ethnic group) and a sense of competence.

2. Impulse regulation - the ability to inhibit impulsive hyperactivity, to regulate the expression of aggression, and to postpone gratification.

3. Social responsiveness and social sensitivity.

4. Ability to cope with feelings about self and others.

5. Ability to focus attention and resist distraction.

6. School-related motivation - the enjoyment of school, interest in school-related tasks, and willingness to continue working on a difficult or frustrating task.

7. Autonomy, independence - the ability to maintain task orientation without teacher direction, self-selection of tasks, self-monitoring of outcomes.

Ready-made measures for most of these attributes, especially measures validated and standardized on underprivileged children, were not available or were in only the early stages of development. A search was made for relevant measures by seeking the advice of sponsors on measures that they thought would come closest to assessing their individual objectives. For some attributes like self-esteem, nothing satisfactory that was adaptable to the age group under study was found; for other attributes like impulse control, relatively unproven measures were used in the absence of anything better. In general, the so-called social-personal measures are less dependable than the more academically oriented tests, and hence some program objectives will be better assessed in the first-year testing than others.

The test battery had to satisfy several practical requirements: (1) testing time for any one child should not exceed an hour-and-a-half total, with no test session longer than 45 minutes; (2) tests must be administered individually since the children ranged in age from three to six years; (3) tests must have a sufficient range of difficulty to be applicable also in the beginning of the following school year and preferably longer; (4) there must be coordination with the test battery to be used in Follow Through to provide testing continuity in the longitudinal study; and (5) some measures should be identical to those used elsewhere in Head Start to permit more extensive and useful comparisons.

General approval was given by the sponsors for the test battery described below.

To understand the impact of the programs on the children, a variety of data were needed in addition to pupil test scores. Included among these kinds of data was demographic information about the children, their families, and their teachers. Also needed was information on the degree of understanding about the programs that the teachers and parents had gained over the year. Their expectations and extent of participation in program related activities were expected to have an impact on the development of the children. The kind and style of events that occurred in the classroom would be of paramount importance for the implementation of the sponsors' programs (except in the case of the parent education model where the primary arena is the home).

The section that follows describes the means by which assessments were made of the children, teachers, parents, and the processes that took place in the class settings. An overview of the measures and procedures used is shown in Table 5. The discussion of the measures that follows groups them as: pupil measures (1 through 5), process interaction measures (6), descriptive measures (7 through 9), and implementation measures (10 through 14).

Description of the Measures*

Pupil Measures

Academic Achievement: New York Univeristy Early Childhood Inventory Tests. Although more general measures like IQ and achievement tests give

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* Selected tests and procedures are shown in Appendix C. A limited number of information copies of the tests used in this evaluation are available upon request.

Table 5

MEASURES AND PROCEDURES USED

Title	Content
1. Booklet 3D, NYU Early Childhood Inventory	Pre-science Pre-math Prepositions
Booklet 4A, NYU Early Childhood Inventory	Alphabet Numerals Shape names
2. Booklet 5, Preschool Inventory (PSI)	General Cognition
3. MI, Motor Inhibition	Movement inhibition
4. Stanford-Binet Intelligence Scale, Form L-M; Hertzig-Birch Scoring	General cognition (IQ) Vocabulary (subscore) Child's response style
5. Eight-Block Sort Task	Mother-child interaction
6. Classroom Observation Procedure	Interactions and activities of teacher/aide/child
7. Teacher Questionnaire	Teacher characteristics
8. Parent Questionnaire	Interest/knowledge/participation in Head Start and child
9. Classroom Information Form	Demographic data on child and family
10. Sponsor ratings of teachers	Teaching skill in the model
11. Head Start director ratings of teachers	Head Start teacher performance
12. Head Start consultant ratings	Program implementation
13. Sponsor report on implementation activities	Sponsor activities in training/coordination
14. Video taping	Activities in sponsor-selected classes

a good indication of how well the child can or will do in school, more specific information is needed about certain aspects of the child's abilities and how his Head Start PV participation has affected these abilities.

For some sponsors development of specific quantitative and linguistic preacademic skills is a primary program objective. These sponsors believe that, as children develop high levels of competence in areas central to school performance, their self-esteem and self-confidence will rise and their general cognitive ability will also develop. Other sponsors believe that academic achievement follows the development of personal-social characteristics such as self-confidence, motivation, and trust in the world or is best facilitated by the development of general reasoning and basic congitive traits. All sponsors were, however, interested to some extent in performance in the preacademic area.

Six of the subtests from the New York University Early Childhood Inventories Project (Coller and Victor, undated) were selected. The subtests--pre-math, pre-science, prepositions, alphabet, numerals, and shape names--had been used in the Follow Through evaluation in 1968-69 assembled in three forms, each form consisting of one-third of the test items selected at random from each subtest. On the basis of the data from Follow Through in 1968-69, it was possible to identify those forms of the subtests that had the best range of responses with respect to potential use with the Head Start PV preschoolers and that were predicted to retain sufficient range for later use when the children attended Follow Through.

The subtests covering pre-math, pre-science, and prepositions were presented in one booklet (Booklet 3D). In the first year of the Follow Through PV evaluation, the pre-math and pre-science subscales that eventually were used for Head Start PV came from Booklet 3A, and the preposition subscale came from Booklet 3B. In the case of the remaining three subtests--alphabet, numerals, and shape names--the original configuration (Book 4A in Follow Through) was used in its entirety.

General Cognitive Development: Preschool Inventory and Stanford-Binet Tests. General cognitive development is the focus of several sponsors and is of interest to all. The Preschool Inventory (PSI) and Stanford Binet tests are complex measures; performance reflects motivational factors and cultural experiences, as well as general learning ability. Both the tests have repeatedly been found sensitiv to preschool intervention and to predicting later school achievement.

They should be interpreted with caution, as indicated for general cognitive performance.

Preschool Inventory Test. The PSI 64-Item Experimental Edition (1968), developed for Head Start by Caldwell and published by Educational Testing Service (ETS) had been part of the Follow Through battery for kindergarten and entering first-grade classes in the 1968-69 SRI evaluation and was scheduled for the 1969-70 Follow Through. It was also used in the 1968-69 Head Start national assessment.

To reduce the amount of time required for the testing of each child in Follow Through, the PSI had been assembled in three forms, each consisting of a random one-third of the test items; the test was group administered. For the Head Start PV evaluation, the full PSI was administered individually to all children.

Stanford-Binet Intelligence Scale. The Stanford-Binet Intelligence Scale (Terman and Merrill, 1961) has been used in other Head Start evaluations and is also applicable throughout all subsequent grade levels. It is usually thought to measure cognitive functioning. It has long been understood, however, that motivational factors may influence Stanford-Binet scores. For example, Zigler and Butterfield (1968) investigated the effects of motivational factors on IQ scores and found that increases in IQ could be obtained by optimizing motivational factors in the administration of the test. However, IQ scores obtained using an optimizing procedure did not differ for the same children tested before and after a seven-month nursery school, and post-program IQ scores obtained using the standard testing procedure approached those of the preprogram optimized procedure. It was suggested that the program increased the children's ability to use their intelligence rather than increasing their cognitive ability per se.

Cognitive Response Style Development. All sponsors were concerned that the child's personal-social development would come to be central to the program; the aspects of this development that appeared most cogent, however, are also very difficult to measure in a large scale national program. As previously noted, available measures were used so that this important variable would not be neglected.

Motor Inhibition. The Motor Inhibition Tests (Maccoby et al., 1965) are a measure of the child's ability to inhibit movement. Maccoby et al. found that the ability to inhibit movement is related to intellectual ability and suggested that impulse control may be important for intellectual functioning. The test procedures used were taken directly from those developed by the ETS for its longitudinal study of Head Start children in four cities. Although these procedures were slightly at variance with the original work of Maccoby and her associates, it was considered desirable to reproduce as closely as possible the test conditions of the current ETS study.

The three parts of the test are concerned with different levels of muscle group involvement and include the following: (1) a beam-walking task, which requires gross motor coordination; (2) winding the crank on a toy tow truck, which requires small muscle coordination; and (3) drawing a straight line using a straight edge, which requires small muscle coordination. Each of the tasks was done twice by the child, first at his natural rate of speed and then on instruction to do it as slowly as he could.

This test was attractive in that it provided a possible means for assessing the ability of a child to modify his rate of performance when so requested. There was also the possibility of determining whether the child was unwilling or incapable of following specific instructions, e.g., starting the task before the command to begin was given. The task additionally had a practical function: It provided a break in the testing situation for the child, giving him the opportunity to get up and participate in a motor activity and to play with a toy truck.

Maccoby et al. used only the "slow" times in their study; a difference score is included here to compensate for the fact that a child may get a high "slow" score by simply being slow--not by inhibiting his response.

Hertzig-Birch Scoring of the Stanford-Binet Test. Hertzig et al. (1968) devised a system for scoring the way in which a child responds to a Stanford-Binet test item. He can pass an item in two ways: (1) by doing only as much as is required of him or (2) by doing more than is required. He can fail an item in a number of ways: (1) by refusing to do the task, (2) by doing something else, (3) by claiming incompetence, (4) by asking the examiner for help, (5) by making no response at all, or (6) by doing the task but doing it incorrectly. In addition, these responses may be made verablly or nonverbally. The scoring system and definitions used are shown in Appendix C.

Hertzig and his coauthors used this categorization in an investigation of the response styles of middle-class American and working class Puerto Rican three-year-olds. They found that IQ scores in the range of 90 to 110 were obtained in different ways by Puerto Rican children and middle-class American children: middle-class children were more verbal and made more Work responses and Spontaneous Extensions; when they got an item wrong, they were more likely to say that they did not know the answer or that the task was too difficult; and they made fewer Substitution responses and were more responsive than Puerto Rican working class children.

The Stanford-Binet IQ scores were supplemented with a modified version of the Hertzig-Birch scoring system (1) to provide an indication of noncognitive factors that might contribute to IQ scores and that would be masked if only IQ scores were considered in the evaluation, and (2) to maintain continuity with its use in previous Head Start evaluations.

The modified Hertzig-Birch scoring system differs from the original in that (1) only the <u>last</u> response the child makes to a test item is scored and (2) a more concise coding is used. These modifications were made to enable Stanford-Binet examiners to use the scoring system as they administer the Stanford-Binet. (The original method required a separate observer to do the Hertzig-Birch scoring.) The modified Hertzig-Birch scoring changes the usual Stanford-Binet scoring in that the examiner writes down one of nine codes instead of the usual "+" or "-" for each item given on the standard L-M Record Form.

Responses are initially divided into two categories: Work and Nonwork. When the child is presented with a demand for cognitive performance by the examiner, he may either do it or not do it. Each of these categories is further divided into Verbal and Nonverbal responses; a Verbal response is any response in which words are used.

The Work responses are recorded as falling into one of three categories: Delimited, Spontaneous Extension, and Incomplete/Wrong. A Delimited response is one where the child's response consists <u>only</u> of meeting the demands of the task. A Spontaneous Extension is recorded when the child elaborates his response without prompting by the examiner. If the child does the task but does it incorrectly or does not complete the task, it is scored as Incomplete/Wrong.

If a child makes a Nonwork response, it may be scored as Negation (refuses to do the task), Substitution (does something else), Competence (says he is unable to do the task, including responses of "I don't know"), Aid (asks for help in doing the task), or Passive (does nothing at all).

The Binet with the Hertzig-Birch scoring was administered to a random half of the children in each class.

Maternal Teaching Style: Eight-Block Sort Test. For the preschool child, the mother is the major socializing agent, selecting, structuring, and transmitting information about the environment to the child and regulating his behavior in relation to the environment and to the information transmitted. Thus, the mother acts as a mediator between the child and his environment and establishes contingencies that not only shape the child's immediate behavior but may also shape his strategies and capabilities for processing information (Hess et al., 1968). The types of input expected and utilized by the child, the kinds of processing performed on input, and the nature and amount of evaluation and interpretation of both input and output by the child may be influenced through socialization processes arising out of styles of interaction between the mother and her child.

Previous research has shown that aspects of mothers' interactions with their preschool children are associated with social class membership; with child behavior and outcomes in an interactive, task-oriented situation (Hess et al., 1968; Bee et al., 1969; Barbrack, 1970; Barbrack and Horten, 1970); and with the same children's academic performance in the first two years of school (Hess et al., 1969). An objective of several Head Start PV programs is to involve the parents in the program, particularly the mother, teaching her new techniques for interacting with her child in learning situations. These intervention programs seek to influence aspects of interaction between mother and child to bring the child's home experience more into accord with his school experience--in other words, to enrich the home environment by influencing the style of interaction between mother and child.

The Eight-Block Sort Task used by Hess and others (1968) allows investigation of direct or indirect effects of the Head Start PV programs on the styles of interaction between mothers and their children. The task involves sorting eight blocks into four groups defined by two criteria. The blocks differ according to four attributes--height (tall or short); mark (X or O painted on the top); color (red, yellow, green, or blue); and shape (rectangular or circular cross-section). Only two of these attributes are relevant to the sorting task: height and mark. The children are to learn to group the blocks of the same height and the same mark and to explain the reasons for the groupings. The four groups defined by height and mark would be composed of (1) tall blocks marked X, (2) short blocks marked X, (3) tall blocks marked O, and (4) short blocks marked O.

The opportunity for each mother to interact freely with her child in a standardized situation allows a comparison of mothers' styles of interaction: How does the mother communicate information to her child (modes of communication)? How does she structure the learning situation? In particular, does she provide her child with task-relevant information (transmission of information)? How does she monitor and regulate the child's behavior (modes of control)? How do the child's behavior and performance relate to maternal behavior?

This test was being used concurrently by ETS in its longitudinal study of Head Start children in four cities, and the procedures used by ETS for the administration of the test were carefully followed. However, the scoring of the task differed from the ETS procedure. ETS made tape recordings of the situations for later analysis of the verbal interactions between the mother and the child, whereas the SRI procedure required the tester to make the ratings and judgments during the test situation. Tape recordings were not made for three reasons: (1) the nonverbal communications (e.g., gestures and facial expressions) could not be derived from tape recordings; (2) equipping approximately 80 testers with a tape recorder was prohibitively expensive in cost and logistical effort; and (3) the time needed to transcribe and code the tapes would have been too great for the budgeted resources.

The task situation is divided into three phases: training of the mother by an SRI-trained tester, training of the child by the mother, and, finally, testing of the child on task comprehension by the tester.

Mother's Training Session. The mother was first taught by the tester to sort the blocks according to height and also according to mark. Then the mother was shown the eight blocks grouped into four groups according to both height and mark and was asked to place four additional blocks into their correct groups. The tester provided the mother with sufficient feedback so that she could eventually find the correct group for each additional block and could give both criteria applied in adding the block to that group. Finally, to ensure the mother's comprehension of the task, the blocks were removed from the board and the mother was asked to sort the original eight blocks into the four categories defined by height and mark. The success of the mother in learning the task was recorded by the tester.

Child's Training Session. When the mother's training session had been completed, her child was brought into the room. Mother and child were left at the training table with the blocks while the tester moved to another chair at the side of the toom. The mother was left uninterrupted to teach her child the sorting task in whatever manner she wished. Inconspicuously, the tester rated the mother and the child on various measures of interaction. The child's training session ended when the mother indicated that the child was ready to be tested on his comprehension of the grouping of the blocks. However, no mother was allowed more than 20 minutes for training her child.

Child's Testing Session. At the end of the child's training session the tester returned to the training table with two previously unseen blocks (short O, tall X). After arranging the original eight blocks into the four groups defined by height and mark, the tester asked the child to place first the short O block and then the tall X block in their respective correct groups, each time asking the child to give reasons for adding the block to the group. The child's responses and the mother's support of the child during testing were recorded by the tester.

Process/Interaction Measures - Observational: The SRI Classroom Observation Procedure

The first year of PV was expected to be one in which good implementation could develop. The classroom is the major arena in which implementation can be observed and charted.

The SRI observation instrument was developed for use in both the Head Start and Follow Through PV evaluation projects. In view of the differing values of the various sponsored programs, an observation instrument suited to SRI's evaluation needs had to (1) incorporate an interaction analysis system and (2) assess what happens: How is time allocated? What materials are used? What do the adults do? How are the children grouped or not grouped? What control systems are used? What is the affective environment? In addition, it was necessary for the instrument to differentiate among the sponsored models and assess their specialized educational processes in terms of their own value systems.

Since no existing instrument could meet all these diverse requirements, an observation procedure was developed with the substantive assistance of all sponsors, beginning in October 1969.*

The SRI Classroom Observation (CO) procedure is made up of three major sections, each covering a different aspect of the class in its daily session. The first part consists of a series of observations and ratings that are made about every 15 minutes and include a tally of all activities going on in the class and of the participants in each activity (the Classroom Checklist, or CC), a five-minute systematic recording of all interactions in a selected activity (Five-Minute Interaction, or FMI), and a short set of ratings at the end of each five-minute observation period to record the frequency of child and adult behavior not included in the FMI (Five-Minute Rating, or FMR). A second part of the observation procedure is a separate observation of an outdoor or highly mobile situation (OO). At the end of the day's observation a set of summary ratings is completed, and an inventory of equipment available and used is made along with a sketch and description of the space and physical arrangement. (Details of the SRI Classroom Observation procedure and the field testing are described in Appendix B.)

Class Observations were made at one site for each PV sponsor. Three PV classes and three comparison classes were to be observed for two consecutive days each at these sites.

A comprehensive review of 79 observation systems was made by Simon and Boyer (1970). The summary of the characteristics of these systems

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* Portions of the present work were based on the efforts of Dr. Vivian S. Sherman in developing an earlier observation instrument at SRI for Follow Through. At the inception of the present system Dr. Ned Flanders of the University of Michigan helped to format the five-minute observation in an interaction analysis pattern, where "who says what to whom and how" are recorded. Dr. Robert Soar of the University of Florida and Dr. Carolyn Stern of the University of California at Los Angeles were also contributors to the instrument in the early stages. Soar's work in assessing the affective environment of a classroom and Stern's efforts in assessing placement of children and adults were especially helpful. Direct and formative inputs were made by Patricia Olmstead, Sadie Mallory, Kay Green, Stephen Berkowitz, N. Rayer, Don Williams, Fred Honigman, and Dennis DeLoria in their roles as Joint Fellows to the Follow Through Project at SRI. The Joint Fellow program was supp..ted entirely by the Office of Education.

considered details of their foci, coding units, collecting methods, settings, population, use, and purpose. These tabulations are reproduced in Appendix B. The SRI classroom observation procedure has been added to these listings to compare it to the others.

Descriptive Measures

Teacher Questionnaire. It is axiomatic that a pupil's performance on school achievement measures is critically affected by the kind and quality of instruction he receives. Accordingly, the generalized framework for the Head Start evaluation shows the in-school instructional setting as one of the major antecedents of pupil behavior and beliefs. An essential component of the instructional setting, of course, is the teacher, who assumes multiple roles in interaction with a pupil as a guide, resource person, source of knowledge and authority, and so on. Teachers vary in their assumptions and beliefs about the natures of the learner, the learning process, and teaching functions. In addition, instructional settings vary according to the kind and quality of resources and materials available and the uses to which they are put.

It was recognized from the beginning of the evaluation planning that the sharing of information or material about the PV programs with teachers of the comparison groups could result in a systematic contamination of the classes that were expected to be free of any sponsor influence.

One of the disadvantages of using comparison classes that are located in the vicinity of the PV classes is the heightened likelihood that information exchanges may occur between the two groups of teachers and parents. Head Start activities, community functions, and social and professional meetings are a few of the ways by which program information exchanges can happen. Even off-site comparison classes can become contaminated through teacher attendance at sectional meetings; or a comparison teacher could have graduated from a school where she participated in sponsor's program.

To assess the degree to which this diffusion could exist in the comparison classes, several specific items were included in the Teacher Questionnaire. Each teacher was asked if she knew the name of the PV sponsor in the community; had attended any meetings where the model was presented; had discussed the model with other teachers; had received any preservice or in-service training from the sponsor; had been given any equipment or teaching materials by the sponsor; had had individual consultation on the model; or had been visited in the classroom by the sponsor's training staff.

If a teacher's answers to all these questions are negative, diffusion could be considered absent or negligible, and although positive responses do not necessarily mean that her teaching had been modified, it is reasonable to expect that contamination has occurred. More objective evidence is available from the classroom observation data with respect to the kinds of class activities and procedures carried out by a teacher. It is a moot point, however, whether a comparison class that is handled in a manner similar to the PV classes must be considered "contaminated" in view of the possibility that the comparison teacher's style and methods may be naturally congruent with the model. The determination of the diffusion and its impact on implementation effects is discussed in Chapter IX.

Measuring some of the essential differences among teachers has represented an important development task in the evaluation project. One approach to identifying and describing differences among instructional settings is through direct observation; efforts directed toward that area of inquiry have been described in a preceding section. Another approach is direct questioning of teachers, through either interview or self-report questionnaire, to obtain their own reports of preferences, beliefs, and practices.

A provisional draft of a teacher questionnaire was distributed at the Head Start/Follow Through planning conference in Palo Alto in late July and early August 1969. The questionnaire had already been through several coordinated reviews and revisions, and many suggestions for change and addition were received from the sponsors and the Head Start staff and were incorporated into a lengthy two-part version of the Teacher Questionnaire in mid-September. In October the Teacher Questionnaire was shortened, and in early November, additional revisions were undertaken--this time aimed primarily at forming an instrument specifically applicable to Head Start teachers.

For the questionnaires to require no more than an hour for completion, selections were deleted. The questionnaire was then submitted to Head Start for final approval before being sent to a small number of Head Start teachers for their opinions.

A larger pretest was conducted only among Follow Through and comparison teachers from six sites selected to obtain a reasonable cross section of sponsors, grade levels, and locations. Questions relevant to Head Start were included in this version of the questionnaire.

After each teacher had completed her questionnaire individually, experienced supervisors from the National Opinion Research Center conducted group sessions to discuss the pretest and possible ways of improving the questionnaire. As a result of this pretest the questionnaire was again revised, and in May 1970 it was mailed to Head Start Directors for distribution to the sponsored and unsponsored teachers whose classes were tested. A copy of the Teacher Questionnaire is shown in Appendix C. Briefly, it covered the following areas:

- Classroom practices with regard to the teacher's responses to children behaving in desirable and undesirable ways, allotment of class time to different activities and methods used in teaching academic subjects (Items A1 through A10, E40).
- Participation in the sponsor's training program and the availability and exchange of information and materials on the sponsor's program. (These items relate specifically to the problem of program diffusion to comparison classes.*) (Items A11 through A14).
- The use of the TV program, "Sesame Street" (Items A15 through A20).
- The importance of various educational goals for the children (Items B1 through B41).
- The social behavior of the children as judged by the teacher (Items C1 through C13).
- Home visits (Items D1 through D6).
- Participation of the parents (Items D7 and D8).
- Materials and equipment availability and use (Items E1 through E39).
- Teaching experience and background (Items F1 through F23).

Parent Questionnaire. A parent interview instrument was developed initially for use in SRI's Follow Through evaluation. Its purpose was

* The rationale for these items on diffusion is discussed later.

to provide information about the characteristics and changes in characteristics of families of Follow Through and non-Follow Through children to determine if these factors might be related to other factors, such as performance in school and teacher behavior and attitude. The procedure went through several reviews by SRI staff and consultants, PV program sponsors, U.S. Office of Education staff, and the OCD Head Start Staff.

Although the Follow Through parent information was obtained by interviews conducted in the parents' homes, such a procedure was not possible in the Head Start PV evaluation because of resource limitations.

The interview procedure was converted to a Parent Questionnaire format, modified to meet the circumstances specific to Head Start, and was administered to the mothers who participated in the Spring testing of the Eight-Block Sort Task described earlier. This administration was carried out by a so-called "parent interviewer" who also assisted in the scheduling of the children in the Eight-Block Sort Task. The interviewer's task was to assist the mother in understanding the Parent Questionnaire instructions and, if illiteracy was suspected, actually to administer the questionnaire orally. Because of the need to keep the administration time within a one-hour limit, some shortening of the original home interview procedure used in Follow Through was made. The experiences gained in the Follow Through home interviewing were used in the formating of the Head Start Parent Questionnaire.

The items contained in the questionnaire (a copy of which is shown in Appendix C) covered the following areas:

- The extent of parent contact with the Head Start center or class (Items 1 through 5).
- The child's attitude toward Head Start as perceived by the parent (Items 6 through 10).
- The degree of parent understanding and involvement in the community Head Start Activities, especially as it pertained to policy making (Items 12 through 22).
- The parents' perception of their ability (and desire) to influence the programs (Items 23a through d,f).
- The extent to which parents feel they can control their futures (Items 24a through t, 40).

- The involvement of the child in the daily activities of the household and home learning opportunities, i.e., cultural enrichment (Items 25 through 39, 42).

Two practical restrictions were acknowledged in the manner and form of the Parent Questionnaire finally administered. The conversion from an interview procedure to a self-interrogation format obviously precluded the advantages of the probing possibilities of the interview. Moreover, a questionnaire assumes a certain literacy level of the respondent, although the "parent interviewer" was carefully instructed in ways to anticipate the literacy level of the parents and to act supportively in the administration of the questionnaire by such means as an initial offer to read the questions aloud, it was acknowledged that social stigmas attending illiteracy could result in parents persisting in completing the questionnaire when their literacy level prevented full understanding of the items asked. Secondly, the initial plan of a pre- and post-interview design could not be accomplished because of limitations in resources.

Classroom Information Form. Selected demographic information about the children and the families was obtained through the use of a Classroom Information Form that was distributed at each site for completion by the teachers and/or Head Start Directors. These forms were to be available at the beginning of the year at the time parents enrolled their children, but in some locations the enrollment periods occurred during the summer. The items of information called for included the child's date of birth, sex, and ethnic group; the educational level of the parents and their occupations and family income; the previous preschool experience of the child; the number of siblings with Head Start or Follow Through experience; and so forth.

The Classroom Information Form closely paralleled the demographic form used in Follow Through and profited from the earlier comments from the sponsors and Head Start. On the basis of the Follow Through evaluation experience, some difficulty was anticipated in obtaining completely filled out forms. Where possible, the mothers who participated in the Eight-Block Sort Task were asked to verify the information entered in the forms.

Implementation Measures

Sponsor Ratings of Teachers. An important indicator of implementation success resides in the sponsor's appraisal of the level of performance of the teachers in his program. In May 1970 each sponsor was requested to rate each teacher in his program according to how well the teacher had represented the program in class. Forms were provided to each sponsor that contained the names of each PV teacher whose class was tested. Ratings were to be made on a scale ranging from "Barely Acceptable" to "Completely Acceptable." (There was also a "Not Acceptable" category.) Ratings were to be made for three time periods: October 1, 1969; May 1, 1970; along with a prediction of performance for May 1, 1971.

A copy of the teacher rating form used by the sponsors is shown in Appendix C.

Head Start Director Ratings of Teachers. The Head Start directors were requested to rate the teachers of the comparison classes according to how well they performed as Head Start teachers. Except for essential word changes, the form was similar to the one used by the sponsors. Since the names of the PV teachers were also shown on the forms sent to the Head Start directors, their ratings were also obtained. A copy of this form is shown in Appendix C.

Head Start Consultant Ratings. Reports on program implementation* were prepared by consultants to Head Start who had witnessed the PV programs for one to three days each month, were familiar with the model observed, and were specialists in early childhood education. The consultant reports that were made available consisted of detailed appraisals of the degree to which the PV programs were implemented in each community; appraisals at the class level were not provided nor did the reports cover the comparison classes.

Sponsor Reports on Implementation and Training. Detailed information on preservice and in-service training schedules and programs was provided by the sponsors, along with critical self-assessments on the problems and extent of program implementation. These reports, which were obtained by interview, correspondence, and telephone, also covered community, personnel, and coordination difficulties, and their impact on the first year of PV program implementation in Head Start.

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* The availability of these reports that were submitted to Head Start was a factor that contributed timely and substantive information on implementation.

Video Taping. During the August 1969 planning conference, the sponsors proposed a program of exchanging video tapes of good examples of their classes for the purpose of sharing with one another explicit details of their programs. The idea was quickly enlarged to a systematic collection of exemplar vignettes from the PV classes and of samples of comparison class activities. These would be coordinated by SRI and would provide a convenient way to apply simultaneously the SRI and the sponsor's classroom observation procedures to a pool of systematically collected video tapes of class activities.

At a subsequent meeting in October 1967, detailed plans were made for taping to be made on three different occasions during the year under comparable technical conditions. Each sponsor was to select for taping the events that he considered most appropriate for his program.

Because of some delays and incompleteness in the taping, no systematic application of the observation systems was made. However, the pool of taped situations was instrumental in the refinement of the SRI CO procedure and critical to the development of the training tapes that contain situations from each program and serve as examples for the application of the observation codes.

Intensive Child Study

A pilot effort was initiated to study intensively two children from one site for each sponsor in order to identify characteristics of experience that are significant in the development of the child other than those measured in the SRI evaluation. A practical outcome was to be the specification of measures and procedures that could be implemented in the national assessment. This work was done under the direction of Dr. Laura Dittmann, Institute for Child Study, College of Education, University of Maryland. The report on these intensive case studies will be contained in a supplement to this interim report.

V FIELD TESTING PROCEDURES

This section contains descriptions of the field organization and the training and standardization procedures that accompanied the Fall and Spring testing activities. As will be observed below, some basic changes were made in the testing procedures between the fall and the spring to capitalize on the experiences gained in the fall and to correct what seemed to be weaknesses in the original implementation.

Fall Testing Procedures

The Fall test period was initially scheduled by OCD, Head Start, to begin early in the first week of class in each center. Such timing would help ensure that the initial scores were as unaffected as possible by Head Start experience. The first days in the Head Start classes are full of commotion, uncertainties, and excitement as schedules, physical facilities, equipment, and teachers are brought into order. To avoid the general disruption of the first few days, testing was scheduled to begin the second week of class and to be completed in two weeks.

The starting date for the classes ranged from August 25 to October 15, 1969, with about half the communities starting right after Labor Day. The Fall pupil testing was completed during the period September 8 to October 21, 1969. The early testing proved to be very difficult for two reasons: (1) the communities were generally severely pressed to accommodate the testing during a period when the Center was still in the process of settling into its routine, and (2) the recruitment and scheduling of qualified Binet testers in many instances had to be accomplished when most of these testers were either on vacation or soon to be busy with college classes and registration. Because of these problems, testing was one week late in three sites and three weeks late in one site. All other sites were tested starting the second week of school.

The basic testing team consisted of persons with three kinds of qualifications. The first was a Binet-qualified tester who had proven expertise in the administration of the Stanford-Binet by virtue of completing a supervised course of instruction and administering tests under formal supervision. The Binet tester also administered the Eight-Block Sort Task for assessing mother-child interaction. Supplementing the Binet tester was a junior tester who was concerned with the administration of the NYU tests (Bk 3D and 4A), the PSI (Bk 5), and the Motor Inhibition tests. The term auxiliary battery is used to describe conveniently the tests given by the junior tester. Augmenting these two people was an aide whose tasks were to schedule the children to the Binet tester and the junior tester, to check the demographic data on the classroom information forms by consulting with parents who were waiting to participate in the Eight-Block Sort, and to care for the child whose mother was being instructed in the Eight-Block Sort procedure.

To ease the introduction of a stranger into the class, extensive use was made of locally hired testers and aides. Related to this issue is whether testers should be of the same ethnic background as those tested. It is possible that such matching would be advantageous to data collection efforts, but the ability to establish good rapport rapidly and consistently was considered more pertinent to effective testing than ethnic group affiliation. Although records were kept of the tester's age, sex, educational level, ethnic affiliation, and administrative proximity to the Head Start programs, these data have not been examined at this time in terms of their possible relationship to the pupils' test performance.

The junior tester and the aide were trained in their procedures by the Binet tester for one or two days (or longer if necessary) to gain proficiency in their procedures. Each Binet tester attended one of several coordination and training sessions conducted by SRI staff or field supervisors. The field supervisors were non-SRI personnel who were skilled and experienced in testing and test procedures; many held appointments as assistant or associate professor in colleges of education or departments of psychology. In preparation for the field work, these field supervisors attended a coordination meeting at SRI during August 1969. Training sessions for the testers were conducted at various locations around the country. The number and categories of field personnel used in the fall testing were as follows:

1.	Non-SRI field supervisors	9
2.	Stanford-Binet/Eight-Block Sort testers	97
3.	Junior testers (auxiliary battery)	52
4.	Aides	21

During the 1968-69 Follow Through evaluation, training sessions were held that included school district persons, and these sessions proved to be a useful way to share with school personnel the purposes, means, and requirements of the testing and evaluation program. A similar view was held about the training sessions for the Head Start evaluation. The OCD Head Start staff made it possible for local persons to be reimbursed for travel and to receive a per diem while attending the training sessions.

It proved, however, to be very difficult to run training sessions when the audience was made up of persons experienced in testing techniques and also of parents or other community members who were well versed in the administration and objectives of Head Start but not in testing. Some technical discussions may have been very unsettling to the community people who were not fully aware of the content and purpose of all of the tests involved. The training session agenda was revised for the last session in an effort to avoid the apparent confusion on the part of community members who had attended previous sessions. The revision permitted the whole group to participate in general matters but later separated the testers into a technical detail work session and the community persons into a separate meeting to discuss the nature and meaning of the tests and the evaluation program without the distraction of the issues that are pertinent to detailed testing procedures. This agenda appeared to be much more productive than the initial one. Community participation is important, and the agenda should be responsive to these needs so that a full understanding of the evaluation activities can be carried back to the communities.

The primary goal for the training sessions was to instill in the testers the need to follow explicitly the test procedures so that the conditions of testing would be standardized. Each tester was provided with a tester's log in which he was to enter any anomaly in testing procedures.

Spring Testing Procedures

To tighten up quality control procedures of the field activities, some changes in the test organization were instituted for the Spring testing. The basic change consisted of hiring site coordinators for each location. These site coordinators were qualified in Binet testing and were responsible for controlling and coordinating all the test activities in their locations. Their specific responsibilities included the selection and approval of the Binet testers, the Auxiliary Battery testers, and the Eight-Block Sort testers who were to work with them. They, along with the Head Start Director, assisted in the identification of the trainees who were to participate in the CO training procedures. A five-day orientation meeting was conducted at SRI to ensure that all the procedures were fully understood and would be standardized among the site coordinators.

Each site coordinator had under his immediate jurisdiction a minimum of one Binet tester, an Eight-Block Sort tester, an Auxiliary Battery tester, and a second junior tester called a parent interviewer. The parent interviewer was responsible for scheduling the parents for the Eight-Block Sort and, while the mother was waiting for her participation in that task, for administering a parent questionnaire to the mother. The parent interviewer's presence was necessary to ensure that the mother understood the questions being asked; if the mother could not read, the parent interviewer administered the questionnaire in verbal form. The number and categories of field personnel* used in the Spring testing were as follows:

1.	Site coordinators	20
2.	Stanford-Binet testers	58
3.	Eight-Block Sort testers	27
4.	Auxiliary battery testers	49
5.	Parent interviewers	27
6.	Classroom observers	10

In those locations where possible difficulties in test implementation were indicated, SRI staff visited the projects to give support and counsel to the site coordinators.

Spring testing was conducted during the three-week period beginning May 4, 1970. The closing day for the Head Start Centers ranged from the end of May until late summer, with some year round programs in continuous operation except for a brief interval in July or August. The scheduled test period avoided the closing activities of the last week of class in the case of centers that terminated early. Sufficient testers were used in each community to complete the testing within the three-week period.

The classroom observations were conducted during the first three weeks of April 1970. Observations were completed one week before the pupil-testing period except in one community (Site D) where the observations were made during the last three weeks of April.

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* To reduce the number of outsiders testing the children, the Eight-Block Sort testers and classroom observers were also locally recruited. However, the availability of qualified Binet testers made it necessary to use several who were moved into those sites where Binet testers could not be found.

Coordination Between Follow Through and Head Start Planned Variation Evaluations

The extension of the eight Follow Through sponsor's programs into the preschool setting of Head Start adds a year to the period in which the children's progress can be observed and provides a basis on which to determine the effects attributable to earlier entrance into a sponsor's program. This integration of effort between Head Start and Follow Through placed a premium on joint selection of test instruments and measurement procedures. Some tailoring of the test batteries to specific interests of Head Start was necessary to give due recognition to earlier research by Head Start and, where feasible, to provide anchor points in such previous work. For the coordination to be most effective, Follow Through had to have its test batteries delineated early enough to permit the inclusion of specific instruments in the Head Start evaluation procedures. Changes in the Follow Through battery of tests were negotiated as late as the first week in September, however, thus preventing optimum coordination.

To achieve a coordinated use of SRI's field testing staff and to avoid excessive duplication of travel and training time required an integrated test schedule. But, in fact, the timing of test periods in the two projects at joint locations was most likely to create conflict or competition rather than cooperation. The eventual separation of the Head Start and Follow Through field logistics resulted in easier planning and a greater responsiveness to the needs of both projects.

Identification of Community Data

As stated earlier, it is hoped that the development of well-implemented PV classes can be assisted by the findings of this evaluation. Although information about specific communities should be shared with the sponsors involved, the disclosure of specific community or sponsor findings in this report could result in premature comparisons of program effects. Such early comparisons could result in different forms and degrees of community satisfactions or dissatisfactions that constitute an intervention in themselves, the effects of which would be compounded with those of sponsors. To maintain an acceptable level of confidentiality of the data, the communities are identified in this report only by letter (A through O).

Testing Schedule

The periods of testing are shown by week in Table 6. The first day of class ranged from August 25 in Site H to November 3 in Site C. In the case of the off-site comparisons for C and J, there was a difference in class starting date of seven and six weeks, respectively. Testing was to be initiated the second week, but some delays occurred because of difficulties in obtaining testers (for example, in Site A) or because the classes were not fully functioning during the first week of school. The classroom observations were scheduled for a three-week period in April 1970. The observations in Site D were delayed one week because of scheduling difficulties. The pupil post-testing period was accomplished during May 1970 except for Site I, which had an early closing date, and for the comparison classes in Site J, which were delayed because of a scheduling problem of Binet testers. The representations in Table 6 are approximate because the symbol for testing (T) is entered even though only the first or last day(s) of a week was (were) used. The delay in fall testing at Site J was caused by the need to replace the testing personnel.

All the data collection periods are shown in Table 7 to display concisely those measures that were part of the pre-post design as contrasted with the other evaluation efforts.

Tests Administered

The demographic data on the pupils and families are contained in the Classroom Information Forms that were to be completed at the time of the Fall 1969 pretest period. Incomplete forms were returned for the addition of missing data, and this was followed by phone calls and letters requesting the information. This effort was interrupted in January and resumed during the post-test period (May 1970) in a final effort to get the forms completed. In the summaries that follow, the number of "No" responses is shown but is not included in the percentages. These summaries refer to children in the experimental (sponsored) as well as in the comparison (unsponsored Head Start) groups, except where otherwise specified.

Demographic information was available for the 2,647 children listed on the fall 1969 Classroom Information Forms. The data analyses were based on Ns less than this because of attrition of the following kinds: dropouts from the program, absence during testing, and unuseable test data.

Table 6

TESTING SCHEDULE
1969-1970

Site		September					October				November			April				May				June	
	25	2	8	15	22	29	6	13	20	27	3	10	17	6	13	20	27	4	11	18	25	1	8
A		•				T	T	T						O	O			T	T	T			
		•				T	T	T							O				T	T			
B		•	T	T										O	O			T	T	T			
			•	T	T	T	T								O	O		T	T	T			
C											•	T	T					T	T	T			
				•		T	T											T	T	T			
D						•	T	T	T	T					O	O	O	T	T	T			
E				•		T	T	T										T	T	T			
F			•		T	T	T	T						O	O	O		T	T	T			
G		•		T	T	T												T	T	T			
H	•		T	T	T													T	T	T			
		•	T	T	T													T	T	T			
I						•	T	T						O	O	O	T	T	T				
J		•					T	T						O	O			T	T				
								•	T	T	T	T			O	O					T	T	T
K						• *		T	T	T								T	T	T			
L			•	T	T									O	O	O		T	T	T			
M		•	T	T	T													T	T	T	T		
N				•		T	T	T	T					O	O	O		T	T	T			
O				•		T	T	T										T	T	T			

* Off-site comparison group.

Legend: • First week of class
T - Weeks in which testing occurred
O - Classroom observations
(shaded) Off-site comparison classes

Table 7

DATA COLLECTION PERIODS

Measure	Fall 1969 Test Period	Spring 1970 Test Period
Pupil measures		
Auxiliary Battery (NYU, PSI, Motor Inhibition)	All children	All children
Stanford-Binet	Random half of each class	Same random half as fall
Eight-Block Sort Task	Half of each class not taking the Binet	Same random half as fall
Classroom Observation		One site per sponsor (Three PV and Three comparison classes)
Descriptive measures		
Teacher Questionnaire		All teachers
Parent Questionnaire		Mothers who took the Eight-block sort task
Classroom Information Form	All Children	
Implementation measures		
Sponsor ratings of Teachers		All Planned Variation Teachers
HS director rating of teachers		All teachers
HS Consultant reports	Monthly visits to the sites; reports provided SRI in June	
Sponsor reports on implementation	Based on year-long experiences; report in May and June	
Video taping	Scheduled three times: December, February and May	
Intensive Child Studies (University of Maryland)	January and May	

The number of children for whom test data were available is summarized in Table 8. Although the Binet and Eight-Block Sort Task were to be given to random halves of each class, preference was given to administering the Binet in the case of the extra child in classes with an odd number of children and also on occasions when there was a scheduling difficulty owing to the requirement that a child was not to be tested on both the Auxiliary Battery and the Binet or Eight-Block Sort Task on the same day.

The figures in Table 8 show the number of completed tests. In the fall, approximately 11% of the children listed on the class rosters (recorded on the Classroom Information Forms) were not tested because of absence or withdrawal from the Head Start class in which they were initially enrolled. Four percent of the tests presented to the children were incomplete because of the child's refusal to take or complete the test or of improper administration. There was a further loss of completed tests in the spring of about 7% of the children.

Table 8

NUMBER OF TESTS COMPLETED

	Fall 1969	Spring 1970
Classroom Information Forms	2,647	
NYU Tests (Booklet 3D)	2,239	2,135
NYU Tests (Booklet 4A)	2,229	2,125
Preschool Inventory	2,209	2,130
Stanford-Binet	1,256	1,107
Motor Inhibition Test	2,231	2,135
Eight Block Sort Task	978	815

VI THE CHILDREN AND THEIR FAMILIES

The preceding chapters have outlined the background, design, and measures for this evaluation of Head Start PV programs. This chapter and those that follow discuss the data collected in the course of the evaluation. Chapter VI outlines general features of the sample of children for whom data were obtained. Chapters VII, VIII, and IX deal with analyses of the sponsors' implementation efforts. Chapter X, in parallel with earlier chapters, discusses teacher and classroom-level features of the unsponsored (comparison) classes. Chapters XI and XII treat the findings of changes in the children and their parents over the year of Head Start.

Background of the Planned Variation Sample

The children in the PV sample showed much of the variety characteristic of Head Start as a whole. They came from northern (5.3%), eastern (23.4%), southern (42.7%), central (21.2%), and western (7.4%) states.

Age of the Children

In the fall of 1969 Head Start children ranged in ages from three years to six-and-a-half years. Most (72%) were between four-and-one-half and five-and-one-half years on October 1, 1970. In seven sites, Head Start was a prekindergarten program for four- to five-year olds; in eight sites, Head Start was a kindergarten-age program for five- to six-year olds.

Using October 1, 1969, as the reference point, the distribution of ages of the children is shown in Table 9 for each site. The range of ages in a site varied from as little as one year in Site G to an extreme of four years in Site H. Because of the range of ages at each site, the analysis of pupil performance had to attend to the possible effects of age, the details of which are described in Chapter XI.

These age data indicate that some children will not be eligible for public school for at least another year and consequently will not be legitimate subjects in the evaluation of the effects of one year of PV immediately before Follow Through participation.

Table 9

DISTRIBUTIONS BY DATE OF BIRTH
(Entries Are in Percent, Based on N Shown)

			Age*								
Site	Group	N	3	3-1/2	4	4-1/2	5	5-1/2	6	6-1/2	No Response
A	S	81	1 %	2 %	31 %	48 %	15 %	1 %	0 %	0 %	1 %
	U†	58	0	0	10	34	43	9	3	0	0
B	S	158	0	0	1	1	42	46	11	0	0
	U†	83	0	0	0	0	51	49	0	0	0
C	S	124	0	0	22	57	19	0	0	0	2
	U†	93	0	0	39	58	0	1	0	1	1
D	S	121	0	0	0	1	28	43	27	1	0
	U	84	0	0	6	12	19	45	14	1	2
E	S	159	0	1	58	40	0	0	0	0	2
	U	105	0	1	33	56	4	4	0	0	2
F	S	97	0	0	0	0	33	55	4	2	6
	U	65	2	11	17	20	25	22	3	0	2
G	S	107	0	0	0	0	51	47	0	0	2
	U	80	0	0	0	0	41	58	0	0	1
H	S	147	1	0	10	22	27	38	1	1	0
	U†	50	0	0	0	0	54	46	0	0	0
I	S	61	0	0	30	41	28	2	0	0	0
	U	80	0	0	3	30	29	11	3	0	25
J	S	43	0	0	53	47	0	0	0	0	0
	U†	59	3	2	24	7	37	25	0	0	2
K	S	197	0	5	10	10	21	36	11	0	7
	U	60	2	5	23	27	13	17	5	0	8
L	S	39	0	0	62	33	0	0	0	0	5
	U	40	0	0	60	40	0	0	0	0	0
M	S	103	1	0	0	0	34	55	9	0	1
	U	61	0	0	0	0	38	52	8	2	0
N	S	60	0	8	43	37	2	0	0	0	10
	U	78	6	5	49	38	0	1	0	0	0
O	S	72	0	0	0	0	25	51	24	0	0
	U	82	0	0	0	0	30	46	21	2	0
	All S	1,569	0.2%	1.1%	17.3%	19.6%	23.9%	28.7%	6.6%	0.3%	2.4%
	All U	1,078	0.8%	1.5%	17.2%	22.8%	24.5%	25.6%	4.0%	0.4%	3.0%
	Total	2,647	0.5%	1.3%	17.3%	20.9%	24.1%	27.5%	5.5%	0.3%	2.6%

S = Sponsored, U = Unsponsored.

* As of October, 1969. The age shown is the midpoint of the six-month period, e.g., age 4-1/2 covers the period 4 years, 3 months up to 4 years, 9 months.

† Off-site comparison.

Sex Distribution of the Pupils

A summary of the proportion of males in each site is shown in Table 10. For all sites, the proportions of males in the sponsored and unsponsored groups were quite similar (49% boys and 51% girls), but within the sites there were some extreme variations. For example, in Site B and again in Site H, the ratio of females to males in the unsponsored groups was not only divergent from the usual near balance that was expected but was opposite. The data analysis examined the relationship of the sex of the children to the performance scores; the procedure for doing this is described in Chapter XI.

Ethnic Composition

Numerically speaking, more white children live in poverty than black children, Mexican-American children, or American-Indian children. Proportionately, however, a higher proportion of minority children than of Caucasian children came from families whose income was below the poverty guidelines (currently, $900 per person per year for an urban family of four). The disproportionate burden of poverty borne by minorities was reflected in the ethnic distribution of children in PV Head Start: 48% were black, 9% were American Indian, and 25% were other white (see Table 11).

In the fall of 1969, 25% of all full-year Head Start children were white, 51% were black, 10% were Mexican-American, 5% were Puerto Rican, 2% were American Indian, and 6% were from other groups.

PV in 1969-70 was thus representative of the black and white children reached by Head Start but not of the sizable proportion of other minorities.* National Head Start data indicate that about 50% of the

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* Most available tests for low income children (black, white, brown, and red) are culturally unfair in that the questions are based on experiences that are common to middle-class children but are unknown to low-income children. The scores therefore reflect the inequality in background rather than in ability to learn. For children whose at-home language is other than English, interpretation of results poses additional problems. For the first year, PV was not initiated in Mexican-American and Puerto Rican neighborhoods. New measures for Spanish-speaking children offer promise of more adequate assessment for year 3 of the study. The inclusion of American Indian children in PV was dictated by the urgency of developing model programs for this often neglected group.

Table 10

SEX OF THE PUPILS
(Percent Entry Is Based on N Shown)

	Sponsored			Unsponsored		
Site	N	No Response	Percent Male	N	No Response	Percent Male
A	81	0	54%	58*	0	45%
B	158	0	53	83*	0	65
C	124	2	44	93*	1	50
D	121	0	45	84	2	43
E	159	3	49	105	1	41
F	97	6	41	65	1	50
G	107	2	46	80	1	53
H	147	0	48	50*	0	38
I	61	1	42	80	0	41
J	43	0	56	59*	1	50
K	197	13	51	60	3	47
L	39	2	54	40	0	60
M	103	1	49	61	1	52
N	60	9	39	78	0	59
O	72	0	40	82	0	50
All Sites	1,569	39	47.7%	1,078	11	49.4%

* Off-site comparison.

Table 11

ETHNIC DISTRIBUTIONS

(Entries Are in Percent, Based on N Shown)

Site	Group	N	Mexican American	Puerto Rican	Other White	Negro	American Indian	Orient-al	Other Non-caucasian	Mixture	No Response
A	S	81	20 %	0 %	51 %	2 %	0 %	0 %	0 %	25 %	2 %
	U*	58	0	0	98	0	0	0	0	0	2
B	S	158	0	0	29	0	0	0	0	0	71
	U*	83	0	0	27	73	0	0	0	0	0
C	S	124	0	19	14	65	0	1	0	0	2
	U*	93	0	19	15	62	0	0	0	3	1
D	S	121	0	0	10	90	0	0	0	0	0
	U	84	0	0	15	83	0	0	0	0	1
E	S	159	0	0	3	91	0	0	0	1	5
	U	105	0	0	33	66	0	0	0	0	1
F	S	97	0	0	0	100	0	0	0	0	0
	U	65	0	0	0	98	0	0	0	0	2
G	S	107	0	0	29	47	0	0	0	0	24
	U	80	0	0	16	81	0	0	0	0	3
H	S	147	0	0	1	0	97	0	1	0	1
	U*	50	0	0	0	0	94	0	0	6	0
I	S	61	0	0	43	57	0	0	0	0	0
	U	80	0	0	25	75	0	0	0	0	0
J	S	43	0	0	19	81	0	0	0	0	0
	U*	59	0	0	20	78	0	0	0	0	2
K	S	197	0	0	76	0	0	0	0	1	24
	U	60	0	0	92	0	0	0	0	0	8
L	S	39	0	0	5	90	0	0	0	0	5
	U	40	0	0	0	100	0	0	0	0	0
M	S	103	1	0	11	78	0	0	0	0	11
	U	61	0	0	16	84	0	0	0	0	0
N	S	60	0	0	5	88	0	0	2	0	5
	U	78	0	0	0	99	0	0	0	1	0
O	S	72	0	0	49	51	0	0	0	0	0
	U	82	0	0	44	56	0	0	0	0	0
Total S		1,569	1.1%	1.5%	24.7%	48.3%	9.1%	0.1%	0.2%	1.4%	13.7%
Total U		1,078	0 %	1.7%	26.5%	65.6%	4.4%	0 %	0 %	0.6%	1.2%
Totals		2,647	0.6%	1.5%	25.5%	55.3%	7.1%	0 %	0.1%	1.1%	8.6%

S = Sponsored

U = Unsponsored

* Off-site comparison.

participating children were Negro, but this and other percentage comparisons are inappropriate in the context of this summary inasmuch as no systematic sampling by ethnic group was done. Strict comparisons to the national scene were not attempted because the selection of sites and participants as discussed in Chapter III was not made primarily to achieve a sampling of Head Start children. However, these figures suggest that the total evaluation sample was not completely unlike the national picture, although site variations were extreme in some instances; e.g., Site F had all Negro children and in Sites F, H, K, L, and N, the samples were predominantly of a single ethnic group. The data analysis was specifically attendant to these differences and is treated in detail in Chapter XI.

Head of the Household

Children in PV Head Start came from homes that were poorer, more crowded, and more likely to be headed by women than are homes of most children in the United States. In 38% of the homes in the sample for which information was available,* women were responsible for the family; 29% of three- to five-year olds in the U.S. total population live with their mothers only. The average number of people in the household was 5.9; the U.S. average is 3.6.† In the PV sample, the average per capita annual income was $656; the U.S. average per capita annual income was $3,676.

The head of the household in these families received less formal education than most Americans of comparable ages. In PV, only 5.2% of the parents responsible for the household had received more than a high school education; 43% had attended grade school only. The proportions of household heads who have attended grade school, high school, and college are shown in Table 12 by site. These data were grouped as shown because of some confusion in designating the number of grades completed in grade school. For some sites a single code was used to indicate completion of

* There was no information given for the sex of the household head for 25% of the children. This high figure suggests that some of this information was left out deliberately, possibly because of reluctance to admit to a middle-class audience the lack of a male in the family.

† This is the average number in 1969 of persons in family units throughout the United States. The number of persons in the average household (including single-person units) is 3.19. These and all other national level statistical data are taken from the "Statistical Abstract of the United States: 1970."

any grade from 1 to 8 although the intent of the instructions was to obtain a specification of the actual grade completed.

For the groupings of educational level shown, the proportions for the sponsored and unsponsored groups were very similar, but within specific sites there was considerable variation. The use of these data as part of the socioeconomic status (SES) index compiled for the data analysis are described in detail in Chapter XI. The consequences of minimal education experience were reflected in the occupations of heads of household: of those responding, 43.8% were unskilled laborers and the unemployed-but-looking for work (only 10.2% of the national civilian labor force in 1969 fell into these categories) and only 13.2% were employed in clerical or sales positions or were on the threshold of more secure positions.

The high proportion of unskilled and unemployed was not due to an unusual proportion of rural families; only 12.5% of the children, as opposed to 30.1% of the national population, lived in rural areas. (However, 59.6% of the children were bussed to the Centers.)

Many children (about 27.8% of those for whom this information was available) had prior Head Start experience. In addition, 74.1% came from families where one or more siblings had previously attended Head Start. Thirty-two percent of all parents were described as active in the program: 2% as aides, 14% as volunteers, and 16% in parent groups. These data are consistent with national reports (Bates, 1970) that in many communities Head Start is an ongoing experience for children and their families.

Summary

When all sponsored and unsponsored children were pooled, there were no significant differences in any of the characteristics discussed. Within a site, for a given sponsor, and between sites as well, the children could and did vary on almost every characteristic discussed.

The direction of difference (Sponsored greater than Unsponsored; Unsponsored greater than Sponsored) did not vary systematically. However, the within-site variations indicate that comparisons of raw initial levels of achievement, final levels, and gain between Sponsored and Unsponsored classes at a given site must be made cautiously, if at all. Covariance adjustments could be made but they involve assumptions not

Table 12

EDUCATION OF HEAD OF THE HOUSEHOLD
(Entries Are in Percent of Those Answering)

Site	Group	N	Number of No Response	None	Attended Grade School Only	Attended High School	Attended College	Post Grad Work
A	S	81	20%	2%	12%	72%	15%	0%
	U*	58	1	0	33	61	5	0
B	S†	158	156					
	U*	83	11	0	28	60	10	3
C	S	124	46	2	18	74	5	1
	U*	93	4	0	28	67	5	0
D	S	121	53	0	32	56	12	0
	U	84	20	2	31	64	3	0
E	S	159	3	2	40	55	1	0
	U	105	13	4	16	74	5	0
F	S†	97	65					
	U†	65	57					
G	S	107	21	6	38	52	3	0
	U	80	15	2	35	62	2	0
H	S	147	17	0	28	60	11	2
	U*	50	8	6	24	69	2	0
I	S	61	1	0	98	0	2	0
	U	80	0	0	98	0	3	0
J	S	43	5	3	97	0	0	0
	U*	59	16	2	49	40	9	0
K	S	197	16	1	62	35	2	1
	U	60	0	2	25	63	8	2
L	S	39	8	3	19	70	6	0
	U	40	2	0	24	74	3	0
M	S	103	23	8	56	35	1	0
	U	61	11	4	44	50	2	0
N	S	60	21	23	21	51	3	3
	U†	78	45					
O	S	72	2	0	48	45	6	0
	U	82	4	1	90	9	0	0
	All S	1,569	29%	2.8%	44.1%	47.6%	4.9%	.6%
	All U	1,078	19%	1.6%	41.8%	51.9%	4.4%	.4%
	Total	2,647	25%	2.3%	43.1%	49.5%	4.7%	.5%

S = Sponsored
U = Unsponsored
* Off-site comparison.
† Distributions are not shown because of the high proportion of No Response.

usually met in data such as these if the expectation is providing statistical correction for initial disparities on relevant variables.

The PV children, like most Head Start participants, came from economically and societally handicapped homes. Their parents are financially poor and disproportionately from ethnic minorities reportedly long exposed to unequal opportunities. Overall, sponsored children are not markedly different in their poverty or social disadvantage from unsponsored children; nonsystematic differences between sites were, however, marked and this suggests that the individual site cannot readily be treated as a quasi-experimental replication since the validity of covariance adjustments for these samples is questionable. Based on this reasoning, most analyses employed the individual child or classroom rather than the site as the unit o_ analysis.

VII IMPLEMENTATION AS SEEN BY SPONSORS AND CONSULTANTS

Introduction

It has already been mentioned earlier that an essential goal of the first-year evaluation of the Head Start PV experiment is a study of the relative effectiveness with which sponsors succeeded in implementing their programs in the various communities during 1969-70. Programs and communities differ widely and, considering that the programs were newly revised to apply to preschool children, there is every reason to expect that some programs will prove easier to implement in some communities--even in some classrooms--than others in different locations. Increasingly, by the second and third years of the experiment, implementation levels should approach complete effectiveness; in the first year, however, it would be irresponsible to assume effective implementation and to evaluate child effects on this basis or to find child differences and to judge the various programs before they have achieved effective operation.

To what extent did the sponsor succeed in implementing his program in the classroom or the home? The Head Start PV Programs call for a variety of innovative teaching methods, classroom materials, classroom organizations, and approaches to the children; they require changes in the actions and attitudes of both classroom personnel and parents. Above all, they call for a transition from the often economically and socially insulated demonstration programs under the control and the close personal supervision of the sponsor to the complex, often stressed milieu of community-operated preschool programs in which the sponsor is one of many influences.

In addition, the composition and duties of the classroom staff working with the children change. The teacher, as before, has teacher aides, but she must learn how to use them as coteachers and how to increase their effectiveness according to specific organized goals of the sponsor. These aides are generally from the community and often do not have the kind of background and training that is typical of teaching personnel. Parents may be encouraged to visit the classrooms and to take an active part in teaching their children at home. Supervisory people from the sponsor's office are in and out of the school and the classroom, and in most programs the teacher must learn to accept very close supervision of her work (including video taping while she is teaching). In some programs she has extensive batteries of new teaching materials with which she must become familiar and which she must incorporate into the classroom day. She must change aspects of her own behavior that have become so habitual as to seem automatic.* Finally, teaching must be done under the constant pressure (and challenge!) of the knowledge that the children's progress will be evaluated in detail.

The pressures imposed on the program by the evaluation should be stressed. Efforts to evaluate the long range effect of college teaching have led to some sobering discoveries--for example, that students retain little of the content of specific courses after a lapse of time. Colleges are usually not required to demonstrate long range educational effectiveness in order to stay in business. Students of elementary schools are evaluated in a general way according to their performance on national achievement tests, and students of secondary schools take the college entrance examinations, with public support of a school system being geared to how well it performs in preparing its students for college. But the performance of elementary and secondary school pupils is seldom evaluated in relation to a specific philosophy of education, and certainly the effects of preschool education for middle-class children have seldom been systematically assessed. Head Start and Follow Through are unique in being expected to show measurable gains, both immediate and long range. Although the threat may not be entirely explicit, the continuation of funding for these programs is generally understood to depend on their being able to demonstrate such gains. The pressures and difficulties of the early phases of implementation of the programs, then, have been exacerbated by the presence of teams of "outside" testers who may arrive at inconvenient times, who make demands on scarce facilities, and who must be accommodated because the program has to be evaluated.

As one observer noted, a great burden was placed on the Center during SRI testing. The Center space was small and all the overflow areas such as the offices of the nurses, the social worker, and the director were used for testing. With many additional adults in the Center and some displacement of the regular personnel, a milling of adults through the classrooms prevailed during testing.

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* One Head Start consultant notes, "It appears to me that the teachers find it most difficult to change old habits of performance. They have always done it 'that way' and do not understand the reasons for change."

Also, for a number of programs, the in-class changes required in implementing a program occur concurrently with changes in the relationship of the schools to the communities they serve. All Head Start programs operate under the guideline that parents and community leaders are to be involved in decisions concerning the Head Start program under development. This objective is not always totally compatible with the sponsor's model and imposes additional pressures on the classroom and the teachers.

It would be unrealistic to expect that, at the end of one year, the sponsors would have achieved in each of the classrooms under their direction exactly the classroom procedures and "atmosphere" that their models require. Some models require the internalization of a view of child development and human relationships that is almost psychotherapeutic in its sensitivity; others may require less internalization but demand the development of complex specific skills and finger-tip knowledge of new material. Training a Montessori teacher, for example, requires a full year, full-time attendance at a special institute; training an EDC or Bank Street teacher in the real world of Head Start may take as long or longer. Part of the purpose of PV was to trace the relationship of curriculum approach and implementation: how long does it take for 90% to 100% implementation for different models? Which components "come in" first?

In addition, within the limitations of available time and money, it was not possible for each sponsor to do everything he thought desirable. Some sponsors chose to invest heavily in teacher training and supervision; others spent more time and effort on the development of teaching materials. A variety of administrative arrangements were set up for establishing and maintaining communication between a sponsor's headquarters and the widely scattered classrooms under his supervision. It is important to learn as much as possible about how these various choices and various administrative arrangements worked out in practice during the program's first year.

Sponsors' approaches varied on several, sometimes correlated, dimensions: in specific content; in the roles of teacher, aide, parents, and children; in the extent to which the program and techniques were "prescripted" for both child and teacher; in the extent to which the activities and sequencing were initiated by a given teacher or child; on the kind of incentives and control techniques used; and on others. At some point in the study the programs should be sufficiently well implemented for all sponsors, and the numbers of sites and teachers should be large enough to permit analyses by sponsors according to (1) dimensions on which sponsors may be similar or essentially different, and (2) nuances of philosophy, approach, and technique among sponsors.

For the present analyses, sponsors were grouped into three categories: Preacademic, Cognitive Discovery, and Discovery-Oriented approaches. The grouping was based on the nature of the learning process and its focus for the eight sponsors. And although certain features of some programs were more appropriately assigned to another category, the major thrust of the sponsors seemed most compatible with the class to which it matched.

The Preacademic sponsors (Englemann/Becker and Bushell) both followed S-R (Hull/Spence tradition) or S-R-reinforcement (Skinnerian) learning paradigms. The content of both programs was heavily weighted (both in theory and, as the CO indicates, in practice) on training in academic or preacademic skills: numbers, computation, letter recognition, phonetic analysis, reading, writing, and language.

The Cognitive Discovery sponsors (Tucson, Weikart, Nimnicht, Gordon) followed learning models with some S-R components but most clearly focused on basic cognitive processes such as categorizing, differentiating, abstracting, and inferring. The theoretical framework had Piagetian elements in the cognitive processes selected and the developmental sequencing. There were, however, also Montessori-like elements in the role played by autotelic, discovery opportunities in the prepared and typcially richly equipped environments of these sponsors.

Discovery-Oriented sponsors (Bank Street and EDC) followed a learning model based on discovery and inquiry, on learning principles, and on how-to-learn techniques in the tradition of Gestalt psychologists, Lewin, and Harlow. They placed strongest emphasis on the developmental priority of humanistic growth: of a strong, positive sense of self-worth, of respect for others, and of the trust in adults and the world that stimulates curiosity. Children are encouraged to explore through experiences provided by adults. Perceptive, individualized guiding comments of adults eventually lead to cognitive learning and the learning of skills.

Assessment of implementation has relied on two sources of information: systematic observations and reports. The CO system developed within SRI had its first extensive use in the spring of 1970. This instrument is still in its developmental phases, but the first round of data will be used to provide certain information about what went on by the end of the first year in sponsored and unsponsored classrooms. In addition, each sponsor was asked to evaluate each classroom under his supervision in terms of how well he thought his model had been implemented. Further, there were reports from the teachers, OCD consultants, local Head Start directors, and members of the SRI staff that, taken together, provided a qualitative picture of how the training of teaching personnel and the preparation of the necessary new classroom materials were carried out.

The questions to be considered in this chapter, as seen by sponsors and consultants, are twofold: Are the programs well implemented? and What was the site-to-site variation in implementation?

Program Implementation

Information on implementation was available from sponsor ratings of October and May teacher performance (rating form and procedure are shown in Appendix C), monthly reports from OCD consultants, and April classroom observations.

The Classes in October

According to the sponsors, almost all teachers began the year with relatively few model components in place. Of the 61 teachers rated, 5% were judged in October to be High in implementation, 28% were rated Medium, and 67% were considered Low. It is worth noting that 13% were rated as 0 or 1, which would indicate major problems even after preservice training and early in-service support (see Table 13).

According to the consultants, by early November 1% of the classes they observed were rated High on implementation, 50% were Medium, and 49% were Low. The sponsors rated a higher proportion of teacher Low than did the consultants; consultants also were less likely initially to rate a teacher as High in implementation. This may suggest that in the fall ratings consultants had a less differentiated picture of the teachers than did the sponsors.

According to the sponsors, there was a relationship between curriculum approach and start-up rate of implementation in the fall: the Preacademic model teachers were significantly more likely to be rated by the sponsors as Medium or High in implementation (52%) than either Discovery-Oriented (21%) or Cognitive Discovery approaches (24%). The consultants, however, were more likely to rate Discovery-Oriented teachers as High or Moderate (65%) than Preacademic (54%) or Cognitive Discovery (42%) teachers. If we assume that the sponsors were somewhat better able to judge their models' implementation than were the consultants, this may suggest that both consultants and teachers were being trained in what the models really meant.

In general, the fall ratings and descriptions indicate that, for most teachers, implementation was low to medium by October-November and rarely, if ever, high. On a 0-to-9-point scale, the median sponsor

Table 13

RATINGS OF TEACHER IMPLEMENTATION BY SPONSORS AND CONSULTANTS

Period	Teachers Ratings	Preacademic Models		Cognitive Discovery Models		Discovery-Oriented Models		Total	
		Sponsor	Consultant	Sponsor	Consultant	Sponsor	Consultant	Sponsor	Consultant
	High	10%	10%	3%	0%	0%	0%	5%	1%
Fall	Medium	42%	54%	21%	42%	21%	65%	28%	50%
1969	Low	48%	36%	76%	58%	79%	35%	67%	49%
	N	19	11	28	41	14*	20	61	72
	High	55%	82%	31%	46%	44%	25%	41%	45%
Spring	Medium	45%	18%	38%	41%	13%	60%	34%	43%
1970	Low	0%	0%	31%	13%	44%	15%	25%	12%
	N	19	11	33	46	16*	20†	68	77

* Reflect only sponsor 3; sponsor 8 refused to provide ratings.

† Reflects two sites for sponsor 3 and one site for sponsor 8.

ratings for the 11 sites available ranged from a low of 1.5 (a Cognitive Discovery model geographically located far from the sponsor) to a high 7 (a Preacademic model located close to the sponsor's headquarters). The median rating was 3--at the borderline between Low and Medium.

The consultant reports suggest a number of problems during the early period:

- The models required complex changes in teacher behavior: One consultant reported,

  "The teacher is telling, rather than helping, the child discover (a difficult task for many teachers, yet a major component of this model). I'm not sure the teachers know what 'exploration and discovery' means. I think they think they discover for the child."

- New teacher-aide relationships had to be worked out:

  "The relationship between the teacher and assistant teacher is not implemented. The assistant teacher is used more for clean-up chores than as an assistant teacher. According to the model, the assistant teacher is supposed to plan with the teacher and work out different responsibilities in terms of the program."

- Materials were sometimes conceptually mystifying to teachers:

  ". . . all of the staff are enthusiastic about the model and feel very optimistic about the potential value of home intervention. They appeared (however) to be mystified, if not impatient, with the assorted materials involved in the model. . . ."

- Local organization and funding problems often were chaotic at the same time model implementation was being accomplished.

  "The Head Start director was away and the staff does not know of his general plans for leaving the program. . . . program desperately in need of clarification as to their go-ahead on expansion plans and budget problems. . . . The Head Start operation is still in a state of confusion . . . [the director's] answers to direct questions are evasive jokes."

  Progress could be observed, however, during this early period.

  "[The visit] gave me a chance to see the initial efforts of teachers attempting to employ a model markedly different from their previous experience. (The were scared!) As would be predicted, some cautious, reluctant to take hold of the procedure. . . . But this was not true of most; the majority were showing real progress in the use of the strategy and in understanding the principles of the model during three practice sessions."

and a month later:

"There is no question but that the teachers in all three groups are using the model and are using it surprisingly well, considering the shortness of their experience with it. However, it is also true that there are ways in which they could use it more fully and somewhat more precisely."

Still another observer notes:

"The staff as a group and individually seem to feel its commitment to the model strongly. There also seems to be some depth of understanding of what is involved. As the staff discussed the approach,. . . it became apparent that a good bit of work had been done by the (modeler's) people. . . . As I moved through the rooms, I was impressed immediately by evidence of children's language; it was all over the place. Children's words had been elicited and recorded and were on the scene for all to see. 'Mine ain't nothin. I just dreamed it,' said LaBronze about his picture on the wall. 'We gotta make pancakes and eat 'em. I'm gonna eat the biggest one. Look at the butter melt,' said Bill. . . ."

In summary, consultant reports indicate heterogeneity on almost every dimension one associates with implementation: funding stability of local programs; organizational effectiveness of the local Head Start; supportiveness of CAP/Head Start relations; relationships among Head Start, Follow Through, and the public schools; physical facilities and classroom equipment; local program advisor workload; and the conceptual difficulty of the model for the teachers.

What seems to vary relatively little, however, was teacher and staff enthusiasm. Although there were some exceptions, PV generally began in a burst of good will and willingness on the part of the teachers and the sponsors' representatives. The achievement this represents cannot be overestimated: on the one hand, teachers were receiving the technical support and advice most of them seek; on the other, whole ways of life--of being, thinking, feeling--were about to be shifted and that can be, as one consultant noted, scarey.

Mid-Year Consultant Reports

Mid-Year consultant reports for December, January, and February reflected the struggle for implementation that was taking place at all sites. The difficulties ranged from working around newly painted walls to confusing learning episodes. The following are various comments reported by consultants:

> "[There is] confusion as to what a 'learning episode' is. A few teachers used learning episodes meant for one to four children with the entire group of children. Some teachers follow the specified learning episode but do all the talking. There is too much telling and not enough exploration and discovery for which the episodes allow. Other teachers who attempt to improvise episodes do not seem to understand the philosophical intent. More inservice training is needed at this time."

> "Parent meetings are not yet integrated. Blacks don't attend. There is only one black administrator, and he does not take leadership. All the teachers are white and the aides are black. It is the same old image for the children. Hopefully the sponsor can encourage more black parent involvement."

A Cognitive Discovery model finds a totally teacher-directed approach in the classroom. Peabody Language Development Kits are used but children are not allowed to handle the objects.

> "Small groups with an adult directing are sometimes used ineffectively. The teachers seem to have the rule of small working committees but not the understanding. There are times when a small group could function without a supervising adult and the adult could give a child individual attention."

> Schedules can be a problem when facilities are shared.

> "Teachers are all quite aware of the clock but necessarily so as they are first in all the school to go to the cafeteria for lunch, and it comes as early as 10:45 a.m. The rest of the schedule is regulated by playground times, snacks, bus departure, etc. There is considerable emphasis on the clock. Teachers seem time bound."

> "Head Start teaching staff is now fully integrated. Black and white teachers work well together in spite of severe local racial problems. Federal programs are the only link the black citizens of this community have with potentially liberating forces."

"Model is being better implemented now due to recent in-service training. Teachers now have curriculum materials and are enthusiastic about the model."

"The sponsor's format of home visits is followed. They are generally but not always well implemented. The rationale for specific instruction needs to be understood by parent educators. The parent educators reported that asking the mothers to demonstrate to them that they know how to teach their children these simple tasks embarrasses them as well as the mothers. Parent educators are now integrated in teaching staff.

Improving facilities brings pleasures and problems.

"New ceilings and floors make quite a difference. Teachers and aides have evidently worked hard in re-organizing their work areas and thinking through the organization of their classrooms. Walls are to be painted shortly and work will continue in this area. In the meantime it makes operating school difficult until this work is completed."

"Most activities observed this particular morning were adult directed. Teachers are attempting to put the model into operation. However, it would seem that whatever inservice training was given by the sponsor provided things to do rather than helping teachers develop a grasp of the significant ideas upon which the model is based. This has yet to come."

In summary, at mid year the programs are in various stages of development. As one consultant wrote,

"It takes many months before evidence of implementation can be viewed. A program that is new to teachers and requires structuring of teachers encompasses a dimension not frequently focused on and that is the unlearning stage which is difficult and painful. Teachers habitually behaving in certain patterns for years do not quickly change even if they are philosophically in tune with the new program. It is this sponsor's belief that it takes two years of training and practice before this model can be internalized, and I am inclined to agree."

Spring Ratings

According to the sponsors, by May 1970 a substantial proportion of teachers (41%) were performing as exemplars of their programs. The consultants, similarly enthusiastic, rated 45% High in implementation (see Table 13).

In general, then, the sponsors and consultants agreed in reporting that spring implementation, although not 100% completed, showed substantial and perhaps remarkable changes for many teachers. The median site ratings ranged from 3.5 (threshold between Low and Medium) to 9 (very High). There was a median gain of 2 points on a 10-point scale (20%) for all teachers in all models.

In May the consultants reported important changes in all components of program implementation:

- The Children

  "Children are more verbal. They use descriptive and relational words. [They seem more] self-directed and independent."

  "Clear gains of individual children in specific competencies with books, pencils, number concepts, etc., and. . .clear gains in ability to listen, observe, follow instructions, attend for significant periods of time without apparent fatigue or boredom."

  "Children were permitted to disagree with adult decisions to a greater degree and pursue a nongroup activity; children were expressing themselves more in questioning and the pursuit of ideas."

  "A great deal of physical improvement was observed in the children--their eyes, skin, motor coordination. Their anxiousness to participate in activities had greatly increased. The excellent health program has undoubtedly contributed to this improvement. The Head Nurse and the model's representatives have worked closely to support these children during their fears of the dentist and physical examinations. The staff made it fun for the children. Their home diets and eating habits have improved through home education efforts to include quality food on low budgets."

- The Teachers

"Much improvement has been made since the beginning of the program. The teachers have a better understanding and a more positive application of this model's approach. In these classrooms, there is better utilization of space as well as material; especially since one of the problems in some of the classrooms was overcrowding; i.e., too much furniture not in use, or being used for storage--such as the teacher's desk, etc. Much of this has been removed, making more space in the classroom. Activity areas are established to some degree in most of the programs providing children with more freedom and opportunity to explore and pursue their own interest. I see more small group activities and more black and white children playing together."

"At the beginning of the year there was little evidence of learning episodes. Now there is an abundance. Some teachers followed the model's booklets' others expanded upon ideas and developed own; two still do not seem to understand why learning episodes are used. There was a pendulum swing to learning episodes. At first, most teachers sat at tables and did not circulate during 'free time' to help children by reinforcing appropriate concepts during the spontaneous and self-chosen play. This pattern seems to have changed through more frequent in-servicing training."

"Most teachers are involving their assistants in planning and implementing the model. While some A/T's are interacting much more with children than in earlier months, some A/T's have no idea what the purpose or specific objectives of the concept table are. It should be noted that a contributing problem is time. A/T's are paid for four hours and teachers for five hours. So no time is built in for team planning and evaluation. When such planning has taken place it means the teachers and aides have given much more time than that for which they are paid."

"All teachers have made progress. Some teachers are exceptionally original and creative in expanding the model."

"Most teachers, including aides, seem to reflect feeling of real accomplishment in making the model work; their success is visible and they feel good about it; it has sharpened specific teaching skills and increased their understanding of the reinforcement principle."

"As we arrived, the 20 children, four parents, teacher, and aide were ready to leave for the fire station, airport, and a picnic at the fire lookout tower. There was a lot of good teaching and learning during the morning. The teacher is genuinely interested in the children. It makes one feel there is hope in the world to see someone like [the teacher]. A Head Start teacher-aide in 1965-66, a teacher since, she has raised eight children alone, worked full-time, and she is determined to get her college degree. She will do it, too! Three of her children have graduated from college or are there now."

"The teacher from class (b) went all out to do a good job, and she did! Her techniques of discipline are not yet smooth, but she did have her day well planned. Both teachers at this Center do their home visiting (teaching) and do it well. . . . had planned for each child. As we visited, she did an excellent job of working with the mother and child."

- The Parents

"For some, there was an apparent understanding of the broader principle of reinforcement and an ability to use this Control System in other situations at home; generally, the parents had a high level of enthusiasm for the model. They were proud of their children's academic achievements."

- The Sponsor

"The program director has made great strides. He has been learning while providing guidance and leadership to the Head Start Planned Variation centers.

"Very limited pre-, in-service, and on-site training was offered during the initial year by the modeler. I view this as the most significant weak point of the program. In view of the fact that the field representative's role changed from time to time, I view this as an uncertainty on the part of the modeler. The second year should be easier for the modeler and Head Start staff."

"I strongly felt that in-service was very weak until late spring, at which point a staff developer was hired. Thereafter, a change took place. The Field Representative assigned to this community appeared to have an overloaded schedule and did not give as much support as was needed in the beginning stages. The staff developer helped that situation."

The tendency noted in the fall for curriculum approach to be correlated with implementation continued in the spring (Table 13): 55% of the Preacademic, 44% of the Discovery-Oriented, and 31% of the Cognitive Discovery teachers were rated High in implementation. The pattern of low and medium implementation was, interestingly, more sensitive to curriculum differences than the pattern of high implementation. It ran as follows:

- The Preacademic program was judged by the sponsors as moving all the 48% Low teachers out of this category: by May 1970 all teachers in this approach were judged by the sponsors as rating at least Medium.

- The Preacademic and Cognitive Discovery approaches both moved about half of the 76% originally rated Low in implementation to High or Medium categories.

- But the Discovery teachers were most likely either to make it into the High category (0% in the fall to 44% in the spring) or not make it at all (44% Low in the spring): few were rated Medium.

- The Cognitive Discovery teachers were most likely to move from Medium to High, or from Low to Medium ratings. Some (31%) were not implementing the model well in the spring, as judged by their sponsors.

This suggests that implementation as seen by the sponsors followed three rather different processes:

- In Preacademic programs, teacher skill acquisition seemed to be linear, with a steep slope and little variance--an S-R reinforcement learning curve.

- In Discovery programs, teacher skill acquisition seemed to be either an understanding of principles or nothing, an S-curve for individuals with great group variance--an insight learning curve.

- The Cognitive Discovery approaches showed a curve with a moderate slope and higher variance than that of the Preacademic approach--in learning theory terms, one would expect this from a composite curve where some elements of the approach involved insight learning and others involved accretion of S/R-type skills.

Figure 1 shows hypothetical curves illustrating these notions with respect to the sponsor ratings. There is a certain sense of match between curriculum approaches for the children and the apparent learning curves for the teachers, a match possibly reflecting real differences in how and what the teachers are learning. In learning theory the S-R reinforcement curve performance is often dependent on external reinforcements, typically falling to the base line after external rewards are removed unless the organism is on a random reinforcement schedule. Insight learning, on the other hand, typically is sustained and transfers after the external guide leaves.

The mean sponsor ratings for each of the three categories of approaches are shown in Figure 2. The rated periods (fall 1969, spring 1970, and spring 1971) are plotted in log time to portray better the relationship. Considering the relatively few teachers rated and the fact that the description of the fall 1970 performance and the spring 1971 prognosis was made in the spring of 1970, the relative similarity to the theoretical curves is striking.

Data from the first year of PV (even data as "soft" as sponsor ratings) may still provide some theoretical basis for examining acquisition patterns in the second and third years and for indicating the need for a follow-up study of Head Start teacher behavior in the fourth year.

The predicted performance for the second year ranges from 5 to 9; Preacademic sponsors predict that virtually all their present teachers will perform as program exemplars by the second year. Other sponsors predict slower rates of improvement--with little or no change for some teachers. This also suggests that the Cognitive Discovery and Discovery-Oriented approaches require changes in personal style; a broad comprehension of many basic principles; and an ability to initiate, transfer, and generalize that may not feasibly be developed in all Head Start teachers under present training and support conditions for PV.

Site Differences

Although the sponsors expressed greater satisfaction with implementation as the year progressed, they were sensitive to what was not happening, its whys, and to site differences.

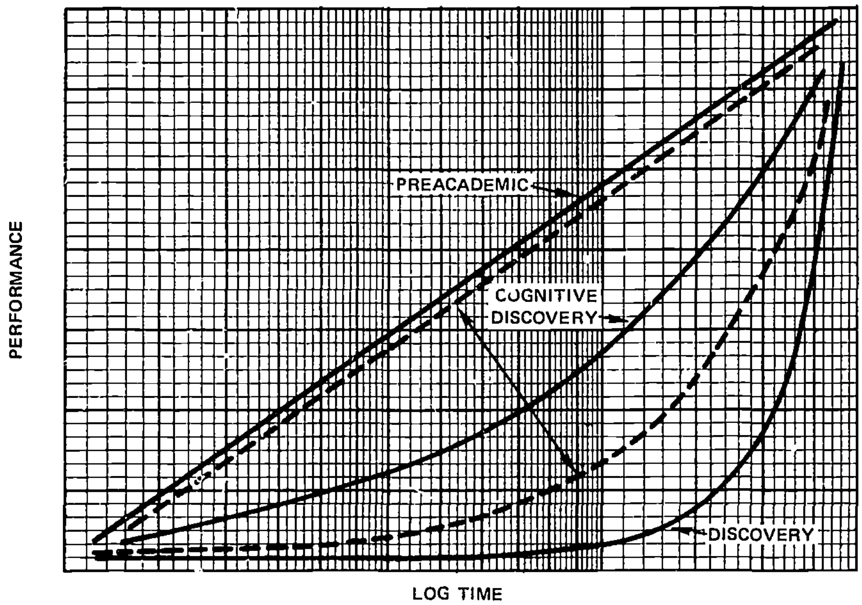

FIGURE 1 HYPOTHETICAL PERFORMANCE OF TEACHERS ACCORDING TO CURRICULUM APPROACH

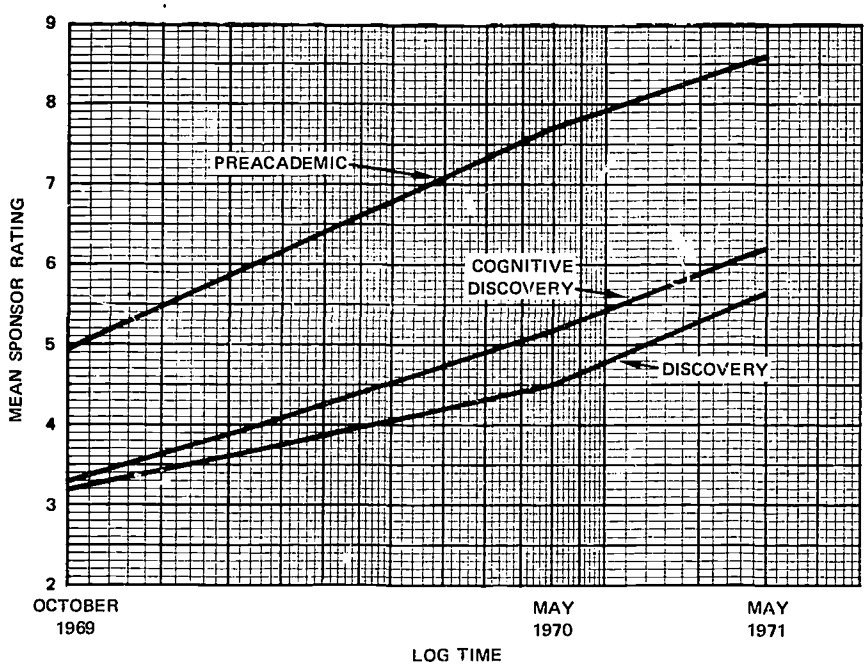

FIGURE 2 MEAN SPONSOR RATINGS OF TEACHER IMPLEMENTATION FOR THREE TIME PERIODS

Preacademic Models (Sponsors 4 and 5)

Sponsor 4 attributed site differences in implementation to variations in staff quality. He reported that Site G had strong director support, an excellent teacher trainer, dedicated teachers, and aides. The consultant report concurred with this view and further commended a new site tester for her improved testing procedures and efficient reporting of data.

Conversely, the sponsor reported that Site F had a highly unsatisfactory and nonsupportive administrator, a ,oor program organization, and inadequate training for teachers. The important factor contributing to Site F's gradual improvement was viewed as the increased time given to teacher training sessions.

The consultant at Site F reported that the persistent efforts of the staff were contributing to improved implementation, even with the assistance of a staff trainer or the support of the director. The consultant further reported that poor facilities, inadequate equipment, and materials contributed to a depressed atmosphere, but that improvements were noticeable after meetings with sponsor and community representatives. When in-service training time was increased, the consultant found marked differences in the classroom situations.

Sponsor 5 suggested that although budget restrictions interfered with more satisfactory training and implementation, systematic teacher training had resulted in improvement at both Sites H and I. In his final report, he stated: "In summation, all the pieces fall together this quarter and maximum progress effects were the rule in all classes for the first time."

The consultant for Model 5 reported that Site I had achieved satisfactory implementation of the model within the first three months. However, implementation of some of the finer points of teaching strategies was more difficult and occurred gradually. The consultant expressed the hope that the Site I staff would gradually develop greater background in child development and early childhood education to complement the satisfactory model implementation attained during the first year. A consultant report for Site H was not available.

Discovery-Oriented Models (Sponsors 3 and 8)

Sponsor 3 attributed site differences in implementation to the variety in ecological settings. Site D is a southern semirural community where parents did not expect to have education for their young children and where the program for the five-year-olds serves as the only preparation for first grade. Site E is situated in a northern city ghetto where parents had begun to demand schooling for their four-year-olds before kindergarten.

Site E teachers were described as more sophisticated than Site D teachers; however, teacher turnover was higher in Site E. Site E teachers took greater advantage of the teacher training service available at the sponsor's home base. Site E's staff of 32 participated in a three-day training session; only four persons from Site D participated in the three-day training session. The remaining staff were unable to participate because of the physical distance between Site D and the sponsor's home base.

The consultant at Site D also reported the implementation as limited. The consultant found problem areas that included insufficient training of teachers and infrequent opportunities for staff planning and assessment. On the positive side the consultant acknowledged the following strong points: psychological support by the education coordinator, administrative planning across all staff lines, and open facing of problems and requests for help. The consultant recommended: consistent and regular guidance, possibly by field representatives; fewer classes or an additional educational coordinator; and a greater number of teaching teams to assess the program and to plan for improved model implementation.

Sponsor 8 did not report on implementation at his sites, but did express dissatisfaction with the large number of people advising, supervising, and evaluating the Head Start programs. He stated that they hampered the educational program and recommended that OCD consultants visit the communities every other month instead of every month.

The consultant for model 8 questioned whether personnel at Site O really understood the point of view of the model. She attributed part of the problem to the inability of the model to describe in working terms the policy and the operation of the model. She felt that the model was chosen because it seemed in agreement with what the local system was currently doing.

"On the plus side there is considerable community support of Head Start, especially by parents. I attributed this in part to the quality of the previous Head Start program and the considerable parent involvement it encouraged."

Consultant reports for Site N were not available.

Cognitive Discovery Models (Sponsors 1, 2, 6, and 7)

Sponsor 1 is responsible for only Site A in the PV program. He reports satisfaction with the gradual improvement in implementation throughout the year because of consistent, ongoing teacher training; commitment of staff and consultants; and improvement in organization and administration of the model. These elements contributed to better model definition, clarification of the role of the staff members, ease in obtaining materials, and in reorganization of available facilities. Sponsor 1's final report summarized implementation efforts in the following way: "Favorable in general. PV gave us potential for a closer tie-in with school district and community."

In general, the consultant viewed the following as impediments to implementation of Model 1: insufficient guidelines; inadequate teacher training, especially for implementation of innovative practices such as discovery approach, small group "learning episodes," and individualized instruction; and inadequate evaluation of implementation plans to guide teachers to the next planning level. In spite of her rather strong criticisms this consultant's mean rating of teachers in May was 70% implemented. The ratings for the classrooms ranged from 40% to 90% implementation. The consultant felt the model required experienced teachers and systematic feedback to implement the program effectively. Although some teachers demonstrated unusual creativity and enthusiasm, other teachers remain rigid and structured.

Sponsor 2 expressed satisfaction with implementation at both his sites. At Site B, both program assistants and classroom teachers were reported to have come far in their understanding and implementation of the model. At Site C the sponsor reported full implementation in six of the eight classes. Two classes were handicapped because of lack of space that did not allow full utilization of the materials. However, he reported that the instructional program was well coordinated and that

> ". . . the children are working extremely well in groups of from two to five; the classroom teachers are gradually but definitely moving toward better implementation of the model; and . . . despite setbacks during the year caused by changes in personnel, they have come far in terms of model implementation."

His mean ratings of teachers at Site B and C were 52% and 68%, respectively.

The consultant at Site B felt the model was complex and required extensive knowledge of children and their whole life environment. Knowing the difficulty of achieving such knowledge, the model consultant expressed satisfaction with the progress at Site B even though full implementation was not reached this first year. She reported

> ". . . notable progress . . . but the model is one that can only be evaluated over a longer period of time. Teachers and parents developed more effective ways to elicit children's language and help children work in small groups."

Although implementation at Site B was reported to have taken place slowly, the consultant noted a "qualitative change" in classroom climate and said that a more extensive interpretation of this complex all-embracing model would improve implementation. This same complexity, on the other hand, was viewed as a strength from the long range point of view in that the model requires a continuous in-service program that should yield greater ultimate payoff to children and teachers. The consultant reported that the program implementation was impeded in some part by harrassment of teacher and parents by a local right-wing political group.

The consultant at Site C reported definite improvement in implementation as the year progressed. He stated that the program was initially well organized and that the staff had done well in conceptualizing and implementing the model during this initial year. However, poor physical facilities and some intrastaff difficulties posed implementation problems. (It is reported that the staff situation was resolved with the resignation of the Head Start director.) This consultant also reported excellent parent involvement: The parents had helped remodel a large home to accommodate the Head Start Center and during the year they had organized to elect to the school board the first black man ever to be elected to any position in the county.

Sponsor 6 rated implementation at Site J as "better than average" and attributed its excellent quality to a dynamic curriculum supervisor. His comments on the results of the training were as follows:

". . . the program has made major strides in adopting the cognitive model. This is the result of a strong curriculum assistant and the general openness of the teachers. Teachers were reluctant to follow theoretical guidelines--this was gradually overcome. As children responded to the program, the teacher responded also."

He rated implementation at Site K as "less than average" and expressed dissatisfaction with implementation of the parent education program. He recommended additional training for staff members and provision for adequate classroom materials at Site K.

The consultant for Model 6 reported that systematic in-service training had been helpful in model implementation: the teachers understood and followed the model very well. She also attributed the success of implementation that had occurred at Site J to an outstanding curriculum supervisor who had excellent human relation skills and perseverence. The teachers were handicapped by lack of experience and training; however, despite differences in physical facilities and training of teachers, the consultant reported that reasonable adherence to the model was observed in each room.

The same consultant viewed Site K as having at the end of the year a "far richer program" in program components and that was more typical of the preschool program specifically taught by the sponsor. Initial problems with model implementation were solved after staff visits to the sponsor's home base. The quality of home units was improved after training by means of role playing, observations of video tapes, and frequent discussions. Site K's centers were described as offering the children opportunities for repetition and reinforcement of language and learning experiences throughout the day.

Sponsor 7 stated that the programs in Sites L and M were proceeding very well. Though Site M had performed at a high level for the entire year, Site L had reached a similarly high performance peak after a slower beginning. In both communities mothers from the Head Start community had been selected as parent educators. The parent educators had assisted in the classroom instructional program and had aided in teaching individual children as well as small and large groups of children. They had not successfully employed systematic observation for the purpose of task development. However, this goal may have been unrealistic. They had visited the homes once a week, presented tasks for mothers to deliver to children, and recorded the outcomes of their home visits. The parent educators had also served as a link between the Center and the community and vice versa. He recommended that parents and staff be encouraged to make the relationship between the Policy Advisory Committee and the Head Start Centers really come alive.

The consultant for Model 7 at Site L questioned the degree of in-depth implementation. Although staff and parents expressed an interest in implementing the model, she was not strongly convinced that they were implementing the model effectively. According to the consultant, staff members ". . . constantly voice a need for help from the expert which has not been forthcoming." The consultant stated that the model strengths lay in its growing parent involvement as a result of a special training program and in a high quality nutrition program, and that its chief problem areas were insufficient staff training and lack of equipment.

The consultant reported that Site M successfully implemented model 7 through effective parent home visits. He stated that teachers were cooperative and became increasingly effective and that the skill and attitude of supervisors and representative have facilitated implementation of the program.

Summary

The reports by sponsors and consultants noted in detail the various kinds of difficulties in implementation that appeared during the first year (see Table 14). Many of these difficulties were not unexpected and often were the natural consequence of logistic and coordinating strains. New directions and improved procedures emerged directly from the critical appraisals of the sponsors and consultants (and are already incorporated in the second year preservice training and in-service support). It is important to note that the overall proportion of high implementation (41% of 68 teachers) reflects an extraordinary achievement for the sponsors and for the teachers in this first year of the PV program.

Sponsor year-end ratings of classroom implementation were used for a three-part classification of sponsored classes (into High, Moderate, and Low categories) that was used to analyze classroom-level child performance data. The results of this analysis will be discussed in Chapter XI.

Table 14

PROBLEMS IN IMPLEMENTATION AS REPORTED BY SPONSORS AND/OR CONSULTANTS

Problem Areas	Pre-academic Models				Discovery-Oriented Models				Cognitive Discovery Models						
Sponsor	4		5		3		8		1	2		6		7	
Site	F	G	H	I	D	E	N	O	A	B	C	J	K	L	M
Training teachers to:															
Individualize instruction; diagnose and assess for individualized instruction learning style as well as for pace	*	*	*	*	*	*			*			*	*		
Sequence tasks for individual needs					*	*			*						
Use small group instruction (as opposed to whole class)									*						
Encourage discovery by child (as opposed to dissemination by teacher.					*	*			*						
Encourage discovery by open climate, open-ended question					*	*				*					
Encourage openness in classroom environment; provide choices (vs. hidden agenda)					*	*									
Encourage child to question teacher					*	*				*					
Reinforce appropriate behavior at appropriate times	*	*	*	*											
Community problems								*		*					
Inadequacies of:															
Equipment and materials	*	*	*	*	*	*			*		*	*	*	*	
Space (limits full use of materials)	*	*									*				
Training of teacher and staff	*	*	*	*	*	*			*	*	*	*	*	*	
Budget	*	*	*	*					*			*	*		
Administrative or sponsor direction	*				*	*		*	*		*			*	
Personnel changes: teacher turnover, absenteeism	*	*				*					*				
Distance between site and sponsor's home base (limits participation in teacher training)	*	*			*					*	*				
Conflict with local school administration or Head Start personnel	*							*							
Too much supervision and evaluation							*	*							

VIII PROGRAM IMPLEMENTATION AS SEEN BY TRAINED CLASSROOM OBSERVERS

General Description of the Classes

Classroom observations were made in the spring in a subsample of sponsored and unsponsored classrooms to assess the extent to which the sponsors had achieved the kind of classroom interaction that was the goal of their training efforts. Each sponsor selected three classrooms at one site and the Head Start director selected three comparison classrooms.* Each classroom was observed for two consecutive days. Generalizations about teacher behavior were thus based on a relatively small and nonrandom sample of behavior. The CO procedure is described in Chapter IV and Appendix B.

The classroom observer recorded approximately 50 to 65 interaction units during a five-minute interaction period (FMI). Ten to 16 FMIs were made for each classroom on each day, which means that 500 to 1,040 interaction units were recorded for each classroom observed. When sites were summarized, there was a total of 2,574 to 4,952 interaction units for the three classrooms of any one sponsor. Because the number of interaction units per classroom varied, scores were computed as proportions: The number of occurences of a given type of behavior was divided by the total number of interaction units recorded.

The classroom observations yield several measures designed to reveal the degree of successful implementation.† They include:

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* In three cases, fewer than three unsponsored classes were observed: observer error in following the schedule (resulting in one class missed); two classes that SRI records indicated as being separate actually met as one class (two classes observed); and three unsponsored classes were not available on the site (two classes observed).

† The indicators showing greatest variation, reliability, and the highest theoretical relation to curricula differences were selected for this report. Fuller analyses will be available in 1971.

1. Allocation of time. How much classroom time is devoted to which kinds of activities (academic work, play, arts and crafts, and the like)?

2. Organization of classroom learning groups. Are activities engaged in by large groups of children, by small groups, or by individual children working independently?

3. The amount and kind of communication in the classroom. What proportion of sampled classroom behavior time is the teacher talking? What proportion is the child talking? When a request is made by a child or an adult, is it a direct request calling for a single specified response or is it a request that allows a choice of responses? When a response is made is it followed by praise, correction, or something else?

4. The focus of adult communication. When adults talk, what proportion of the time is their talk directed to a single child, to a small group, or to a large group of children?

Sponsor expectations of the variables assessed by the CO are summarized in Table 15. A plus beside a variable indicates that a sponsor would expect or hope that a particular behavior or activity would occur with relatively high frequency in his classrooms.

Table 16 shows the degree of implementation achieved on 17 CO variables for each of the observed sponsor classrooms. The final implementation score for each classroom was computed as 100 X the ratio of the total weights (where +H = 3, +M = 2, +L = 0, Summary Row 1, Table 16) to the maximum possible weighted pluses (Row 2, Table 16). These final percent scores are listed in Summary Row 3, Table 16. They range from 37 to 88, with a median of 76. Classrooms were labeled High implementation if they had scores of 75% or over, those with scores between 54% and 75% were rated Medium for implementation, and the remainder of classes were rated Low. These designations were based both on rational considerations (75% is good) and on characteristics of the distribution of scores (the Low classrooms represent a noticeable drop from the lowest Medium class). The final High, Medium, Low designations of the 24 observed classrooms are given in Summary Row 6 of Table 16. There were, among all 24 observed classrooms, 12 well-implemented (High) classrooms, seven moderately well-implemented (Medium) classrooms, and

Table 15

SPONSOR EXPECTATIONS OF CLASSROOM OBSERVATION PROCESS VARIABLES

	Preacademic Sponsors 4	5	Cognitive Discovery Sponsors 1	2	6	7	Discovery-Oriented Sponsors 3	8
Distribution of classroom activities recorded								
Relatively high proportion of academic work	+	+	-	-	-	-	-	-
Inquiry	-	-	+	+	+	+	+	+
Wide variety of child play	-	+	+	+	+	+	+	+
Grouping of adults and children in classroom								
Single-child units	-	-	+	-	+	+	+	+
Two-child units	-	-	+	+	+	+	+	+
Small groups	+	+	-	+	+	+	-	-
Independent child units	+	-	+	-	+	+	+	+
Amount and kind of communication in classroom								
Adult talk (greater proportion)	+	+	-	-	-	-	-	-
Child talk (greater proportion)	-	-	+	+	-	-	+	+
Direct request	+	+	-	-	-	-	-	-
Choice request	-	-	+	+	+	-	+	-
Praise feedback	-	+	-	-	+	-	-	-
Corrective feedback	+	+	-	-	-	-	-	-
Proportion of academic activities								
Direct request	+	+	-	-	+	-	-	-
Choice request	-	-	+	+	+	-	+	-
Focus of adult communication								
One child	+	+	+	+	+	-	+	+
Small group	+	+	-	+	+	-	-	-
Large group	-	-	-	-	+	-	-	-

+ = Sponsor expectation.
- = Not an expectation.

Table 16

ORDINAL CLASSIFICATION OF CLASSROOMS FOR IMPLEMENTATION AS REFLECTED IN CLASS OBSERVATION VARIABLES

	Preacademic						Discovery Oriented						Cognitive Discovery											
Sponsor	4			5			3			8			1			2			6			7		
Classes	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Distribution of classroom activities recorded																								
1. Relatively high proportion of academic work	+H	H	H	+H	H	H	L	H	M	L	M	M	L	M	M	H	L	L	L	L	L	M	M	H
2. Inquiry	L	L	L	M	H	L	+M	M	H	+M	M	L	+H	M	M	+H	M	L	+M	L	L	+H	H	H
3. Relatively high proportion arts and crafts	L	M	H	H	L	H	+H	H	M	+H	M	M	+H	M	H	H	M	M	L	L	L	L	M	L
4. Wide variety child play	L	H	H	+M	M	M	+H	H	L	+M	M	H	+H	M	M	+M	M	M	+L	L	L	+H	M	H
Grouping of Adults and Children in Classroom																								
5. Single-child units with adults or without	L	M	H	L	M	L	+M	H	M	+H	M	H	+H	H	H	L	M	M	+M	L	L	+M	M	L
6. Small groups	+M	H	H	+H	H	H	M	L	L	L	L	M	M	H	M	+M	M	M	+L	M	M	+H	H	H
7. Independent child units	+L	M	H	L	L	L	+M	H	H	+H	M	H	+H	M	H	L	M	M	+M	L	L	+M	M	L
8. Large groups	M	L	L	L	M	L	H	H	L	M	M	M	L	H	H	M	M	H	H	H	M	M	M	L
Amount and Kind of Communication in Classroom																								
9. Adult talk (greater proportion)	+H	H	M	+H	H	H	M	L	M	H	L	M	M	M	H	L	L	L	M	M	M	M	H	H
10. Child talk (greater proportion)	L	H	M	M	M	M	+L	M	L	+M	H	M	+H	H	H	+M	H	M	H	H	H	L	L	M
11. Direct request	+H	H	H	+M	M	M	L	L	L	H	M	H	M	M	L	L	M	L	H	H	H	M	L	M
12. Choice request	M	L	L	L	L	H	+H	H	H	M	L	L	+L	L	H	+L	M	H	+L	L	L	H	H	H
13. Positive feedback: praise	M	L	L	+H	H	H	L	M	L	L	M	M	L	L	M	H	M	L	+L	H	M	M	M	M
14. Positive feedback: acknowledgment	H	H	H	L	L	L	H	H	H	M	H	M	M	M	L	L	M	H	M	L	L	L	H	H

Table 16 (concluded)

	Preacademic						Discovery Oriented						Cognitive Discovery											
Sponsor	4			5			3			8			1			2			6			7		
Classes	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Focus of Adult Communication																								
15. One child	+M	L	L	+H	H	H	+M	M	M	+H	M	M	+H	M	M	+L	L	L	+H	H	H	H	M	H
16. Small group	+H	H	H	+M	M	M	L	L	L	H	L	M	L	H	L	+M	H	M	+M	M	M	M	H	H
17. Large group	M	L	L	L	M	L	H	M	H	L	M	M	L	L	H	M	L	H	+M	M	M	M	L	M
Sponsor Summary																								
Row																								
1. Weighted score	16	17	17	21	21	21	17	21	15	18	15	15	21	16	21	11	14	11	13	12	11	13	12	9
2. Maximum possible weights	21	21	21	24	24	24	24	24	24	21	21	21	24	24	24	21	21	21	30	30	30	15	15	15
3. Percent implementation score	76	81	81	88	88	88	71	88	63	86	71	71	88	67	88	52	67	52	43	40	37	87	80	60
4. Average percent implementation		79.4%			87.5%			73.6%			76.2%			80.6%			58.1%			40.0%			75.6%	
5. Assigned rank*		2.5			1			6			4.5			2.5			7			8			4.5	
6. Implementation level	H	H	H	H	H	H	M	H	M	H	M	M	H	M	H	L	M	L	L	L	L	H	H	M

+ = The sponsor expects the variable so marked to be present in his program.

* Tied rank given if difference less than 2.

five nonimplemented (Low) classrooms. The rank ordering of the sponsors for implementation is given in Summary Row 5, of Table 16. This ranking is based on the eight mean ranks for the three observed classrooms per sponsor.*

Detailed Description of the Classes

A finer grained analysis of the CO data highlights what was happening in sponsored classes, at least as seen in the three exemplar classes observed for two days in the spring of 1970. Before making a FMI observation the classroom observer would take a verbal "snapshot" of the room, recording all the activities on the Classroom Checklist (CC). (See Appendix B.) Sometimes several activities were going on at once--a small group might be receiving reading instruction, another group might be engaged in creative work at the art table under the general guidance of a teacher, and several pairs of children might be engaged in an unstructured small-group activity of their own choosing. If the observer

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* The rank order correlation between the composite sponsors' ratings for a site and the implementation score derived from the classroom observation data for the same site is .82 ($p < .05$) based on the seven locations where matching information was available. Although the sponsor and consultant ratings were in agreement (rho = .87, $p < .05$), the consultant ratings and the implementation score from the classroom observations were not significantly correlated (rho = .55). The observation procedure was intended to be responsive to the major characteristics of the various programs and, since the sponsors selected the classes to be observed, it is encouraging that the ratings are as highly related as noted above. In the same vein, the lack of high correspondence of the consultant ratings with the CO scores may be attributable to the consultants including in their evaluations several features that are not recorded by the observation procedure.

Of the 68 teachers who were rated by sponsors in the spring of 1970, 41% were rated High on implementation; 34%, Medium; and 25% Low. In the CO out of 24 teachers observed, 58% were rated High, 25% Medium, and 17% Low. Since the observed teachers were selected by the sponsors as prototypes among the Head Start teachers after eight months of training, it is not inconsistent that a greater percentage of these teachers would be rated higher than the sponsored teachers in general.

had a choice of activities to use for his FMI observation, he was instructed to try to distribute his observations across activities so that he might obtain at least one FMI of each type of activity. Thus an activity chosen for observation might be quite rare in one classroom and quite typical in another. There is no guarantee that the distribution of activities reported for the FMI observations provides an unbiased estimate of the frequency with which that activity actually occurred. The CC, on the other hand, does provide such an unbiased estimate since it records all activities occurring four times every hour.

Table 17 shows how the total number of recorded activities on the CC was distributed among the 18 separate kinds of activities. The entries are proportions based on the total observations on the CC. CCs ranged at each site from 67 to 96. For example, the entry .17 under sponsor 1. means that 17% of the CC for sponsor's 3's classrooms included "lunch" or "snack" times; the entry underneath it shows that 13% of the CCs of the unsponsored classrooms in that site included "lunch" or "snack" times.

Table 18 gives the proportion of activities that were actually observed in the FMIs in each classroom. The number of FMIs at each site also ranged from 67 to 96 because of the varying lengths of school day from site to site. The two tables correspond well in the sense that the proportion of activities for each sponsor is approximately the same in Table 17 (class activities) as in Table 18 (activities observed), showing that what was observed is probably representative of what actually was taking place. Since Table 18 categories were formulated as combinations of activities listed in Table 17, it is more concise. The activity numbers in Table 17 pr ·ide definitions for the letter categories used in Table 18.

Content of Sponsor Programs

As would be expected, the Preacademic models have a significantly higher average of academic activities recorded than all other sponsors ($p < .01$). (See Table 18.)

Both Discovery and Cognitive Discovery models emphasize child inquiry and discovery; consequently, they would be expected to have a high average of inquiry activities. Only model 7 of the Cognitive Discovery group had a higher average of inquiry activities, D, ($p < .05$). Sponsors 1 of the Cognitive Discovery and 3 of the Discovery group also had a relatively higher average than other models for this activity.

Table 17

DISTRIBUTION OF CLASSROOM ACTIVITIES AS RECORDED ON THE CLASSROOM CHECKLIST
(Proportion of CC in Which Each Activity Occurred*)

Category	Activity	Sample	Pre-academic Sponsor 4	Pre-academic Sponsor 5	Cognitive Discovery Sponsor 1	Cognitive Discovery Sponsor 2	Cognitive Discovery Sponsor 8	Cognitive Discovery Sponsor 7	Discovery-Oriented Sponsor 3	Discovery-Oriented Sponsor 8
A	1 Lunch, snack	S	.09	.14	.17	.18	.25	.24	.10	.28
		U	.11	.12	.13	.20	.06	.22	.10	.20
B	2 Group time	S	.05	.08	.03	.19	.13	.07	.25	.02
		U	.03	.20	.08	.18	.11	.04	.17	.01
	3 Singing	S	.19	.10	.25	.25	.14	.15	.20	.17
		U	.10	.32	.23	.18	.26	.26	.08	.09
C	4 Numbers	S	.62	.50	.03	.01	0	0	0	.01
		U	.14	.01	0	.08	.01	0	.12	.01
	5 Language	S	.72	.49	.07	.10	.02	.22	0	.09
		U	.10	.05	.15	.03	.04	.04	.11	.27
D	6 Science	S	0	0	.07	0	0	.11	.10	.01
		U	0	0	.02	.02	0	.02	.04	.02
	7 Social studies	S	0	.21	.18	.17	.02	.26	.05	.07
		U	.02	.06	.09	.08	0	.10	.08	.16
E	8 Table games	S	.28	.21	.38	.26	.14	.15	.10	.34
		U	.21	.05	.04	.20	.23	.18	.11	.22
F	9 Arts, crafts	S	.28	.44	.48	.29	.14	.22	.45	.30
		U	.17	.19	.15	.17	.39	.35	.44	.27
	10 Cooking, hammering	S	.08	.01	.03	0	.02	0	.10	.06
		U	.08	0	.02	.05	.06	.14	.01	.08
G	11 Trucks	S	.06	.06	.21	.17	.16	.08	.25	.10
		U	.14	.04	.09	.17	.19	.22	.17	.15
	12 Dolls	S	.01	.06	.28	.10	.11	.04	.15	.25
		U	.10	.05	.04	.22	.02	.24	.12	.27
H	13 Swings, slides	S	0	.02	.06	0	0	.11	.25	.04
		U	.11	0	.04	.02	.01	.06	.24	.22
	14 Active games	S	.02	.03	.01	.08	.02	.10	.10	.04
		U	.08	0	.04	.02	.05	.02	.01	.11
	15 Transition	S	.19	.03	.14	.06	0	.17	.10	.13
		U	.22	.02	0	.03	0	.33	.17	.09
I	16 Classroom management	S	.33	.07	.04	.24	.23	.50	.90	.20
		U	.54	.04	.06	.40	.14	.69	.57	.10
	17 Observing	S	.33	.18	.03	.20	.16	.26	.60	.20
		U	.54	.28	0	.02	.37	.41	.15	.28
	18 Other	S	0	.18	.14	.10	.01	.15	.25	.26
		U	.06	.28	.28	.10	.01	.24	.24	.25

S = Sponsored.
U = Unsponsored.

* Totals do not equal 1.00 because of multiple occurrence of events during the CC scoring.

Table 18

DISTRIBUTION OF CLASSROOM ACTIVITIES RECORDED
(Proportion of FMIs Devoted to Each Activity)

Category of Activity	Group	Preacademic Sponsor 4	5	Cognitive Discovery Sponsor 1	2	6	7	Discovery-Oriented Sponsor 3	8
A Lunch, snack	S	.08	.14	.17	.14	.30	.20	.09	.23
	U	.16	.14	.12	.20	.06	.14	.21	.18
B Group time (singing or other group)	S	.11	.14	.19	.38	.17	.17	.27	.16
	J	.14	.47	.26	.32	.27	.16	.08	.10
C Academic activities (numbers and language)	S	.57	.39	.11	.03	.02	.13	.09	.07
	U	.23	.08	.12	.10	.04	.04	.12	.20
D Inquiry activities (science and social studies)	S	.00	.05	.10	.06	.03	.17	.09	.04
	U	.02	.06	.11	.05	.00	.08	.08	.10
E Table games	S	.06	.09	.06	.11	.12	.04	.03	.10
	U	.03	.04	.04	.07	.19	.08	.04	.05
F Arts and domestic	S	.08	.11	.15	.11	.08	.08	.13	.14
	U	.16	.16	.11	.10	.30	.16	.17	.16
G Trucks, dolls	S	.01	.07	.12	.05	.07	.04	.07	.11
	U	.11	.03	.14	.10	.08	.14	.08	.10
H Active play	S	.00	.01	.03	.03	.02	.07	.07	.03
	U	.05	.01	.05	.02	.02	.04	.04	.04
I Classroom management	S	.08	.00	.07	.09	.18	.10	.13	.11
	U	.12	.03	.05	.05	.04	.14	.12	.07

S = Sponsored.
U = Unsponsored.

The Cognitive Discovery models used many table games to help children learn general concepts of color, size, shape, similarities, and differences. Table 18 shows that sponsors 2 and 6 had a higher average of this activity (E) than other models.

The Discovery models (3 and 8) believe important child learning takes place through arts and crafts. On Activity F they show a higher average than other sponsors, along with sponsor 1.*

Discovery models also emphasize dramatic play (or free play) with dolls, trucks, blocks, and the like. On Activity G, sponsors 8 and 1 are higher than the other sponsors while sponsor 3 is average.

Organization of Classroom Learning Groups

Another important differentiating variable to be considered is the organization of learning groups. The grouping of adults and children in the room is shown in Table 19, which gives the average frequency with which each grouping was recorded when one child was alone or with an adult. For the Discovery-Oriented group and for some of the models in the Cognitive Discovery group, it is important that a child be alone sometimes or have an adult all to himself. On this variable, sponsors 1 and 8 have clearly the highest average. Both have three classrooms ranked high on this variable. Sponsor 3 is also relatively high on this variable, as would be expected of a Discovery model. Cognitive-Discovery models other than model 1 do not rank high on this variable. Model 4, of the Preacademic group, is also relatively high on single-child units--as it was on independent-child units. It appears that within this model time is allowed for children to be alone or in a one-to-one relationship with an adult.

Models 1, 3, and 8 also have a relatively high average of two-child units recorded. (As will be seen, model 1 often fits with the Discovery models.) Such a unit is recorded whenever two children are playing alone or are with an adult. This is in keeping with the expectations of these sponsors since their educational strategies include engaging one or a few children in informal learning situations.

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* As will be seen, sponsor 1 often looks more like a Discovery model than a Cognitive Discovery model. The primary difference between them is that sponsor 1 requires more specific structure in arranging the environment and presenting learning episodes to stimulate inquiry than do sponsors 3 and 8.

Table 19

GROUPING OF ADULTS AND CHILDREN IN THE CLASSROOM
(Average Number of Each Grouping Per CC Recorded)

		Preacademic Sponsor		Cognitive Discovery Sponsor				Discovery-Oriented Sponsor	
Grouping	Sample	4	5	1	2	6	7	3	8
Single-children	S	.62	.10	.60	.20	.04	.15	.38	1.01
	U	.39	.02	.19	.05	.18	.10	.67	.49
Two-children	S	.35	.14	.81	.23	.11	.24	.50	.56
	U	.33	.04	.25	.23	.44	.35	.54	.48
Small groups	S	3.00	2.66	1.00	1.58	1.00	2.14	1.19	1.21
	U	1.02	1.03	2.00	1.56	.73	2.73	1.46	2.71
Independent child (without an adult)	S	1.83	.38	1.13	1.03	.23	.60	1.60	1.39
	U	1.89	.66	.83	.57	.72	1.35	1.51	1.12

S = Sponsored.
U = Unsponsored.

The Preacademic sponsors 4 and 5 have a high relative incidence of small groups recorded per observation; they regard the organization of children into small learning groups as an important part of their teaching strategy. Actually, sponsor 5 has all three classrooms ranked High and sponsor 4 has two High classrooms and a Medium one (see Table 16). Sponsor 7 of the Cognitive Discovery group has three classrooms ranked High on small groups organization also. Although model 7 does not specify how groups should be organized, it is interesting to see how the teachers behave without such specifications.

Contrary to what might be hypothesized about highly structured Preacademic models, sponsor 4 has, in addition to his small groups, a high average of independent child units. In the organization of this model there are four small groups of children that rotate every 20 to 30 minutes. Three of these groups are taught by adults and the fourth group may be engaged in independent activities without a supervising adult. Thus the children do operate independently within the structure.

The Discovery models 3 and 8 and sponsors 1 and 2 of the Cognitive Discovery group also have a relatively high average of independent child units. (See Table 19.) Except for model 2 each had two classes ranked High and one ranked Medium for independent child units. The sponsors of the Discovery model would expect children to engage in numerous activities without supervision from adults since one of their goals is to allow self-selection and to develop independence in children at an early age. The Cognitive Discovery groups hope to develop some degree of independence in children but their organizational schemes would also expect to include dyads and small instructional groups, as well as occasional large groups. Model 4 of the Preacademic group is the highest of all sponsors in this variable. Although this model does not specifically organize to promote child independence, during work times one group of children chooses from a selection of table games and operates independently.

Amount and Kind of Communication in the Classroom

The COs describing the communication pattern in the classroom are presented in Table 20. The amount of adult talk and child talk has been taken as a proportion of the total interaction units.

One interesting question is, "Of all the talking, who talks more--adults or children?" A simple binomial test was used with each sponsor's data to compare the apportionment of total talk among adults and children. The null hypothesis for these tests was that there would be a 50-50 split. There was no significant difference for sponsor 4. Sponsors 5 and 7 had smaller proportions of child talk than of adult talk ($p < .01$). The Discovery and Cognitive Discovery sponsors (1, 2, 3, 6, and 8) had higher proportions of child talk ($p < .01$, .01, .05, .01, .01, respectively). Sponsor 5's model is a structured one in which we might expect less child talk and sponsor 7's model is one in which child talk is not an important objective. The sponsors for whom there was a higher proportion of child talk are those with objectives consistent with that outcome. See Table 20 for the sponsor site summaries and Table 16 for classroom summaries.

Closely related to the proportion of adult talk and child talk is the kind of communication that takes place in the classrooms. The proportions of direct requests, choice requests, praise, and corrective feedback have been considered for all activities and also separately for academic activities.

Table 20

AMOUNT AND KIND OF COMMUNICATION IN THE CLASSROOM

Communication	Sample	Pre-academic Sponsor 4	Pre-academic Sponsor 5	Cognitive Discovery Sponsor 1	Cognitive Discovery Sponsor 2	Cognitive Discovery Sponsor 6	Cognitive Discovery Sponsor 7	Discovery-Oriented Sponsor 3	Discovery-Oriented Sponsor 8
Proportion of total FMI units over all activities									
Adult talk	S	.40	.43	.35	.26	.32	.42	.30	.34
	U	.29	.29	.43	.28	.29	.29	.27	.35
Child talk	S	.39	.36	.47	.40	.51	.33	.34	.40
	U	.38	.27	.31	.35	.51	.31	.39	.41
Direct request	S	.19	.13	.13	.15	.25	.10	.07	.19
	U	.10	.12	.08	.11	.19	.07	.04	.20
Choice request	S	.01	.02	.01	.02	.01	.08	.06	.02
	U	.01	.01	.05	.02	.02	.06	.02	.01
Praise feedback	S	.06	.10	.02	.02	.03	.04	.04	.03
	U	.02	.04	.03	.04	.03	.04	.02	.04
Corrective feedback	S	.04	.04	.04	.01	.01	.05	.03	.02
	U	.04	.03	.02	.00	.01	.03	.02	.02
Proportion of academic activity interaction units									
Direct request	S	.23	.13	.11	.08	.21	.16	.18	.16
	U	.15	.16	.14	.20	.18	.12	.12	.31
Choice request	S	.00	.02	.07	.02	.00	.09	.02	.03
	U	.00	.01	.01	.03	.01	.12	.00	.01

S = Sponsored.
U = Unsponsored.

A direct request is a clear statement of what is expected; there is only one known and acceptable response. When direct requests are considered over all activities, sponsor 6 had a greater proportion than all other sponsors (all $p < .01$). This sponsor was likely to have the entire group make plans for the day. Although the plans were made individually, it was necessary to ask direct questions and be directive to maintain large group attention.

Choice requests allow the receiver of the question or request to make a decision on how he will respond. Choice requests occurred at a relatively low rate in all models. However, sponsors 3 and 7 had a higher proportion of choice requests over all activities than other sponsors (all $p < .01$). Although teaching strategies of both Discovery and Cognitive Discovery would encourage teachers to pose questions such as "What do you think?", "How does it feel?", and so forth, only sponsors 3 and 7 distinguished themselves here.

The Preacademic models gave more positive praise feedback over all activities than any of the other models. Sponsor 5 was significantly higher than all others ($p < .01$). All three of his classrooms were rated High on this measure. Sponsor 4 was next highest and also differed from all other sponsors ($p < .05$). Both programs are based on a consistent feedback system. Sponsor 4's positive feedback is more inclined to be acknowledgment. The three classrooms of his model are classified as high on this variable.

Sponsor 7 had a significantly greater proportion of corrective feedback than sponsors 2, 3, 6, and 8 ($p < .05$). Corrective feedback is not an important part of this sponsor's strategy since this sponsor provides few directives to teachers. It is not clear why sponsor 7 was proportionately higher on this measure than other sponsors, but two out of three of his classrooms were rated High on positive feedback. It appears that these teachers used a higher proportion of both praise and corrective feedback than other models' teachers.

Where only academic activities were considered, Preacademic sponsors would be expected to have a high proportion on direct requests. Sponsor 4 had a greater proportion of requests that were direct requests than other sponsors except sponsor 6 (all $p < .05$). When a response was made, some kind of positive or corrective feedback was often given. Sponsor 4, who emphasized academic development, also had a high rate of praise feedback. Seemingly the teaching strategies of this sponsor are being reflected by the CO instrument, and it may be concluded that the teachers are implementing the model as expected.

For two of the Cognitive Discovery models, 1 and 7, the proportion of choice requests recorded in academic activities was greater than that of other models, although most of the comparisons did not reach significance (see Table 20). Sponsor 7's comparison group, however, also had a high rate of such requests. When choice requests were considered over all activities, sponsors 3, a Discovery model, and 7 had all three classes ranked High on this variable whereas sponsor 1 had only one teacher ranked High (see Table 16).

The Focus of Adult Communication

Data describing the proportion of total interaction units in which adults talk with one child, a small group, or a larger group are presented in Table 21. It may be seen that all Discovery and Cognitive Discovery models had a high relative proportion of adult talk directed to one child. These models were informally organized so that an adult would be more likely to speak to individual children rather than to groups. Model 5 of the Preacademic group also had a high proportion of talk addressed to one child.

Table 21

FOCUS OF ADULT COMMUNICATION*
(Proportion of Total Interaction Units)

Proportion of Adult Talk	Sample	Pre-academic Sponsor 4	Pre-academic Sponsor 5	Cognitive Discovery Sponsor 1	Cognitive Discovery Sponsor 2	Cognitive Discovery Sponsor 6	Cognitive Discovery Sponsor 7	Discovery-Oriented Sponsor 3	Discovery-Oriented Sponsor 8
One child	S	.29	.77	.58	.44	.66	.55	.62	.57
	U	.46	.44	.44	.40	.66	.56	.57	.60
Small group	S	.62	.15	.14	.30	.17	.28	.07	.25
	U	.06	.08	.36	.23	.11	.35	.16	.29
Large group	S	.07	.06	.18	.21	.16	.11	.25	.13
	U	.41	.42	.12	.34	.22	.06	.24	.09

* Adult talk focused toward other adults is not recorded here. Columns do not total 100%.

S = Sponsored.
U = Unsponsored.

Conversely, sponsor 4 of the Preacademic group had a much higher ratio of adult talk addressed to small groups than to single children. Sponsor 4 was also seen to have a high average of small groups in his room organizations as recorded on the CC. This is most in keeping with the instructional strategies this sponsor wished to employ. Model 5 is much like model 4 in its educational goals, but the teachers directed more talk within a small group to individuals.

At three unsponsored Head Start sites, the proportion of adult talk addressed to large groups was considerably greater than the corresponding proportion for sponsored classes. In these places unsponsored Head Start teachers may spend more time in large group sharing and discussions, in giving directions, and in similar activities. Most of the sponsored groups were either focused on the individual child or a small group of children.

Summary

Overall, these data suggest a remarkably high level of implementation, even keeping in mind that these classes were selected by the sponsor as his best after eight months in PV: of the 24 classes, 50% were rated High in observed implementation and only 21% were rated Low.

Analyses of implementation by curriculum approach for classroom observations indicated that curriculum was related to implementation. All the Preacademic exemplar classes were reported by the classroom observers to be High in implementation (mean 84%). The Discovery classes were seen as Medium or High (mean 75%); none were Low. The Cognitive Discovery classes showed the greatest variation within as well as between sponsors: four were seen to be well implemented; three to be moderately well implemented; and five to be Low in the similarity between sponsor expectations and what was observed.*

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* One sponsor had three classrooms assessed as Low by the classroom observation instrument. This sponsor has made great effort in his training procedures (he ranks third) and the teachers have participated in the sponsor's training enthusiastically, as indicated by their responses on the Teacher Questionnaire. One of the differences between these three teachers and others is that they have lacked both formal college education and previous teaching experience. This model is complex; the sponsor did not expect to be able to develop excellence in these teachers in one year. The sponsor ranked the teachers as 40%, 50%, and 70% for implementation of the model at the end of the first year and projected further gains for each teacher in the coming year. An alternative explanation for the Low ratings of this sponsor is that some teaching strategies and goals important to this model were not assessed by the CO, and therefore satisfactory implementation that did occur was not scored by the present system.

IX FACTORS ASSOCIATED WITH VARIATION IN IMPLEMENTATION

On the whole, by the end of the year most classes seemed to be moderately or well implemented. The variation among curriculum approaches in patterns of approaching implementation has been discussed in terms of intrinsic curriculum attributes: that skills in teaching some curricula may inherently develop more rapidly or with different learning processes than skills in other approaches. Variations have also been discussed in terms of site and other extrinsic differences. In this section some of these extrinsic sources of variation are examined more closely, namely, supervision, training provided by sponsors, teachers response to training, prior experience, and education of teachers.

Supervision

Supervision of model implementation varied in depth and degree. For five sponsors, curriculum directors on each site provided ongoing supervision; for the other three, field representatives visited the sites regularly. The visits ranged in frequency from 12 to six times in the ten program months. Reporting and feedback systems also varied widely. In some cases child test data were sent weekly to the sponsor; in other cases no child testing by the sponsor occurred. In some cases videotapes of teachers and aides were sent monthly to some sponsors who responded with immediate feedback to improve teacher behavior; in other cases, videotapes of classrooms were used more to inform the sponsor than to affect teacher behavior.

The number of Head Start classrooms per site in which a sponsor attempted to implement his program varied from three to 15; the number of Follow Through classrooms in which the eight sponsors simultaneously implemented their programs varied from four to 19. The supervisory responsibilities of Head Start and Follow Through were more interrelated for some sponsors than for others. In some sites, the PV programs had separate supervisory personnel and in other sites the same supervisors managed both Head Start and Follow Through; thus, supervisory responsibilities were greater for some sponsors than for others. Several sponsors reported that training and maintaining an adequate field staff were major problems. One sponsor stated:

"One of the real difficulties this year was the training and maintaining of an adequate field staff. It requires about six weeks to train a field staff person since he must know the model thoroughly and be able to teach it to others. Once he is trained, he then supervises several sites. Field staff personnel travel for approximately six weeks, returning at that time to the Center for reporting. After a few weeks at home they return again to the supervision of their sites. The amount of travel time necessary seems to be a cause of high turnover among supervisors. We have had difficulty in keeping people for more than one year."

Although no attempt was made to correlate supervisory and sponsor staff training loads to implementation, sponsor comments suggest that this area may represent one of the major changes between the first and second years of PV.

Teacher Training Provided by Sponsors

An essential element of all eight models was the teacher training component. Each sponsor provided for staff training by preservice and inservice programs offered at the site level, at the sponsor's own central program office, or at both.

The programs of teacher training adopted by the sponsors are summarized in Table 22, which shows the kind, frequency, and length of training, techniques used, and personnel responsible for the training.

Seven models conducted preservice (summer) workshops for teachers. Two of the models offered training opportunities for representatives of the entire staff (teachers, teacher aides, assistants, parents, and volunteers). Five models offered regular training service to staff providing special or complementary services; for example, in the parent educator model the sponsor hired, trained, and supervised at-home educators--a new job for Head Start.

Initial training varied from one week to six weeks, with a median time of two weeks. Responsibility for training was assumed by sponsor field representatives, consultants associated with universities, and staff members from the sponsor program office.

Each sponsor offered a similar type of preservice program for each of his two sites and, with one exception, all reported satisfactory attendance and participation by representatives from both sites. At one

Table 22

SPONSORS' TEACHER EDUCATION PROGRAMS

Sponsors	Type of Training	Trained by Whom?	Place of Training	Frequency of Training	Length of Training	Training Techniques
1	Workshop, in-service	Program advisors	Project Site, sponsor's home base	Ongoing, summer	1 week	Demonstration, observation, transmittal of materials, discussion, micro teaching
2	Workshop, in-service	Program advisors, others	Project site, sponsor's home base	Monthly, summer	2 days 2 weeks	Demonstration, observation, discussion, micro teaching, transmittal of materials, other
3	Workshop, in-service	Teachers	Project site, sponsor's home base	Monthly	3 days	Demonstration, observation, discussion, microteaching other
4	Workshop, in-service	Others	Project site	On-going, summer, weekly, monthly	1 week 2 hours	Demonstration, observation, discussion, microteaching, other
5	Workshop, in-service	Others	Project site, sponsor's home base, other	On-going, monthly, bi-yearly, summer	3 days 3 days 1 week	Demonstration, observation, transmittal of materials, discussion, microteaching
6	Workshop, in-service	Program advisors, others	Project site	Monthly, summer	1 week 1 week	Demonstration, observation, transmittal of materials, discussion, microteaching
7	Workshop, in-service	Program advisors	Project site, sponsor's home base	Summer	3 weeks	Demonstration, observation, discussion, microteaching, transmittal of materials, other
8	Workshop, in-service	Program advisors, teachers	Project site, sponsor's home base	Summer	2 weeks	Observation, transmittal of materials, discussion, microteaching, other

site teachers simply did not attend the initial training session, but by the third quarter of the year, the sponsor reported that the site had undergone "...a beautiful transformation." This change was attributed to the active support and performance of two highly qualified staff members.

All sponsors provided ongoing in-service assistance at both sites, at least to the extent that their services were available on request. Staff members were provided opportunities to develop skills by means of a variety of training processes including demonstration teaching, observation, discussion, and microteaching.

Two models specifically planned systematic in-service training on a monthly basis, at which time consultants and field representatives were on site for a period of three to five days to visit classes, conduct meetings, and provide whatever services were needed. During the month between regular consultant visits, on-site field representatives of these two programs called special training sessions for developing specific skills; for example, in mathematical concepts and spatial relations.

Five models planned ongoing in-service training so that continuous training and feedback would be available to the staff. These sponsors used one or all of the following procedures:

1. Review of daily or weekly teacher reports on pupils' progress in specific academic areas and of teachers' adaptations of classroom schedules to meet the needs of the children.

2. Viewing of video tapes showing selected teaching formats in actual use by teachers and by program advisors to identify areas in need of attention and to provide immediate feedback to teachers about their own performance.

3. Attendance at staff seminars or periodic workshops for the encouragement of professional exchange and discussion of problem areas.

Sponsors' expectations about the results of their teacher training programs vary according to their philosophies about the teacher's role. The more structured models focus a major part of their training on presentation techniques, use of materials, and management procedures. Teachers are thus encouraged to develop skills in a sequential and systematic manner, and it is considered desirable in such programs for different teachers to use similar classroom techniques. The less structured models encourage teachers to develop their own individual teaching techniques and materials. Their training emphasizes theoretical aspects of the program and techniques for creating climates conducive to a variety of behaviors as well as to specific content and methodology. This training requires less sequencing according to stages in skill acquisition and greater emphasis on a curriculum based on awareness of the child's psychological development.

One way to compare the eight sponsor training programs is in terms of the quantity of training provided. The programs were assessed and rated. (See Appendix E for the scoring procedure used to compute the training level score.)

The total possible score is 22; actual scores ranged from 7 to 19, with a median of 14. As Table 23 shows, training and implementation were related: Preacademic sponsors provided the most intensive training and tended to rank High in implementation. The Cognitive Discovery models that focused on the classrooms had Medium training scores (about 60% of the possible total) and Medium implementation ratings. Although the rank order correlation between training effort and the sponsor ratings and the CO implementation did not achieve the p = .05 level, these data suggest that training intensity as rated here differentiates between better and best implementation, but that less intensive training does not differentiate between better and good implementation. Two sponsors provided training levels at the 50% or less level of the total possible score. One of these sponsors is planning in his second year to explore some training techniques used regularly by other sponsors, such as video taping and on-site representatives.

Training (and Diffusion) as Reported by Teachers

The Teacher Questionnaires were sent to 160 teachers; 124 responded.

Nine items on the Teacher Questionnaire were used as a source of information about the kind and amount of training that actually occurred. These nine items are shown in Appendix F, together with a summary of the responses to them by site and sponsor.

A weighted total score based on these nine items was computed as follows: All Yes responses to items one, two, and three were assigned weights of 1. All Yes responses to items four to nine were assigned weights of 2. Thus, a teacher who responded Yes to all nine items would receive the maximum score of 15.

Table 23

SPONSOR TRAINING AND IMPLEMENTATION AS JUDGED BY SPONSORS

Curriculum	Sponsor	Training Score	Training Rank	Rated Implementation Rank
Preacademic	4	19	1	2
	5	18	2	1
Cognitive Discovery	1	14	4.5	3
	2	14	4.5	7
	6	16	3	5
	7	8	6	4
Discovery Oriented	3	10	6	6
	8	7	8	--

Table 24 displays the weighted total scores by site and sponsor for these nine items for all of the sponsored and unsponsored teachers who returned questionnaires. The term "Diffusion Score" will refer to the nine-item total weighted score. For sponsored teachers the total weighted score was considered an indicator of how well the sponsor implemented his training plans; for unsponsored teachers the total weighted score was an indicator of the diffusion of the model through training and related activities.

Diffusion in Sponsored Classes

The sponsored classes as a whole were rated High in reported training and awareness of sponsored programs: 37% had maximum scores of 15; 86% had scores of 11 or more. According to teacher reports, only two sites appeared to have had major trouble. Sites B and N had a constellation of relatively Low ratings in May by consultants and Low teacher reports of sponsor training and support. Site B had the additional difficulty of Low sponsor ratings of teacher implementation.* From this it

* Overall, teacher reports and sponsor rankings for training effort correlate moderately (rho = .62, df = 6, $p < .05$).

Table 24

IMPLEMENTATION/DIFFUSION SCORES BASED ON TEACHER QUESTIONNAIRE
(Weighted Scores for Each Teacher)

		Sponsored Teacher's (N = 73)													Unsponsored Teacher's (N = 51)						
		Teacher Number												Implementation Score Rounded	Teacher Number						Diffusion Score Rounded
Sponsor	Site	1	2	3	4	5	6	7	8	9	10	11	12	Mean	1	2	3	4	5	6	Mean
1	A	15	13	11	15									14	0	0					0*
2	B	6	13	1	13	14	12	7						9	0						0*
	C	15	13	15	15									15	0	0	0	0	0		0
3	D	15	14	12	6	13	15							13	15	15	15	0	0		9
	E	13	12	12	13	15	0							11	0						0*
4	F	8	15	13	13									12	1	7	2	0			3
	G	15	12											14	0	13	0	0	0		3
5	H	15	0	11	13	13	13							11	0	0					0*
	I	14	15											15	0	0	0	0	0		0
6	J	15	15	15										15	3	0	0				1*
	K	15	13	12	9	15	15	12	12	13	15	15	15	13	0	0	2	15			4
7	L	6	13	13										11	1	0					1
	M	11	11	13	11									12	11	0					6
8	N	7	6	8	13									9	0	0	0	0	0		0
	O	15	15	15	13	15								15	3	3	2	3	3		3

* Off-site comparison.

would seem as if in at least two of the sites PV was not doing as much for these sponsored teachers as would be expected. In comparison, in a site rated as Low in implementation (a situation ascribed earlier to initially low teacher experience and education), both sponsor and teachers reported good training support--as if the site were "in motion." Training as reported by sponsored teachers was not related to implementation as judged by sponsors and classroom observers (see Table 25).

Table 25

TRAINING REPORTED BY TEACHERS
AND IMPLEMENTATION RATINGS

Source of Rating	Percent High	Percent Other
Teacher Reports	86%	14%
Sponsor Ratings	21	79
Classroom Observers	55	45

In-service training was reported by 89% of the sponsored teachers. Three teachers at one site where 13 PV classes were located reported no in-service training. Apparently, the sponsor's field supervisor at that site had too many classrooms to serve efficiently. Overall, of those teachers receiving in-service training, 85% reported the training as highly effective and helpful. The following comments made by PV teachers in May 1970 are typical of the statements made on the Teacher Questionnaire:

> "Most rewarding time of my life has been five years at Head Start. The new impetus in Planned Variation to increase staff education has allowed me to go back to college for a degree."

> "For me, the upgrading of the Planned Variation program through continuing education . . . has given me a second chance at education."

> "I am glad I was accepted to work in Head Start PV, because I feel that I have been able to help families and little children, who had met with the same misfortune as my children and I. I can now help them adjust and learn new ways to help their children in their homes."

Diffusion in Unsponsored Classes

It is apparent that most unsponsored teachers (67%) knew nothing about the model, not even the sponsor's name (see Appendix F).

What diffusion there was occurred in two on-site comparison groups. In one instance, the Head Start director was responsible; in the second instance, the modeler was responsible for a training agreement he had made earlier. There are many reasons for preferring on-site comparisons; although they are more fragile, Table 24 makes clear that diffusion was not necessarily high in on-site groups--the off-site groups would simply appear less likely to be contaminated. In a study like PV, the costs and difficulty of off-site data collection and follow-up in non-Follow Through public schools are so great that on-site comparisons may be, in the long run, equally good science provided sponsors and Head Start directors restrain their enthusiasm for disseminating information about the models.

In-service training was reported by most unsponsored teachers. Of the 50 unsponsored teachers in the sample, 88% reported that they had received in-service training. Of those teachers who received training, 96% of the unsponsored stated that the training was effective. The training for unsponsored teachers was supplied for the most part by their local Head Start offices.

Concerning their training, regular Head Start teachers noted:

"Most effective--a constant motivation to do a good job."

"Highly effective as practical experience and theory are reinforcing each other."

"Helped stay alert--learn new materials--grow professionally."

"Some of it has been very helpful."

"Very good . . . better methods of working with children."

Teachers' Education and Experience

It is possible that teachers with high levels of education and experience may differ from those with low levels of such training and experience with regard to the levels of implementation they achieved. Table 26 presents the joint frequency distributions to show the

Table 26

TEACHER EDUCATION AND EXPERIENCE RELATED TO RATINGS FROM THE CLASSROOM OBSERVATIONS AND SPONSORS

Teacher Education and Experience	CO Implementation				Sponsors Ratings			
	Low	Medium	High	Total	Low	Medium	High	Total
High	0	0	2	2	4	9	2	15
Medium	2	7	11	20	10	17	10	37
Low	2	0	0	2	2	3	1	6
Total	4	7	13	24	16	29	13	58
	gamma = 1.00				gamma = .21			

relationship between teacher background and experience and implementation as shown by CO score and by sponsors May ratings.

The gamma coefficients (a correlation for ordinal-grouped data such as these) indicate that there is essentially no relation between sponsor ratings and teacher education and experience for all 58 sponsored teachers for whom information was available. Of the Discovery-Oriented sponsors, 42% of the teachers reported having both prior teaching experience of two years or more and four years of formal college education. Of the Cognitive Discovery teachers, 24% reported such training and experience, and none of the Preacademic teachers reported having both a formal education and two years prior teaching experience. Of the 14 teachers reporting for these two sponsors, only 14% had had formal education and 71% had had previous Head Start teaching experience. However, there is a positive relationship between background and experience and CO implementation for the 24 observed teachers.*

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* For the 24 observed teachers, those low in education and experience seemed somewhat more likely to teach in ways not seen as appropriate for their sponsors' models, whereas those with medium or high education and experience taught in ways that matched what would be expected, given their sponsors' models. The number of low experience (N = 2) and high experience (N = 2) teachers is too small, however, for this tendency to indicate more than an analysis that should be repeated with a larger sample in the second year, particularly since three of the four low teachers represent one site and one sponsor.

Summary of Implementation in Head Start Planned Variation

This section summarizes the relationship between sponsor implementation effort, results, and model structure. Table 27 gives the rank orderings of the eight sponsors for training effort, CO implementation, sponsors May ratings, and consultants ratings.

Table 27

RANK ORDERINGS OF SPONSORS ON TRAINING EFFORT AND IMPLEMENTATION MEASURES

Sponsor	Rank on Training	Rank on CO Score*	Rank on Sponsors May Ratings†	Rank on Consultants Ratings
1	4.5	2.5	3	4
2	4.5	7	7	7
3	6	6	6	5.5
4	1	2.5	2	2
5	2	1	1	1
6	3	8	5	3
7	8	4.5	4	5.5
8	7	4.5	--	8

* Rankings are based on the average CO score for the three teachers observed for each sponsor.

† Rankings are based on median ratings for all sponsored teachers for whom ratings were available.

Table 28 gives the rank order correlations (rho's) between training effort and the measures of implementation.

There is a positive relationship between sponsor training effort and implementation as reflected in the ratings of the Head Start consultants and between sponsor training effort and the May Sponsor Ratings. The implication here is that sponsors who ranked higher in teacher training produced classrooms that seemed well implemented to themselves and to the consultants of Head Start.

Table 28

CORRELATIONS BETWEEN SPONSOR TRAINING EFFORT AND IMPLEMENTATION

Variable	N	Rank Order Correlation with Rating of Sponsor Training Effort	
CO implementation	8	.44	n.s.
Sponsors May rating	7	.72	$p < .05$
Consultants ratings	8	.81	$p < .05$

n.s. = Not significant.

The question arises whether there is a relationship between model structure and success in implementation. The Preacademic models 4 and 5 that trained teachers and children to behave in a highly predictable manner achieved more success in implementation at the end of the first year than did other models. In the rank order of sponsors, consultants, and classroom observations (see Table 27), these two models ranked first or second on all implementation measures. They were also the highest on training effort, with sponsor 4 having 19 out of 21 possible points and sponsor 5 having 18 out of 21 possible points (see Table 23).

Site F was reported by sponsor 4 to have started with poor facilities, inadequate materials, a nonsupportive administration, and poor teacher training. Evidently there were changes due to sponsor effort during the year because this site was rated 70% and 80%, respectively, by sponsor and consultant. Problems at Site G were not specifically mentioned in reports by sponsor 4. Teachers at Site G rated their training by the sponsor higher than did the teachers at Site F and consultant ratings were also higher than for Site F.

Site H was reported by sponsor 5 to have had budget restrictions that limited training efforts. The fact that the site is quite a distance from the sponsor and in a remote location undoubtedly contributed to the difficulty and expense of training and supervision. The consultant at Site I suggested that the teachers needed more training in early child development to achieve good implementation; however, she rated all of the teachers at 90% implementation.

Models 3 and 8, Discovery models, primarily require teachers to understand child development and human interaction theories--theories that offer a distinct, almost counterculture conscious view of the world and the human condition. These teachers are expected to arrange rich environments where children can select from a wide range of activities such as arts, crafts, dramatic play, dance, visits to museums, and the like. There is not so much emphasis in these models that children learn sets or categories or academic subjects but rather that they learn to make choices about their own time and space and to respect their own person and other people as well. How the people within a classroom--teachers and children--live together and solve human relation problems is of central importance to these models. These teaching attitudes are difficult to transmit; in many ways they transcend teaching situations to create a life style for the teacher. Therefore, the teacher may require more exposure to what is considered good examples of the model--and some individuals may find a basic incongruity between their life values and those of the sponsor.

Sponsor 3 ranked sixth on training effort, sixth on sponsor ratings, and 5.5 on consultant ratings. Teacher turnover at Site D was reported to be high and attendance was poor at training sessions because of the distance involved. Site E also reported insufficient training and infrequent planning and assessment sessions. At the end of the year the sponsor reported that educational consultants from the model had been located on each site to provide the ongoing in-service training that is required for good implementation.

Sponsor 8 was ranked seventh on training effort and eighth by the consultant. Teachers at Site N reported the lowest rate of all sites in sponsor contact. This sponsor was theoretically opposed to advising and evaluating that would inhibit the good performance of teachers. He expressed opposition to the large number of people supervising and evaluating Head Start programs. The message of the sponsor interpreted by the teachers in general at Site O seemed to be "do your own thing." This does not seem to be enough guidance since the teachers, as reported in the Questionnaires, did not feel that they had received enough assistance from the sponsor. The consultant reported that the local Head Start personnel were not so supportive of the sponsor as they might have been. He attributed this lack of support to poor communication.

Sponsors 1, 2, and 6, the Cognitive Discovery models, attempt to develop concepts of similarities, differences, and categorization. They attempt to train their teachers to create and use materials from which children can learn through inquiry. This method of teaching is not easily communicated since it is not exact in its specifications and requirements. Teachers do not have a "cookbook" to go by; they must be responsive in specific ways to learning situations initiated by the children. The success of the models depends on the insight, creativity, and sensitivity of the teacher.

Sponsor 1 ranked fourth on training and consultant ratings and third on sponsor ratings and classroom observation score. The consultant recommended more comprehensive sponsor guidelines and evaluations that could be useful to teachers. She felt this would help teachers achieve the next planning level required by the sponsor. The sponsor also voiced a need for close contact with teachers to facilitate implementation of the model. The teachers in this model rated relatively High in prior education and experience. Changing the existing patterns seems to be one of the difficulties this sponsor encountered.

In Site B sponsor 2 had difficulty with implementation, although his training effort scored 14 out of 21 points. The consultant reported a need for greater understanding of this complex model on the part of the teachers. She felt that the teachers did not understand how to use the environment of the children within the structure of the model. The number of teachers (13) at this site might have been too large for the supervision available from the sponsor. Teachers at this site reported one of the lowest exposures to sponsor training (see Table 23). Site C was handicapped by lack of space; two of the four classrooms were very small. The teachers reported good exposure to sponsor training, but the sponsor rated them as being poorly trained. Possibly the fact that the teachers were teaching a morning and an afternoon class--with very little preparation time--affected their ability to implement the model. With double classes the teachers also had twice as many parents to involve and twice as many materials to prepare. This might have been a burden greater than good implementation could handle since the children had a shorter time at the Center and seemed to be rushed through meals and activities.

Sponsor 6 rated third on training effort and consultant ratings. The teachers at Site J reported full participation in sponsor training efforts and they were enthusiastic about the model. Although these teachers lacked formal education and prior teaching experience, the sponsor was optimistic about their growing ability to implement the model satisfactorily. The teachers at Site K had had more prior experience and education than the teachers at Site J, but they reported less sponsor contact and were rated lower in implementation by both sponsor and consultant. At this site there were 12 classrooms to implement and it may be that the quality and quantity of training and supervision were not adequate for good implementation of this highly complicated model.

The sponsor of model 7 has not attempted to effect teacher change. This model focuses its attention on the training of parent-home educators. Thus, the program of the teachers is less affected than that of the other models. However, home tasks do involve Cognitive Discovery items proposed by the sponsor and therefore this model has been placed in the group.

The present evaluation measures do not adequately assess the goals of this sponsor in parent and child outcomes. One of the special goals of this sponsor is to involve the parents in the child's education. Because the parent educator goes into the home, the expectation is that the education of the younger and older members of the family will also be affected. Through site visit reports of consultants and an SRI staff member, it seemed that this type of learning is in fact taking place. The teachers at both Site L and Site M report a medium range of sponsor contact and a desire for more guidelines and assistance from the sponsor. Using parent home educators as teaching aides is a new experience for all of the teachers and requires adjustments that are sometime difficult to make. Although it is understandable that the sponsor focuses most of his attention on the home educator, it would appear that both sponsor and teacher might profit from more communication.

Summary

Model implementation calls for substantial changes in what goes on in a classroom--changes in the behavior of the teachers as well as in the materials and sequence of lesson plans that are used. Models differ in how "easy" they are to implement, although what exactly is meant by this is only beginning to be defined. Some of the specifics of the kinds of changes called for and some of the difficulties teachers have had in adjusting their classroom procedures to these requirements have been chartered.

Implementation takes time, in the real, complex, challenging, often heart-breaking world of Head Start. This is a world of poverty, of despair, of making do in church basements, of enduring funding uncertainties beyond any sponsor or Head Start director's control; it takes time for any model to be realized fully in these circumstances. There was progress during the first year in the degree to which the models "took hold" in the classrooms. Sponsors and Head Start teachers learned to cope with the real world, to make do, and to do more. It is a significant finding of the study that many teachers were able to overcome the difficulties in learning new procedures and to achieve a notable degree of implementation although the degree of success was greater for some models than for others this first year. Modelers differed in the amount of money and administrative time and effort that they put into training and continued supervision of teachers. It was possible to make quantitative ratings of this degree of effort and relate them to the degree to which a model was successfully implemented. The relationship was positive and it seems appropriate to say, therefore, that the expenditure of time and money in detailed and continued supervision paid off in terms of desired classroom changes for the first year of PV after only eight months of implementation.

X THE UNSPONSORED (COMPARISON) HEAD START PROGRAMS

For 1969-70 Head Start, the questions of what the regular (or unsponsored) Head Start programs are like, what accounts for their variation, and how this variation affects child development gain added significance in a national report on program operations after five years. The sample of Head Start programs is not, of course, random; it is, however, representative geographically and ethnically of the diversity of Head Start. Overall, there seems to be no bias in assignment of teachers to PV or unsponsored programs. Within some sites the more experienced or academically trained teachers were assigned to PV; within others more experienced teachers were assigned to unsponsored classes; and within still others entire new staffs were hired for PV.

The analyses presented herein are suggestive rather than conclusive for Head Start nationally; however, the relationships within this sample may be extrapolated, where significant, to the national Head Start characteristics.

Teachers of Unsponsored Programs

Tables 29, 30, and 31 show the characteristics of the unsponsored Head Start staff from 1967 through 1969. The percentages for unsponsored Head Start in the tables were taken from Bates' random census sample (1970).

Ethnic Background

The ethnic background of teachers in all groups is proportionally similar except for the American Indian group. PV had 8% American Indians among their teachers* but their comparison classes had none, and the unsponsored Head Start classes had less than 4% American Indian teachers (see Table 29).

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* The sponsor in this case made a great effort to train people from the Indian community as teachers. His belief was that the children would be better taught by their own people who understood them and spoke their language.

Table 29

ETHNIC BACKGROUND OF HEAD START TEACHERS

	Percent of Teachers (Professional Staff)				
	Unsponsored Head Start			PV	Unsponsored Comparisons
Ethnicity	1967	1968	1969	1969	1969
Black	31.6%	34.9%	39.5%	32.9%	37.3%
American Indian	3.9	3.8	0.9	8.2	0
Puerto Rican	5.2	5.8	4.8	0	0
Caucasian	53.4	43.4	44.2	56.2	58.8
Other	5.9	12.1	10.6	2.7	3.9

Experience

The trend toward increasing experience is statistically reliable for unsponsored Head Start teachers (see Table 30). The implication is that teachers attracted to Head Start continue teaching and gain experience. In PV 37% of the sponsored teachers and 26% of the comparison teachers had less than a year of experience with preschool children in 1969. These figures are consistent with the overall data for unsponsored Head Start.

Academic Qualifications

There were some differences between the academic qualifications of the PV teachers and the teachers of unsponsored classes. PV had fewer teachers with bachelor degrees than either the comparison or unsponsored Head Start teachers; further, they had more teachers with only high school diplomas than either of the other groups. This may be explained by the sponsors' desire to train their own teachers in preservice and in-service sessions, and thus the need was not so great for previous formal education or experience (see Table 31). A trend to use people with only high school diplomas may also be seen in the unsponsored Head Start classes. This percent changed from 22% to 39% in three years. The in-service training provided by local Head Start directors for teachers with no college education, but in many cases with experience as teaching aids,

Table 30

PREVIOUS EXPERIENCE OF HEAD START TEACHERS

Amount of Previous Experience*	Percent of Teachers (Professional Staff)				
	Unsponsored Head Start			PV	Unsponsored Comparisons
	1967	1968	1969	1969	1969
None to less than 1 year	55.9%	35.3%	32.4%	37.0%	25.5%
1 year to 3 years	22.4	27.1	29.5	32.8	41.2
4 to 5 years	4.7	14.2	14.1	28.8	33.3
Over 5 years	13.6	23.3	24.0	1.4	0
Not reported	3.4				

* With preschool children.

Table 31

ACADEMIC QUALIFICATIONS OF HEAD START TEACHERS

Highest Degree or Diploma	Percent of Teachers (Professional Staff)				
	Unsponsored Head Start			PV	Unsponsored Comparisons
	1967	1968	1969	1969	1969
No diploma or degree	4.7%	3.5%	3.9%	0 %	2.0%
High school diploma	22.0	32.7	39.7	53.4	45.1
Associate's degree	14.6	6.4	9.9	13.7	7.8
Bachelor's degree	46.3	44.1	34.5	28.8	41.2
More than Bachelor's degree	13.4	13.3	12.0	4.1	3.9

may have proved satisfactory in supplying not only good teachers for Head Start but also new job opportunities for the disadvantaged parent.

Some reports suggest that the combination of experience and academic training is associated with greater gains for the children, at least on linguistic and general cognitive measures. Of the 51 unsponsored teachers in the sample, 43.1% had a B.A. degree and two or more years of Head Start paid teaching experience by the spring of 1970, 45.1% had a degree or two or more years experience, and only 11.8% had neither.

Directors' Ratings

According to the Head Start directors, most teachers were performing acceptably in May 1970. Of the 37 unsponsored teachers for whom ratings were available, 57% were rated as "performs moderately well" (5 to 7 on a 10-point scale), 27% were judged excellent (8 points or higher), and 16% were rated as unacceptable. The following tabulation shows the initial, final, and anticipated teacher ratings by directors:

Percent Rated	October	May	Anticipated
High (8+)	14%	27%	55%
Moderate (5-7)	62	57	41
Low (4 or less)	24	16	3
Number of teachers	37	37	29

Ratings were not available for five of the 15 sites. There may be some bias in that the teachers for whom ratings were available were less likely (37.5%) to have degrees and academic training than teachers for whom ratings were not available (52.6%). This means that the teachers with the highest qualifications were underrepresented in the analyses described below of teacher qualifications and Head Start directors' ratings.

There was a statistically reliable relation between Head Start directors' ratings and teacher education and experience: teachers rated moderate or low in education and experience ($N = 20$) were more frequently rated Low or Medium in performance (85%) and rarely were rated High (15%), whereas of teachers high in education and experience, 50% were High in performance, and 50% Medium or Low ($X^2 = 4.55$, $p < .05$, $df = 1$). Education and experience were likely therefore to separate the "good" from the "best" teachers, but this combination was no guarantee against poor performances of the three teachers rated Low (two were in the high education/experience groups) and none of the four teachers without degrees or experience were rated Low. These four teachers were dispersed across sites, so favoritism or bias toward nonprofessionals on the part of a single Head Start director is not a tenable explanation of this last finding. The bias in nonrating of more "qualified" teachers raises the question, however, of whether directors in the nonrated sites would have similar patterns. Replication in the second- and third-year studies would be needed to establish the relationship with reasonable certainty.

Earlier analyses of sponsor ratings for sponsored teachers showed no relationship between teacher education and experience and teacher performance for sponsored classes: 73% of the high education and experience and 72% of the moderate and low education and experience teachers were rated as High or Medium in implementation. These data suggest that in unsponsored Head Start programs, a teacher's formal qualifications tended to be associated with outstanding rather than with acceptable performance, and that in sponsored programs academic qualifications did not influence sponsor ratings of implementation. In-service training and support such as the sponsors provided may have compensated for differences in teacher performance that are otherwise associated with a combination of formal education and teaching experience.

The Unsponsored Classes

COs were completed for three unsponsored classes selected by the Head Start director in each of the eight communities where sponsor COs were completed.* These observations were therefore likely to be descriptive of unsponsored Head Start classes considered good by the program directors. It should also be recalled that the observations were made during two sequential days in May 1970 and reflect end-of-program-year patterns.

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* The two sites with high sponsor diffusion were excluded from classroom observations: ranges for unsponsored classes are not, therefore, likely to reflect diffusion as we have been able to measure it.

Classroom Content

The data from the CCs (Table 17) and the FMIs (Table 18) in Chapter VIII were consistent in indicating that the amount of time spent by unsponsored classes highest in such academic activities as numbers and language (23% of FMIs) was substantially lower than the amount of time spent in these activities for the classes of the two PV sponsors who emphasized Preacademic readiness (57% and 39% of FMIs, respectively). For the other six PV sponsors, however, the range and medians were similar for PV and unsponsored Head Start classes (see Table 32). The unsponsored Head Start classes had, if anything, higher medians and ranges for "academic" activities than the Discovery-Oriented and Cognitive Discovery programs: the Preacademic sponsors differed from both the other sponsored and the unsponsored classes equally, and this aspect of classroom content did not differentiate the latter two groups.

As is suggested in Table 33, differences among sponsored (Preacademic, Discovery-Oriented, and Cognitive Discovery), and the unsponsored Head Start classes were small for the FMI observations of inquiry activities and table games. The ranges and medians were similar for all three groups. On the CC scores, however, differences did emerge; again, the differences were in the high points of the distributions, not in the low points. The differences were not, however, as clear-cut as those in Table 32 for Preacademic training. Sponsored classes included programs with higher proportions of science inquiry (11% versus 4%), of social studies inquiry (26% versus 16%), and of table games such as Lotto or puzzles (34% versus 23%) than the highest unsponsored Head Start classes. The general Cognitive Discovery sponsors also had higher medians on social studies--"inquiry" (8% versus 7%) and table games (26% versus 19%)--than the unsponsored Head Start classes. General cognitive development content does appear, then, to differentiate among groups, but the ranges and medians for unsponsored Head Start classes were about the same as those for the Preacademic and Discovery-Oriented sponsors.

In the area of activities that can include role playing (phantasy), unsponsored Head Start classes tended to be higher than PV classes (see Table 34). According to the FMI observations, the unsponsored Head Start classes had a higher range on both arts/domestic and truck/doll play activities than the sponsored classes, and the Discovery-Oriented classes were closer to the unsponsored programs. The same pattern emerged on the CC data for girl-related play only. In doll play both the Discovery-Oriented and unsponsored Head Start programs provided more opportunity for role playing and phantasy than the Preacademic and Cognitive-Discovery approaches. For boy-related play (trucks), the medians and ranges were virtually the same.

Table 32

FREQUENCY OF ACADEMIC ACTIVITIES

Academic Activities	Unsponsored Classes		Sponsored Classes: Pre-academic	Sponsored Classes: Cognitive Discovery, Discovery Oriented
Numbers and language*	Range:	4% to 23%	39% to 57%	2% to 13%
	Median:	11%	48%	8%
Numbers†	Range:	0 to 14	50 to 62	0 to 1
	Median:	5.5‡	56	1
Language†	Range:	3 to 27	49 to 72	0 to 22
	Median:	7	60	10

* Source: FMI observations (scored as a percent of all events observed in a class).

† Source: CCs (scored as an average over all observation periods for a class).

‡ Bimodal distribution.

Table 33

FREQUENCY OF COGNITIVE ACTIVITIES

Cognitive Activities	Unsponsored Classes		Sponsored Classes: Preacademic and Discovery Oriented	Sponsored Classes: Cognitive Discovery
Inquiry*	Range:	0% to 11%	0% to 17%	3% to 10%
	Median:	7%	5%	6%
Table games*	Range:	3% to 19%	3% to 10%	6% to 12%
	Median:	5%	6%	11%
Science†	Range:	0 to 4	0 to 11	0 to 7
	Median:	2	1‡	0
Social studies†	Range:	0 to 16	2 to 26	2 to 18
	Median:	8	5‡	17
Table games†	Range:	4 to 23	10 to 34	14 to 38
	Median:	19	24	26

* Source: FMI observations (scored as a percent of all events observed in a class).

† Source: CCs (scored as an average over all observation periods for a class).

‡ Bimodal distribution.

Table 34

FREQUENCY OF ROLE-PLAYING ACTIVITIES

Role-Playing Activities		Unsponsored Classes	Sponsored Classes: Preacademic and Cognitive Discovery	Sponsored Classes: Discovery Oriented
Arts and domestic*	Range:	10% to 30%	8% to 15%	13% to 14%
	Median:	16%	10%	13.5%
Trucks, dolls*	Range:	3% to 14%	1% to 12%	7% to 11%
	Median:	10%	7%	9.5%
Child talk†	Range:	0 to 14	0 to 8	6 to 10
	Median:	5.5	2.5	8
Trucks†	Range:	4 to 22	6 to 21	10 to 25
	Median:	16	16.5	17.5
Dolls†	Range:	2 to 27‡	1 to 28‡	15 to 25
	Median:	11	10.5	20

* FMI observations (scored as a percent of all events observed in a class).

† CCs (scored as an average over all observation periods for a class).

‡ Bimodal distribution.

Unsponsored Head Start classes clearly offered about the same opportunities for phantasy play as the Discovery-Oriented classes. For girls, Discovery-Oriented and unsponsored Head Start programs offered both more opportunities and more "extreme" classes than the Preacademic and Cognitive discovery programs.

Role playing and phantasy are thought by some educators to be vital to the preschool child's personal-social development; they are also believed to foster a cognitive richness, freedom, and flexibility that emerge in the creativity and freshness that so often characterize a child's perceptions. The cognitive style differences that Discovery-Oriented schooling can make among able, older children have been explicated by Biber et al. (1969). Some child-development-oriented educators have feared that more preacademically oriented approaches may neglect or stifle important aspects of the child's growth as a free, enriched, creative human being.

Not all "free play" is enriching and creative. The child who tiredly rolls a truck back and forth, sitting alone in a corner, may be internally phantasizing and growing; one feels, however, a different quality in the three or four boys playing roles of fireman, bus driver, bread truck driver, and gasoline delivery man, or in the teacher/child interchange reported by one observer of the little girl who was baking pancakes for the fully-realized and diverse family she described in response to the teacher's perceptive questions.

It has been said that in traditional Head Start classrooms free play typically is not enriching and that the Discovery-Oriented sponsored teachers are much more aware of the dynamics of play. The COs did not describe the quality of the free play observed, nor could it be assumed that the nature and quality of the observed language, number, and table games were similar among sponsors and among sponsored and unsponsored Head Start classes. The data did show that the opportunities for role playing were there in the daily experiences of Head Start children in the study, and there is no evidence that there was typically disproportionately more "free play" for unsponsored than for sponsored programs. In terms of active indoor play or group singing and games, there was little difference between sponsored and unsponsored Head Start classes. One point is worth noting, however: The range of FMI group activities was higher (47% versus 38%) for unsponsored Head Start classes. The proportion of time spent in other activities (indoor active play, group singing, and games) was similar for unsponsored and sponsored classes (see Table 35).

Table 35

FREQUENCY OF ACTIVE INDOOR PLAY

Active Indoor Play		Unsponsored Classes	Sponsored Classes
Group activity*	Range:	8% to 47%	11% to 38%
	Median:	21%	17%
Active play*	Range:	1% to 5%	0% to 7%
	Median:	4%	3%
Group time†	Range:	1 to 20	2 to 25
	Median:	9	7.5‡
Singing†	Range:	8 to 32	10 to 25
	Median:	21	18
Swings†	Range:	0 to 24	0 to 25
	Median:	5‡	3
Active games†	Range:	0 to 11	0 to 10
	Median:	3	3.5

* Source: FMI observation (scored as percent of all events observed in a class).

† Source: CCs (scored as an average over all observation periods for a class).

‡ Extreme single instance or bimodal distribution.

Classroom Management

The possibility that unsponsored Head Start teachers may be less skilled in classroom management (group activities can provide easy control for teachers who are unable to organize small group learning situations without chaos) is not supported by the times spent in classroom management, child observing, and "other" events (see Table 36).

These data suggest that unsponsored Head Start teachers had no greater difficulty with classroom management than PV teachers. "How can children be controlled?" is a question often asked of consultants by teachers of young childrn; the ability to manage classes so transitions are made smoothly and children can participate individually without chaos may, more than specific content, differentiate experienced and inexperienced teachers.

Table 36

FREQUENCY OF CLASSROOM MANAGEMENT EVENTS

Activity		Unsponsored Classes	Sponsored Classes
Classroom management*	Range:	3% to 14%	0% to 18%
	Median:	6%	9.5%
Management†	Range:	4 to 69	4 to 90
	Median:	8 and 56‡	23.5
Observing†	Range:	0 to 54	3 to 60
	Median:	28	20

* Source: FMI observations (scored as a percent of all events observed in a class).

† Source: CCs (scored as an average over all observation periods for a class).

‡ Extreme single instance or bimodal distribution.

Classroom Processes

Three aspects of classroom process will be considered: classroom affective atmosphere (praise/blame communication), classroom individualization (group size), and classroom directiveness (direct/choice requests, and child-adult talk).

Classroom Affective Atmosphere. In most classes neither praise nor blame communication absorbed much of the total proportion of FMI units: twice as much praise was recorded (6% and 10%) for the Preacademic programs that used positive reinforcement as was recorded in the highest unsponsored classes (4%), but the proportion of blame feedback also tended to be higher (2.5% for unsponsored and 3.5% for sponsored classes). If feedback, and particularly positive feedback, is considered an important aspect of child/adult communications, it would seem as if both sponsored and unsponsored Head Start classes provided relatively little emotional support or information in this way.

Classroom Individualization. Table 37 summarizes sponsored and unsponsored distributions of child and adult groupings.

Table 37

FREQUENCY OF INDIVIDUALIZED GROUPINGS

Grouping		Unsponsored Classes	Sponsored Classes
Single child/adult	Range:	0.2 to 6.7	0.4 to 10.1
	Median:	1.8	2.9
Dyads	Range:	0.4 to 5.4	1.1 to 8.1
	Median:	3.4	3.0
Small groups	Range:	7.3 to 27.3	10.0 to 30.0
	Median:	15.1	14.0
Independent child	Range:	5.7 to 18.9	2.3 to 18.3
	Median:	9.8	10.8

Source: CCs (scored as an average over all observation periods for a class).

Sponsored Head Start classes provided somewhat greater opportunities than unsponsored Head Starts for individualized instruction (single child/adult units), and there were on the whole fewer instances of child/child dyads, of independent child units, and of group activity. The differences, it should be made clear, were not in any single instance striking. On the whole, however, the pattern was consistent with the earlier observation of more whole group activity, with the possibility that unsponsored Head Start teachers might benefit particularly from the kind of classroom management training that permits greater individual attention for each child and less reliance on activities for the whole group or the child alone--"Do what you want if you'll keep quiet and not bother the rest of us."

Classroom Directiveness. Who is talking and what is being said may be among the most central process aspects of classroom experience. Is the adult doing most of the talking, and is most of the communication directive? Or do children participate extensively and often respond to choices and options that may stimulate both cognitive development and self-esteem? Table 38 shows the ranges and medians of communication patterns in sponsored and unsponsored Head Start classes on the FMI.

The ranges and medians were strikingly similar for sponsored and unsponsored classes. The variation in unsponsored classes of teacher-dominated versus child-dominated speech and of direct requests versus choice requests was clearly as great as that for the sponsored programs. To the extent that sponsored programs sought to change communications patterns from those of unsponsored Head Start classes, this complex and often subtle change was not observed in the sample classes.

Of all aspects of classroom dynamics, communications are likely to be most resistent to change and most reflective of pervasive individual differences. Consider, for example, the difference between asking a child where a choice is possible and telling a child. Telling a child what to do or directly requesting action is often more efficient than offering a choice and may be more natural to many adults. To restructure these patterns may involve revision of such personal-social characteristics as tolerance of ambiguity, tolerance of "threat" to one's authority and control, and openness. Such changes may be slow to emerge reliably in PV classrooms.

Table 38

COMMUNICATION PATTERNS

Type of Talk		Unsponsored Classes (percent)	Sponsored Classes (percent)
Adult talk	Range:	27% to 43%	26% to 43%
	Median:	29%	35%
Child talk	Range:	27 to 51	33 to 51
	Median:	37	40
Direct request	Range:	4 to 20	7 to 35
	Median:	11	14
Choice request	Range:	1 to 6	1 to 8
	Median:	2	2

Source: FMI observations (scored as a percent of all interactions recorded in a class).

The Typical Unsponsored Head Start Classroom

In a typical unsponsored classroom the teacher was likely to be rated as performing moderately well by her director and to have had either a college degree or previous Head Start experience, but not both. About 11% of the time her children were being taught preacademic skills, such as language or numbers. Activities that should foster general cognitive development such as inquiry and table games absorbed about 7% and 5% of the total time respectively. There were many opportunities for role play and phantasy-stimulating activities: about 26% of the total time. Relatively little time was spent in active indoor play (4%); much time was given to whole group activities (21%). Management and eating absorbed 10% and 18% of the time, respectively (see Table 39).

Table 39

OCCURRENCE OF VARIOUS CLASSROOM ACTIVITIES

Activity*	Unsponsored Classes (percent)	Sponsored Classes (percent)
Developmental		
Preacademic	11%	10%
Cognitive Discovery	12	16
Personal, social (role play)	26	18
Active play	4	3
Group time	21	17
Management	10	9
Eating	18	16

* Source: FMI observations (scored as a percent of all events observed in a class).

In terms of classroom process, the typical child in the unsponsored Head Start classroom received little (2%) praise or blame from his teacher. He was usually in a group or by himself; he rarely received for an extended period of time the individual attention of his teacher or another adult. Most of the time (79% of FMIs) someone was talking to someone. The slight majority of this time the teacher was talking at the child (53%); this included, however, all kinds of teacher communications, and child talk was recorded in 49% of all observations involving oral communication.*

Summary

The data reported in this section suggest that good unsponsored Head Start classes and good sponsored classes at the end of eight months differed:

- In specific program content like preacademic training. (The Preacademic approach was much higher in preacademic training than the Discovery-Oriented and Cognitive Discovery approaches and the unsponsored programs.)

- In activities likely to foster cognitive development. (Both the Cognitive Discovery approach and the unsponsored programs were high in cognitive development and the Preacademic and Discovery-Oriented approaches were lower.)

- In providing opportunities for role playing. (The unsponsored programs and the Discovery-Oriented approaches were higher in providing opportunities for role playing than the Preacademic and Cognitive Discovery approaches.)

The data also suggest that all Head Start classes were similar in communication patterns such as praise/blame, proportions of child/adult talk, and directed/choice requests.

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* There may be some observer bias if teacher/child groups were more likely to be observed; also, if several children were talking so the observer could not hear, this would be recorded as "confused talk" and so may systematically underestimate child speech.

The significant relationship between teacher formal qualifications and director ratings of performance (which is not found in sponsored classes) suggests that sponsors' technical assistance may have compensated for the know-how otherwise gained through academic training and time. Some analyses suggest that classroom management techniques may have figured prominently in the sponsors' technical assistance, at least in the first eight months. Specific content, such as preacademic readiness training, also appears to have entered a teacher's repertoire relatively early; general cognitive and person-social development techniques may have been acquired more slowly and changes in adult-child communication patterns more slowly still.

The typical Head Start class observed had more formal preacademic and cognitive training (23%) during indoor time than earlier studies had shown or previous observers had reported. The opportunities for role playing were as high as prior reports suggested, and substantial time was spent in group singing, story telling, or circle-type games. Active, indoor play was observed relatively infrequently; outdoor play was recorded separately, and it should be kept in mind that these data are indoor time figures.

The relation of variation in teacher and classroom characteristics to child change is discussed in later sections of this report. The data presented in this section offer empirical support for the belief that Head Start programs are diverse in content and in process, and that the diversity in many dimensions within unsponsored Head Start classes is likely to be as great as the diversity among experimental programs of different sponsors--at least as these programs are realized after the first eight months of PV Head Start.

XI ANALYSIS OF CHILD PERFORMANCE DATA

The main goals of the Head Start PV program evaluation were listed earlier. The portion of those goals to which this chapter is addressed is the analysis of the changes in the children. Two things were necessary for the assessment of child changes. First, it was necessary to establish a data bank of information on sites, teachers, and children and to measure base line features of the bank's information as a preliminary step to the inclusion of more data and the performance of more elaborate, comprehensive, and longitudinal analyses in succeeding years; and second, to analyze in a preliminary fashion the changes in child performance during the first year of Head Start PV implementation.

There were at least two possible standards against which the performance of the subjects in the present experimental situation could be evaluated: the effect of no treatment whatever (that is, the effects of those caused by maturation or the complex educational experiences of the children's day-to-day life without participation in any preschool program) and the effect due to participation in regular Head Start programs. The performance of children in the Hard Start PV classes was compared to both of these standards--the first indirectly by means of age and ethnicity norms, and the second directly.

A problem with quasi-experimental evaluations is that factors confounded with the treatment effect must be cancelled out by the analyses to the extent that this is possible since they are not controlled in the experimental design. In the Head Start PV evaluation design such factors included child age, ethnic origin, the extent of prior Head Start experience, sex, socioeconomic status (SES), the amount of time elapsed between start of classes and testing, and the days attended between initial and final testing. These factors varied between sponsored and unsponsored classes in the same site and between sites for the same sponsor. In addition, the variation was not systematic across sponsors: in some sites, for example, more sponsored than unsponsored children had attended Head Start in 1968-69; in other sites, the unsponsored children were more experienced; and in still others, there were no differences. Unless this variation was in some way controlled statistically, it could cause so much "noise" variance in child performance that the "signal" of sponsor effects would be lost.

Analytic Design

The analytic design used controlled statistically for age and ethnicity by "norming" or adjusting measure values so that each of these subgroups had the same midpoint and range. Although change as an associate of age or ethnicity could still be studied, initial score variance no longer had age or ethnicity as part of the "noise." Other factors such as prior Head Start experience were studied separately in the course of the analysis; however, interactive effects were not considered as extensively in this preliminary overview of the child performance data as they will be in later periods of PV evaluation when the number of observations will be larger, and tests of effect stability by replication will be possible.

The child performance analyses* were concerned with three main lines of questions:

1. Was there evidence of reliable gains associated with participation in the Head Start program during the school year 1969-70--of gains greater than those attributable to maturation?

2. If there were gains, was sponsored Head Start more effective than unsponsored Head Start in producing these changes?

3. If some children and classes gained more than others, to what might this variability be due?

PV sponsorhip, particular sponsored program types, and teacher and child characteristics were factors explored as potential sources of variation in child performance gains. The general analytical paradigm entailed:

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* The course of analysis contained various shortcomings, some of which were emphasized too late to be accommodated in time for this report. Others were the result of decisions that were made in the light of the lack of random sampling, suspected lack of precision and standardization of testing procedures among 190 different testers, and a desire to present the data from the first year in as "open" a form as possible.
The reader should refer to Appendix H to gain a detailed appreciation of the alternative procedures that should be pursued in subsequent reportings on PV.

- Grouping related child measures into a small set of scores
- Initial score standardization of each measure for children according to age and ethnicity
- Testing experimental hypotheses by parametric or nonparametric means.

Norming and Standardization

As a first step in the analysis of child-performance data, the total sample was broken down into groups by ethnicity* and six-month age level categories.† Table 40 shows the results of this breakdown. Three ethnic

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* How to handle ethnicity as a factor in child performance poses difficult problems both experimentally and analytically. Variance associated with race is complexly determined: genetic factors, constitutional factors (such as those due to effects of maternal preadolescent, adolescent, and prenatal diet and medical care) and socioenvironmental differences that invade almost every aspect of the child's life are surely implicated in varying degrees in the performance differences often reported for race. Since the focus in the first year's analyses was on Head Start and PV program characteristics, norming by ethnicity as well as age permitted direct assessment of gains due to programs without continued interpretations of initial, final, and gain performance with qualifications imposed by score, age, and ethnicity differences within and among sites.

† Six-month intervals rather than the two-, three-, or four-month groupings were chosen to provide reasonably large Ns within cells for American Indian and Puerto Rican children. This reduced sensitivity to change and increased error where less than six months intervened between initial and final testing (N = 306 for children with at least one pair of initial and final tests). In the second and third years of this study, larger Ns will permit finer norm groupings.

Table 40

NUMBER OF CHILDREN BY AGE AND ETHNIC GROUP OF THE NORMING SAMPLE*

Age (months)	Ethnic Group: Puerto Rican†	Caucasian	Negro	American Indian	Total
36-41	0	0	4	0	4
42-47	0	16	32	0	48
48-53	2	76	228	8	314
54-59	9	104	247	22	382
60-65	1	137	230	46	414
66-71	0	118	280	48	446
72-77	0	15	31	0	46
Total	12	466	1,052	124	1,654

* For a representative variable, general cognition [Preschool Inventory (PSI)].

† The number of Puerto Rican children is far too small to justify the formation of norming groups but they are left in because their effect on overall variance is negligible.

groups proved to have large enough sample sizes to be useful: Caucasian, Negro, and American Indian.* There were 7 six-month age categories, including children from 36 to 77 months of age at time of initial testings. There were no children below 36 months in age; those few 78 months in age or older in October 1969 were not included in these analyses.

It should be noted that the norming sample size was smaller than that mentioned in Chapter VI for the total number of children tested, mainly because of lack of information on ethnicity: there were no data on ethnic origin for 595 children. The group omitted in this fashion was not

* Table 40 shows that the number of Puerto Rican children was very small. This group was included originally because it had a fairly even sponsored/unsponsored split; most properly it should have been excluded. Because of the small sample size, effects of inclusion were minimal.

studied systematically to see if its known characteristics differed from those of the remainder of the sample. In addition, children were excluded from the analysis entirely if there was no information on their age. Children also were excluded for a given performance measure if they lacked one or both scores on that measure. For tests of a particular effect (e.g., prior Head Start experience) children were excluded if data related to that effect were missing.

Following the identification of standardization cells, means and standard deviations were calculated separately for each child-performance measure within each cell. (The child measures will be described in detail later.) Next, for each cell the Fall (initial) scores for each variable were set to a mean of 50.0 and a standard deviation of 10.0, and Spring scores were expressed in terms of the Fall standardization for the age group to which each child belonged in the Spring. This procedure transformed to equivalent numbers the values in each cell without altering the shapes of either Spring or Fall distribution curves in each cell.* The

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* The formulas for this adjustment on each child's Fall and Spring scores were:

Fall: $$X'_{ijnf} = \frac{(X_{ijnf} - \bar{X}_{ij\cdot f}) \times 10.0}{S_{ij\cdot f}} + 50$$

Spring: $$X'_{ijns} = \frac{(X_{ijns} - \bar{X}_{i(j+k)\cdot f}) \times 10.0}{S_{i(j+k)\cdot f}} + 50.0$$

where

X_{ijnf} is the Fall (initial) value on the i^{th} child measure for the n^{th} child in the j^{th} cell.

$\bar{X}_{ij\cdot f}$ is the Fall mean for the i^{th} child measure in the j^{th} cell.

S_{ijf} is the Fall standard deviation for the i^{th} child measure in the j^{th} cell.

The subscript (j+k) denotes the cell to which a child belongs at the time of Spring testing; <u>j</u> is the subscript for the cell to which the child belongs in the Fall, and <u>k</u> is obtained by dividing the time in months between Fall and Spring testing by 6, the number of months of "width" of a standard cell, and rounding upwards. <u>k</u> may have values of 1 or 2.

Spring means and standard deviations would therefore be expected to be also 50.0, respectively, if factors other than typical age-related experience had no effect on the rate of the child's development. For example, consider the following raw scores for a group of children initially between 54-59 months of age on the PSI:

	Fall 1969	Spring 1970	Comparison Fall 1969
N	104	104	137
Age range (months)	54-59	60-65	60-65
Raw mean	39.7	51.0	45.3
Standard deviation	10.0	8.4	9.3
Mean standard score	50	56.1	50

Without Head Start experience a six-months difference was associated with a raw score gain of 5.6 points (45.3 - 39.7); after Head Start, the six-months difference was associated with an 11.3 point gain (51.0 - 39.7)--almost 104% greater than that attributed to maturation. In terms of standard scores the average child of this age and ethnic group would have a Fall standard score of 50 points. Without Head Start experience the best prediction of his Spring score would be 45.3 points or a standard score of 50; however, his actual Spring raw score of 51.0 corresponds to a standard score of 56.1. The 6-point gain is greater than one-half of a standard deviation of 10 points. The raw scores in Fall and Spring tests were standardized in this manner for all children for whom age, ethnicity, and test data were available.

X'_{ijnf} is the standardized Fall score on the i^{th} measure for the n^{th} child in the j^{th} cell.

X'_{ijns} is the standardized Spring score on the i^{th} measure for the n^{th} child in the j^{th} cell.

It was pointed out that such a procedure is based on the assumption of no age-related bias in the selection of children into the Head Start program--an assumption that may not be justified.

Children Included in the Analyses

Only children having both initial (Fall 1969) and final (Spring 1970) scores on a given test were used in the norming group for that test. This procedure ensured that no dropouts were used in the analysis of the data--a dropout being defined here as a child who had taken one or more Fall tests but for whom there were no measures availabe in the Spring. Other side effects of this caution were that, for various logistical reasons, the number of children with both initial and final values on a given measure might differ slightly from one test to another. Age and ethnicity data* and at least one Fall test score were available on a total of 2,161 children; of these, 381 children (18%) had no test score in the Spring testing period and were considered dropouts from the Head Start program as far as the analysis was concerned.

Child Measures Used in the Analysis

In Chapter IV the various tests given to the children in the sample were discussed. These tests were combined into measures in three general areas: Preacademic skills, general cognition, and noncognitive skills.

Preacademic Skills

A summary measure of preacademic skills was computed from the two-part battery of tests adapted by SRI from the NYU test battery (Early Childhood Inventories Project) by having each part standardized separately to a mean of 50.0 and a standard deviation of 10.0; then the two standardized scores were averaged. Although there was no a priori reason for keeping the tests separate (three subtests in each of two test booklets),

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* Because of the central importance of data on age and ethnicity to the analytical model, children were excluded from the analyses if there were no data on their age and ethnicity. Age information was missing for 242 children, while 372 had no information on race; of these totals, data on 232 children were lacking both varieties of information, so that a total of 382 cases were lost because of missing information. Subsequent to the testing, information on a total of 176 children was obtained from new requests for information from tested sites, but through a clerical oversight the information thus obtained was not included in SRI's main data bank for this analysis.

analysis showed that each had relatively high internal consistency and somewhat lower correlation with the other set of subtests. Since one test had 19 items and the other 18 items, this provided a rationale for standardizing before combining the scores. These tests were given to all children. This variable primarily measures the extent to which children have become better prepared to handle traditional academic skills. The ranges for the two variables and a range of Fall 1969 and Spring 1970 means for the various normalization groups before standardization were:

	NYU Book 3D*	NYU Book 4A
N	1,687	1,671
Possible score range	0 to 19	0 to 18
Means		
Fall	8.2 to 15.9	3.3 to 6.2
Spring	10.2 to 16.9	4.1 to 10.5
Standard deviations		
Fall	2.0 to 3.9	1.4 to 4.1
Spring	2.0 to 5.6	1.3 to 5.4

General Cognition

One general cognition measure was formed by separately standardizing and then adding and averaging two variables: the first was the 1968 Experimental edition of the ETS's PSI (Caldwell) given to all the children and the second was the Stanford-Binet IQ test (Form L-M) given to one-half of all children chosen at random in each classroom. In cases where data were missing for the Binet, PSI data were used alone without averaging.† Characteristics of the Fall 1969 and Spring 1970 data for the variables were:

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* There is some evidence of "ceiling" effects for Book 3D but no such evidence whatsoever for Book 4A. For Book 3D, Fall ranges expressed in terms of percentages of the maximum possible score are 43 to 84% and Spring ranges are 54 to 89%; the percentage differences are, respectively, 41 and 35%. Thus, both Fall and Spring actual upper bounds are close to the maximum possible score and the Spring range is slightly reduced, as are the standard deviations for cells with the highest means. Books 3D and 4A combined Kuder-Richardson-20 reliability was .75.

† The reverse also occurred, although much less frequently (26 cases as opposed to 727).

	Book 5 (PSI)*	Stanford-Binet IQ
N	1654	925
Theoretical range	0 to 64	0 to 200
Range of norming group raw means		
Fall	23.0 to 49.9	70.0 to 108.0
Spring	34.5 to 57.4	76.3 to 122.5
Range of norming group raw standard deviations		
Fall	6.4 to 17.0	10.5 to 17.3
Spring	4.2 to 20.5	7.0 to 17.2

Noncognitive Skills

As noted earlier, it proved difficult to find measures that provide direct assessment of such motivational factors as the child's intrinsic interest in learning or his willingness to try new things. There was also no proven set of measures of those personal-social attributes that are presumed to be important in cognitive growth, such as the ability to pay attention to task-relevant events and objects or the avoidance of disruptive "problem" school room behavior. For measurement of noncognitive skill levels and changes, three measures were used, each of which represented certain cognitive elements and certain social or motivational components. They might be said to fall into the category of measures of "cognitive style." Two of the measures were taken from the Hertzig-Birch scoring of the Stanford Binet and were available for only the half of the sample to whom this test was administered. The two measures were spontaneous elaboration and negative response styles. The score on elaboration reflected the extent to which the child, in giving a correct answer to a Stanford-Binet test item, spontaneously responded at greater length than was required. Such responses could be verbal or nonverbal. Previous work with the score has suggested that it reflects enthusiasm and interest in the task as well as verbal skill. The score on negative response styles reflected a particular type of response that may occur when a child answered an item incorrectly. Often a child, in getting a test item wrong, will do so by attempting to solve the given problem but will obtain the wrong answer or will stop short of finding the correct answer; at other times, he may refuse actively to perform the task and state verbally that he is not capable of solving the problem or will ask the test administrator for help or hints. The assumption was made

* Kuder-Richardson-20 overall item reliability was .92.

that responses of this type reflect a certain level of orientation toward the task and of willingness to engage in a trial-and-error process that is vital to the child's chances of hitting on the right response and hence getting the positive feedback necessary for continued learning whereas incorrect responses of another type do not. The latter type of responses includes substitutive activities (where the child engages in another activity than that indicated by the task) and passive responses--the child responds to the demands of the task by doing nothing. These response styles were labeled as "negative" in that they may reflect fear of failure or possibly disinterest on the part of the child and were assumed to be unproductive in terms of correct responses and task learning. The negative response style measure, then, computed the ratio of passive and substitutive responses to all incorrect responses. The third measure included in the present section was the measure of "impulse inhibition." In this task the child was asked to perform certain simple actions twice, once at normal speed and once "as slowly as possible." This measure was intended to reflect the child's ability to inhibit impulsive motor movement that is not related to successful performance on a task. This measure was available for all the children who received the cognitive test battery .

The noncognitive measures mentioned above have not been used previously in large-scale research (although the tests from which these measures were derived have been used in studies such as those of Hertzig et al., 1968 and Maccoby et al., 1965). They are complex in structure, and, as will be shown in a later section, are not highly intercorrelated or correlated with the preacademic or general cognition variables. For these and other reasons to be explained in fuller detail below, they were not used in answering the main questions of this study; instead, they are considered separately in a later section of this chapter where their overall behavior is described and--with the proper precautions against mis- or over-interpretation--some of the major findings on child performance derived from these variables are described.

The crucial questions asked in the beginning of this chapter, then, will be answered in terms of traditional, academically oriented variables through the measurement of general cognitive changes and the extent of acquisition of preacademic skills. The extensive developmental and analytic work done by SRI in 1969-70 in pursuit of valid, reliable noncognitive area variables has not succeeded fully.* This constitutes a serious reservation to the results of the present, first-year SRI study, the more so since all of the sponsors participating in the experiment seek to achieve educational goals in the noncognitive area; for some of the sponsors, indeed, noncognitive goals are more important--or rather, of more immediate importance--than more traditional academic goals such as the acquisition of particular scholastic skills or increases in "general intelligence." This is a generally understood problem; research into and development of better measures in this very difficult area are being pursued actively at SRI and elsewhere.

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* This statement ignores one noncognitive test in which SRI's developmental work has already shown signs of success: the Classroom Observation instrument. Variables from classroom observation are not used here for several reasons; among them the facts that full-scale observation of Head Start classrooms was only carried out in the spring of 1970, that the observations as presently performed result in class-level and not child-level figures, and that variables that relate strictly to child performance have not yet been reliably isolated from the observation procedure. Further study, fall and spring replication in 1970-71 in the same classrooms, and the modification of forms for faster recording and more convenient analysis are expected to lead to usable noncognitive (interactional and motivational) variables from the observation procedures in succeeding years of this study.

Major Issues Related to Child Performance

In this section the questions listed above are addressed through analysis of the performance of children on preacademic and general cognitive measures. The method of display of score levels and changes for each question will be quite similar; for each variable a set of histograms shows the initial (Fall 1969) distribution of standard scores for each group of children to be considered, the distribution of the corresponding final (Spring 1970) standard scores, and the distribution of gain (Spring 1970 to Fall 1969) scores.

The Effect of Head Start

Was the overall Head Start program as sampled by SRI in 1969-70 effective in changing the classroom performance of children in the program? That is, were changes greater than those to be expected by maturation found on the two measures of preacademic skills and general cognition?

The data available yielded a positive answer to this question. Tables 41 and 42 display the child standard score distributions for the two variables considered for all children (the initial numbers of children are 1,643 and 1,680 for preacademic and general cognition variables, respectively). By using the means and standard deviations to summarize the changes occurring, it was found that, for the measure of preacademic performance, the Fall (initial) test score mean was 50.00 with a standard deviation of 8.14* and the Spring (final) test score mean was 57.33 with a standard deviation of 10.11. A t-test of the significance of the difference between Fall and Spring mean scores

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* The Fall figures were set to a mean of 50.00 and a standard deviation of 10.0 for each normed cell; any change in variance results from the pooling effect. Note, also, in reading the histograms that all values outside the limits of the histogram scales are grouped at the corresponding end-point cell. Computation of Spring scores adjusted for maturation effects could be carried out only for those children whose Spring age was low enough for there to be a Fall group with which to match them. Thus, Spring (and difference) Ns are slightly lower than Fall cell sizes, and the mean of Fall-Spring difference is not exactly equal to the difference of Fall and Spring means.

Table 41

PREACADEMIC MEASURES: SCORES FOR ALL CHILDREN

FALL SC	FALL FREQ	FALL PCT	SPRING SC	SPRING FREQ	SPRING PCT	SPRING-FALL CHANGE SC	CHANGE FREQ	CHANGE PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	0	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	0	0	14	1	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	0	0	18	0	0	-64	0	0
20	0	0	20	0	0	-60	0	0
22	0	0	22	0	0	-56	0	0
24	1	0	24	1	0	-52	0	0
26	0	0	26	0	0	-48	0	0
28	2	0	28	1	0	-44	0	0
30	1	0	30	0	0	-40	0	0
32	4	0	32	5	0	-36	0	0
34	16	0	34	2	0	-32	0	0
36	17	1	36	8	0	-28	0	0
38	38	2	38	10	0	-24	2	0
40	63	3	40	18	1	-20	5	0
42	82	4	42	27	1	-16	11	0
44	145	8	44	58	3	-12	22	1
46	166	10	46	64	4	-8	42	2
48	191	11	48	89	5	-4	93	5
50	177	10	50	99	6	0	159	10
52	167	10	52	129	8	4	246	15
54	122	7	54	104	6	8	278	17
56	101	6	56	121	7	12	265	16
58	103	6	58	137	8	16	180	11
60	63	3	60	108	6	20	137	8
62	50	3	62	86	5	24	67	4
64	39	2	64	93	5	28	28	1
66	23	1	66	92	5	32	22	1
68	26	1	68	78	4	36	12	0
70	16	0	70	82	5	40	6	0
72	11	0	72	60	3	44	3	0
74	4	0	74	31	1	48	0	0
76	5	0	76	16	0	52	0	0
78	6	0	78	15	0	56	0	0
80	1	0	80	11	0	60	0	0
82	1	0	82	12	0	64	0	0
84	2	0	84	10	0	68	0	0
86	0	0	86	4	0	72	0	0
88	0	0	88	8	0	76	0	0
90	0	0	90	1	0	80	0	0
92	0	0	92	1	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	0	0	100	0	0

Fall: N= 1643 M= 50.00 V= 66.28

Spring: N= 1578 M= 57.33 V= 102.30

Spring-Fall Change: N= 1578 M= 7.32 V= 95.72

SPRING - FALL CHANGE, T= 22.67

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Table 42

GENERAL COGNITIVE MEASURES : SCORES FOR ALL CHILDREN

FALL SC	FREQ	PCT	SPRING SC	FREQ	PCT	SPRING-FALL CHANGE SC	FREQ	PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	1	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	1	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	1	0	18	0	0	-64	0	0
20	1	0	20	0	0	-60	0	0
22	1	0	22	1	0	-56	0	0
24	3	0	24	2	0	-52	0	0
26	6	0	26	2	0	-48	0	0
28	5	0	28	2	0	-44	0	0
30	17	1	30	3	0	-40	0	0
32	27	1	32	4	0	-36	0	0
34	27	1	34	6	0	-32	0	0
36	44	2	36	12	0	-28	0	0
38	49	2	38	10	0	-24	0	0
40	59	3	40	13	0	-20	0	0
42	99	5	42	25	1	-16	5	0
44	115	6	44	29	1	-12	3	0
46	125	7	46	42	2	-8	27	1
48	124	7	48	68	4	-4	85	5
50	137	8	50	80	4	0	155	9
52	127	7	52	89	5	4	249	15
54	123	7	54	127	7	8	326	20
56	111	6	56	123	7	12	310	19
58	119	7	58	155	9	16	222	13
60	104	6	60	148	9	20	128	7
62	95	5	62	142	8	24	46	2
64	57	3	64	138	8	28	28	1
66	40	2	66	123	7	32	11	0
68	27	1	68	115	7	36	5	0
70	17	1	70	60	3	40	2	0
72	10	0	72	35	2	44	1	0
74	3	0	74	25	1	48	0	0
76	3	0	76	16	0	52	0	0
78	0	0	78	3	0	56	0	0
80	0	0	80	3	0	60	0	0
82	2	0	82	1	0	64	0	0
84	0	0	84	1	0	68	0	0
86	0	0	86	0	0	72	0	0
88	0	0	88	0	0	76	0	0
90	0	0	90	0	0	80	0	0
92	0	0	92	0	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	0	0	100	0	0
N= 1680 M= 49.85 V= 91.90			N= 1603 M= 57.42 V= 76.76			N= 1603 M= 7.53 V= 66.44		

SPRING - FALL CHANGE, T= 23.57

yielded $t = 22.67$ ($p < .05$). For the general cognitive measures, the Spring mean score was higher than the Fall by 7.53 points ($t = 23.57$, $p < .05$).* Mean gains can be caused by extreme changes for few children (who may possibly have tested unreliably low) or by increases for all children. The gain score distributions show that most children gained from Fall to Spring. Table 43 summarizes the child gains.

Table 43

FALL-TO-SPRING TEST SCORE CHANGES FOR CHILDREN

Measures		Total N	Change in Standard Score Points: Loss (< -2)	No Change (-2 to +2)	Gain (> +2)
Preacademic	N	1,578	175	159	1,244
	%	100%	11%	10%	79%
Cognitive	N	1,603	120	155	1,328
	%	100%	7%	10%	83%

The data clearly show that within the brief initial/final testing interval of about six months of Head Start experience, almost all children made significant gains in the areas of preacademic skills and general cognitive facility above the normal gains expected because of maturation. The slight changes in variance for these two measures suggested that increases were fairly uniform across all children and score levels.

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* It is of considerable interest that variance for the general cognitive measure over all children (as well as in the many breakdowns of the sample to be given below) decreased from Fall to Spring and decreased rather markedly for the gain scores (cf Table 43). This did not happen for any of the other measures. The only possible interpretation of this fact is that increases in general cognition tended to be fairly uniform over the whole spectrum of scores; the data, even at this point, would suggest that the Head Start programs (both sponsored and unsponsored) operated in a manner that raised uniformly the general cognitive abilities of all children.

Interpretation of these findings as gains associated with Head Start was supported by the analytical design's initial standardization procedure that provided a measure of statistical control of the growth expected without program experiences. The initial/final interval was also too long to expect much specific retention of test items. Interpretation of the changes as an increase only in preacademic skills or general cognitive ability was, however, not consistent with other studies. There was, for example, a possibility that the findings could reflect to some extent test-retest effects associated with adaptation. None of the measurements made can be used to show directly the extent of social adaptation or test-retest learning but the literature on testing young children indicates that these effects are usually modest in absolute size (for example, see Zigler and Butterfield, 1968). When the gains are on the order of 1 standard deviation, it seems unlikely that such gains would be due only to test adaptation by the children.

Social adaptation is not regarded as error variance or "noise." Responsiveness to adults, a willingness to cooperate, a sense of ease and trust, and a sense of participation are thought by some researchers (e.g., Biber, 1969) to antedate skill acquisition. The child who is terrified, hostile, bewildered, or bored is thought unable to profit from educational experience. It has been suggested that social adaptation reaches its peak fairly early in the school experience whereas changes in reasoning and thinking processes occur more slowly, possibly even beyond the eight months "final" testing date of the first year of planned variation. Since most initial testing was completed during the first six weeks of 1969-70 Head Start, gain variance on the preacademic and general cognitive measures should be considered as including social adaptation as well as cognitive change.

The Effect of Planned Variation

Was sponsored Head Start more effective than unsponsored Head Start in producing changes in child performance? That is, were gains on the two measures greater for the group of children under PV sponsorship than for those children in the regular Head Start programs?

In general, the answer was yes. Tables 44 to 47 present the findings in detail and Tables 48 and 49 summarize them. Inspection of these summary* tables shows that children in sponsored programs had greater Fall-to-Spring test gains in the areas of preacademic readiness and general cognition than did the unsponsored children in regular Head

* In all tabular summaries: * = $p < .05$ and ** = $p < .01$, one-tailed
† = $p < .05$ and ‡ = $p < .01$, two-tailed.

Table 44

PREACADEMIC MEASURES: SCORES FOR ALL SPONSORED CHILDREN

FALL

SC	FREG	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	1	0
26	0	0
28	0	0
30	0	0
32	2	0
34	9	1
36	7	0
38	17	1
40	36	4
42	38	4
44	78	8
46	85	9
48	92	10
50	94	10
52	99	11
54	78	8
56	66	7
58	56	6
60	32	3
62	34	3
64	17	1
66	14	1
68	14	1
70	9	1
72	9	1
74	1	0
76	5	0
78	1	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 854 M= 50.37 V= 62.42

SPRING

SC	FREG	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	1	0
16	0	0
18	0	0
20	0	0
22	0	0
24	1	0
26	0	0
28	0	0
30	0	0
32	1	0
34	1	0
36	4	0
38	6	0
40	7	0
42	13	1
44	27	3
46	27	3
48	45	5
50	42	4
52	74	8
54	50	5
56	70	8
58	70	8
60	58	6
62	54	6
64	54	6
66	54	6
68	38	4
70	46	5
72	42	4
74	20	2
76	5	0
78	8	0
80	9	1
82	8	0
84	9	1
86	3	0
88	6	0
90	1	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 854 M= 58.33 V= 106.65

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	1	0
-20	3	0
-16	5	0
-12	7	0
-8	20	2
-4	52	6
0	77	9
4	138	16
8	144	16
12	140	16
16	106	12
20	78	9
24	37	4
28	13	1
32	18	2
36	6	0
40	6	0
44	3	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 854 M= 7.93 V= 98.92

SPRING - FALL CHANGE, T= 18.15

Table 45

GENERAL COGNITIVE MEASURES: SCORES FOR ALL SPONSORED CHILDREN

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	1	0
22	0	0
24	3	0
26	4	0
28	4	0
30	11	1
32	13	1
34	20	2
36	22	2
38	28	3
40	32	3
42	37	4
44	65	7
46	59	6
48	74	8
50	74	8
52	65	7
54	83	9
56	61	6
58	69	7
60	53	5
62	50	5
64	32	3
66	24	2
68	20	2
70	7	0
72	7	0
74	1	0
76	1	0
78	0	0
80	0	0
82	1	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 921 M= 50.07 V= 92.13

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	1	0
28	1	0
30	1	0
32	3	0
34	3	0
36	5	0
38	5	0
40	7	0
42	15	1
44	16	1
46	19	2
48	28	3
50	43	4
52	42	4
54	76	8
56	58	6
58	73	8
60	78	8
62	89	10
64	67	7
66	78	8
68	68	7
70	39	4
72	28	3
74	11	1
76	11	1
78	3	0
80	1	0
82	1	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 870 M= 58.14 V= 75.23

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	0	0
-20	0	0
-16	3	0
-12	1	0
-8	9	1
-4	38	4
0	84	9
4	121	13
8	181	20
12	181	20
16	118	13
20	80	9
24	30	3
28	16	1
32	5	0
36	3	0
40	0	0
44	0	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 870 M= 8.04 V= 62.97

SPRING - FALL CHANGE, T= 18.64

Table 46

PREACADEMIC MEASURES: SCORES FOR ALL UNSPONSORED CHILDREN

FALL SC	FREQ	PCT	SPRING SC	FREQ	PCT	SPRING-FALL CHANGE SC	FREQ	PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	0	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	0	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	0	0	18	0	0	-64	0	0
20	0	0	20	0	0	-60	0	0
22	0	0	22	0	0	-56	0	0
24	0	0	24	0	0	-52	0	0
26	0	0	26	0	0	-48	0	0
28	2	0	28	1	0	-44	0	0
30	1	0	30	0	0	-40	0	0
32	2	0	32	4	0	-36	0	0
34	7	0	34	1	0	-32	0	0
36	10	1	36	4	0	-28	0	0
38	21	2	38	4	0	-24	1	0
40	27	3	40	11	1	-20	2	0
42	44	5	42	14	1	-16	6	0
44	67	8	44	31	4	-12	15	2
46	81	10	46	37	5	-8	22	3
48	99	13	48	44	6	-4	41	5
50	83	11	50	57	7	0	82	11
52	68	9	52	55	7	4	108	14
54	44	5	54	54	7	8	134	18
56	35	4	56	51	7	12	125	17
58	47	6	58	67	9	16	74	10
60	31	4	60	50	6	20	59	8
62	16	2	62	34	4	24	30	4
64	22	2	64	39	5	28	15	2
66	9	1	66	38	5	32	4	0
68	12	1	68	40	5	36	6	0
70	7	0	70	36	4	40	0	0
72	2	0	72	18	2	44	0	0
74	3	0	74	11	1	48	0	0
76	0	0	76	5	0	52	0	0
78	5	0	78	7	0	56	0	0
80	1	0	80	2	0	60	0	0
82	1	0	82	4	0	64	0	0
84	2	0	84	1	0	68	0	0
86	0	0	86	1	0	72	0	0
88	0	0	88	2	0	76	0	0
90	0	0	90	0	0	80	0	0
92	0	0	92	1	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	0	0	100	0	0

FALL: N= 749 M= 49.57 V= 70.63

SPRING: N= 724 M= 56.14 V= 94.70

SPRING-FALL CHANGE: N= 724 M= 6.59 V= 91.12

SPRING - FALL CHANGE, T= 13.86

Table 47

GENERAL COGNITIVE MEASURES: SCORES FOR ALL UNSPONSORED CHILDREN

FALL SC	FREQ	PCT	SPRING SC	FREQ	PCT	SPRING-FALL CHANGE SC	FREQ	PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	1	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	1	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	1	0	18	0	0	-64	0	0
20	0	0	20	0	0	-60	0	0
22	1	0	22	1	0	-56	0	0
24	0	0	24	2	0	-52	0	0
26	2	0	26	1	0	-48	0	0
28	1	0	28	1	0	-44	0	0
30	6	0	30	2	0	-40	0	0
32	14	1	32	1	0	-36	0	0
34	[illegible]	0	34	3	0	-32	0	0
36	22	2	36	7	0	-28	0	0
38	21	2	38	5	0	-24	0	0
40	27	3	40	6	0	-20	0	0
42	62	8	42	10	1	-16	2	0
44	50	6	44	13	1	-12	2	0
46	66	8	46	23	3	-8	18	2
48	50	6	48	40	5	-4	47	6
50	63	8	50	37	5	0	71	9
52	62	8	52	47	6	4	128	17
54	40	5	54	51	6	8	145	19
56	50	6	56	65	8	12	129	17
58	50	6	58	82	11	16	104	14
60	51	6	60	70	9	20	48	6
62	45	5	62	53	7	24	16	2
64	25	3	64	71	9	28	12	1
66	16	2	66	45	6	32	6	0
68	7	0	68	47	6	36	2	0
70	10	1	70	21	2	40	2	0
72	3	0	72	7	0	44	1	0
74	2	0	74	14	1	48	0	0
76	2	0	76	5	0	52	0	0
78	0	0	78	0	0	56	0	0
80	0	0	80	2	0	60	0	0
82	1	0	82	0	0	64	0	0
84	0	0	84	1	0	68	0	0
86	0	0	86	0	0	72	0	0
88	0	0	88	0	0	76	0	0
90	0	0	90	0	0	80	0	0
92	0	0	92	0	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	0	0	100	0	0

N= 759 M= 49.59 V= 91.62 | N= 733 M= 56.56 V= 77.32 | N= 733 M= 6.92 V= 69.96

SPRING - FALL CHANGE, T= 14.63

Table 48

PREACADEMIC MEASURES: EFFECT OF SPONSORSHIP ON ALL CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- SPONSORED CHILDREN	FREQ	894	854	854	18.15**
	MEAN	50.37	58.33	7.93	
	VAR	62.42	106.65	98.92	
2-UNSPONSORED CHILDREN	FREQ	749	724	724	13.86**
	MEAN	49.57	56.14	6.59	
	VAR	70.63	94.70	91.12	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		-1.98†	-4.31**	-2.71**	

Table 49

GENERAL COGNITIVE MEASURES: EFFECT OF SPONSORSHIP ON ALL CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- SPONSORED CHILDREN	FREQ	921	870	870	18.64**
	MEAN	50.67	58.14	8.04	
	VAR	92.13	75.23	62.97	
2-UNSPONSORED CHILDREN	FREQ	759	733	733	14.63**
	MEAN	49.59	56.56	6.92	
	VAR	91.62	77.32	69.96	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		-1.02	-3.61**	-2.74**	

Start programs. The differential gains were statistically significant (t-test, $p < .05$) if not educationally overwhelming, amounting to approximately 13% of the total gains. In interpreting these findings, two cautions should be borne in mind:

- These were overall findings; confounding sponsors of many types and sites and geographical areas and ethnic groups of widely varying sorts, each of which introduces "noise" into the findings.

- This was the first year of PV implementation; implementation of specialized programs presents special problems not faced in classes using the relatively established regular programs.

Since 1965, studies of the immediate impact of Head Start have consistently found that children who participated gained more than children who did not and that, after a year's participation, final scores were reliably higher than initial scores. Repeated, similar findings have established to a certain extent that the effectiveness is widespread in time and place. No national data have been reported, however, since the ETS Summer 1966 study, in which classes and children observed by uniform procedures could be compared; no data have been published on the full year programs.* Critiques of the Westinghouse follow-up report have argued that Head Start classes vary in effectiveness and that program and child characteristics interact.

The data from the PV evaluation show that:

- Most children (79 to 83%) gained over 2 standard score points in cognitive and preacademic measures during their Head Start experience.

- Almost all classes (92 to 95%) showed gains of more than 2 standard points (cf. Table 52, shown later).

- Almost no classes (1%) (cf. Table 52, shown later) and few children (7 to 11%) showed losses.

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* Analyses of data from three national evaluations (1966-1969) are in progress; reports should be available in 1971.

- Some children and classes did, indeed, gain considerably more than others.

- At least initially on preacademic and general cognition measures, "regular" Head Start variation was as great as the variation in "sponsored" programs, considered as a whole and after eight months of sponsor operation.

- Even in the first period of operation, PV as a whole was associated with slightly greater average preacademic and cognitive gains than "regular" Head Start.

Some limitations should be reemphasized:

- The gains were based on standardizations by age and ethnicity. Growth was greater than would be expected for children not attending the program (as extrapolated from the "maturation" estimates based on the Fall data); however, the standardization was for Head Start children, not "average" or "general population" children.*

- There is no reason to expect major age-related biases that would affect the validity of the standardization in factors such as the mothers' interest in Head Start. There are, however, regional, state, and local biases in that older children typically attend Head Start where there are no public school kindergartens and for younger children Head Start is typically prekindergarten.

Differences between PV and regular Head Start classes were statistically reliable but not substantial. These differences were compiled over all sponsors, over all degrees of implementation, and early in the PV program. The comparison included some programs in which implementation was incomplete (see Chapter VII) and some regular Head Start classes that were judged excellent. Second and third years of the PV program

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* It should be noted that, since the Fall scores included children with some prior Head Start experience, both the initial and maturation comparisons tended to operate against showing change, since (as will be shown below) prior Head Start experience was associated with higher initial scores. Correction of this error in the sample will have to await larger cell sizes and the exclusion of a large part of the data from the initial sample.

and more refined analyses are needed before conclusions regarding the effectiveness of PV can be drawn with much confidence.

The analyses gave positive answers to the first two evaluation questions: (1) children in Head Start programs typically make gains beyond what one might expect for children who are just growing older, and (2) PV Head Start provides children with somewhat greater gains than does regular Head Start. If it can be shown that child gains have considerable classroom level variability, the overall factors that contribute to the variability in gains can be identified. Such factors might be: the nature of sponsored programs, the degree to which PV sponsors managed to implement their programs to their satisfaction, the quality and quantity of training of sponsored and unsponsored teachers, and the extent to which information about PV programs was absorbed by unsponsored teachers. (The last factor, of course, would operate to diminish the difference between sponsored and unsponsored Head Start classes.) To answer these same questions for gains at the classroom level, the same analytic paradigm as before was used but this time the classroom and not the child was the unit of analysis.

The Effect of Program Type

To answer the third question--to sketch out in preliminary fashion, at least, differences between the various sponsored programs or program types--it must first be established that there was variation in gains for different classrooms.

In general, there are two usual sources of variation in child scores, and these can be illustrated by using extreme examples. Assume first that every Head Start classroom studied in 1969-70 had the same mean initial, final, and gain scores on some measure. This would mean, of course, that there was no variation in gain (or other) classroom mean scores; hence questions such as "Do particular sponsored programs or program types provide larger gains for their overall classes than others?" could be answered immediately in the negative (although particular programs might still be found to benefit certain types of children more than others). At the other extreme, assume that every child in every classroom had the same initial, final, and gain score on some measure as every other child in his class (but classrooms differed in mean scores from each other). In such a case all the variation in the child scores that had occurred earlier would be due to differences between classrooms, and consequently classroom, sponsor, and regional differences would be assumed to be the cause of score variations and would thus be the foci of investigative hypotheses.

The reality of the 1969-70 child performance data, of course, lies somewhere in between these two extremes. Tables 50 and 51 show the frequency distributions of mean standard scores for all classes tested in 1969-70. Table 52 summarizes the gains for all classes on the measures of preacademic skills and general cognition. The variances for the classes were smaller than those for the children (see Tables 41 and 42), amounting to about one-fourth to one-third of the child-level variance).

What, if any, findings of differences among sponsored programs or program types were there for the year 1969-70 for the preacademic skills and general cognitive measures of child performance?

As a preliminary inquiry into the hypotheses raised by Bissell's (1970) reanalyses of the Weikart, DiLorenzo, and Karnes data and by Miller's (1970) comparative study, classrooms identified as High in program implementation* during 1969-70 were considered "best" classes, (the best examples of successful sponsor programs) and analyses were

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* During the first year of PV, few if any classes were expected to be exemplars of the sponsors' programs throughout the year. The chapters on implementation have described some of the problems and achievements of this first year. Although most teachers made progress toward good implementation as judged by sponsors and consultants and as observed in the classroom, not all were considered to represent most aspects of the model by the spring of 1970. The first year PV study was designed to identify these classes, if any, and to test for sponsor effects only in these.
For these analyses two measures of sponsor success in program implementation were used: the first was a simple rating by the sponsors of which teachers they considered had best implemented their program and the second was derived from the variables considered in the Classroom Observation instrument that has been described in some detail in Chapter VII. To assess the implementation procedure, each sponsor's particular goals were used to determine the extent to which each classroom's profile matched the sponsor's expectations of what should occur, and an implementation percent score was derived.

Table 50

PREACADEMIC MEASURES: SCORES FOR ALL CLASSES TESTED

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	0	0
42	3	2
44	2	1
46	18	13
48	24	17
50	24	17
52	20	14
54	26	18
56	9	6
58	8	5
60	2	1
62	1	0
64	0	0
66	0	0
68	0	0
70	0	0
72	0	0
74	0	0
76	0	0
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 137 M= 49.93 V= 15.48

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	0	0
42	0	0
44	0	0
46	1	0
48	0	0
50	3	2
52	19	13
54	18	13
56	17	12
58	19	13
60	21	15
62	21	15
64	7	5
66	7	5
68	1	0
70	0	0
72	2	1
74	0	0
76	0	0
78	0	0
80	0	0
82	1	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 137 M= 57.20 V= 26.27

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	0	0
-20	0	0
-16	0	0
-12	0	0
-8	0	0
-4	1	0
0	10	7
4	26	18
8	42	30
12	36	26
16	17	12
20	3	2
24	1	0
28	0	0
32	1	0
36	0	0
40	0	0
44	0	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 137 M= 7.24 V= 28.82

SPRING - FALL CHANGE, T= 13.11

Table 51

GENERAL COGNITIVE MEASURES: SCORES FOR ALL CLASSES TESTED

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	1	0
42	5	3
44	10	7
46	12	8
48	22	16
50	29	21
52	14	10
54	14	10
56	16	11
58	7	5
60	3	2
62	3	2
64	0	0
66	0	0
68	1	0
70	0	0
72	0	0
74	0	0
76	0	0
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 137 M= 49.86 V= 24.00

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	0	0
42	0	0
44	0	0
46	0	0
48	2	1
50	6	4
52	9	6
54	13	9
56	20	14
58	25	18
60	26	18
62	18	13
64	11	8
66	3	2
68	4	2
70	0	0
72	0	0
74	0	0
76	0	0
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 137 M= 57.27 V= 18.59

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	0	0
-20	0	0
-16	0	0
-12	0	0
-8	0	0
-4	0	0
0	7	5
4	25	18
8	42	30
12	39	28
16	19	13
20	4	2
24	1	0
28	0	0
32	0	0
36	0	0
40	0	0
44	0	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 137 M= 7.42 V= 22.57

SPRING - FALL CHANGE, T= 13.24

Table 52

FALL-TO-SPRING TEST SCORE CHANGES FOR CLASSES

Measures		Total N	Change in Standard Score Points: Loss (< -2)	No Change (-2 to +2)	Gain (> +2)
Preacademic	N	137	1	10	126
	%	100%	1%	7%	92%
General	N	137	0	7	130
Cognitive	%	100%	0	5%	95%

then carried out contrasting the performance of these "best" classrooms, grouped into three general sponsor groups:

1. The "prescriptive" or Preacademic sponsors (Englemann-Becker, Bushell).

2. The Discovery-Oriented sponsors (EDC, Bank Street).

3. The Cognitive Discovery sponsors (Tucson, Weikart, Nimnicht, Gordon).

Tables 53 and 54 summarize the initial, final, and change scores for the best classes of each sponsor type on the principal measures used in the present analysis.

Using t-tests of the significance of the difference between the means, there were no significant differences in spring values or fall-to-spring changes between the three program types for either measure. For the general cognition measure, prescriptively oriented classes had significantly higher initial average values than did the other program types. The number of best classes for each sponsor type was small, and the assumption of normal distribution of (best sponsored) classes of each type was probably unjustified.

Table 53

PREACADEMIC MEASURES: RELATIVE PERFORMANCE OF BEST CLASSES IN DIFFERENT PROGRAM TYPES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-DISCOVERY	FREQ	2	2	2	.68
	MEAN	54.11	57.13	3.02	
	VAR	15.41	4.21	35.72	
2-COGNITIVE-DISCOVERY	FREQ	8	8	8	2.96 *
	MEAN	50.88	61.56	10.50	
	VAR	5.75	84.22	99.40	
3- PRESCRIPTIVE	FREQ	10	10	10	5.88 **
	MEAN	52.14	61.93	9.61	
	VAR	8.41	16.56	16.65	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-1.32	.60	.91
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.75	1.49	1.74
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.93	.13	-.24

Table 54

GENERAL COGNITIVE MEASURES: RELATIVE PERFORMANCE OF BEST CLASSES IN DIFFERENT PROGRAM TYPES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- DISCOVERY	FREQ	2	2	2	7.94 *
	MEAN	5.75	57.18	11.42	
	VAR	2.96	.01	1.76	
2- COGNITIVE-DISCOVERY	FREQ	8	8	8	3.93 **
	MEAN	47.81	59.13	10.74	
	VAR	33.39	24.84	11.36	
3- PRESCRIPTIVE	FREQ	10	10	10	4.00 **
	MEAN	53.36	60.70	7.36	
	VAR	18.91	11.42	20.46	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.45	.49	-.25
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	2.24 †	1.34	-1.15
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	2.19 †	.75	-1.66

Using the Mann-Whitney nonparametric test of differences between two distributions, no significant differences were found between the initial, final, or change distributions for classes of the three program types. Table D-1 of Appendix D displays the values of U for each of the possible contrasts.

Although it is somewhat premature to discuss analyses of the non-cognitive variables before the detailed consideration of the behavior of these variables in a later section of this chapter, because of the importance of the question it should be noted here that there were no significant differences in initial, final, or change levels between best implemented classes of the three program types on the motor inhibition variable or for either of the Hertzig-Birch measures (spontaneous response extension and passive/substitutive behavior).

According to Bissell (1970), reanalyses of data from the comparative studies of Karnes, Weikart, and DiLorenzo indicate that, for children in low income groups:

- In Discovery-Oriented programs the children of relatively higher SES made the largest gains on cognitive measures.

- In some of the more directive programs (corresponding to the Preacademic and Cognitive-Discovery-Oriented models), children made about the same average gains on cognitive measures regardless of variations in SES, whereas in others the children of lowest status made the largest average gains.

If these findings were widely replicated, they would have far-reaching implications for the preschool education of low income children; the safest bet for meeting the needs of all low income children in the cognitive domain would be the provision of directive programs with a heavy emphasis on learning. The data available to Bissell were the Stanford-Binet IQ, the Metropolitan Readiness tests, and the ITPA. When Miller (1970) compared children assigned at random to traditional, Montessori, cognitive-discovery, and prescriptive Head Start classes in a single city, she found an interaction between curriculum and measures:

- On measures of preacademic readiness, children attending prescriptive classes gained most and achieved highest final levels.

- On measures of general cognitive development, children in the Cognitive Discovery program achieved slightly higher final levels and made greater gains.

- On measures of personal-social and perceptual-motor development, children in the Cognitive Discovery program gained more than others.

- Montessori children showed moderate progress, particularly in perceptual-motor tasks.

- Children in traditional Head Start classes made significant, relatively uniform but modest gains relative to no-treatment controls in all areas.

If Miller's findings were replicated, they would also have far-reaching implications for preschool programming. They suggest:

- The need to study longitudinal developments to see if different curricula are approaching the same final goals but at different rates, or if both goals and rate are affected by curriculum.

- The need to think long and clearly indeed about the immediate and long range objectives for the development of low income children, particularly since cultural pluralism may become more pronounced as income levels decrease.

Data from the well-implemented PV classes supported the "equally good" hypothesis rather than the "one best approach" hypothesis. If preacademic and cognitive development areas are considered equally important in assessing the immediate impact of preschool programs, no single program type achieved clear superiority over the others in the first year of PV implementation. In fact, grounds for choosing one program over another became less clear. It should be remembered that the measures were blunt, even in the preacademic and cognitive domains. In the affective area, they were even less satisfactory, reflecting only a very small segment of a large and complex area of human growth and potential. Also, the numbers of classes in the discovery and cognitive-discovery groupings were small. With these and other limitations in mind, analyses of the first year of PV suggested:

- The strong recommendation that, because "equally good" effects have now been found in two curriculum comparison studies (Weikart, 1970, and the present PV evaluation), widespread implementation of a single-curriculum approach on the basis of enthusiasm for one kind of gain would be premature and possibly would have undesirable long range consequences for full human development.

Supplementary Findings Related to Child Performance

A number of supplementary analyses were carried out in an attempt to establish in a preliminary fashion some child- and classroom-level factors that were significant in affecting child performance as measured in 1969-70 with the two principal variables, preacademic and general cognition.

Some of the possible child- and class-level effects explored were: diffusion of sponsor information and materials to unsponsored teachers and classes; teacher educational background, specialized training, and overall quality rating; teacher attitudes; the level of implementation of sponsored programs; the extent of previous Head Start experience; sex; socioeconomic status of the child's family; and the number of days attended by the child and the time interval before initial testing. The following sections summarize the major findings with regard to these variables.

Class-Level Findings for Unsponsored Classes

Education and Experience of Unsponsored Teachers. The education and experience of teachers of unsponsored classes were categorized as High (B.A. degree and two years of teaching experience), Medium (B.A. degree or two years of experience), and Low (neither the degree nor prior experience). These categories were tested for effects by comparing class-level means on the main performance measures.

The data are summarized in Tables 55 and 56. There was a nonlineal effect of teacher educational background: teachers rated High and Medium in education produced similar fall-to-spring changes in their children to approximately the same final levels, whereas teachers rated Low on education and experience had lower mean gain and final levels (for the general cognitive measure High versus Low rating); child performance differences are significant at the .05 level; the findings were obscured somewhat for the preacademic variable by significantly lower initial levels for the children of teachers rated High than for those rated Medium, but relative gain differences were in the stated direction. For unsponsored teachers the level of education was directly related to gains in child performance on the two academically oriented measures.

Table 55

PREACADEMIC MEASURES: LEVEL OF TEACHER EDUCATION IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	20	20	20	6.51**
	MEAN	48.13	56.50	8.45	
	VAR	12.05	19.30	21.86	
2- MEDIUM	FREQ	20	20	20	4.02**
	MEAN	50.94	57.25	6.23	
	VAR	22.86	23.75	16.87	
3- LOW	FREQ	6	6	6	2.14*
	MEAN	49.46	54.96	5.45	
	VAR	15.66	17.51	9.04	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	2.07 †	.50	-1.55
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.76	-.73	-1.42
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.66	-1.00	-.41

Table 56

GENERAL COGNITIVE MEASURES: LEVEL OF TEACHER EDUCATION IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	20	20	20	5.16 **
	MEAN	48.11	56.38	8.47	
	VAR	28.47	20.32	29.31	
2- MEDIUM	FREQ	20	20	20	4.11 **
	MEAN	51.41	57.95	6.61	
	VAR	34.04	14.25	20.34	
3- LOW	FREQ	6	6	6	1.17
	MEAN	51.17	54.59	3.38	
	VAR	21.51	21.63	2.74	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.82	1.06	-1.13
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.22	-.81	-2.17 *
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.09	-1.74	-1.65

Cognitive Orientation of Unsponsored Teachers. The degree of cognitive orientation* of unsponsored teachers was directly related to final levels of child performance on the general cognition variable (High versus Low contrast was significant at .05 level) but was not significantly related to final levels or change scores for the preacademic skills measure (although results were in the same direction). Tables 57 and 58 summarize these findings.

Affective Orientation of Unsponsored Teachers. The level of affective orientation of unsponsored teachers was directly related to gains in preacademic skills on the part of children in their classes (High and Medium versus Low contrasts were significant at .05 level) but was not significantly related to gains or final scores (although relative gain levels, again, were in the same direction) on the general cognitive measure. Tables 59 and 60 summarize these findings.

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* A section of the Teacher's Questionnaire (shown in Appendix C) deals with the exploration of the educational goals of the teachers. Of the 41 original items--plus four optional ones--subsets of 6 items were selected that fell most clearly into three areas defined and categorized by experienced teachers on the SRI staff acting as raters. The subsets were:

(1) Cognitive goals, e.g., item 10 - Reading. (The term "cognitive" is used here in the general sense of the traditional concerns of schools and not in its more specialized technical sense.)
(2) Affective goals, e.g., item 2 - Trust of Adults.
(3) Child physical management goals, e.g., item 21 - Caring For and Picking Up Material.

Teachers were asked to rate the various educational goals on a 7-point scale from Very Important to Not Important At All. Scores for each of the subsets were summed and then teachers were classed into one of three groups: High, Medium, or Low on each subset. Thus, a typical teacher might be classed as getting a mean relative importance level of Medium on Cognitive goals, a level of High on Affective goals, and a level of Low on Child Physical Management goals. These three categorization levels are independent of each other (at least in terms of the forms) since no items are shared by more than one category.

Table 57

PREACADEMIC MEASURES: LEVEL OF TEACHER COGNITIVE ORIENTATION IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-HIGH	FREQ	2	2	2	1.10
	MEAN	50.41	58.30	8.18	
	VAR	7.51	43.52	18.18	
2-MEDIUM	FREQ	32	32	32	6.54 **
	MEAN	49.46	56.92	7.50	
	VAR	19.01	21.30	18.00	
3-LOW	FREQ	14	14	14	3.85 **
	MEAN	49.58	56.13	6.53	
	VAR	18.16	19.57	22.14	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.30	-.39	-.21
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.25	-.57	-.44
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.08	-.53	-.67

Table 58

GENERAL COGNITIVE MEASURES: LEVEL OF TEACHER COGNITIVE ORIENTATION IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	2	2	2	2.65
	MEAN	50.77	60.91	9.73	
	VAR	8.60	[illegible]	23.21	
2- MEDIUM	FREQ	32	32	32	5.41 **
	MEAN	49.84	57.41	7.64	
	VAR	38.63	22.07	29.23	
3- LOW	FREQ	14	14	14	3.99 **
	MEAN	49.58	55.12	5.68	
	VAR	17.96	7.03	10.76	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.20	-1.01	-.52
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.36	-2.73 **	-1.43
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.14	-1.67	-1.23

Table 59

PREACADEMIC MEASURES: LEVEL OF TEACHER AFFECTIVE ORIENTATION IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	10	10	10	5.12 **
	MEAN	47.76	56.55	8.85	
	VAR	10.57	15.99	19.74	
2- MEDIUM	FREQ	33	33	33	6.31 **
	MEAN	49.72	57.09	7.40	
	VAR	19.42	24.33	16.95	
3- LOW	FREQ	5	5	5	1.31
	MEAN	51.88	54.88	3.00	
	VAR	14.52	6.37	9.58	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.27	.31	-.93
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	2.03	-.79	-2.46 **
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	1.01	-.96	-2.23 **

Table 60

GENERAL COGNITIVE MEASURES: *LEVEL OF TEACHER'S AFFECTIVE ORIENTATION IN UNSPONSORED CLASSES*

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	10	10	10	3.64 **
	MEAN	50.11	57.96	7.76	
	VAR	25.79	16.35	53.25	
2- MEDIUM	FREQ	33	33	33	5.76 **
	MEAN	49.28	56.54	7.39	
	VAR	30.02	20.81	15.88	
3- LOW	FREQ	5	5	5	1.14
	MEAN	52.64	57.05	4.40	
	VAR	49.82	10.26	22.46	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.42	-.87	-.20
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.74	-.41	-.87
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	1.19	.23	-1.48

R tings of Unsponsored Teachers. Unsponsored teachers were rated by local Head Start directors on their overall performance. Based on the May 1970 ratings for performance, teachers for whom information was available* were classed into three groups: those rated as High (7 or more points on a 0 to 9 scale); those rated as Medium (4 to 6 points); and those rated as Low (3 or fewer points†). Tables 61 and 62 summarize the initial, final, and change scores for the preacademic and general cognition variables for the three classifications of unsponsored teacher performance. Initial and final levels were similar; only one of the change differences reached significance at the .05 probability level. If anything, the ordering seemed reversed: in the scores for the preacademic variable the High teacher-quality group increased beyond maturation levels significantly less than the Medium teacher-quality group; the Low teacher-quality group also had greater fall-to-spring score increases than the group of teachers rated High but not enough to reach the .05 level of statistical significance. For the general cognitive variable, the Medium teacher-quality group gained the largest amount, although not enough to reach statistical significance at the .05 level. There was no clear trend relating unsponsored teacher quality to any of the personal-social variables. In fact, the Head Start director ratings of teachers did not seem to relate to the measures of child performance in any consistant fashion.

Other Findings for Unsponsored Classes. There was no relation between the level of diffusion of sponsorship information or the level of Head Start unspecialized inservice training and the performance of unsponsored children on either of the two principal measures. Tables D-2 through D-5 of Appendix D summarize mean initial, final, and gain scores and standard deviations for each of the levels of contrast for these comparisons and also include t-tests of the significance of differences.

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* No systematic study was carried out for teachers for whom Head Start director ratings were not available.

† The rating of zero was marked "Unacceptable"; no teacher was given a zero rating.

Table 61

PREACADEMIC MEASURES: EFFECT OF TEACHER QUALITY IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-HIGH	FREQ	11	11	11	2.22 *
	MEAN	50.47	54.90	4.43	
	VAR	22.71	17.12	10.32	
2-MEDIUM	FREQ	22	22	22	5.43 **
	MEAN	48.94	56.52	7.60	
	VAR	18.14	22.82	17.75	
3-LOW	FREQ	6	6	6	2.67 *
	MEAN	49.92	56.47	6.73	
	VAR	20.57	9.49	21.13	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.91	.93	2.13
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.22	.77	1.13
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.47	-.02	-.42

Table 62

GENERAL COGNITIVE MEASURES: EFFECT OF TEACHER QUALITY IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-HIGH	FREQ	11	11	11	2.12 *
	MEAN	52.15	58.02	5.87	
	VAR	54.95	21.67	26.81	
2-MEDIUM	FREQ	22	22	22	5.09 **
	MEAN	49.46	56.75	7.29	
	VAR	24.85	18.94	28.15	
3-LOW	FREQ	6	6	6	1.43
	MEAN	51.13	55.91	4.79	
	VAR	42.43	13.33	49.22	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-1.22	-.75	.71
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.27	-.49	-.34
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.68	-.42	-.92

Class-Level Findings for Sponsored Classes

Education and Experience of Sponsored Teachers. The educational background and experience of sponsored teachers (classified into levels in the same fashion as for unsponsored teachers) were negatively related to the performance of the children in their classes: children in the classes of teachers relatively less qualified in terms of educational background achieved higher final scores on the general cognitive measure than did children in the classes of teachers with more experience (High versus Low contrast significant at .05 level). Tables 63 and 64 summarize these findings. For the measure of preacademic skills the means had the same direction as the general cognition variable, although the differences failed to reach conventional significance levels.

Implementation Level in Sponsored Classes. Sponsors' ratings of implementation level were strongly related to final and gain scores on the measure of preacademic skill acquisition and to final scores on the measure of general cognitive development. Tables 65 and 66 summarize these findings, which provide strong justification for the study of implementation levels discussed in earlier chapters as well as for the consideration of best-implemented classes in an earlier section of the present chapter.

Other Findings for Sponsored Classes. Classroom-observation-based ratings of sponsor implementation, levels of sponsored inservice training, and levels of sponsored teacher cognitive and affective ratings were not found to be significantly related to final or change standard score levels for either of the two main child-performance measures. These findings are summarized in Tables D-6 through D-13 of Appendix D.

Child Level Findings

The Effects of Prior Head Start Experience. Although the participants in PV were to have had no prior Head Start experience, a sizeable proportion of the children tested (approximately 30%) had varying months of previous experience. Children were classed as having (1) no prior Head Start experience, (2) one to three months experience (which is described as summer Head Start), and (3) four or more months experience (described as full-year Head Start).

Tables D-14 through D-15 of Appendix D display the findings in the terms of distributions; Tables 67 and 68 summarize them. For the

Table 63.

PREACADEMIC MEASURES: LEVEL OF TEACHER EDUCATION IN SPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	16	16	16	4.60 **
	MEAN	49.56	56.55	6.87	
	VAR	16.60	17.97	26.55	
2- MEDIUM	FREQ	36	36	36	7.01 **
	MEAN	50.90	59.31	8.39	
	VAR	13.50	37.05	45.42	
3 LOW	FREQ	8	8	8	4.17 **
	MEAN	51.43	59.49	7.97	
	VAR	5.71	20.50	29.16	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.15	1.61	.79
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.15	1.50	.46
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.38	.08	-.16

Table 64

GENERAL COGNITIVE MEASURES: LEVEL OF TEACHER EDUCATION IN SPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	16	16	16	6.29 **
	MEAN	49.09	57.90	8.78	
	VAR	22.73	6.66	22.11	
2- MEDIUM	FREQ	36	36	36	7.70 **
	MEAN	50.34	58.56	8.24	
	VAR	19.25	21.5[illegible]	22.34	
3- LOW	FREQ	8	8	8	5.35 **
	MEAN	51.51	60.83	9.48	
	VAR	13.12	8.15	16.92	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.90	.53	-.37
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.[illegible]1	2.42	.34
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.69	1.33	.07

Table 65

PREACADEMIC MEASURES: IMPLEMENTATION LEVEL IN SPONSORED CLASSES ACCORDING TO SPONSOR RATINGS

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	14	14	14	5.78 **
	MEAN	51.01	62.50	11.28	
	VAR	6.54	44.69	46.46	
2- MEDIUM	FREQ	26	26	26	6.45 **
	MEAN	50.77	57.91	7.11	
	VAR	14.29	16.43	30.17	
3- LOW	FREQ	16	16	16	3.75 **
	MEAN	50.49	54.97	4.49	
	VAR	12.22	9.37	13.59	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.21	-2.63 **	-2.05 *
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.45	-3.91 **	-3.33 **
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.24	-2.44 **	-1.65

Table 66

GENERAL COGNITIVE MEASURES: IMPLEMENTATION LEVEL IN SPONSORED CLASSES ACCORDING TO SPONSOR RATINGS

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	14	14	14	5.50 **
	MEAN	50.83	61.55	9.89	
	VAR	31.78	13.10	16.87	
2- MEDIUM	FREQ	26	26	26	7.39 **
	MEAN	50.86	58.06	7.38	
	VAR	14.53	9.25	20.35	
3- LOW	FREQ	16	16	16	5.22 **
	MEAN	48.91	57.26	8.33	
	VAR	20.36	19.03	29.11	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.02	-2.70 **	-1.69
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-1.10	-2.52 **	-.85
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.46	-.64	.69

Table 67

PREACADEMIC MEASURES: EFFECT OF PRIOR HEAD START EXPERIENCE ON ALL CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- NONE	FREQ	1072	1018	1018	18.46 **
	MEAN	49.18	56.34	7.13	
	VAR	60.88	97.30	92.63	
2- 1 - 3 MONTHS	FREQ	217	217	217	7.50 **
	MEAN	50.91	57.76	6.86	
	VAR	73.34	102.27	95.53	
3- 4 OR MORE MONTHS	FREQ	250	239	239	8.49 **
	MEAN	52.97	59.76	6.94	
	VAR	70.25	85.65	91.42	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	2.93**	1.92	-.37
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	6.81**	4.88 ‡	-.27
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	2.62**	2.20 †	.09

Table 68

GENERAL COGNITIVE MEASURES: EFFECT OF PRIOR HEAD START EXPERIENCE ON ALL CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- NONE	FREQ	1095	1036	1036	21.51 **
	MEAN	48.49	56.92	8.37	
	VAR	85.98	77.27	65.48	
2- 1-3 MONTHS	FREQ	219	219	219	6.60 **
	MEAN	51.26	57.36	6.10	
	VAR	100.76	85.58	63.18	
3-4 OR MORE MONTHS	FREQ	262	244	244	6.25 **
	MEAN	54.49	58.99	4.46	
	VAR	73.23	56.32	58.82	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	3.98**	.67	-3.78 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	9.54**	3.40 ‡	-6.85 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	3.80**	2.09 †	-2.25 †

preacademic and general cognitive measures, both summer and full-year Head Start experience added successive increments to the initial scores of children with no prior Head Start experience. For the Fall preacademic measure, children without previous Head Start had a mean score of 49.18 points ($N = 1{,}072$) whereas children with a prior summer of Head Start had mean initial scores of 50.91 points ($N = 217$), a gain of 1.73 points ($t = 2.93$, $p < .01$). Children with a full year of prior Head Start started with a mean standard score of 52.97 points ($N = 250$), a gain over those with only summer Head Start experience of 2.0 points ($t = 2.62$, $p < .01$). For the measure of general cognition, the results were similar: children without prior experience scored on the average 48.49 standard points ($N = 1{,}095$); summer Head Start children initially scored 2.77 points higher on the average ($N = 219$, $t = 3.98$, $p < .01$), and the children with a full year of previous Head Start experience averaged 54.49 points, adding another 3.23 standard points ($N = 262$, $t = 3.80$, $p < .01$).

Prior Head Start experience made a difference in preacademic training and general cognitive performance, and the more a child had, the greater difference it made in initial test response.

Given these initial effects, what additional difference did a further year of Head Start, sponsored or unsponsored, make? Tables 69 through 72 summarize the findings for sponsored and unsponsored children. For sponsored children, the evidence from both the preacademic and general cognitive measures was that

- Children with prior Head Start experience achieved higher final scores than children without such experience; consequently, the initial inequalities between groups with and without prior Head Start were not erased.

- For children with prior Head Start experience, the initial difference between the effects of summer and full-year experience was nullified by higher gains by the children with summer Head Start.

For the unsponsored children on the preacademic and general cognitive measures, the children with the most prior experience reached the highest final levels although not with the largest gains, whereas children with only a summer of prior Head Start made low gains, reaching final levels similar to those of children without any prior Head Start experience. Overall, the effect of a year of prior Head Start experience would seem to be similar for sponsored and unsponsored children. The effect of sponsorship and prior experience combined was to allow sponsored children with only a summer of prior experience to make large gains and come up

Table 69

PREACADEMIC MEASURES: EFFECT OF PRIOR HEAD START EXPERIENCE ON SPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-NONE	FREQ	608	577	577	14.18 **
	MEAN	49.60	56.83	7.14	
	VAR	57.44	97.46	91.86	
2-1-3 MONTHS	FREQ	98	98	98	7.98 **
	MEAN	49.74	60.23	10.49	
	VAR	58.82	108.83	80.32	
3-4 OR MORE MONTHS	FREQ	148	139	139	6.83 **
	MEAN	53.92	61.12	7.30	
	VAR	76.55	81.57	98.84	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.17	3.12 ‡	3.22 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	6.02 **	4.67 ‡	.18
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	3.83 **	.70	-2.52 †

Table 70

GENERAL COGNITIVE MEASURES: EFFECT OF PRIOR HEAD START EXPERIENCE ON SPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-NONE	FREQ	620	585	585	16.02 **
	MEAN	49.02	57.43	8.31	
	VAR	91.49	73.75	62.60	
2-1-3 MONTHS	FREQ	99	99	99	6.78 **
	MEAN	50.75	59.72	8.97	
	VAR	86.69	84.92	54.45	
3-4 OR MORE MONTHS	FREQ	159	143	143	5.94 **
	MEAN	53.51	59.30	5.86	
	VAR	81.44	59.63	66.44	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.67 *	2.42 †	.77
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	5.33 **	2.38 †	-3.30 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	2.35 *	-.38	-3.02 ‡

Table 71

PREACADEMIC MEASURES: EFFECT OF PRIOR HEAD START EXPERIENCE ON UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- NONE	FREQ	464	441	441	11.86 **
	MEAN	48.62	55.70	7.12	
	VAR	64.98	96.59	93.86	
2- 1-3 MONTHS	FREQ	119	119	119	3.20 **
	MEAN	51.87	55.73	3.86	
	VAR	83.84	88.51	88.85	
3- 4 OR MORE MONTHS	FREQ	102	100	100	5.22 **
	MEAN	51.60	57.88	6.46	
	VAR	58.56	86.01	81.59	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	3.81 **	.03	-3.27 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	3.40 **	2.02 †	-.62
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.23	1.69	2.06 †

Table 72

GENERAL COGNITIVE MEASURES: EFFECT OF PRIOR HEAD START EXPERIENCE ON UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- NONE	FREQ	475	451	451	14.40 **
	MEAN	47.79	56.25	8.45	
	VAR	78.10	81.21	69.35	
2- 1-3 MONTHS	FREQ	120	120	120	2.94 **
	MEAN	51.68	55.41	3.73	
	VAR	112.80	78.39	58.38	
3- 4 OR MORE MONTHS	FREQ	103	101	101	2.43 **
	MEAN	56.01	58.54	2.48	
	VAR	57.39	51.83	41.85	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	4.12 **	-.91	-5.60 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	8.75 **	2.38 †	-6.75 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	3.44 **	2.83 ‡	-1.29

to the final levels of children with a year of prior experience, whereas unsponsored children with a summer of Head Start made gains only to the ceiling marked by the final levels of children without prior experience. (This discussion refers to effects beyond the regular effects of sponsorship--a general increase in final levels and gains for both preacademic and general cognitive variables--discussed earlier.)

It should be emphasized that the second year in Head Start is the first year in PV for the sponsored children. Karnes (1970) reported that children gained as much on both preacademic and cognitive measures in their second year in a well-implemented Englemann-Becker program as they did in their first year. Confirmation of Karnes' findings for PV sponsors may be possible after the second year of PV. A year of regular Head Start followed by a year in a sponsored program may not be so effective as two years of sponsored experience. If this finding were replicated, it may suggest that regular Follow Through (where children move from a regular Head Start to a sponsored program) is a relatively weak educational treatment and may even call for some unlearning if regular and sponsored programs are different.

With regard to the findings for regular Head Start, Kraft, Herzog and Fuschillo (1968) reported that average first-year gains on cognitive measures (Binet, PPVT) were greater than average second-year gains in a traditional program. Higher SES children gained rapidly, then plateaued in the second year; lower SES children gained at a slower rate, taking two years to reach the level children from relatively more advantaged homes reached in one year. Kraft et al. suggested that unless the program continues to challenge the child's new-found abilities, the growth rate will level off although gains may be sustained. Most Head Start classes mix children with and without prior experience.* Without

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* Second year children were generally older than children without prior Head Start. The possibility that the measures ceiling out for older children was examined. On the Binet and Book 4A, there was no evidence of either initial or final ceilings for children 72 to 77 months old in the fall. Books 3D and the PSI approached ceilings in the fall and reached them in the spring (75% Fall scores and 90% Spring scores were correct), so some amount of test insensitivity must be considered as an explanation of the lower preacademic (4A + 3D) and the cognitive (PSI + Binet) gains for children with prior Head Start. Summer-only children were typically of average or younger age on entering full year Head Start. Their high gains in sponsored programs may support a test ceiling as well as a program ceiling effect for children in their second year of Head Start.

individual attention, it would not seem likely that the optimum match between the child and the program would be reached. These data suggest, then, that if Head Start continues to lower the age of entry to provide earlier and longer preschool benefits, the children are not likely to gain as much from their second year as they should and could, unless programs adapted to the different levels within a classroom are developed.

Child Sex and Head Start Performance. The influence of child sex on performance and its relationship to the sponsored-unsponsored dichotomy is apparent in the figures summarized in Tables 73 through 76. Consider first the initial score levels of boys and girls: for the children in the sponsored classes, no difference appeared for initial score level, but in the spring assessment the girls scored higher on both the preacademic and general cognitive variables. In contrast, the unsponsored girls achieved higher scores in the initial testing and maintained this advantage through the spring tests. For both groups there was no difference between the sexes in the change scores.

These tables also show that for sponsored children there were no significant initial test differences associated with sex. However, this was not the case for unsponsored children where the unsponsored girls entered with higher initial scores than the boys had. Girls achieved significantly higher final scores than the boys on both measures of child performance, regardless of sponsorship. For the unsponsored children the effect of a year of Head Start seemed to amount to the maintenance of initial difference levels.

Socioeconomic Status and Program Effects. From the available data and imputation techniques,* a measure of socioeconomic status (SES) was devised and scores were assigned to each child on the basis of family income, family size, education of household head and spouse, and occupation of household head and spouse. From these computations children with an SES value greater than 1 standard deviation above the overall mean were considered to be of relatively high status. (The notation "high" is restricted to the subjects of this evaluation, as defined.) A definition of relatively low status, then, was given to all children with an SES value less than 1 standard deviation above the mean.

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* The computation of the measure of SES is detailed in Section II of Appendix H. Accurate interpretation of the results obtained by the use of this measure depends on understanding the procedures used to derive it; the reader is urged to read this section of Appendix H carefully.

Table 73

PREACADEMIC MEASURES: EFFECT OF SEX ON SPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-BOYS	FREQ	413	395	395	10.98 **
	MEAN	50.14	57.38	7.24	
	VAR	63.04	112.01	113.83	
2-GIRLS	FREQ	481	459	459	14.66 **
	MEAN	50.56	59.15	8.52	
	VAR	61.94	99.96	85.55	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		.79	2.50†	1.88	

Table 74

GENERAL COGNITIVE MEASURES: EFFECT OF SEX ON SPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-BOYS	FREQ	432	406	406	12.10 **
	MEAN	49.62	57.47	7.84	
	VAR	95.31	80.03	67.75	
2-GIRLS	FREQ	489	464	464	14.25 **
	MEAN	50.46	58.73	8.21	
	VAR	89.17	70.45	58.86	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		1.32	2.14†	.69	

Table 75

PREACADEMIC MEASURES: EFFECT OF SEX ON UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-BOYS	FREQ	377	368	368	9.07 **
	MEAN	48.95	54.90	5.96	
	VAR	70.07	90.19	94.00	
2-GIRLS	FREQ	372	356	356	10.65 **
	MEAN	50.21	57.42	7.25	
	VAR	70.59	96.37	87.54	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	2.05 +	3.51 ‡	1.82

Table 76

GENERAL COGNITIVE MEASURES: EFFECT OF SEX ON UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-BOYS	FREQ	387	378	378	10.24 **
	MEAN	48.52	55.51	6.93	
	VAR	90.86	86.81	77.92	
2-GIRLS	FREQ	372	355	355	10.64 **
	MEAN	50.70	57.68	6.91	
	VAR	90.22	65.01	61.69	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	3.15 ‡	3.36 ‡	-.03

The median per capita annual income of all low/status children in the SRI Head Start sample for whom sufficient data were available (approximately 1,500) was \$540 (mean, \$558) and that of the group classified as having relatively high SES (approximately 240 children) was \$1,160 (mean, \$1,280). How do these figures relate to national indices of socioeconomic well-being? The OEO guidelines for 1969-70 specified that for a nonfarm family of four an annual family income of \$4,200 or less was considered to be below the poverty line. This figure corresponds to a per capita income of \$1,050 per person. Moreover, recent estimates of minimum income levels suitable for a comfortable living were in the neighborhood of \$6,800 per year, or \$1,700 per capita. Within the SRI Head Start sample, then, children classified as having relatively low SES are well below the OEO poverty income guidelines, as are a proportion of those children classified as having relatively high SES. The percentage of children in the SRI sample for 1969-70 with incomes at or above the poverty guidelines is approximately 11%. Some 3% of all children in the sample (60 in number) have incomes above the "comfortable living" levels.

Tables 77 through 80 compare the results of the SES breakdown with respect to child performance measures for sponsored and unsponsored children. As has been reported in many other studies, children of relatively high status had significantly higher initial scores than children of low SES, on both the preacademic and general cognitive measures. Regardless of sponsorship, low status children made significantly higher gains beyond maturation levels than did high status children on the measures of general cognition, reducing but not erasing initial differences. (On the measures of preacademic skill acquisition gains were in the same direction although not large enough to reach statistical significance.)

These figures speak directly for the overall success of the Head Start program. If replicated for future waves of children or confirmed for the same children in their successive years of participation in the Follow Through program, they suggest strongly that Head Start is succeeding in giving poor children an initial advantage and is most successful with the children who most need help.

Table 77

PREACADEMIC MEASURES: EFFECTS OF SES ON SPONSORED CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Low SES	Freq	748	718	718	17.35**
	Mean	49.81	57.94	8.08	
	Var	58.15	103.51	100.97	
2-High SES	Freq	146	136	136	6.13**
	Mean	53.23	60.42	7.14	
	Var	74.94	118.92	88.00	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		4.81‡	2.57†	1.01	

Table 78

GENERAL COGNITIVE MEASURES: EFFECT OF SES ON SPONSORED CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Low SES	Freq	771	730	730	18.07**
	Mean	49.38	57.86	8.39	
	Var	89.02	75.60	62.25	
2-High SES	Freq	150	140	140	5.59**
	Mean	53.59	59.59	6.20	
	Var	93.91	71.31	63.12	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		4.97‡	2.16†	3.28‡	

Table 79

PREACADEMIC MEASURES: EFFECT OF SES ON UNSPONSORED CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Low SES	Freq	650	628	628	13.68**
	Mean	49.14	55.84	6.74	
	Var	64.07	89.29	90.59	
2-High SES	Freq	99	96	96	3.66**
	Mean	52.39	58.07	5.66	
	Var	105.56	127.07	94.57	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		4.03‡	2.09†	1.03	

Table 80

GENERAL COGNITIVE MEASURES: EFFECT OF SES ON UNSPONSORED CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Low SES	Freq	658	635	635	14.62**
	Mean	48.94	56.29	7.28	
	Var	87.40	75.34	71.61	
2-High SES	Freq	101	98	98	3.27**
	Mean	53.83	58.34	4.59	
	Var	99.23	87.40	53.60	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		4.84‡	2.15†	2.98‡	

Effect of Testing Periods and Length of Time in the Program. Two general variables that might have had a confounding effect on the analyses concerned the time lag between the beginning of Head Start classes and the dates on which the children were actually tested. Academically oriented sponsors in particular have claimed that delays in testing prejudice evaluation by raising "initial" scores since a significant amount of learning is achieved by the children in the first six weeks of the program.

Accordingly, the interval between the time classes started (as given to SRI by personal reports by the Head Start directors) and the time individual children were tested* was used to group children into three categories: those who were tested up to 15 days after the start of classes (N = 50); those who were tested more than 15 and up to 30 days after the start of classes (N = 400); and those who were tested more than 30 days after the start of classes (N = 1,000).† Tables D-20 through D-23 of Appendix D display the findings. Regardless of prior Head Start experience, there was no systematic increase in initial scores over all children due to the effects of time elapsed before initial testing. Significant differences occurred between children with prior Head Start experience who were tested in less than 15 days and those tested more than 15 but less than 30 days after the start of classes on both the preacademic and general cognitive measures. The group tested more than 30 days after the start of classes had lower mean scores than the second group. Perhaps the suspected effect occurs only for the programs of certain (academically oriented) sponsors. This hypothesis was not directly tested, but sponsored children with prior Head Start experience showed a direct relationship between initial score and time before testing on the preacademic measure (see Tables D-24 to D-31 of Appendix D), but there were no other systematic effects. Overall, it seemed that the time elapsed before testing did not significantly affect children's initial scores.

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* Children were never given more than one test per day, but generally all tests for a given child were given within a week of each other. Thus only one test day was used.

† Another major cut that had to be considered in looking at these initial values was the complicating effect of prior Head Start.

A second question raised by the sponsors involved the length of time children had actually participated in the Head Start program and the possible effects of variable time lengths on child performance. At least two factors were significant here:

1. If testing at a site started relatively late and ended early, data might show spurious site level reductions in program effectiveness; however, the important factor for the evaluation was not how long the program lasted at a given site, but rather how long the interval was between initial and final tests.

2. Children who in general are happy in preschool attend more and thus get more from the program in an interactive fashion (they learn more because they are satisfied and more again because they attend more).

A measure of time in attendance between testing periods was formed by subtracting total absence figures from the interval between Fall and Spring test dates. The measure was used to classify children into two groups: those who attended up to 140 days of classes (estimating 20 class days to the month) and those who attended more than 140 days.* The Ns were approximately 1,200 and 300, respectively. The results of this test are summarized in Tables D-32 to D-35 of Appendix D. For unsponsored children final levels on the general cognitive measure were higher for children with a relatively high number of days of attendance; there were no other significant effects. There is insufficient evidence either to accept or reject the overall hypothesis of effects due to time of attendance; replication of the study and the breakdown by sponsor types that is possible with larger sample sizes may provide an answer to this question.

In connection with the above child performance question, two indirect measures of general child satisfaction with the sponsors' programs were available: the average number of days absent for each child in the program and the number of dropouts. These figures were compared with the

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* The figure of 140 days was not chosen arbitrarily; it was felt that the upper tail of the attendance distribution should show the effects sought. Different numbers were tried (130 days, for instance) to find a tail for the distribution that did not place all of a sponsor's children in the lower groups a priori and yet had a large enough N to show effects; 140 days was the largest such number possible.

overall values for the unsponsored programs to obtain estimates of relative differences. As the Table 81 shows, there are no differences between the values of these figures for different types of PV program sponsors or for sponsored programs overall compared with overall unsponsored programs.

Table 81

ABSENCES AND DROPOUTS

Group	Absences: Number of Children with Information	Absences: Mean Number of Days	Dropouts*: Number of Children	Dropouts*: Percent of All Children Tested in Fall
Sponsored				
Preacademic/presciptive	271	17.4	56	16.7%
Cognitive discovery	438	19.9	112	21.6
Discovery oriented	311	14.3	61	17.0
Total	1,020	17.5	229	18.9%
Unsponsored	854	16.7	152	16.2
Grand total	1,874	17.1	381	17.6%

* Children with at least one initial but no final tests.

The Noncognitive Measures

In addition to the two measures described in an earlier section of this chapter and used throughout as descriptors of child performance, three other summary measures were used in the preliminary analysis of the 1969-70 Head Start PV child cohort; they also have been described earlier. The two measures used above as descriptors of the changes in the children due to Head Start dealt with areas traditionally identified as broadly "academic," namely, the development of skills summarized by the phrase "preacademic readiness" and the enhancement of general cognitive powers. The remaining three measures attempted to isolate variations in behaviors in a much broader field: the area of social, emotional, "noncognitive" factors.

Description of the Measures

The Motor Inhibition and Birch scoring procedures were described in detail in Chapter IV. The measures derived were as follows:

1. Motor Inhibition. Children taking this test performed three different tasks twice, first at their own speed and then in obedience to instructions to proceed as slowly as they could. The three tasks were: drawing a line, walking on a board, and towing a toy car with the winch of a toy tow truck. The tasks were meant to test the child's ability to inhibit his own motor impulses and test, respectively, motor inhibition in the areas of: hand-eye coordination, large motor coordination, and small motor coordination. The time elapsed for the performance of all six tasks was measured, and the difference between slow and fast times for each task was summed to give the final score for each child. Children with a high level of ability to inhibit motor impulses would then have large (slow-fast) differences, and hence a high score.

2. Hertzig-Birch measure of spontaneous response extension. Each item of the Stanford-Binet IQ test (administered to a random half of the children) was scored according to the Hertzig-Birch coding of respondent response style instead of being scored in the regular correct/incorrect manner. The complete list of possible codes are described in Appendix C and are noted here briefly:

Correct response	1.	Delimitation
	2.	Spontaneous Extension
Incorrect response	3.	Incomplete
	4.	Negation
	5.	Substitution
	6.	Competence
	7.	Aid
	8.	Passive
	9.	Unscoreable.

The measure of spontaneous elaboration was devised as the ratio of spontaneously extended responses (both verbal and nonverbal) to all correct responses.

3. Hertzig-Birch measure of passive/substitutive response styles. This measure was obtained for the same children as the second noncognitive variable above and in a similar manner; it consists of the ratio of passive and substitutive (verbal and nonverbal) responses to all incorrect responses.

Both of the Hertzig-Birch-derived variables had ranges of 0.0 to 1.0 and were skewed, with a number of children with values close to 0.0.

It should be clear to the reader that the measures selected do not in any sense provide coverage of the noncognitive area. These measures were selected for a multiplicity of theoretical and practical reasons, not the least of which were preliminary evidence of variability and relation to characteristics considered of importance to Head Start PV sponsors.

The characteristics of each of the variables are considered separately below. Table 82 contains the fall and spring intercorrelations of the three variables over all children who had some initial and final test data. These values are low, suggesting at best that the noncognitive area is complexly interrelated for the fairly diverse group of children receiving Head Start treatment. Of some interest is the fall-to-spring decline in the intercorrelation between the spontaneous extension and

Table 82

CORRELATIONS OF NONCOGNITIVE MEASURES

Measures		Fall Scores			Spring Scores			Fall to Spring	
		1	2	3	1	2	3		
Motor Inhibition	1	1.00	-.07	-.03	1.00	.02	-.01	.06*,	N = 1457
Spontaneous Elaboration	2	-.07	1.00	.25*	.02	1.00	-.05	.06 ,	N = 779
Passivity/Substitution	3	-.03	.25*	1.00	-.01	-.05	1.00	.13†,	N = 781
Range of N		714 to 818			693 to 781				

* $p < .05$.
† $p < .01$.

passive/substitution variables (from .25 to -.05). Possible causes of this change will be checked more thoroughly when the behavior of each of these variables is considered. Being in sponsored as opposed to regular Head Start programs did not make a substantial difference in either initial or final noncognitive measure intercorrelation values (see Tables D-36 and D-37 of Appendix D).

Of somewhat more interest were the fall-to-spring correlations for each of the variables, displayed in Table 82 for all children. Again the values were low. Children in Head Start (both sponsored and unsponsored) were undergoing an experimental treatment, the effect of which was not predictable for such untested measures as these. It might be expected, though, that since unsponsored children received "less treatment" than children in sponsored programs, they showed less relative changes than sponsored children and had higher fall-to-spring correlations. As table D-38 of Appendix D shows, if anything, the opposite is the case. It can still be argued that unsponsored Head Start is a treatment; thus tests to this point cannot choose between a hypothesis of measure unreliability and one of lack of initial-final correlation due to treatment effects.

The Motor Inhibition Measure

Table 83 presents the Fall, Spring, (adjusted for maturation) and change score distributions for all children for the measure of motor inhibition. As can be seen from the histograms, Spring and gain variances increased markedly, principally because of an increase in distribution skewness toward the high-score end.* In other words, some children made much higher gains than others. In contrast, mean fall-to-spring changes were small, amounting overall to some three-tenths of a standard deviation. Table 84 displays the same distributions

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* For the raw (unstandardized) data for this variable, statistical consultants recommended a logarithmic transformation to reduce some of the skewness in the distributions. This recommendation came too late to be used in the analysis. This is a conservative error in that the raw data show a direct relation between mean and variance values and hence the standardization and maturation adjustments would tend to be diminished and the possibility of significant findings would be decreased. However, only reanalyses will show whether the elimination of this source of noise would cause the motor inhibition variable to show significant, if not substantial, differences.

Table 83

MOTOR INHIBITION MEASURE: SCORES FOR ALL CHILDREN

FALL

SC	FREQ	PCT
0	0	0
2	1	0
4	0	0
6	1	0
8	1	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	1	0
22	1	0
24	5	0
26	2	0
28	4	0
30	1	0
32	5	0
34	14	0
36	10	0
38	25	1
40	43	2
42	69	4
44	117	7
46	159	10
48	211	13
50	217	14
52	179	11
54	113	7
56	91	5
58	59	3
60	46	3
62	26	1
64	22	1
66	20	1
68	17	1
70	11	0
72	9	0
74	11	0
76	6	0
78	3	0
80	3	0
82	0	0
84	2	0
86	4	0
88	0	0
90	0	0
92	0	0
94	2	0
96	2	0
98	3	0
100	2	0

N= 1518 M= 49.81 V= 82.94

SPRING

SC	FREQ	PCT
0	15	1
2	1	0
4	2	0
6	0	0
8	0	0
10	0	0
12	0	0
14	1	0
16	0	0
18	1	0
20	0	0
22	1	0
24	0	0
26	0	0
28	0	0
30	2	0
32	1	0
34	2	0
36	7	0
38	9	0
40	28	1
42	55	3
44	100	6
46	130	8
48	185	12
50	195	13
52	136	9
54	114	7
56	80	5
58	58	3
60	53	3
62	34	2
64	36	2
66	28	1
68	21	1
70	22	1
72	20	1
74	11	0
76	16	1
78	13	0
80	6	0
82	9	0
84	3	0
86	0	0
88	4	0
90	5	0
92	8	0
94	5	0
96	3	0
98	5	0
100	34	2

N= 1458 M= 53.25 V= 279.15

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	2	0
-92	0	0
-88	2	0
-84	0	0
-80	4	0
-76	1	0
-72	0	0
-68	1	0
-64	1	0
-60	2	0
-56	1	0
-52	1	0
-48	3	0
-44	4	0
-40	3	0
-36	1	0
-32	5	0
-28	4	0
-24	5	0
-20	12	0
-16	29	1
-12	45	3
-8	100	6
-4	172	11
0	229	15
4	224	15
8	187	12
12	112	7
16	87	5
20	58	3
24	40	2
28	33	2
32	14	0
36	20	1
40	7	0
44	7	0
48	6	0
52	7	0
56	4	0
60	7	0
64	5	0
68	2	0
72	1	0
76	1	0
80	2	0
84	1	0
88	1	0
92	1	0
96	1	0
100	2	0

N= 1457 M= 3.39 V= 343.38

SPRING - FALL CHANGE, T= 7.00

Table 84

MOTOR INHIBITION MEASURE: SCORES FOR ALL CLASSES

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	1	0
42	0	0
44	4	2
46	8	5
48	28	20
50	36	26
52	28	20
54	16	11
56	8	5
58	5	3
60	1	0
62	0	0
64	1	0
66	0	0
68	0	0
70	1	0
72	0	0
74	0	0
76	0	0
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 137 M= 49.97 V= 14.76

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	0	0
42	0	0
44	1	0
46	8	5
48	15	10
50	31	22
52	25	18
54	14	10
56	14	10
58	7	5
60	7	5
62	2	1
64	1	0
66	2	1
68	1	0
70	2	1
72	4	2
74	0	0
76	1	0
78	0	0
80	0	0
82	1	0
84	0	0
86	0	0
88	1	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 137 M= 53.04 V= 52.16

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	0	0
-20	0	0
-16	0	0
-12	1	0
-8	2	1
-4	15	10
0	35	25
4	38	27
8	19	13
12	11	8
16	8	5
20	4	2
24	1	0
28	1	0
32	1	0
36	0	0
40	1	0
44	0	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 137 M= 3.03 V= 57.56

SPRING - FALL CHANGE, T= 4.37

as Table 83, but for all classes. As can be seen, there is some variability between classes that might be explained by teacher, site or program-level factors.

Data summaries for this variable are contained in Appendix D. The findings are described below along with the identification of the appropriate reference table.

- There were no significant differences in initial, final, or change levels between sponsored and unsponsored children (see Table D-39, Appendix D).

- Children with no prior Head Start experience achieved significantly higher spring levels than children with three months or less of Head Start experience. The gain levels were not significantly different, and children with more than three months of previous Head Start made intermediate gains to a lower final level than that of children without prior Head Start (see Table D-40, Appendix D).

- There were no SES or sex-related differences in initial, final, or change levels (see Tables D-41 and D-42, respectively, in Appendix D).

- There were no class level effects identifiable by any of the class level variables, although well-implemented, Discovery Oriented classes seemed to lead to higher final levels of motor inhibition than the other program types (see Table D-43, Appendix D, but the number of classes is very small for these comparisons).

The Hertzig-Birch Measure of Spontaneous Extension

Table 85 presents the distributions for fall and spring and the distribution of fall-to-spring difference scores for the spontaneous extension variable for all children. As the histograms show, over all children variable means decreased slightly from fall to spring and the variance also decreased. Change variance increased, and the distribution of change scores was skewed toward the lower scores. Initial and final distributions were also skewed, with a lower score "plateau"

Table 85

SPONTANEOUS EXTENSION MEASURE: SCORES FOR ALL CHILDREN

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	0	0
42	1	0
44	10	2
46	263	32
48	264	32
50	75	9
52	45	5
54	29	3
56	20	2
58	15	1
60	10	1
62	10	1
64	11	1
66	4	0
68	8	0
70	3	0
72	1	0
74	5	0
76	4	0
78	3	0
80	5	0
82	6	0
84	1	0
86	2	0
88	1	0
90	1	0
92	2	0
94	2	0
96	0	0
98	2	0
100	6	0

N= 818 M= 50.00 V= 98.16

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	0	0
42	1	0
44	13	1
46	287	36
48	318	40
50	57	7
52	25	3
54	24	3
56	18	2
58	7	0
60	6	0
62	7	0
64	4	0
66	0	0
68	0	0
70	3	0
72	0	0
74	0	0
76	1	0
78	1	0
80	0	0
82	1	0
84	2	0
86	0	0
88	1	0
90	1	0
92	0	0
94	0	0
96	0	0
98	0	0
100	4	0

N= 781 M= 47.99 V= 67.98

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	1	0
-80	0	0
-76	0	0
-72	0	0
-68	1	0
-64	0	0
-60	2	0
-56	1	0
-52	0	0
-48	2	0
-44	2	0
-40	0	0
-36	4	0
-32	7	0
-28	9	1
-24	4	0
-20	12	1
-16	8	1
-12	20	2
-8	30	3
-4	67	8
0	285	36
4	253	32
8	32	4
12	16	2
16	7	0
20	3	0
24	2	0
28	2	0
32	2	0
36	1	0
40	1	0
44	2	0
48	0	0
52	0	0
56	0	0
60	0	0
64	1	0
68	1	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	1	0

N= 779 M= -2.02 V= 157.34

SPRING - FALL CHANGE, T= -4.39

that corresponds to raw scores close to the lower end of the measure range, 0.0. As has been mentioned earlier, the measure is a composite, and its values are determined by

$$x = \frac{A + B}{A + B + C + D}$$

where

x is the raw score

A is the frequency of verbal extended correct responses

B is the frequency of nonverbal extended correct responses

C is the frequency of verbal delimited correct responses

D is the frequency of nonverbal delimited correct responses.

To understand the behavior of the variable, the characteristics of each of its component parts must be clarified. Tables 86 and 87 summarize the mean levels for each of the components of the spontaneous extension measure for each of the sponsor types, for all sponsored programs, for unsponsored children, and over all children for fall and spring, respectively. As will be noted from the table, each of the variables that made up the measure remained relatively constant over each of the sponsor groupings and in the comparison with the unsponsored program average. Further, the delimited correct responses (verbal and nonverbal) remained roughly constant from fall to spring; it is the raw frequency of extended responses (again, both verbal and nonverbal) that decreased markedly and uniformly from the initial to the final testing period and led to the decline in the measure of spontaneous extension already noted.

Table D-44 of Appendix D presents the fall-to-spring correlations of the component variables of the measure of spontaneous extension for all children. In general, these fall-to-spring correlations did not differ for sponsored and unsponsored children. The table shows that significant correlations occurred only for verbal delimited responses and for nonverbal extended responses (as well as for both total delimited and extended responses).

Table 86

FALL RAW MEAN VALUES FOR THE COMPONENTS OF THE SPONTANEOUS EXTENSION MEASURE*

Component	Sponsor Programs: Preacademic/ Prescriptive (N = 120)	Sponsor Programs: Cognitive Discovery (N = 186)	Sponsor Programs: Discovery Oriented (N = 157)	All Sponsored Classes (N = 463)	All Unsponsored Classes (N = 385)	Total (N = 848)
Delimited						
1. Verbal	29.62	27.73	30.21	29.06	28.41	28.76
2. Nonverbal	35.17	34.16	39.46	36.22	37.47	36.79
Extended						
3. Verbal	.58	.49	.56	.54	1.15	.81
4. Nonverbal	2.75	2.56	1.83	2.36	2.96	2.64
5. Total delimited	64.78	61.89	69.67	65.28	65.88	65.55
6. Total extended	3.33	3.05	2.39	2.90	4.11	3.45
7. Sum of 5 and 6	68.11	64.94	72.06	68.18	69.99	69.00
8. Ratio of 6 to 7	.049	.047	.033	.043	.059	.050

* For explanation of variable categories, see text.

Table 87

SPRING RAW MEAN VALUES FOR THE COMPONENTS OF THE SPONTANEOUS EXTENSION MEASURE*

Component	Sponsor Programs: Preacademic/ Prescriptive (N = 120)	Sponsor Programs: Cognitive Discovery (N = 186)	Sponsor Programs: Discovery Oriented (N = 157)	All Sponsored Classes (N = 463)	All Unsponsored Classes (N = 385)	Total (N = 848)
Delimited						
1. Verbal	28.35	24.27	27.54	26.44	26.24	26.35
2. Nonverbal	38.89	40.02	41.10	40.09	39.46	39.81
Extended						
3. Verbal	.15	.10	.11	.12	.16	.14
4. Nonverbal	.52	1.11	.89	.88	1.23	1.04
5. Total Delimited	67.24	64.29	68.64	66.53	65.70	66.16
6. Total Extended	.67	1.21	.99	1.00	1.39	1.18
7. Sum of 5 and 6	67.91	65.50	69.63	67.53	67.09	67.34
8. Ratio of 6 to 7	.010	.019	.014	.015	.021	.018

* For explanation of variable categories, see text.

Given that the spontaneous extension measure had relatively small fall-to-spring change and skewed distributions, it was expected that traditional tests of significance would not be very powerful in distinguishing between levels of treatment effect with this variable.

Student's t, in particular, would be a conservative test of significance.* Breakdowns of the overall sample into various treatment categories resulted in the following findings for this variable:

- Sponsored children initially had significantly higher levels of spontaneous extension than did unsponsored children; both groups had similar fall-to-spring mean drops in standard scores, so that initial differences between the groups were not eliminated (see Table D-45, Appendix D).

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* Both this measure and the passivity/substitution variable were considered to be too skewed in distribution for the use of Student's t to be anything but a conservative guide. It was noted that both measures were similar to gamma distributions, with clearly marked lower score bounds (corresponding to values close to zero for the raw ratio data). If a is the lower bound and x the variable value, then let

$$y = x - a \quad ,$$

and the gamma distribution will be given by

$$\frac{\beta(\beta y)^{c-1}\, e^{-\beta y}}{\Gamma(c)}$$

where

β and c are parameters of the distribution
e and $\Gamma(c)$ are mathematical functions

For this function, the mean is given by

$$\bar{y} = c/\beta \quad , \qquad \text{and the variance by}$$

$$s^2 = c/\beta^2 \quad .$$

If c is constant, tests of significance can be readily performed using the F test with 2Nc degrees of freedom. For the treatment variables detailed here, it was quickly found that values of c were not constant for either the spontaneous extension or the passivity/substitution measure. Although this possible analysis did not work, careful study of the distribution in the future may lead to a suitable normalizing transformation.

- There were few discernible effects of SES on either sponsored or unsponsored children, except for possible initial effects: children of relatively high status tended to have a somewhat higher initial level of spontaneous response elaboration (for sponsored children, mean difference significant at .05 level). A year of Head Start tended to produce identical final levels regardless of SES and sponsorship, and differences in change scores were not large enough to reach statistical significance at traditional levels (see Tables D-46 and D-47 of Appendix D).

- The level of sponsored teachers' educational background and experience was inversely related to initial levels on the spontaneous extension variable. The effect of this teacher characteristic over the year of sponsored Head Start was to give the children of teachers with relatively high educational backgrounds slight gains in spontaneous elaboration, whereas teachers with medium and low educational backgrounds had net losses. Final levels for children of teachers classified as high were significantly higher than those for teachers classified as low (see Table D-48, Appendix D).

- The level of teacher cognitive orientation was direct and nonlinearly related to initial performance levels on the spontaneous extension measure for children in sponsored programs; the Fall-to-Spring change effect, however, was to bring everyone to the same final levels. For children in unsponsored programs initial scores on all levels of teacher cognitive orientation were the same, and program effects were to give the children of teachers rated as high in cognitive orientation significantly higher gains and final scores than to the children of teachers rated as moderate or low in cognitive orientation (see Tables D-49 and D-50 in Appendix D).

The Hertzig-Birch Measure of Passivity/Substitution

Table 88 presents Fall, Spring (adjusted for maturation) and Fall-to-Spring change standard score distribution histograms for the measure of passivity/substitution for all children, and Table 89 makes the

Table 88

PASSIVITY/SUBSTITUTION MEASURE: SCORES FOR ALL CHILDREN

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	5	0
38	4	0
40	35	4
42	116	14
44	136	16
46	82	9
48	70	8
50	61	7
52	43	5
54	46	5
56	46	5
58	27	3
60	15	1
62	23	2
64	22	2
66	21	2
68	11	1
70	14	1
72	11	1
74	8	0
76	5	0
78	4	0
80	3	0
82	4	0
84	1	0
86	4	0
88	2	0
90	0	0
92	1	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 820 M= 50.00 V= 98.05

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	1	0
36	2	0
38	6	0
40	8	1
42	200	25
44	154	19
46	98	12
48	60	7
50	44	5
52	23	2
54	29	3
56	19	2
58	24	3
60	14	1
62	14	1
64	10	1
66	11	1
68	16	2
70	6	0
72	7	0
74	5	0
76	4	0
78	4	0
80	6	0
82	2	0
84	2	0
86	1	0
88	2	0
90	3	0
92	0	0
94	1	0
96	1	0
98	0	0
100	4	0

N= 781 M= 48.62 V= 122.08

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	2	0
-36	7	0
-32	4	0
-28	13	1
-24	15	1
-20	19	2
-16	27	3
-12	55	7
-8	65	8
-4	87	11
0	135	17
4	141	18
8	77	9
12	45	5
16	29	3
20	16	2
24	14	1
28	11	1
32	5	0
36	4	0
40	1	0
44	2	0
48	1	0
52	2	0
56	1	0
60	1	0
64	0	0
68	0	0
72	1	0
76	0	0
80	0	0
84	1	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 781 M= -1.45 V= 191.81

SPRING - FALL CHANGE, T= -2.63

Table 89

PASSIVITY/SUBSTITUTION MEASURE: SCORES FOR ALL CLASSES

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	1	0
42	3	2
44	18	13
46	11	8
48	24	18
50	13	9
52	16	12
54	14	10
56	12	9
58	5	3
60	6	4
62	5	3
64	1	0
66	0	0
68	2	1
70	1	0
72	0	0
74	0	0
76	0	0
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 132 M= 50.18 V= 35.11

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	0	0
34	0	0
36	0	0
38	0	0
40	1	0
42	14	10
44	24	18
46	18	13
48	15	11
50	16	12
52	14	10
54	9	6
56	8	6
58	5	3
60	3	2
62	1	0
64	2	1
66	0	0
68	0	0
70	0	0
72	0	0
74	0	0
76	1	0
78	0	0
80	0	0
82	1	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 132 M= 48.30 V= 41.19

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	2	1
-20	0	0
-16	3	2
-12	5	3
-8	14	10
-4	25	18
0	31	23
4	22	16
8	21	15
12	4	3
16	3	2
20	1	0
24	0	0
28	1	0
32	0	0
36	0	0
40	0	0
44	0	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 132 M= -1.89 V= 60.31

SPRING - FALL CHANGE, T= -2.47

NC DATA FOR ID= 8 47351

same presentation over all classes. As with the measure of spontaneous extension, the measure of passivity/substitution is a composite, and its form is given by

$$X = \frac{A + B + C}{\text{Total incorrect responses}}$$

where

X is the score on the measure

A is the raw frequency of verbal substitutive behaviors

B is the raw frequency of nonverbal substitutive behaviors

C is the raw frequency of occurrence of passive behavior in response to a stimulus

The denominator is the summed frequency of all incorrect (both solution oriented and other) responses to all items of the Stanford-Binet IQ test presented to the child.

Again, this variable is definitely not normal in distribution and is highly skewed toward higher score values with a definite "floor." The cause is the ratio nature of the measure, with a high proportion of values close to a raw score of 0.0. Overall, Tables 88 and 89 show that means decreased slighly from initial to final testing periods while variances increased somewhat. Tables 90 and 91 attempt to show the cause of the changes in mean values. As can be seen from the table, the cause of the Fall-to-Spring decrease was again a general decrease in the numerator with the denominator of the ratio measure (the total number of incorrect responses) remaining relatively constant from Fall to Spring.*

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* Although almost all treatment categories showed similar Fall-to-Spring changes in Tables 90 and 91, children in Preacademic/ Prescriptive programs showed higher values in both Fall and Spring than other groups and no evidence of a Fall-to-Spring decline. The possibility of sampling treatment interaction in the explanation of this difference should not be ignored; but if the finding is

Table 90

FALL RAW MEAN VALUES FOR THE COMPONENTS OF THE PASSIVITY/SUBSTITUTION MEASURE*

Component	Sponsor Programs: Preacademic/ Prescriptive (N = 120)	Sponsor Programs: Cognitive Discovery (N = 186)	Sponsor Programs: Discovery Oriented (N = 157)	All Sponsored Classes (N = 463)	All Unsponsored Classes (N = 385)	Total (N = 848)
Substitution						
1. Verbal	.93	1.18	1.03	1.06	1.35	1.20
2. Nonverbal	2.27	2.66	1.71	2.24	3.18	2.67
3. Passivity	6.56	2.57	2.85	3.70	3.04	3.40
4. Total (numerator)	9.76	6.41	5.59	7.00	7.57	7.27
5. Work Incorrect	33.18	35.58	40.26	36.54	36.92	36.71
6. Nonwork Incorrect	13.89	12.01	15.58	13.70	16.05	14.77
7. Total Incorrect	47.07	47.59	55.84	50.24	52.97	51.48
Ratio of 4 to 7	.207	.135	.100	.139	.143	.141

* For explanation of variable categories, see text.

Table 91

SPRING RAW MEAN VALUES FOR THE COMPONENTS OF THE PASSIVITY/SUBSTITUTION MEASURE*

Component	Sponsor Programs: Preacademic/ Prescriptive (N = 120)	Sponsor Programs: Cognitive Discovery (N = 186)	Sponsor Programs: Discovery Oriented (N = 157)	All Sponsored Classes (N = 463)	All Unsponsored Classes (N = 385)	Total (N = 848)
Substitution						
1. Verbal	.72	.26	.47	.45	.40	.43
2. Nonverbal	1.70	.59	1.12	1.06	1.00	1.03
3. Passivity	9.32	2.96	2.75	4.54	3.21	3.93
4. Total (numerator)	11.74	3.81	4.34	6.05	4.61	5.39
5. Work Incorrect	38.96	32.99	36.00	35.56	39.59	37.39
6. Nonwork Incorrect	17.25	18.56	15.32	17.13	13.29	15.39
7. Total Incorrect	56.21	51.55	51.32	52.69	52.88	52.78
Ratio of 4 to 7	.209	.074	.085	.115	.087	.102

* For explanation of variable categories, see text.

Table 92 displays Fall and Spring intercorrelations and Fall-to-Spring correlations for the component variables of the measure of passivity and substitution. The substantial Fall-to-Spring correlation of the passivity variable should be noted: apparently Head Start treatment did not have an overwhelming effect on the extent of passive response styles (and it should be noted that sponsored and unsponsored children had closely similar Fall-to-Spring correlations for this variable). It should also be clear that passive and substitutive behaviors were not strongly related to each other.

As with the measure of spontaneous extension, the skewness of the passive/substitutive response-style variable, or the lack of strong Fall-to-Spring correlation, or intermeasure intercorrelation makes interpretation of findings from analysis of treatment effect levels with this variable preliminary and tentative. Because the tests of significance using Student's t were judged to be conservative, the following findings are reported for further consideration:

- There was no discernible effect of sponsorship on initial, final, or change mean values of the measure (see Table D-51, Appendix D).

- There was no consistent effect of time before testing attributable to the measure of passivity/substitution (see Tables D-52 and D-53, Appendix D).

- The amount of prior Head Start experience was directly related to initial values for all children. Generally, the effect of a year of Head Start on values of the measure was to preserve initial inequalities so that final test values show the same direct relationship as initial values (see Tables D-54 through D-56, Appendix D).

- There was no relationship between sex or SES levels and initial, final, or change standard mean scores.

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replicated with suitable controls it could be of extreme interest. The cause of the higher mean ratio values in both Fall and Spring was a markedly higher mean value on passive responses for the Pre-academic group; the fact that such anomalous values occurred in both Fall and Spring administrations points away from the possibility of a pure treatment effect.

Table 92

PASSIVITY/SUBSTITUTION VARIABLE COMPONENT CORRELATIONS
N = 848

		Fall Scores				Spring Scores				Fall to Spring
		1	2	3	4	1	2	3	4	
Substitution										
Verbal	1	1.00	.27†	.03	.66†	1.00	.18†	.08†	.47†	.10†
Nonverbal	2	.27†	1.00	-.05	.90†	.18†	1.00	-.04	.95†	.01
Passivity	3	.03	-.05	1.00	-.03	.08*	-.04	1.00	-.01	.02
Total substitution	4	.66†	.90†	-.03	1.00	.47†	.95†	-.01	1.00	.33†

* $p < .05$
† $p < .01$

- The level of in-service training among unsponsored teachers was found to be nonlinearly related to final and change values. Children in the classes of teachers rated Medium in extent of in-service training achieved the largest reductions in standard scores and achieved the lowest final levels and those in the classes of teachers rated Low on this variable made gains in passivity/substitution and achieved the highest final levels (Medium versus High final and change score differences significant at .01 level). Children with teachers of relatively high training achieved intermediate final scores and moderate reductions in standard scores (see Table D-57, Appendix D).

XII PARENTS AND CHILDREN

Among the many issues in early education, few have generated more intense discussion than the role of the parent in compensatory programs. Some educators attribute many of the child's developmental problems to parental inadequacies; these researchers, while fully supporting the dignity of individuals and the importance of job training and other adult-oriented programs, nonetheless would emphasize the need for the school, via the teacher, to supply the educational stimulation not provided by low-income parents. Others emphasize the importance of the mother's influence on the child's linguistic, cognitive, and personal development and urge that compensatory programs either focus on or include parent-as-educator training.

Parent participation was an integral part of early demonstration programs, such as Gray's (1965), and a spread of benefits to younger children ascribed to changes in maternal skills and attitudes was reported almost as early as initial changes in the target children. Head Start has attempted to institutionalize the participation of parents as decision-makers (through Policy Advisory Committee representation) and as associates in child development (through volunteer work in classes, visits to the centers, and special courses). In general, planned variation sponsor models try to develop both parent and teacher skills. For one PV sponsor's model, changes in the mother's teaching skills are central to the program.

Thus, in recognition of the importance of parent skills and attitudes as mediators of child development, the Hess-Shipman Eight-Block Sort, mother-child interaction task and a parent questionnaire were included in the planned variation assessment. The procedures used in the administration of the Eight-Block Sort Task and the parent questionnaire are described in Chapter IV; the specification of the variables is given in detail in Appendix G.

Eight-Block Sort, Mother-Child Interaction

Description of the Indicators

For analysis of the Eight-Block Sort data, five indicators of mother-child interaction were selected:

- Verbal communication: This variable represents the total amount of task-related communication from mother to child. Mothers who talked a great deal to the child about the task during the task situation received the maximum raw score of 8 on a 0 to 8 scale.

- Task description: A high raw score of 6 indicates that the mother, in teaching her child, (1) oriented him to the nature of the task and (2) provided him with instruction about task dimensions and task performance.

- Regulation: A high score of 7 indicates a mother who used praise and verbally expressed approval in motivating the child and in giving him information on his performance. A low score of 0 describes a mother who used blame and physically expressed disapproval in providing information to a child on his responses.

- Child verbal responsiveness: An index of how much the child talked to his mother about aspects of the task, this variable is similar to that of maternal verbal communication. The raw score range for this variable is 0 to 9.

- Child success: Correct performance on the Eight-Block Sort task is a complex measure, reflecting both the ability of the child to learn a new, abstract, conceptualization task and the mother's skill as a teacher. The raw score range for this variable is 0 to 8.

- Six hundred and fifty-two mothers and children participated in the Eight-Block Sort Task. Table 93 indicates the number of mother-child pairs for which data are available on the 5 measures of mother-child interaction.

Table 93

MOTHER-CHILD PAIRS FOR THE EIGHT-BLOCK SORT

Variable	Group*	Fall	Spring
1. Verbal communication (mother)			
	S	325	310
	U	325	313
2. Task description (mother)			
	S	301	294
	U	325	313
3. Regulation (mother)			
	S	316	302
	U	315	301
4. Verbal responsiveness (child)			
	S	301	294
	U	322	313
5. Success (child)			
	S	325	311
	U	327	313

* S = Sponsored.
U = Unsponsored.

Findings from the Eight-Block Sort Data

Changes in Mother and Child Behavior. Scores were standardized to a mean of 50 and a standard deviation of 10 by the same procedure described in Chapter XI for the child performance measures. For the child variables this procedure allows for effects due to maturation; for the maternal variables this procedure allows for changes in the mother's behavior that may be due to maturation of the child. For example, a mother may interact differently with her child when he is four-and-a-half than she did when he was four years old. For this sample, however, there were no consistent child age-related differences in maternal behavior in the Fall tests. Distributions of the Fall 1969 and Spring 1970 standardized scores (SC) for all mothers and children are shown on Tables 94 through 98 for the five variables examined. These tables include the Ns, means (M), and variances (V) and indicate that:

- There were no significant fall-spring changes in task description for the mothers; the change distribution is fairly symmetrical with a mean of approximately 0.0 and a standard deviation of 11. There is no indication that, in general, the mothers were becoming better teachers in the sense of knowing how to orient a child to a task, to sequence task components, and to provide the cognitive framework for thinking, understanding, and succeeding (see Table 95).

- Maternal verbal communication, maternal regulation, and child verbal responsiveness changed substantially from fall to spring. In the spring, mothers talked more to their children and children talked more to their mothers. As Table 97 shows, the initial scores on child verbal responsiveness were bimodal: 218 children (34% of the total) had raw fall scores of 0 verbal communication with their mothers (standard score peak at 42 standard points). In the spring, however, the distribution was more symmetrical. Maternal use of praise rather than blame showed even greater changes than verbal communication.

  These data suggest that Head Start experience is associated with changes in the way mothers and children relate to each other--a change from less verbal mother-to-child communication to more verbal mother-child intercommunication and from blame for what is wrong as a means of behavioral regulation to praise for what is right.

Table 94

EIGHT-BLOCK SORT: VERBAL COMMUNICATION SCORES FOR ALL CHILDREN

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	1	0
22	0	0
24	2	0
26	0	0
28	5	0
30	10	1
32	6	0
34	1	0
36	38	5
38	19	2
40	2	0
42	61	9
44	49	7
46	4	0
48	49	7
50	104	15
52	18	2
54	15	2
56	100	15
58	48	7
60	10	1
62	27	4
64	48	7
66	6	0
68	9	1
70	1	0
72	11	1
74	4	0
76	0	0
78	2	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 659 M= 50.00 V= 97.53

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	1	0
20	1	0
22	3	0
24	4	0
26	7	1
28	5	0
30	2	0
32	4	0
34	8	1
36	24	3
38	15	2
40	15	2
42	36	5
44	11	1
46	0	0
48	45	7
50	53	8
52	12	1
54	11	1
56	159	25
58	36	5
60	12	1
62	25	4
64	52	8
66	10	1
68	33	5
70	3	0
72	22	3
74	0	0
76	7	1
78	1	0
80	3	0
82	0	0
84	0	0
86	3	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 623 M= 52.64 V= 129.71

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	2	0
-32	3	0
-28	8	1
-24	15	2
-20	15	2
-16	23	3
-12	36	5
-8	31	4
-4	60	9
0	64	10
4	56	9
8	100	16
12	43	6
16	63	10
20	28	4
24	36	5
28	11	1
32	15	2
36	7	1
40	3	0
44	0	0
48	2	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 621 M= 2.65 V= 209.08

SPRING - FALL CHANGE. T= 4.42

Table 95

EIGHT-BLOCK SORT: TASK DESCRIPTION SCORES FOR ALL CHILDREN

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	4	0
22	1	0
24	4	0
26	4	0
28	13	2
30	2	0
32	1	0
34	16	2
36	25	3
38	13	2
40	27	4
42	25	3
44	15	2
46	47	7
48	56	[illegible]
50	13	2
52	23	3
54	74	12
56	49	7
58	5	0
60	121	19
62	80	12
64	0	0
66	3	0
68	1	0
70	0	0
72	0	0
74	0	0
76	0	0
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 626 M= 50.00 V= 97.60

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	1	0
30	1	0
32	3	0
34	6	0
36	7	1
38	13	2
40	12	1
42	39	6
44	30	4
46	26	4
48	39	6
50	113	18
52	67	11
54	30	4
56	126	20
58	0	0
60	60	9
62	23	3
64	0	0
66	4	0
68	6	0
70	0	0
72	0	0
74	1	0
76	0	0
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 607 M= 50.32 V= 46.50

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	2	0
-24	5	0
-20	6	0
-16	21	3
-12	17	2
-8	95	15
-4	98	16
0	68	11
4	96	15
8	67	11
12	42	6
16	30	4
20	17	2
24	22	3
28	12	1
32	4	0
36	3	0
40	0	0
44	0	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 605 M= .17 V= 127.31

SPRING - FALL CHANGE, T= .65

Table 96

EIGHT-BLOCK SORT: REGULATION SCORES FOR ALL CHILDREN

FALL SC	FREQ	PCT	SPRING SC	FREQ	PCT	SPRING-FALL CHANGE SC	FREQ	PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	0	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	0	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	0	0	18	0	0	-64	0	0
20	0	0	20	0	0	-60	0	0
22	0	0	22	0	0	-56	0	0
24	0	0	24	0	0	-52	0	0
26	0	0	26	0	0	-48	0	0
28	2	0	28	1	0	-44	0	0
30	3	0	30	0	0	-40	0	0
32	2	0	32	0	0	-36	0	0
34	6	0	34	2	0	-32	0	0
36	28	4	36	6	0	-28	2	0
38	37	5	38	4	0	-24	1	0
40	14	2	40	3	0	-20	1	0
42	77	12	42	26	4	-16	13	2
44	36	5	44	6	0	-12	19	3
46	30	4	46	1	0	-8	33	5
48	58	9	48	29	4	-4	56	9
50	34	5	50	47	7	0	58	9
52	62	9	52	27	4	4	70	11
54	6	0	54	59	9	8	81	13
56	43	6	56	86	14	12	83	13
58	43	6	58	43	7	16	53	8
60	20	3	60	31	5	20	49	8
62	23	3	62	76	12	24	38	6
64	54	8	64	32	5	28	20	3
66	17	2	66	28	4	32	18	2
68	24	3	68	45	7	36	5	0
70	7	1	70	19	3	40	3	0
72	0	0	72	19	3	44	0	0
74	4	0	74	8	1	48	0	0
76	0	0	76	2	0	52	0	0
78	0	0	78	0	0	56	0	0
80	1	0	80	2	0	60	0	0
82	0	0	82	0	0	64	0	0
84	0	0	84	0	0	68	0	0
86	0	0	86	1	0	72	0	0
88	0	0	88	0	0	76	0	0
90	0	0	90	0	0	80	0	0
92	0	0	92	0	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	0	0	100	0	0
N= 631 M= 56.00 V= 97.30			N= 603 M= 56.57 V= 71.22			N= 603 M= 6.47 V= 145.61		

SPRING - FALL CHANGE, T= 12.53

Table 97

EIGHT-BLOCK SORT; VERBAL CHILD RESPONSE SCORES FOR ALL CHILDREN

FALL SC	FREQ	PCT	SPRING SC	FREQ	PCT	SPRING-FALL CHANGE SC	FREQ	PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	0	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	0	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	0	0	18	0	0	-64	0	0
20	0	0	20	0	0	-60	0	0
22	0	0	22	0	0	-56	0	0
24	0	0	24	0	0	-52	0	0
26	0	0	26	0	0	-48	0	0
28	0	0	28	0	0	-44	0	0
30	0	0	30	0	0	-40	1	0
32	0	0	32	0	0	-36	0	0
34	0	0	34	6	0	-32	2	0
36	0	0	36	1	0	-28	0	0
38	0	0	38	0	0	-24	3	0
40	3	0	40	3	0	-20	8	1
42	218	34	42	41	6	-16	22	3
44	93	14	44	13	2	-12	41	6
46	22	3	46	17	2	-8	34	5
48	27	4	48	27	4	-4	40	6
50	16	2	50	46	7	0	50	8
52	8	1	52	91	14	4	83	13
54	35	5	54	80	13	8	87	14
56	37	5	56	64	10	12	78	12
58	25	4	58	70	11	16	53	8
60	4	0	60	34	5	20	48	7
62	14	2	62	27	4	24	23	3
64	7	1	64	25	4	28	19	3
66	30	4	66	11	1	32	4	0
68	63	10	68	27	4	36	2	0
70	19	3	70	11	1	40	0	0
72	0	0	72	0	0	44	2	0
74	1	0	74	3	0	48	0	0
76	0	0	76	0	0	52	1	0
78	0	0	78	3	0	56	1	0
80	0	0	80	0	0	60	0	0
82	0	0	82	0	0	64	0	0
84	0	0	84	3	0	68	0	0
86	1	0	86	0	0	72	0	0
88	0	0	88	0	0	76	0	0
90	0	0	90	0	0	80	0	0
92	0	0	92	0	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	3	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	1	0	100	0	0

FALL: N= 623 M= 50.00 V= [illegible].75

SPRING: N= 607 M= 54.15 V= 70.91

SPRING-FALL CHANGE: N= 602 M= 4.03 V= 155.98

SPRING - FALL CHANGE. T= 7.90

Table 98

EIGHT-BLOCK SORT: CHILD SUCCESS SCORES FOR ALL CHILDREN

FALL SC	FREQ	PCT	SPRING SC	FREQ	PCT	SPRING-FALL CHANGE SC	FREQ	PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	0	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	0	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	0	0	18	0	0	-64	0	0
20	0	0	20	0	0	-60	0	0
22	0	0	22	0	0	-56	0	0
24	0	0	24	0	0	-52	0	0
26	0	0	26	7	1	-48	0	0
28	0	0	28	2	0	-44	0	0
30	2	0	30	7	1	-40	0	0
32	4	0	32	10	1	-36	0	0
34	14	2	34	4	0	-32	1	0
36	15	2	36	4	0	-28	0	0
38	34	5	38	5	0	-24	4	0
40	21	3	40	9	1	-20	4	0
42	56	8	42	22	3	-16	8	1
44	72	11	44	26	4	-12	20	3
46	43	6	46	17	2	-8	33	5
48	45	6	48	27	4	-4	35	5
50	43	6	50	10	1	0	71	11
52	35	5	52	22	3	4	80	12
54	45	6	54	56	8	8	75	12
56	55	8	56	26	4	12	76	12
58	35	5	58	27	4	16	62	9
60	18	2	60	50	8	20	50	8
62	3	0	62	4	0	24	42	6
64	36	5	64	83	13	28	33	5
66	31	4	66	72	11	32	16	2
68	23	3	68	48	7	36	8	1
70	10	1	70	11	1	40	3	0
72	1	0	72	8	1	44	2	0
74	3	0	74	36	5	48	0	0
76	5	0	76	11	1	52	1	0
78	0	0	78	0	0	56	0	0
80	0	0	80	5	0	60	0	0
82	2	0	82	11	1	64	0	0
84	0	0	84	0	0	68	0	0
86	0	0	86	0	0	72	0	0
88	0	0	88	0	0	76	0	0
90	0	0	90	0	0	80	0	0
92	0	0	92	0	0	84	0	0
94	0	0	94	1	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	3	0	100	0	0

FALL: N= 652 M= 50.00 V= 97.39

SPRING: N= 624 M= 57.58 V= 150.25

SPRING-FALL CHANGE: N= 624 M= 7.40 V= 159.35

SPRING - FALL CHANGE, T= 12.18

- The standard score that changed the most from fall to spring was child success (Table 98). The percent correct in spring and fall for one ethnic standardization group* is shown in Table 99.

Table 99

CHILD SUCCESS ON EIGHT-BLOCK SORT TASK

		Fall		Spring	
Fall Age	N	Mean	Percent Correct	Mean	Percent Correct
$3\frac{1}{2}$ years	14	2.4	30%	5.1	64%
4 years	102	3.2	40	5.2	65
$4\frac{1}{2}$ years	93	3.6	45	6.2	77
5 years	97	4.4	55	6.3	79
$5\frac{1}{2}$ years	98	5.0	63	6.0	75
6 years	17	5.3	66	6.9	86

A high "success" on the Eight-Block Sort task involves both correct block sort and correct verbalization of the basis for the sort. Spring performance may reflect the effects of Head Start on learning skills when directly tested in a performance situation, the consequence of changes in mother-child relationships, and some retention of the correct response from fall testing. The data indicate that phenomena of considerable developmental importance are occurring: there is evidence of changes in mother-child affective relationships and in the child's response to an abstract conceptual task.

Teacher/Program Characteristics and Eight-Block Sort Performance. Sponsorship was not associated with differential change on the three maternal variables (verbal communication, task description, and regulation). However, children in sponsored programs did make significantly greater gains on "success" than those in regular Head Start classes, reflecting again the edge of cognitive developmental advantage provided

* Children are grouped by fall CA ages for convenience. The spring scores are standardized against fall norms for their spring age, not fall norms for their fall age, which would virtually guarantee high "standard" score gains on an age-related variable.

by sponsorship per se. On the variable relating to child verbal responsiveness, sponsored children initially were overall some two standard points higher, and both groups gained to approximately the same final level. Table G-1 of Appendix G summarizes these findings.

In unsponsored classes, there was no systematic relation between changes and degree of diffusion, teacher education and experience, amount of inservice training, or Head Start director's rating (Tables G-2, G-3, G-4, and G-5, respectively, in Appendix G). For all subgroups, mother changes in task orientation and verbal communication were minimal from fall to spring, whereas maternal praise/warmth, child verbal responsiveness, and child success tended to increase from 5 to 10 standard score points.

For sponsored classes, teacher education and experience were related to changes in four of the five Eight-Block Sort indicators. Mothers of children in classes directed by teachers with some college education or teaching experience showed significant gains in verbal communication and use of praise/warmth and the children made significant gains in verbal responsiveness and success. Mothers of children in classes directed by teachers without either college degrees or experience showed no gains in verbal communication, task description, or use of praise/warmth, and their children showed no gain in verbal responsiveness and made smaller gains in "success." (Table G-6 in Appendix G.) These data suggest that more experienced and better educated teachers are able, under sponsorship, to attend to both affective and cognitive development while less experienced teachers may be unable to handle simultaneously such complex expectations.

In sponsored classes, sponsor ratings of implementation were not related systematically to changes in maternal behavior or child behavior. In well-implemented classes mothers increased significantly in their use of praise by almost a full standard deviation. On the other hand, children in the least well-implemented classes made the largest gains (to the highest final levels) in verbal responsiveness (Table G-7 in Appendix G). Classroom observation ratings of sponsor implementation showed no relationship to changes on Eight-Block Sort variables for mothers or children (Table G-8 in Appendix G).

Among the well-implemented sponsored classes, the analyses by program type indicate differences in effect (Table G-9 in Appendix G). These differences are to be viewed as indicative only, since the number of well-implemented classes is too small for the attainment of traditional levels of statistical significance.* These are the findings.

- Cognitive-discovery approaches were associated with average gains (though not enough to reach the .05 significance level) in maternal cognitive teaching style (task description), and preacademic/prescriptive programs significantly facilitated maternal use of praise and, to a lesser degree (not enough to attain statistical significance), maternal verbal communication.

- Preacademic-oriented approaches had the highest final levels and gains on the child success measure.

Since their models involve differential predictions of maternal change, data from one preacademic/reinforcement model and the parent educator model were analyzed separately for their best classes and these were contrasted with the best classes of the other sponsor models. Table G-10 of Appendix G summarizes these data, which indicate the following tendencies.†

- The Preacademic/Reinforcement model is affecting maternal verbalization and use of praise as well as child success, but not the child's verbal responsiveness to his mother or the mother's ability to provide an overall orientation or task structure for her child.

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* Strong differences in initial levels (sampling artifacts, with consequent regression toward the mean an inevitable consideration) obscure interpretation of the data in Table G-9 in Appendix G. For instance, the two discovery-oriented, best-implemented classes are initially almost one standard deviation above the overall mean on all mother-child interaction measures except child success, and show net Fall-to-Spring decreases in verbal communication and task description by the mother and in the child's verbal response, and no significant change in regulation. Again, the eight Cognitive-Discovery classes were almost one-third of a standard deviation below the initial overall mean on the measure of task description and were the only ones to show a net increase from fall to spring.

† Again, the findings are complicated by small numbers of observations and unusually low initial levels for the parent-educator model's best classes on the task description measure. The data are summarized in Table G-10 in Appendix G.

- The Parent-Educator model is increasing maternal use of praise (as are almost all well-implemented classes), but does not lead to increases on other maternal variables or child variables.

However, these are only tendencies; there is need for replication of these results with larger sample sizes and more detailed study in the second and third years of the evaluation to establish the validity of these findings.

Child Characteristics and Eight-Block Sort Performance. There was no indication of interactions among child characteristics and Eight-Block Sort performance.

- Estimated socioeconomic status (SES) was not reliably related to initial performance, although higher SESs tended to be associated with slightly higher mean scores on all five measures. There was no evidence of differential gain, except on child verbalization where lower SES children gained more to reach the same Spring test level as the higher SES children (Table G-11 in Appendix G).

- Child sex was not related to either initial performance or gain on any of the five measures. At least in this sample, there is no evidence that mothers were more likely to provide greater emotional support to their daughters than their sons (Table G-12 in Appendix G).

- Prior Head Start experience was not systematically related to initial performance or to gains on Eight-Block Sort performance (Table G-13 in Appendix G).

- Attendance was not reliably related to initial or final mother-child interaction variables; however, children who attended less than 140 days showed greater change in "success" (Table G-14 in Appendix G).

In summary, the Eight-Block Sort performance seems almost a microcosm of Head Start and what happens in the first year of PV. Initial performance indicated low to moderate parent skill in teaching their children; in some subsamples, both cognitive and affective components of child and adult performance were virtually nil. On retesting in the spring, mothers and children were talking more to each other, the balance between use of praise and blame had shifted overall toward praise, and children's success improved to about 75% of the total score.

Parent Questionnaire

A Parent Questionnaire was given to 781 mothers of Head Start children (424 in PV programs and 357 in unsponsored programs) who participated in the Hess and Shipman Eight-Block Sort Test of mother-child interaction. In general, the questionnaire was completed during the child-testing portion of the Eight-Block Sort Test administration.

The questionnaire items were sorted into six categories. Items in each category were retained if they correlated near .5 or higher with the category total score. Tables G-15 through G-20 in Appendix G list the questionnaire items that make up each category,* the correlation between each item and the variable total score, and item intercorrelations. The intercorrelations among the six variables are shown in Table G-21 in Appendix G.

Description of the Variables

The six Parent Questionnaire variables are described below. The short title is shown in parentheses.

Parent Contact with the Head Start Classroom (Parent Contact). The score represents the number of "Yes" responses to items dealing with direct parent contact with the classroom, including visits to the room, conferences with the teacher, social worker, nurse, director or other personnel, and participation in the program as teacher aide or as center staff member.

Child Attitude Toward Head Start (Child Attitude). The score represents parent reports of child behavioral indicators of attitudes toward school, including talking about school, bringing home school work, and expressing feelings about school.

Parent Involvement in Community Head Start Agencies (Parent Involvement). This score includes both measures of parent participation in Head Start agencies (such as the Parent Advisory Committee--PAC) and knowledge of the Head Start organization at the community level.

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* A copy of the Parent Questionnaire is shown in Appendix C.

Parent Feelings of Ability To Change the Schools (Parent Power). The score indicates the degree to which the parents feel they have a say in the running of the schools.

Parent Feelings of Ability To Control Their Lives (Parent Control). This variable reflects the degree to which the parent feels his life is controlled by chance or whether he is in control of what happens to him.

Cultural Enrichment in the Home (Cultural Enrichment). This variable is indicative of how much the parent engages in activities that involve the child in family life and expose him to the subculture of which he is a member. These activities include talking to the child, reading to him and providing reading material and exemplars of reading behavior, and taking him on trips to visit relatives and friends.

Each variable was examined and divided into three score ranges representing Low, Medium, and High scores on each variable; the parent scores on each variable were thus Low, Medium, or High. This procedure was used to group child outcome scores for convenient analysis and to reduce the effect of extreme scores on the analysis.

Findings from the Parent Questionnaire Data

There are four parts to the Parent Questionnaire analysis: the first consists of a description of the parents' responses to the questionnaire; the second looks at possible relationships between parent variables and child outcomes; the third looks at sponsor effects on parent variables; and the fourth looks at responses to open-ended questions on the questionnaire.

Parents' Responses to the Questionnaire. The major findings were:

- Most parents had at least two contacts with the school during the year.
- Most children had favorable attitudes toward Head Start.
- Parents tended to be either very involved in Head Start or not at all involved; about 33% of the parents knew how Head Start agencies functioned or were actively involved in Head Start.
- Most parents had neutral feelings about being able to influence the schools or having control over their lives;

nearly 33% felt they could have a say about how the schools are run--20% had strong feelings one way or another about their ability to control their lives.

- About 10% of the parents provided little or no cultural enrichment in the home and about 33% provided a lot of enrichment.

- There were no major differences between parents of children in PV classes and those of children in unsponsored classes.

Sponsored versus Unsponsored Classes. Table 100 gives the percentages of parents falling into High, Medium, or Low categories on each of the six parent variables. There are a few minor differences between PV and regular Head Start classes. First, unsponsored classes have slightly more parents who have High contact with the school. Second, unsponsored classes seem to have more parents Medium and High in Parent Involvement in community Head Start activities than PV classes (51% for unsponsored classes versus 42% for PV classes, $P < .05$). This may be due to the fact that sponsored programs represent a new thrust in the community whereas regular, unsponsored programs may have been operating in the community years before this evaluation, perhaps establishing better channels for parent involvement. This interpretation would be consistent with the higher levels of relatively high contact with the classroom found for parents of children in unsponsored classes. Lastly, it appears that PV parents may be providing more cultural enrichment in the home. It should be remembered that these differences are not statistically significant.

Relationship of Parent Variables to Child Outcomes. One of the issues implicit in the PV Study is that of the effect parent characteristics may have on children's performance in school; one sponsor's model concentrates on parent education, others concentrate on the child in school, and still others attempt to deal with both the parents and the child. This issue cannot be resolved in this interim report (if only because there is no way to control for change in the parent variables due to participation in Head Start, since the questionnaire was given only in the spring), but there are some indications that parent characteristics are associated with child performance.

Two child outcome measures were used in this analysis: the pre-academic measures (NYU Books 3D and 4A) and one of the general cognitive tests (the PSI). (The IQ and the Hertzig-Birch code-derived measures

Table 100

PERCENTAGE OF PARENTS FALLING IN LOW, MEDIUM, OR HIGH CATEGORIES OF EACH PARENT VARIABLE

	S* (percent)	U† (percent)
Parent contact with Head Start classrooms		
Low	17%	21%
Medium	62	52‡
High	21	27‡
Child attitude		
Low	12	11
Medium	63	66
High	25	23
Parent involvement		
Low	58	49‡
Medium	11	14
High	31	37
Parent ability to influence schools		
Low	28	27
Medium	63	60
High	9	13‡
Parent ability to control own lives		
Low	10	13
Medium	79	80
High	11	7‡
Cultural enrichment		
Low	8	11
Medium	56	57
High	36	32

S = Sponsored.
U = Unsponsored.

* N = 424.
† N = 357.
‡ $p(S-U \neq 0) < .05$.

were not available because children of parents in the sample were not given Stanford-Binet tests.) Scores for these measures were grouped and standardized as described in Chapter XI. Two measures of child performance for this analysis are comparable to those used in Chapter XI: preacademic and general cognition. Only children of the four ethnic groups for whom norming groups were formed were candidates for inclusion in this analysis. In addition, only children for whom both fall and spring scores were available, along with birthdate, date of test administration, and ethnic background information were used in the analysis. Table G-22 in Appendix G lists the remaining sample sizes, by site, for the child measures used.

Analyses of the child data were performed as for the analyses in Chapter XI, using the category breakdowns of the six parent variables described earlier in this section to classify the children.

The findings for each of the variables are detailed below. Tables G-22 through G-28 in Appendix G summarize these findings.

The degree of parent contact with the Head Start classroom was found to be directly related to initial score levels for the preacademic but not for the general cognition variables (although initial levels for the latter are in the same direction as for the preacademic measure).

Table G-24 in Appendix G summarizes the child performance data for the child attitude categorization. There were no significant differences in initial, final, or gain levels for High, Medium, or Low degrees of children's positive attitude toward the Head Start program. As measured, whether the children feel highly enthusiastic about being in Head Start or not, they perform roughly the same in the classroom on both measures.

Table G-25 in Appendix G summarizes the child performance data for the categorization of parental involvement in Head Start as a community agency. As with the categorization of parental contact with the classrooms, the degree of parent involvement seems to be directly related to the initial and final scores on both the preacademic and general cognitive measures (though in both cases only the High-Low differences are large enough to be statistically significant.

Tables G-26, G-27, and G-28 in Appendix G present the results for the parent feelings of power to influence the schools, parent control over their own lives, and cultural enrichment. These variables appear properly to be indices of parental attitude and are directly related to initial and to final scores (two variables), but are unrelated to gain scores of the preacademic and general cognitive measures. These results may suggest that the relationship between parental attitudes in these areas and child performance is not affected by a year of Head Start, but rather that all children gain equally from the Head Start experience regardless of parent attitudes. However, parent contact with the classroom and parent feelings about the power to influence the school are related to child performance in the fall but not in the spring. This lack of relationship in the spring is perhaps due to the general tendency for most mothers to have a medium amount of contact with the school and to have neutral feelings of power to influence the school; few mothers fall in the High or Low groups in these variables.

In summary:

- Parent contact is directly related to initial performance on the preacademic measure.
- Child attitude (as reported by the parent) is not related to child outcomes.
- Parent involvement seems to be directly related to both initial and final scores on the preacademic and cognitive measures.
- The parent attitude variables (parent power, parent control, and cultural enrichment) are related to initial and (to some extent) final scores on both child performance measures.
- It seems that the relationship between parent attitudes and child performance is not affected by a year in Head Start, regardless of whether parent attitudes may have changed during the year.

Parent Responses to the Open-ended Questions. Parents were also asked for their overall reactions to the Head Start program. A section of the Parent Questionnaire asked a series of open-ended questions about parent attitudes toward Head Start.

1. "What are the things you like most about Head Start?"
2. "What are the things you don't like about Head Start?"
3. "What difference has Head Start made in your own life this year?"*

* A fourth question ("Is there anything else....?" was asked, but produced no usable information.

Responses were grouped into 31 categories (described in Table G-29 of Appendix G) and tabulated according to the program affiliation of the child. The discussion below deals with all those responses given by at least 10% of the responding parents, grouped into sponsored and unsponsored programs, with the sponsored programs further analyzed into Prescriptive/Preacademic, Cognitive/Discovery, Discovery, and Parent-Educator-Oriented sponsor groups. The rationale for investigation of this split is that it is expected that sponsors' goals will be reflected in the parents' attitude if the sponsors implement successfully their belief in the value of the parent as a link in the chain of possible educational influences surrounding the child. Seven categories received at least the 10% response rate, and are listed here:

Category Code*	Description
13.	Relationship of child to classmates
14.	Classroom climate and child-teacher relationship
45.	Opportunities for learning
15.	Child's attitude toward school
94.	Everything in general about Head Start
41.	Child's verbal academic performance (reading, writing, speech)
12.	Child's feeling about himself.

Parent Responses to "What are the things you like most about Head Start?" Table 101 displays the rank order, frequency and percentage (of the total number of valid responses given) for all responses given by over ten percent of the parents. These values are given for all parents, for parents of children in sponsored and unsponsored programs, and for sponsored parents by program type.

There was a total of 1,166 responses by 781 parents (with many parents giving multiple responses or responses that fell in several or overlapping categories). Table 102 shows the agreement between sponsored and unsponsored parents on their highest preferences. Four responses (codes 13, 14, 45, and 15) were given in the above order of frequency by all parents and by parents of unsponsored children. Of these response types, three deal with attitudes and relationships of the child (relationship of the child to classmates, the teacher, and the school); sponses of such type might mention "considering others," "learning to share," "individual attention given'

* Category codes are explained in Appendix H.

responses of such type might mention "considering others," "learning to share," "individual attention given," "the way the teacher handles the children," and so forth. The fourth response category mentioned referred to the child's opportunities for learning. The only difference in category ranks for the parents of sponsored children was that category 45 (the opportunities for general learning) responses were slightly more frequent than those in category 14 (the child's relationship to the teacher).

Beyond these features of Head Start, were these program features differentially mentioned as most liked by parents in sponsored and unsponsored programs or in sponsored programs of various types? The following can be abstracted from Table 101.

- Parents of children in preacademic/prescriptive programs mentioned most frequently that what they liked most were the opportunities for learning; their second most frequent response dealt with the verbal academic area (they found most satisfying, in other words, their children's accomplishments in such topics as reading, writing, and speech).

- No other program types placed response category 45 in the first place, and none gave category 41 (verbal academic performance) as much as 10% of the parents' responses; in general, the children in the prescriptive programs had parents who liked academic performance and learning features the most and less frequently preferred the children's relationships, whereas the reverse was true for other sponsors.

Parent Response to "What are the things you don't like about Head Start?". A second open-ended question dealt with features of Head Start that parents liked least. There were few responses overall (some 100, excepting those that amounted to "no complaint"), and the frequency of responses to each category was low--a maximum of 15--so that no detailed breakdowns will be attempted. The most frequent responses fell into the areas of child/teacher relationships and attitude of the child toward the classroom atmosphere, and they were most often given by parents in unsponsored programs. In sponsored programs parents most often reported least liking certain physical aspects of the school plant.

Parent Responses to "What difference has Head Start made in your own life this year?" The response frequency rank-order breakdowns are detailed in Table 102. Almost all parents responded (there were a total of 807 responses for 778 parents), and the overall frequency for the most common response was 128. Answers were surprisingly different from those to the question on what parents liked best; apparently two different response areas are being tapped by these questions. Some of the findings:

- Overall and for unsponsored programs, parents most frequently found that babysitting/daycare aspects of the Head Start program had made the most difference in their lives; in sponsored programs generally, this feature was second in relative rank to changes in the parent-child relationship;

Among the various program sponsor types:

- The child's self-development was a category of high enough frequency to be ranked for parents in Cognitive Discovery and Discovery-Oriented programs but was infrequently mentioned by parents in Preacademic/Prescriptive programs.

- For the Parent Educator model, two response categories shared with parent-child relations the highest response frequency (5 responses apiece for 32 respondents). They were parent self-development and learning and child-to-teacher relationships. These responses are consonant with parental attitudes that could follow implementation of a home-based parent educator model.

In summary, the open-ended parental responses seem to support a hypothesis of specificity of Head Start on the children, at least so far as the parents' judgments extend. Head Start gives parents the freedom of having the children out of the home for part of the day and at the same time involves the child in valued relationships with his classmates, the teachers, and the school in general and provides opportunities for learning and the development of a good self-concept. Sponsored programs more frequently generated the feeling of being more satisfied about "learning" and less about the child's self-concept development than did the unsponsored programs. Parents of sponsored children found that the changes in the relationships with their children that ensued from the programs were of more significance in their lives than day care; for unsponsored parents the reverse was true.

Table 101

RESPONSE TO PARENT QUESTIONNAIRE ITEM 43:
"What are the things you like most about Head Start?"

Response Category	Total N	Total %	Total Rank	Sponsored Classes N	Sponsored Classes %	Sponsored Classes Rank	Unsponsored Classes N	Unsponsored Classes %	Unsponsored Classes Rank	Prescriptive Models N	Prescriptive Models %	Prescriptive Models Rank	Discovery Models N	Discovery Models %	Discovery Models Rank	Cognitive Discovery Models N	Cognitive Discovery Models %	Cognitive Discovery Models Rank	Parent Educator Model N	Parent Educator Model %	Parent Educator Model Rank
13	227	19.5%	1	120	18.8%	1	107	20.3%	1	12	8.2%	5	33	17.4%	2	68	26.1%	1	7	17.1%	2.5
14	167	14.3	2	89	13.9	3	78	14.8	2	16	11.0	3	36	18.9	1	29	11.1	2	8	19.5	1.5
45	162	13.9	3	96	15.0	2	66	12.5	3	35	24.0	1	29	15.3	3	25		3.5	7	17.1	2.5
15	116*		4	57*		4	59	11.2	4	15	10.3	4	15*		4.5	25*			2*		
94				43*		5	23*			7*			15*			13*			8	19.5	1.5
41										17	11.6	2	6*			10*					
12										1*			11*			18*		5	3*		
Total number of responses	1,166	100.0		638	100.0		528	100.0		146	100.0		190	100.0		261	100.0		41	100.0	
Number of respondents	781			424			357			99			120			173			32		

* Frequencies listed without percentages or rankings fall below 10% of parents responding.

Format: N = Frequency of category responses in the grouping named in the column heading.
% = % of total responses in column heading group.

Legend: 13 Relationship of child to classmates
14 Classroom climate and child-teacher relationship
45 Opportunities for learning
15 Child's attitude toward school
94 Everything in general about Head Start
41 Child's verbal academic performance
12 Child's feeling about himself

Table 102

RESPONSE TO PARENT QUESTIONNAIRE ITEM 45:
"What difference has Head Start made in your own ?ife this year?"

Response Category	Total			Sponsored Classes			U::sponsored Classes			Prescriptive Models			Discovery Models			Cognitive Discovery Models			Parent Educator Model		
	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank
91	128	15.9%	1	60	13.9%	2	68	15.7%	1	13	14.6%	2.5	21	16.8%	1	23	12.6%	2.5	3*		
16	115	14.3	2	66	15.2	1	49	11.3	2	15	16.9	1	19	15.2	2	27	14.8	1	5	13.9%	2
21				45	10.4	3	31*			13	14.6	2.5	7*			23	12.6	2.5	2*		
45				43	9.9	4	30*			11	12.4	4	14	11.2	3.5	14*			4	11.1	4
22										5*			14	11.2	3.5	10*			5	13.9	2
12										2*			13	10.4	5	18*		4	2*		
93										9*			6*			23	12.6	3	1*		
14										3*			1*			--			5	13.9	2
Total No. of Responses	807			433			374			89			125			183			36		
No. of Respondents	778			424			354			99			120			173			32		

* Frequencies listed without percentages or rankings fall below 10% of parents responding.

Format: N = Frequency of category responses in the grouping named in the column heading.

% = % of total responses in column heading group.

Legend:
- 91 Head Start acts as baby-sitting or day care service.
- 16 Relationship to my own child.
- 21 Relationship with teachers, school, or other adults.
- 45 Opportunity for learning.
- 22 Parent self-development learning.
- 13 Child's self-development and self-concept.
- 93 No change.
- 14 Relationship between teacher and child.

XIII SUMMARY AND CONCLUSIONS

The main thrust of the first year of PV evaluation has been to catalogue the progress of program implementation, to describe the classroom processes, and to collect base line data on the first set of cohorts who are expected to remain in their respective programs through an additional three years of Follow Through. Since the pupil data were collected at two time periods, each approximately six months apart, it is possible to capitalize on their availability to glean early indications of the potential advantages of PV.

Certainly one of the most important outcomes of the first year of evaluation has been the extensive experience in the intricacies of assessment of a program that is national in scope and covers a broad spectrum of educational approaches to the growth and development of disadvantaged children. The conclusions are derived from the evidence presented in this report and are oriented to issues that seem to be important for the future planning and expectations of the Head Start Planned Variation program. The programmed replications of the second and third years of the program will provide either fulfillment or tempering of the conclusions presented.

The year of effort that preceeded this report was simultaneously difficult, frustrating, and satisfying, but the most important achievement has been the completion of a study that contains portents of significant advances in an area of social reform that may contribute to the improvement of the disadvantaged child's lot: to abet significantly his rightful development and to provide him with the tools, skills, and advantages that most assuredly are needed when he takes on the responsibilities of adulthood.

Limitations of This Evaluation*

Admittedly, this evaluation has a number of practical and theoretical limitations. It is necessary to delineate the more important restrictions under which the work was performed, not so much as an apology for the

* See Appendix H, Section I, for a discussion of specific analytic limitations. Other limitations are mentioned in previous chapters.

past but as a clear reminder of the fact that many of the seemingly unqualified statements made are offered within the context of these limitations.

The major obstacle to generalization from the findings in this report results from the lack of randomness in the assignment of the PV programs to communities across the country. Further, within a designated community the lack of random assignment of PV to centers and classes also restricts the generalizations that can be made. Thus, it is inappropriate to apply uncritically the tentative findings to the United States at large or to use them for purposes of policy decision and action without extreme caution. It should be remembered that the primary objective of PV in Head Start was to provide a preschool program that would be compatible with existing Follow Through programs. The effect of such a design can be assessed only in the last year of Follow Through, or beyond.

The comparison classes used were not completely satisfactory matches with the PV groups in terms of age, ethnic group, and prior Head Start experience, but the treatment of the data in terms of standardization of scores by age and ethnic group has compensated for these shortcomings.

The intensive preparations for the field testing (selection of testers, training sessions, and subsequent supervision of the data collection) still leave much to be achieved. The occurrence of gaps in the data due to uncompleted forms and procedural observations detracts from the substantiality of the reported material.

To prevent this interim report from precipitating unscheduled changes in programs at the community level and thus thwarting the longitudinal nature of the PV program two major restrictions were made: that there should be no comparisons of individual programs and that the anonymity of the concerned communities should be preserved.

The plan for the evaluation of the Head Start PV program (as detailed in Chapter III) included features and issues that cannot be examined successfully until subsequent periods of data collection are completed. Even this interim report has not fully mined all the available data, but it has selectively explored the data appropriate for achievement of the evaluation objectives.

Conclusions

Certain major conclusions are indicated with respect to the implementation of the PV programs and short term changes in the performance of the children:

How well were the models of Planned Variation implemented during the first year?

- The first year's implementation of PV programs succeeded in varying degrees, depending on the type of program and the location where it was applied.
- The more complex programs (i.e., Cognitive-Discovery-type models) need more than one year to achieve uniform excellence in implementation.
- Variations in the qualifications of teachers and the training and supervision conducted by the sponsor and his field staff resulted in unevenness of implementation.
- Sponsors who provided ongoing field supervision, answered teachers' questions, and provided immediate feedback to teachers reported a relatively high rate of satisfactory implementation in their classrooms.
- Sponsors who had difficulty in locating, training, and keeping enough field staff to visit sites for at least two days monthly experienced less success with the first-year implementation effort.
- A traveling field staff organization may be less successful in developing the teaching staff requirements than a locally trained person who is constantly available for consultation.
- The level of implementation success in the first year of PV seemed to be related to the curriculum approach: Preacademic/Prescriptive classes were rated by sponsors High in implementation; Cognitive Discovery-Oriented classes were rated Medium or High, and none were rated Low; the Discovery classes showed the greatest variation in ratings (from High to Low).

What base line data were collected on children and others participating in the program to measure change in later phases of the program?

- The data gathered on the children and other participants (described in Chapter III and listed on page 52) provides a broad base of information for the longitudinal study of the effects of PV, are compatible with similar information in the Follow Through evaluation, and are part of a common data bank.

- Maximum use of these data depends on scheduled and systematic coordination between the Office of Child Development and the Office of Education on the composition of the child test batteries and other instruments, the child population to be tested, and the selection of comparison groups.

- Improved noncognitive instruments and procedures are needed to obtain assessments of the social, emotional, and motivational aspects of the children's development.

What changes in child performance occurred during the first year and how much of these changes are attributed to the child's participation in Planned Variation?

- Overall, Head Start was found to be associated with significant and substantial effects on the cognitive growth of children. Children in all Head Start programs made large gains in preacademic skills and general cognition. These gains occurred for most of the children in Head Start. Cognitive style gains were not substantial.

- On all measures PV-sponsored programs overall achieved larger gains than the regular Head Start programs. These gains differences were statistically significant for preacademic skills and general cognition although they were not large in the first year of implementation of PV programs.

- Prior Head Start experience was beneficial. Children who had either summer Head Start or a full year of prior Head Start experience entered PV and Head Start classrooms with significantly higher scores on the preacademic and general cognitive measures than did children with no prior Head Start experiences. Sponsored programs allowed these children to sustain their advantage throughout the year. Unsponsored programs allowed those children with a full year of prior Head Start experience to sustain their advantage, but those children with only Summer Head Start prior experience lost their advantage and by the time of the Spring testing scored no higher than children without prior experience.

- Study of the performance of the best-implemented classes of each of these program types supports an "equally good" hypothesis. No one program type (Preacademic/Prescriptive, Cognitive Discovery, or Discovery-Oriented) achieved superiority in final levels or gains over the other programs in either educational area--preacademic skill readiness or general cognitive development. There are no clear grounds available from the first year PV data for choosing one program type over another; instead, it becomes clear that all program types must be studied in greater detail.

- Children of relatively low socioeconomic status made significantly larger gains in general cognition during the year of Head Start than did children of relatively higher status, reducing but not erasing initial differences.

- As a direct result of the Head Start experience, parents in general learned to talk more to their children and to use praise more often when teaching their children.

- In PV programs that attempted to involve parents in some way, parental teaching behavior shifted to reflect the model when the classrooms were well implemented and the teacher was experienced; this led to higher child success, and to making the parents more effective teachers of their children than they had been.

In any case, the end of the first year of the PV Head Start programs is too early a time to assess with confidence the specific outcomes of specific programs. The first-year findings are encouraging. The progress toward full classroom implementation of the sponsors' models and the initial progress of the pupils are great enough to form a base for cumulative growth over several years' exposure to a model, and it is this cumulative growth that is the long term objective of the PV program.

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Appendix A

READING RELATED TO SPECIFIC MODELS OF THE HEAD START PV PROGRAM

Appendix A

READING RELATED TO SPECIFIC MODELS OF THE HEAD START PV PROGRAM

The readings contained in this appendix are grouped by sponsor and appear in the following order:

<u>Reading Related to the Educational Development Center (EDC) Model</u>

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Appendix B

SRI CLASSROOM OBSERVATION PROCEDURE

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SRI CLASSROOM OBSERVATION PROCEDURE

This appendix describes the field testing, training development cycles, and details of the various sections of the SRI-classroom observation procedure. At the end of the appendix (in Tables B-2 through B-5) is a reproduction of the Simon and Boyer (1970) descriptions of 79 observation instruments to which has been added a similar breakdown of the SRI procedure to show comparatively the content of the areas of observation covered.

Field Testing

The viability of the SRI observation instrument was tested by several staff members in San Jose and Oakland Head Start classrooms. Reliability, expressed as proportion of total interaction codes recorded the same by two observers of classroom processes, was .83. To test the appropriateness of the instrument for the eight different sponsors' programs, Jane Stallings of SRI used the experimental instrument in observing "ideal" classrooms (as designated by each sponsor) at both Head Start and Follow Through levels. After this investigation, changes were made to facilitate the recording of sponsor-specific processes observed in the field. Representatives of the sponsors (Joint Fellows) again reviewed the instrument and agreed that it could report some of the factors each considered important to education and further agreed that their programs would probably not be distorted by the instrument.

Because the instrument is based on live observation, comprehension of what is seen and said is of utmost importance. Given the many dialects and cultural styles throughout the country, it was decided to use local observers. It was reasoned that persons from the community would be more able to understand the language of the children there than persons brought in from other districts. Another stated requirement was that observers have previous experience with young children. It was assumed that persons who lacked such experience might have difficulty in observing and recording the interactions of the children. General intelligence and memory skills sufficient to learn the 38 codes for the FMI observation were considered more important than college credentials. Operating on these assumptions, SRI staff requested Head Start Directors in San Jose and Oakland to select ten paraprofessionals to be trained at SRI in Menlo Park.

Each observer received a training packet in advance of the training session, which included self-tests and flash cards for home study. Before coming to the training session, each observer had to pass a test of the 38 codes given by the Head Start Director. Observers reported an average of ten hours home study to pass the tests.

Each part of the observation system was explained and demonstrated. Video tapes submitted by the sponsors were used to exemplify each of the codes in the five-minute interaction (FMI) observation. Each observer practiced coding the tapes and role playing situations until the proportion of agreement reliability reached .80 on the test tape. The first training session was four days, including one day observing in a Head Start classroom. Following the training session, all ten trainees observed in separate classrooms for two consecutive days. During this time an SRI staff member joined each observer for a simultaneous reliability check in coding an FMI. Reliability ranged from .60 to .76.

Training procedures were revised for those areas that had proved to be difficult for observers to record. A second training session lasting five days was held in Menlo Park, using new observers. This was considered a better training period since it allowed more time for questions and practice. The observers on each occasion seemed enthusiastic and pleased with their own ability to use the observation instrument successfully. Again, a reliability of .80 was achieved.

Observers of Follow Through and Head Start PV evaluation classes were trained togehter in two 4-day sessions (March 30-April 3 and April 6-9, 1970) conducted by the same three-member team.

Classroom Checklist (CC)

This section of the procedure was constructed in response to the requirement to describe activities undertaken in the classrooms. It is also responsive to several sponsors whose programs may be best described by their unique or varied distribution of activities.

The checklist (shown in Figure B-1) was designed to yield data on what each classroom adult is doing and how groups of children of different sizes are occupied at the various activities. This recording is made approximately every 15 minutes, i.e., before each FMI observation.

CLASSROOM CHECKLIST

Directions:

Circle T, A, or V to show what the adults are doing.
Circle the number or letter to show how many children are together.

Activity:		TEACHER	ASSISTANT/AIDE	VOLUNTEER/VISITOR	1 CHILD	2 CHILDREN	SMALL GROUP	LARGE GROUP
A.	1. Snack, lunch	T	A	V	1	2	S	L
B.	2. Group time, sharing, rest	T	A	V	1	2	S	L
	3. Story, singing, dancing	T	A	V	1	2	S	L
C.	4. Numbers	T	A	V	1	2	S	L
	5. Alphabet, reading, language development	T	A	V	1	2	S	L
D.	6. Finding out about people and how they live	T	A	V	1	2	S	L
	7. Finding out about the natural world (magnets, shapes, sound)	T	A	V	1	2	S	L
F.	8. Table games, guessing games, working puzzles	T	A	V	1	2	S	L
F.	9. Arts, crafts	T	A	V	1	2	S	L
	10. Cooking, sewing, pounding, or sawing	T	A	V	1	2	S	L
G.	11. Blocks, trucks	T	A	V	1	2	S	L
	12. Dolls, dress-up, water play	T	A	V	1	2	S	L
H.	13. Big wheeled toys, sandbox, slide, swings	T	A	V	1	2	S	L
	14. Active games with rules	T	A	V	1	2	S	L
I.	15. Transition	T	A	V	1	2	S	L
	16. Classroom management	T	A	V	1	2	S	L
	17. Observing	T	A	V	1	2	S	L
	18. Other	T	A	V	1	2	S	L

FIGURE B-1 CLASSROOM CHECKLIST FORM

The following information is derived from this part of the instrument: groups sizes, supervision/independence of groups, variety of activities, proportion of given activities to total over the day, and relation of all adult roles.

Five-Minute Interaction

The FMI observation uses four types of categories: Who does the action? To whom is it done? What is done? How is it done? These categories code a piece of interaction when strung into a kind of "sentence." The next sentence codes the response, if any, or, in a one-way communication (such as a teacher lecturing or a child manipulating materials), it continues to describe the primary action. The sentence structure format, which uses interchangeable "parts of speech" or components, was developed with the help of Dr. Flanders and was patterned after his interaction analysis strategy.

The Who and To Whom codes are used to desginate the participants in an interaction. (See list of codes in Table B-1 and the observation form in Figure B-2). The codes make it possible to designate the person or group of persons initiating or receiving an action. The letter E is used to designate adults and children in unison; M refers to such items as typewriters, tape recorders, films, and the like.

The twelve What codes refer to the categories that survived several iterations of use and review with sponsors' representatives (Joint Fellows). They preserve the distinctions that seem to be important in describing sponsors' classes. The O code is reserved for those occasions when the observer is unable to make a decision.

There are two dimensions in the How categories: affect and classroom control strategies. The first refers to the feeling aspects of an interaction between people or materials. Classroom control strategies specify what methods are used by the teachers to control their classrooms. Most of these categories were taken from the list developed by Glen Nimnicht of Far West Laboratories and were field-tested before inclusion in the Classroom Observation procedure.

Five-Minute Ratings (FMR)

A few items of interest to specific sponsors could not be recorded conveniently during the FMI period. These variables that were general to the situation make up the five-minute ratings shown in the lower right

Table B-1

CODES USED IN CLASSROOM OBSERVATION

Who and To Whom	What	How
T - Teacher	1 - Direct request	H - Happy
A - Assistant/Aide	2 - Choice request	S - Sad
V - Volunteer/Visitor	3 - Respond	N - Negative
C - Child	4 - Teach, Inform	A - Angry
D - Different Child	5 - Comment, Play	G - Guide to alternative
2 - Two Children	6 - Praise, Acknowledge	R - Reason
S - Small Group	7 - Help	C - Control by praising
L - Large Group	8 - Cooperate	F - Firm
E - Everyone	9 - Corrective feedback	D - Demean
M - Materials	10 - No response, Ignore, "I don't know"	Th - Threaten
O - Confusion	11 - Refuse, Reject	P - Punish
	12 - Observe	T - Touch
	O - Confusion	M - Materials

FIVE-MINUTE OBSERVATION

What's happening: ________________

____

____

Time Started: ________

No. of Children	Adult Partici-pation	Activity

Adult Participation:

1 - Directing
2 - Observing
3 - Not present

Who	To Whom	What V	What NV	How

Who	To Whom	What V	What NV	How

Who	To Whom	What V	What NV	How

Time Stopped: ________

Code 0, 1, 2, or 3:

Children pay attention to what the teacher says, does. ___

Children pay attention to what they are doing. ___

Children are imaginative, creative. ___

Adults use respectful and polite words with children. ___

FIGURE B-2 FIVE-MINUTE OBSERVATION FORM

corner of Figure B-2. The focus of these ratings is the group just observed in the FMI.

Outdoor Observation (OO)

Experience showed that in many cases it would be impossible to make an FMI observation during the active kind of play that often occurs outdoors. Children move too quickly, and the interest areas are too fluid for an observer to maintain continuity over five minutes.

Four broad areas were selected for attention: the variety of activities, expressed as the number of different things going on; teacher directiveness, expressed as the amount of structuring of children's play by the adult present; child independence, expressed as children's reliance or lack of reliance on adults; and the nature of children's interactions with each other--fighting, getting along, helping. A copy of the outdoor observation form is shown in Figure B-3.

Summary of Classroom Environment (SCE)

The SCE is made up of four-point scalar items relevant to the whole classroom day. Many of the items are related conceptually to three broad constructs that play an important role in the program development of several sponsors: child independence, child initiation, and adult directiveness. A copy of the form is shown in Figure B-4.

Physical Arrangement and Equipment Available (PAEA)

The purpose of this part of the Classroom Observation was to describe the setting and record the physical aspects of the learning environment. The PAEA is essentially an inventory of the classroom equipment and its use. Ethnicity as reflected in the selection of books, posters, musics, and other items was recorded. The classroom arrangement and size were drawn by the observer on the final page of the booklet. A copy of the form is shown in Figure B-5.

Outdoor Observation

Time Started: ________

Time Stopped: ________

A List activities (e.g. riding bikes, playing tag). Add on as new activities emerge.

1. ________	9. ________
2. ________	10. ________
3. ________	11. ________
4. ________	12. ________
5. ________	13. ________
6. ________	14. ________
7. ________	15. ________
8. ________	16. ________

B. Code each item: 0 - Never, 1 - Sometimes, 2 - Often, or 3 - Continuously, to indicate the directiveness of the adults during the entire outdoor play time.

___ 1. Adults are observing, non-interactive.

___ 2. Adults are responsive to call, intervene if danger of bodily harm to child.

___ 3. Adults are informally directive, make comments, suggestions, and join in the play.

___ 4. Adults are formally directive, organize activity, require discipline.

C. Code each item 0, 1, 2, or 3 to indicate the independence shown by the children during the entire outdoor play time.

___ 1. Children call on adult for attention or help.

___ 2. Children accept attention or help when offered.

___ 3. Children refuse or ignore adult attention or help.

D. Code each item 0, 1, 2, or 3, to indicate the children's ability to take turns and get along.

___ 1. Children fight or argue.

___ 2. Children take turns.

___ 3. Children help each other.

FIGURE B-3 OUTDOOR OBSERVATION FORM

SUMMARY OF CLASSROOM ENVIRONMENT

Place one of the following code numbers in the space before each item.

0 - NEVER (Attribute totally absent during observation period.)

1 - SOMETIMES (Attribute occasionally present during observation period.)

2 - OFTEN (Attribute frequently present during observation period.)

3 - CONTINUOUSLY (Attribute continuously present during observation period.)

_____ 1. Children help in serving food.

_____ 2. Adults help children by directing their movement from one activity to another.

_____ 3. When children have a problem they solve it themselves.

_____ 4. Adults encourage children to help themselves.

_____ 5. The children are actively seeking and selecting what they are doing.

_____ 6. In approaching and talking to adults, the children seem confident and friendly.

_____ 7. Adults allow children to risk failure to learn to do things for themselves.

_____ 8. Children don't seem to know what to do with themselves in the classroom.

_____ 9. Children use respectful and polite words with each other and adults.

_____ 10. Adults step in quickly when difficulties occur.

_____ 11. The children are spontaneous.

FIGURE B-4 SUMMARY OF CLASSROOM ENVIRONMENT FORM

_____ 12 When talking and playing with each other, the children argue or fight.

_____ 13. The adults seem to be comfortable in what they are doing.

_____ 14. The teacher treats her adult aide as an equal.

_____ 15. The children seem to be confident in what they are doing.

_____ 16. The adults give the children individual attention and help.

_____ 17. Disruptive behavior occurs in the classroom.

When a child misbehaves, he is:

_____ a. ignored by adults.

_____ b. physically forced or restrained.

_____ c. given a firm command.

_____ d. given reasons for not misbehaving.

_____ e. demeaned, spoken to with sarcasm.

_____ f. redirected to another activity.

_____ g. shown another's good behavior.

_____ h. talked with and listened to.

_____ 18. Adults let the children direct their own activities.

_____ 19. Children help in cleaning up.

_____ 20. When children have a problem, they call an adult to solve it.

_____ 21. Children compete with each other.

FIGURE B-4 SUMMARY OF CLASSROOM ENVIRONMENT FORM (Concluded)

PHYSICAL ARRANGEMENT AND EQUIPMENT AVAILABLE

Physical Arrangement

Make a check (√) for each item present in the classroom.

_____ 1. Tables with chairs for seating a group of 4-8 people.

_____ 2. Individual desks.

_____ 3. Assigned seating for at least some part of the day.

_____ 4. Bookshelves children can reach.

_____ 5. Drying area for art work, etc.

_____ 6. Sink (water supply).

_____ 7. Children's own art on display.

_____ 8. Photographs of the children on display.

Equipment Available

Make a check (√) in any column that applies for each item.

Items	Was it present?	Was it used?
A. READING		
1. Programmed reading materials	_____	_____
2. At least 15-20 books	_____	_____
B. SCIENCE		
1. Magnifying glass, microscope, or magnets	_____	_____
2. Plants, leaves, or seeds	_____	_____
3. Animals, fish, insects, or shells	_____	_____
C. MATH		
1. Weights and measures	_____	_____
2. Counting blocks or sticks	_____	_____

FIGURE B-5 PHYSICAL ARRANGEMENT AND EQUIPMENT AVAILABLE

Items	Was it present?	Was it used?
D. GAMES AND TOYS		
1. Puzzles and table games	____	____
2. Big movable blocks, boards, or boxes	____	____
3. Small wooden or plastic building blocks	____	____
4. Wheeled toys	____	____
5. Climbing apparatus	____	____
6. Sand box	____	____
E. ART		
1. Paints and paper	____	____
2. Clay or dough	____	____
3. Yarn, colored paper, fabric, with scissors or paste	____	____
F. MUSIC		
1. Musical instruments, such as bells, drums, sticks, tamborine	____	____
2. Piano	____	____
G. DRAMA		
1. Costumes	____	____
2. Props, equipment	____	____
3. Dolls	____	____
H. DOMESTIC		
1. Real cooking or sewing equipment	____	____
2. Hammers, nails, screws, screwdrivers, saws	____	____

FIGURE B-5 PHYSICAL ARRANGEMENT AND EQUIPMENT AVAILABLE (Continued)

Items	Was it present?	Was it used?
I. LANGUAGE		
1. TV or radio	____	____
2. Record player or tape recorder	____	____
3. Magnetic tape card reader	____	____
J. SELF-IMAGE		
1. Mirrors	____	____

K. DISPLAYS AND ACTIVITIES REFLECTING THE CULTURE OF THE GROUP
For example, books, songs, posters. (Please list)

1. ____________ 4. ____________
2. ____________ 5. ____________
3. ____________ 6. ____________

CULTURES REPRESENTED (Please list) ____________

Briefly describe your feelings about the classroom, the adults, and the children. ____________

Ask the teacher:

1. Was today a typical day, or was something different than usual? (check one)

   Typical ___ Not typical ___ (If not, explain) ____________

2. Were things any different because an observer was here? (check one)

   No ___ Yes ___ (If yes, explain) ____________

FIGURE B-5 PHYSICAL ARRANGEMENT AND EQUIPMENT AVAILABLE (Continued)

The room is _____ paces by _____ paces.

Sketch the floor plan of the classroom on this page. Please label such things as counters and shelves, as well as areas of the room, such as the doll corner, and the block corner.

FIGURE B-5 PHYSICAL ARRANGEMENT AND EQUIPMENT AVAILABLE (Concluded)

Table B-2

FOCUS OF THE OBSERVATION SYSTEMS*

System	Affective	Cognitive	Psychomotor (body movement)	Activity (doing something)	Procedure or Routine Content	Sociological Structure (role, who to whom, etc.)	Physical Environment (material, equipment, etc.)	Other
1. AMIDON (MCS)	x	x						
2. AMIDON HUNTER (VICS)	x							
3 ASCHNER GALLAGHER		x		x	x			
4 BELLACK		x			x			
5. FLANDERS (FSIA)	x							
6. FLANDERS (EXPANDED)	x	x		x		x		
7. GALLAGHER		x		x				
8. HONIGMAN (MACI)	x			x	x			
9 HOUGH	x			x				
10. HUGHES	x		x	x	x			
11. JOYCE	x	x			x			
12 LINDVALL				x		x	x	
13. MEDLEY (OScAR 4V)	x	x			x			
14 MILLER	x	x						
15 MOSKOWITZ (FLint)	x							
16. OLIVER SHAVER		x			x			
17 OPENSHAW CYPHERT	x	x	x	x	x	x		
18 SIMON AGAZARIAN (SAVI)	x	x				x		
19. SMITH (Logic)		x						
20 SMITH (Strategies)		x						
21. SPAULDING (CASES)	x		x	x				
22. SPAULDING (STARS)	x	x		x	x	x		
23. TABA	x	x			x			
24 WITHALL	x							
25. WRIGHT	x	x						
26. WRIGHT PROCTOR	x	x		x				
27. ADAMS BIDDLE	x	x	x	x	x	x	x	x
28 ALTMAN	x	x		x	x			
29 ANDERSON, A.	x	x				x		
30 ANDERSON, H H	x				x			
31 ARGYRIS	x	x				x		
32 BALES	x	x	x		x	x		
33. BARNES	x	x			x			
34 BLUMBERG	x							
35. BORGATTA (BSs)	x					x		
36 BROWN (TPOR)		x		x	x			
37 BROWN, et al (FTCB)		x						
38 BUEHLER RICHMOND			x			x		
39. CLEMENTS		x						
40 CERLI (CVC)	x	x			x	x		
41. DENNY RUSCH IVES (CCOS)	x	x		x				
42. DODL	x	x						
43 FULLER (FAIR 33)	x		x	x	x		x	
44. GALLOWAY	x		x					
45 HALL			x			x		
46 HERBERT (SAL)	x	x	x	x		x	x	x
47. HILL (HIM)	x					x		x
48. HONIGMAN STEPHENS (SAP)		x		x			x	
49 HUNTER	x	x					x	
50. JANSEN	x			x	x			
51 JASON (MIOH)	x			x			x	
52. KOWATRAKUL	x		x	x				x
53 LONGABAUGH (HP)	x	x	x		x	x		
54 MACDONALD ZARET		x						
55 MATTHEWS Teacher (SCAS)	x			x		x		x
56. MATTHEWS Student (SCAS)				x		x		
57 MELBIN	x			x	x	x		
58 McRAE (MIA)	x	x			x			
59 MILLS (SPA)	x					x		
60 MOUSTAKAS SIGEL SCHALOCK	x		x	x	x	x		
61. OBER (RCS)	x							
62. PARAKH (PBCS)		x				x		
63 PERKINS Teacher	x							x
64 PERKINS Student	x			x				
65 RIBBLE SCHULTZ	x	x						
66 RISKIN	x					x		
67 ROBERTSON	x	x	x	x				
68 ROBERTS	x	x						
69 SCHALOCK (TT)	x	x	x	x	x	x	x	
70 SCHUSLER (CIMAI)	x	x		x	x	x	x	
71 SNYDER	x							
72. SOLOMON (TIP)		x						
73. STEINZOR	x	x				x		
74 STUKAT ENGSTROM	x	x	x	x	x		x	
75 TYLER	x	x						x
76 WAIMON	x	x			x			
77 WALLEN, et al (STEPOS)	x	x	x	x				
78. WITHALL LEWIS NEWELL	x	x						
79 WHARG	x							
† STALLINGS (SRI)	x	x		x	x	x	x	

* Reprinted by permission from MIRRORS FOR BEHAVIOR (Simon and Boyer, 1970, p. 8).

† Comparison of Stallings (SRI) instrument with the 79 instruments summarized in MIRRORS FOR BEHAVIOR (Simon and Boyer, 1970).

Table B-3

CODING UNITS USED*

	System	Category Change	Speaker Change	Topic or Content Change	Time Unit	Time Sample	Audience Change	Language Change	Question-Answer-Response Unit
1.	AMIDON (MCS)	x			x				
2.	AMIDON HUNTER (VICS)	x			x				
3	ASCHNER-GALLAGHER	x	x						
4	BELLACK	x	x						
5	FLANDERS (FSIA)	x			x				
6	FLANDERS (EXPANDED)	x			x				
7	GALLAGHER			x					
8	HONIGMAN (MACI)	x			x				
9	HOUGH	x			x				
10	HUGHES	x							
11	JOYCE	x			x				
12	LINDVALL					x			
13	MEDLEY (OScAR 4V)	x	x						x
14	MILLER	x							
15	MOSKOWITZ (FLint)	x			x			x	
16	OLIVER SHAVER			x		x			
17	OPENSHAW CYPHERT	x			x		x		
18	SIMON-AGAZARIAN (SAVI)	x	x		x				
19	SMITH (Logic)			x					
20	SMITH (Strategies)			x					
21.	SPAULDING (CASES)					x			
22	SPAULDING (STARS)					x			
23	TABA			x					
24	WITHALL	x							
25	WRIGHT	x							
26	WRIGHT PROCTOR	x							
27	ADAMS BIDDLE		x		x		x		
28	ALTMAN					x			
29	ANDERSON, A	x	x		x				
30	ANDERSON, H H	x					x		
31	ARGYRIS	x	x						
32	BALES	x	x			x			
33	BARNES					x			
34	BLUMBERG	x			x				
35.	BORGATTA (BSs)	x	x		x				
36.	BROWN (TPOR)					x			
37	BROWN, et al. (FTCB)					x			
38	BUEHLER RICHMOND					x			
39	CLEMENTS	x							
40	C E R L I (CVC)	x	x		x				
41	DENNY RUSCH IVES (CLOS)	x				x			
42	DODL	x			x				
43	FULLER (FAIR 33)	x	x		x				
44	GALLOWAY	x			x				
45	HALL					x			
46	HERBERT (SAL)	x							
47	HILL (HIM)	x	x	x					
48	HONIGMAN STEPHENS (SAP)					x			
49	HUNTER	x	x		x				
50	JANSEN					x			
51	JASON (MIOR)	x				x			
52	KOWATRAKUL					x			
53	LONGABAUGH (R P)	x	x						
54	MACDONALD ZARET	x	x						x
55	MATTHEWS Teacher (SCAS)	x			x				
56	MATTHEWS Student (SCAS)	x			x				
57	MELBIN	x	x		x				
58	McREL (MIA)	x			x				
59	MILLS (SPA)	x	x						
60	MOUSTAKAS SIGEL SCHALOCK	x	x		x				
61	OBER (RCS)	x	x		x				
62	PARAKH (PRCS)	x	x		x				
63	PERKINS Teacher	x				x			
64	PERKINS Student	x				x			
65	RIBBLE SCHULTZ	x	x						
66	RISKIN			x		x			
67	ROBERSON					x			
68	ROBERTS	x							
69	SCHALOCK (TR)	x			x				
70	SCHUSLER (CMAR)	x	x				x		
71	SNYDER	x	x						
72	SOLOMON (TIP)					x			
73	STEINZOR	x							
74	STUKAT ENGSTROM				x				
75	TYLER	x	x						
76	WAIMON	x	x						
77	WALLEN, et al. (STEPOS)					x			
78	WITHALL LEWIS NEWELL	x			x				
79	WRAGG	x			x			x	

† STALLINGS (SRI)	x	x	x	x				x

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† Comparison of Stallings (SRI) instrument with the 79 instruments summarized in MIRRORS FOR BEHAVIOR (Simon and Boyer, 1970).

Table B-4

USAGE OF SYSTEMS*

	System	Number of Subjects Observed: Less Than Three: One Only	Number of Subjects Observed: Less Than Three: Two Only (Dyad)	Number of Subjects Observed: Three or More: In Classroom Setting	Number of Subjects Observed: Three or More: Non-Classroom Setting	Number of Subjects Observed: Point-Time Sample (one person at a time until sample is exhausted)	System	Purpose of Observation as Reported by Author: Research	Purpose of Observation as Reported by Author: Training by Feedback of Observation Data	Purpose of Observation as Reported by Author: Evaluation of Personnel, Materials or Methodology
1	AMIDON (MCS)			x			1.	x	x	
2	AMIDON HUNTER (VICS)			x			2.	x	x	
3	ASCHNER GALLAGHER			x			3	x	x	
4	BELLACK			x			4	x		
5	FLANDERS (FSIA)		x	x			5.	x	x	
6	FLANDERS (EXPANDED)			x			6	x		
7	GALLAGHER			x			7.	x		
8	HONIGMAN (MACI)			x			8	x	x	
9	HOUGH			x			9	x	x	
10	HUGHES			x			10	x	x	
11	JOYCE	x					11	x	x	
12	LINDVALL					x	12	x		
13	MEDLEY (OScAR 4V)			x			13	x		
14	MILLER	x					14	x	x	
15	MOSKOWITZ (FLint)			x			15	x	x	
16	OLIVER SHAVER			x			16	x		
17	OPENSHAW CYPHERT	x					17	x		
18	SIMON AGAZARIAN (SAVI)	x	x	x	x		18	x	x	
19	SMITH (Logic)			x			19	x		
20	SMITH (Strategies)			x			20	x		
21	SPAULDING (CASES)					x	21	x	x	
22	SPAULDING (STARS)	x					22.	x	x	
23	TABA			x			23.	x	x	
24	WITHALL	x					24	x	x	
25	WRIGHT			x			25	x		
26	WRIGHT PROCTOR			x			26	x		
27	ADAMS BIDDLE			x			27	x		
28	ALTMAN			x			28	x		
29	ANDERSON, A			x			29	x	x	
30	ANDERSON, H.H		x	x			30	x	x	
31	ARGYRIS				x		31	x	x	
32	BALES				x		32	x	x	
33	BARNES			x			33.	x	x	
34	BLUMBERG		x				34	x	x	
35	BORGATTA (BSs)				x		35	x		
36	BROWN (TPOR)	x					36.	x	x	x
37	BROWN et al. (FTCB)			x			37	x	x	x
38	BUEHLER RICHMOND	x	x	x	x		38	x	x	
39	CLEMENTS	x					39	x		
40	C E HILL (CVC)			x	x		40	x	x	
41	DENNY RUSCH IVES (CCOS)			x			41	x	x	x
42	DODL			x			42	x		
43	FULLER (FAIR 33)			x			43	x	x	
44	GALLOWAY			x			44	x	x	
45	HALL		x				45	x	x	
46	HERBERT (SAL)			x			46	x	x	
47	HILL (HIM)				x		47.	x	x	
48	HONIGMAN STEPHENS (SAP)					x	48	x		x
49	HUNTER			x			49	x		
50	JANSEN			x			50	x		x
51	JASON (MIOR)	x					51	x	x	
52	KOWATRAKUL					x	52.	x		
53	LONGABAUGH (RP)	x	x		x		53	x		
54	MACDONALD ZARET			x			54	x		
55	MATTHEWS Teacher (SCAS)	x					55.	x	x	x
56	MATTHEWS Student (SCAS)					x	56.	x	x	x
57	MELBIN				x		57	x		
58	McREL (MIA)			x			58	x		
59	MILLS (SPA)			x	x		59	x	x	
60	VOIR TAKAS SIGEL SCHALOCK		x				60.	x		
61	OBER (RCS)			x			61	x	x	x
62	PARAKH (PBCS)			x			62	x		
63	PERKINS Teacher	x					63	x		
64	PERKINS Student			x			64	x		
65	RIBBLE SCHULTZ			x			65	x	x	
66	RISKIN				x		66	x		
67	ROBERSON	x					67	x	x	
68	ROBERTS			x			68	x		
69	SCHALOCK (TR)			x			69	x	x	
70	SCHUSLER (CIMAH)			x			70.	x	x	x
71	SNYDER		x				71.	x	x	
72	SOLOMON (TIP)	x					72	x	x	
73	STEINZOR				x		73	x		
74	STUKAT ENGSTROM	x					74.	x	x	x
75	TYLER			x			75	x		
76	WAIMON	x					76.	x	x	
77	WALLEN, et al. (STEPOS)			x			77.	x	x	
78	WITHALL LEWIS NEWELL			x			78	x	x	
79	WRAGG			x			79.	x	x	
†	STALLINGS (SRI)	x	x	x		x			x	x

* Reprinted by permission from MIRRORS FOR BEHAVIOR (Simon and Boyer, 1970, p. 25).

† Comparison of Stallings (SRI) instrument with the 79 instruments summarized in MIRRORS FOR BEHAVIOR (Simon and Boyer, 1970).

Table B-5

SETTINGS IN WHICH SYSTEM IS USED
AS REPORTED BY AUTHOR*

Classroom Setting Classroom: Teacher, pupils and subject matter content being dealt with. System	For Any Subject Matter	For Specialized Focus	Teacher Only	Pupil Only	Teacher and Pupil
1 AMIDON (MCS)	x				x
2 AMIDON HUNTER (VICS)	x				x
3. ASCHNER GALLAGHER	x				x
4 BELLACK	x	x			x
5 FLANDERS (FSIA)	x				x
6 FLANDERS (EXPANDED)	x				x
7 GALLAGHER	x				x
8 HONIGMAN (MACI)	x				x
9 HOUGH	x				x
10 HUGHES	x				x
11 JOYCE	x		x		
12 LINDVALL		x		x	
13 MEDLEY (OScAR 4V)	x				x
14 MILLER	x		x		
15 MOSKOWITZ (FLint)		x			x
16 OLIVER SHAVER	x	x			x
17 OPENSHAW CYPHERT	x		x		
18 SIMON AGAZARIAN (SAVI)	x				x
19 SMITH (Logic)	x				x
20 SMITH (Strategies)	x				x
21 SPAULDING (CASES)	x			x	
22 SPAULDING (STARS)	x		x		
23. TABA	x	x			x
24 WITHALL	x		x		
25 WRIGHT		x			x
26 WRIGHT PROCTOR		x			x
27. ADAMS-BIDDLE	x				x
28 ALTMAN	x	x			x
29 ANDERSON, A		x			x
30 ANDERSON, H.H.	x				x
31 ARGYRIS					
32 BALES					
33 BARNES	x				x
34 BLUMBERG	x				
35 BORGATTA (BSs)					
36 BROWN (TPOR)	x		x		
37 BROWN, et al. (FTCB)	x				x
38 BUEHLER RICHMOND	x				x
39 CLEMENTS	x	x	x		
40 CERLI (CVC)	x				x
41 DENNY HUSCH IVES (CCDS)	x				x
42 DODL	x				x
43 FULLER (FAIR 33)	x				x
44 GALLOWAY	x				x
45 HALL					
46 HERBERT (SAL)	x				x
47 HILL (HIM)					
48 HONIGMAN STEPHENS (SAP)		x		x	
49 HUNTER	x	x			x
50 JANSEN		x			x
51 JASON (MIOR)		x	x		
52 KOWATRAKUL	x			x	
53 LONGABAUGH (RP)					
54 MACDONALD ZARET	x				x
55. MATTHEWS-Teacher (SCAS)	x	x	x		
56 MATTHEWS Student (SCAS)	x	x		x	
57 MELBIN					
58 McREL (MIA)	x				x
59 MILLS (SPA)	x	x			x
60 MOUSTAKAS SIGEL SCHALOCK					
61 OBER (RCS)	x				x
62 PARAKH (PBCS)	x	x		x	
63 PERKINS Teacher	x		x		
64 PERKINS Student	x			x	
65 RIBBLE SCHULTZ	x				x
66 RISKIN					
67 ROBERSON	x		x		
68 ROBERTS	x	x			x
69 SCHALOCK (TR)	x				x
70 SCHUSLER (CIMAR)	x				x
71 SNYDER					
72 SOLOMON (TIP)	x		x		
73 STEINZOR					
74 STUKAT ENGSTROM	x		x		
75 TYLER	x				x
76 WAIMON	x		x		
77 WALLEN, et al. (STEPOS)	x				x
78 WITHALL LEWIS NEWELL	x				x
79 WRAGG		x			x
† STALLINGS (SRI)	x			x	x

* Reprinted by permission from MIRRORS FOR BEHAVIOR (Simon and Boyer, 1970, pp. 20 and 23).

† Comparison of Stallings (SRI) instrument with the 79 instruments summarized in MIRRORS FOR BEHAVIOR (Simon and Boyer, 1970).

Appendix C

TEST INSTRUMENTS

Appendix C

TEST INSTRUMENTS

This appendix includes the following forms:

8071
4-70

MANUAL FOR BIRCH SCORING OF THE STANFORD-BINET

The child's behavioral reactions to the administration of the Revised Stanford-Binet, Form L-M will be coded according to the recent revision of the Birch scoring procedure employed in the 1968-1969 national Head Start evaluation. It will be used to record whether the child attempted to work at each item, whether his reaction was verbal or non-verbal, and whether he limited his responses to the demands of the task or spontaneously elaborated beyond those demands. If the child did not work toward completing the task, there are categories to describe his method of avoidance.

The coding categories are presented schematically in Figure 1. The general categories-- work, not work, verbal, non-verbal -- and the scoring conditions for each category are described below:

A. Work Responses. The child attempts to complete the task. His success, failure, intention, or ability are not considered in the coding. If the child is engaged in the task, his response is coded 'work'. For example, if the child puts only one block next to another when he is asked to build a bridge of several blocks, his response is coded as work.

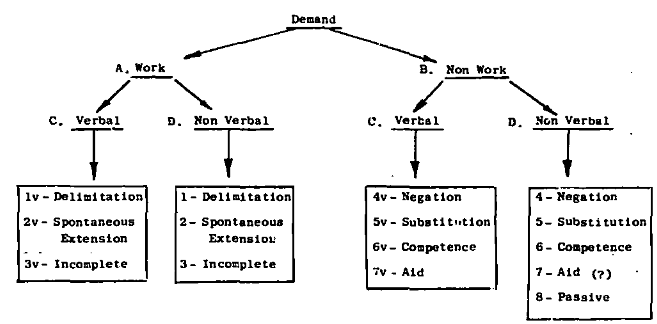
B. Not-Work Responses. The child fails to work at the task presented. He may remain passive and unresponsive or become enthusiastically involved in an alternative task of his own choosing, but if he is not involved in responding to the task presented by the examiner, his response is coded as not-work.

C. Verbal Response. If the child uses words, his response is coded as a verbal response, even if the task requires a non-verbal response, and even if the response to the item is not correct.

D. Non-Verbal Responses. If the child does not use words, his response is classified as a non-verbal response, regardless of whether the appropriate response to the task is non verbal or verbal, and regardless of whether the child is responding appropriately to the task.

Figure 1

BIRCH RESPONSE STYLE CODING CATEGORIES



One of the following coding categories should be used to code the child's responses to each item or sub-item that is presented to him during the administration of the Stanford-Binet, Form L-M. Each type of response is further designated as verbal or non-verbal. For example, a Spontaneous Extension (described below) is scored as '2' if non-verbal or as '2v' if verbal.

CODING CATEGORIES

1 & 2 are correct responses

1. Delimitation. The child's response to a work item correctly answers the item but provides no further elaboration. For example, a child might correctly fold his paper to match that of the examiner and then sit quietly or give the response, "wood," to the question, "What is a house made of?"

2. Spontaneous Extension. The child's work response is accompanied by an unsolicited elaboration related to the item. For example, after she finishes stringing beads, a girl ties the ends of the string together and tries to slip it over her head, or she might say, "Yours is smaller than mine," in comparing her tower of four blocks with the examiner's model consisting of three blocks.

3. Incomplete. The child fails to complete the task (either a verbal or non-verbal task) and does nothing else (categories 4,5, 6, and 7, below).

3 thru 8 are incorrect responses

4. Negation. Direct refusal to work, such as "No, I won't," "I don't want to," or "I don't like to do it;" or shakes her head or turns away to indicate refusal.

5. Substitution. The child offers an irrelevant verbalization or engages in irrelevant physical activity instead of responding to the task requested. For example, a substitute verbalization often takes the form of a request for an alternative activity, such as: "I want to play with the toys now," "I want to go to mommy," or "I want a drink." Non-verbal substitutions may be of the following type: When asked to build a block bridge, the child gets up, goes to the toy shelves and begins to play with a truck. When asked to describe the pictures, the child gets up and runs out of the room.

6. Competence. The child states some limitation of ability to perform the assigned task. Such responses include the following: "I don't know how," "I'm too little to do it." It is possible, though unlikely, that the child can convey his feeling of lack of competence by use of gestures and animation.

7. Aid. The child makes a direct request for help from the examiner. This would include such comments as "Show me how to do it," or "Tell me what the answer is." It is unlikely that a request for aid will be made non-verbally.

8. Passive. This is a No Response category. The child may just sit still when, for example, sticks are presented, or look straight ahead and say nothing when asked to tell a story about pictures.

SCORING INSTRUCTIONS

Use the Supplemental Work Sheet for entering the response codes for each item. The work sheet simply provides more writing space than the original S-B Record Form which must be used when the child draws figures, mazes, etc.

Be sure the identification on the front of the Worksheet is completed. Transfer the scores to the Test Summary column on the front of the S-B Record Form.

1. Each item presented to the child is to be scored using the codes described above (and summarized in Figure 1). A Code Table is printed on top of each Worksheet page for easy reference.

2. Code a verbal response to a non verbal item, or a non-verbal response to a verbal item as a Not Work Substitution. (5v or 5)

3. If a child gives a verbal and a non-verbal response simultaneously, code the response as a verbal response. (v)

4. Pointing or turning pages spontaneously is not coded as Spontaneous Extension. (2 or 2v)

5. "O.K., yes, here, there, here it is, this one,"etc. are not coded as Spontaneous Extensions. (2 or 2v)

6. Only the last response to an item is given a point code--comments of an Extension type that are given before the final response are not coded as Spontaneous Extensions.

TEACHER QUESTIONNAIRE

HEAD START CENTER NAME: ______________________

CLASSROOM LOCATION: ______________________

COMMUNITY/CITY, STATE: ______________________ (Zip Code)

TEACHER: Miss / Mrs. / Mr. ______________________
(Last) (First) (Initial)

Date this questionnaire completed ______________________
(Month) (Day) (Year)

Stanford Research Institute

Menlo Park, California

(Deck 01)

A. CLASSROOM PRACTICES

How do you usually react in each of the following situations?
(Check as many as apply)

1. When a child has behaved toward another child in a desirable way, I usually:

   1 ☐ Make a remark such as "good," "that's fine," and so on 33
   2 ☐ Tell child what was good about his behavior 34
   3 ☐ Give candy, tokens, etc. 35
   4 ☐ Give extra privileges 36
   5 ☐ Other ______________ (Please specify) 37

2. When a child has behaved toward an adult in a desirable way, I usually:

   1 ☐ Make a remark such as "good," "that's fine," and so on 38
   2 ☐ Tell child what was good about his behavior 39
   3 ☐ Give candy, tokens, etc. 40
   4 ☐ Give extra privileges 41
   5 ☐ Other ______________ (Please specify) 42

3. When a child has behaved in solving a learning problem in a desirable way, I usually:

   1 ☐ Make a remark such as "good," "that's fine," and so on 43
   2 ☐ Tell child what was good about his behavior 44
   3 ☐ Give candy, tokens, etc. 45
   4 ☐ Give extra privileges 46
   5 ☐ Other ______________ (Please specify) 47

4. When a child has behaved toward another child in an <u>undesirable</u> way, I usually:

- 1 ☐ Make a remark such as "poor," "we'll do better next time," and so on — 48
- 2 ☐ Tell child what was not good about his behavior — 49
- 3 ☐ Withhold rewards such as candy, tokens — 50
- 4 ☐ Take away privileges of some sort — 51
- 5 ☐ Other ______________ (Please specify) — 52

5. When a child has behaved toward an adult in an <u>undesirable</u> way, I usually:

- 1 ☐ Make a remark such as "poor," "we'll do better next time," and so on — 53
- 2 ☐ Tell child what was not good about his behavior — 54
- 3 ☐ Withhold r~wards such as candy, tokens — 55
- 4 ☐ Take away privileges of some sort — 56
- 5 ☐ Other ______________ (Please specify) — 57

6. When a child has behaved in solving a learning problem in an <u>undesirable</u> way, I usually:

- 1 ☐ Make a remark such as "poor," "We'll do better next time," and so on — 58
- 2 ☐ Tell child what was not good about his behavior — 59
- 3 ☐ Withhold rewards such as candy, tokens — 60
- 4 ☐ Take away privileges of some sort — 61
- 5 ☐ Other ______________ (Please specify) — 62

7. If you have a class schedule, please attach a copy to the questionnaire; otherwise, please describe your "typical" day in the classroom, by time intervals and activities:

	Time:	Activities:
Day begins:		
Day ends:		

(Deck 04)

8. Please indicate the approximate amount of time (in hours or minutes) that a "typical" child now spends each day in the different size groups listed below. Then write the amount of time you would prefer to have the child spend in each size group. (Do not include bathroom, lunch, or rest times.)

Note: If it is easier to answer the question by thinking of one particular child instead of a "typical" child, please do so, and check this box ☐

Now Spends	Different Size Groups	Prefer	
33-35 _____	Activities with the entire class	_____	48-49
36-38 _____	Activities with a large group of children (at least 6 other children)	_____	50-51
39-41 _____	Activities in a small group (with between 1 to 5 other children)	_____	52-53
42-44 _____	Activities done alone	_____	54-55
45-47 _____	Other: _____	_____	56-57

9. Again, not including bathroom, meals, or rest time, about how much time each day (in hours or minutes) might the "typical" child, or one particular child, be engaged in activities that:

58-60 _____ The child selects without consultation

61-63 _____ The child selects after some discussion with you or a teacher assistant

64-66 _____ You or a teacher assistant and the child decide on together

67-69 _____ You or a teacher assistant selects after consulting with the child

70-72 _____ You or a teacher assistant selects for the child without consultation

73-75 _____ Other: _____

(Deck 05)

10. From the methods listed below, please indicate (by letter) which you use it teaching the following subjects:

Methods	Subjects	
_____	Language	33-35
_____	Reading	36-38
_____	Spelling	39-41
_____	Mathematics	42-44
_____	Science	45-47
_____	Social Science	48-50
_____	Writing	51-53
_____	Other subjects: _____	54-56
_____	_____	57-59
_____	_____	60-62

Methods

A. Groups of children are taught in time periods planned for and devoted to the subject.

B. Groups of children are encouraged to engage in activities that provide specific opportunities for them to learn.

C. As individual children or groups of children indicate interest or raise questions concerning these subjects, they are guided in learning them. However, no special effort is made to reach specific goals.

Other methods:

D. _____ 63

E. _____ 64

F. _____ 65

(Deck 06)

11. What is the name of the Head Start planned variation sponsor in your community?

____

1 ☐ Don't Know 33

12. Please check as many of the following as apply to you:

1 ☐ Have attended meetings where model was presented 34
2 ☐ Have discussed the model with other teachers 35
3 ☐ Have not heard about the model formally or informally 36

13. Which of the following have you received from the sponsor:

1 ☐ Pre-service training 37
2 ☐ In-service training 38
3 ☐ Equipment 39
4 ☐ Teaching materials 40
5 ☐ Individual consultation 41
6 ☐ Visits in your classroom from sponsor training staff 42
7 ☐ Other ______________ 43
8 ☐ None of the above 44

14. Do you think the classroom program in this class could be improved?

1 ☐ No (GO ON TO NEXT PAGE) 45
2 ☐ Yes--In what way? 46-48

____
____
____
____
____

15. Is the educational television program called "Sesame Street" shown in your area?

1 ☐ No (GO ON TO NEXT PAGE)
2 ☐ Yes (GO ON TO QUESTION 16) 49

16. Do you use "Sesame Street" in your classroom?

1 ☐ No (GO ON TO QUESTION 18)
2 ☐ Yes--Do the children have a choice of watching it or not watching it? 50

3 ☐ Yes, it is left on for the children to watch if they choose.
4 ☐ No, it is a regular part of the class which all the children watch together. 51
5 ☐ Other ______________ (please describe)

17. Is the program followed by pre-planned material related to the Sesame Street?

1 ☐ There are discussions or activities after each show which I plan 52
2 ☐ I use the Sesame Street guide regularly for discussion and activities 53
3 ☐ There is no pre-planned activity related to the show 54
4 ☐ Other ______________ 55

18. What time of day is the program shown in your area? ______________ 56-59

19. What days of the week is it shown? ______________ 60-66

20. About what percent of the children in your classroom watch "Sesame Street" at home?

_____% 67-69

(Deck 08)

B. EDUCATIONAL GOALS

Please indicate by checking an appropriate point on the scale, how important you consider the following goals for the children in your class this year. (1 = Very important, 4 = Somewhat important, 7 = Not important at all)

1. Participation in group activities	Very important	:_:_:_:_:_:_:_: 1 2 3 4 5 6 7	Not important at all	33
2. Trust of adults	Very important	:_:_:_:_:_:_:_:	Not important at all	34
3. Familiarity with books, paper, crayons, pencils	Very important	:_:_:_:_:_:_:_:	Not important at all	35
4. Observing safety habits	Very important	:_:_:_:_:_:_:_:	Not important at all	36
5. Going to the toilet alone	Very important	:_:_:_:_:_:_:_:	Not important at all	37
6. Tidiness	Very important	:_:_:_:_:_:_:_:	Not important at all	38
7. Handling books carefully	Very important	:_:_:_:_:_:_:_:	Not important at all	39
8. Enjoying stories	Very important	:_:_:_:_:_:_:_:	Not important at all	40
9. Standing up for his own rights	Very important	:_:_:_:_:_:_:_:	Not important at all	41
10. Reading	Very important	:_:_:_:_:_:_:_:	Not important at all	42
11. Speaking more	Very important	:_:_:_:_:_:_:_:	Not important at all	43
12. Solving problems	Very important	:_:_:_:_:_:_:_:	Not important at all	44
13. Using what he knows more effectively	Very important	:_:_:_:_:_:_:_:	Not important at all	45
14. Speaking clearly	Very important	:_:_:_:_:_:_:_:	Not important at all	46
15. Thinking logically	Very important	:_:_:_:_:_:_:_:	Not important at all	47
16. Identifying cause-effect relationships	Very important	:_:_:_:_:_:_:_:	Not important at all	48
17. Enjoying other children	Very important	:_:_:_:_:_:_:_: 1 2 3 4 5 6 7	Not important at all	49

18. Accepting new people without fear	Very important	:_:_:_:_:_:_:_: 1 2 3 4 5 6 7	Not important at all	50
19. Taking turns	Very important	:_:_:_:_:_:_:_:	Not important at all	51
20. Feeling secure in a school situation	Very important	:_:_:_:_:_:_:_:	Not important at all	52
21. Caring for and picking up material	Very important	:_:_:_:_:_:_:_:	Not important at all	53
22. Following directions	Very important	:_:_:_:_:_:_:_:	Not important at all	54
23. Putting on and taking off their own wraps	Very important	:_:_:_:_:_:_:_:	Not important at all	55
24. Completing a task before starting another	Very important	:_:_:_:_:_:_:_:	Not important at all	56
25. Observing good health practices	Very important	:_:_:_:_:_:_:_:	Not important at all	57
26. Relying on verbal communication more than gesture	Very important	:_:_:_:_:_:_:_:	Not important at all	58
27. Working and playing cooperatively	Very important	:_:_:_:_:_:_:_:	Not important at all	59
28. Respecting the rights of others	Very important	:_:_:_:_:_:_:_:	Not important at all	60
29. Sharing ideas and materials	Very important	:_:_:_:_:_:_:_:	Not important at all	61
30. Using good table manners	Very important	:_:_:_:_:_:_:_:	Not important at all	62
31. Working independently	Very important	:_:_:_:_:_:_:_:	Not important at all	63
32. Leading effectively	Very important	:_:_:_:_:_:_:_:	Not important at all	64
33. Following effectively	Very important	:_:_:_:_:_:_:_:	Not important at all	65
34. Accepting group decisions	Very important	:_:_:_:_:_:_:_:	Not important at all	66
35. Expressing his negative feelings	Very important	:_:_:_:_:_:_:_:	Not important at all	67
36. Expressing his positive feelings	Very important	:_:_:_:_:_:_:_:	Not important at all	68
37. Being confident of himself	Very important	:_:_:_:_:_:_:_: 1 2 3 4 5 6 7	Not important at all	69

38.	Accepting authority	Very important	: _ : _ : _ : _ : _ : _ : _ : (1 2 3 4 5 6 7)	Not important at all	70
39.	Showing mastery of quantitative concepts and operations	Very important	: _ : _ : _ : _ : _ : _ : _ :	Not important at all	71
40.	Developing desire to learn	Very important	: _ : _ : _ : _ : _ : _ : _ :	Not important at all	72
41.	Accepting feelings and opinions of others	Very important	: _ : _ : _ : _ : _ : _ : _ :	Not important at all	73

Other goals (please specify)

42.	____________	Very important	: _ : _ : _ : _ : _ : _ : _ :	Not important at all	74
43.	____________	Very important	: _ : _ : _ : _ : _ : _ : _ :	Not important at all	75
44.	____________	Very important	: _ : _ : _ : _ : _ : _ : _ :	Not important at all	76
45.	____________	Very important	: _ : _ : _ : _ : _ : _ : _ : (1 2 3 4 5 6 7)	Not important at all	77

(Deck 09)

C. SOCIAL COMPETENCY

Please answer each of the following questions by giving the number of children in your class that were in each answer category, as of last week. The five answer categories in each set should add to the total number of children in your class.

First, how many children are there in your class? ____

1. How many of the children:
   - a. ____ Can state full name, age, and address 33-34
   - b. ____ Can state full name and age, but not address 35-36
   - c. ____ Can state full name, but not age or address 37-38
   - d. ____ Can state only first name 39-40
   - e. ____ Can't really say 41-42

2. How many of the children:
   - a. ____ Use no proper names in interacting with those around them 43-44
   - b. ____ Use the names of no more than five children or adults 45-46
   - c. ____ Use the names of from five to ten children 47-48
   - d. ____ Use the names of virtually all children and adults 49-50
   - e. ____ Can't really say 51-52

3. When a new child joins the group, how many of the children:
   - a. ____ Inadvertently physically overpower the new child (hug, bump, pull) in greeting him 53-54
   - b. ____ Make a limited and brief physical contact (pat, poke, rub) with him, as well as some verbal contact 55-56
   - c. ____ Usually make verbal contact and sometimes touch child 57-58
   - d. ____ Nearly always make verbal contact with child without physical contact 59-60
   - e. ____ Can't really say 61-62

4. How many children when they have an accident, e.g., spilling, breaking:
   - a. ____ Do not report the accident 63-64
   - b. ____ Sometimes report the accident 65-66
   - c. ____ Frequently report the accident 67-68
   - d. ____ Nearly always report the accident 69-70
   - e. ____ Can't really say 71-72

(Deck 10)

5. How many of the children:

a. ____ Wander from activity to activity with no sustained participation 33-34
b. ____ Continue in own activity but are easily diverted when they notice activities of others 35-36
c. ____ Continue in own activity and leave it only when interrupted by others 37-38
d. ____ Continue in own activity in spite of interruptions 39-40
e. ____ Can't really say 41-42

6. How many of the children:

a. ____ Usually have to be asked two or three times before they begin a task 43-44
b. ____ Usually begin a task the first time asked, but dawdle and have to be reminded 45-46
c. ____ Begin a task the first time asked, but are slow in completing it 47-48
d. ____ Begin a task the first time asked and are prompt in completing it 49-50
e. ____ Can't really say 51-52

7. How many of the children *can follow verbal instructions*:

a. ____ Only when they are accompanied by demonstration 53-54
b. ____ Without a demonstration, when one specific instruction is involved 55-56
c. ____ Without a demonstration, when two specific instructions are involved 57-58
d. ____ Without a demonstration, when three or more specific instructions are involved 59-60
e. ____ Can't really say 61-62

8. How many of the children:

a. ____ Seldom verbalize their wants, nearly always act out by pointing, pulling, crying, etc. 63-64
b. ____ Sometimes verbalize, but usually combine actions with words 65-66
c. ____ Usually verbalize, but *sometimes* act out their wants 67-68
d. ____ Nearly always verbalize their wants without acting out 69-70
e. ____ Can't really say 71-72

9. How many of the children: (Deck 11)

a. ____ Take objects being used by others without asking permission 33-34
b. ____ Sometimes ask permission to use others' objects 35-36
c. ____ Frequently ask permission to use others' objects 37-38
d. ____ Nearly always ask permission to use others' objects 39-40
e. ____ Can't really say 41-42

10. How many of the children:

a. ____ Usually play by themselves 43-44
b. ____ Play with others but limit play to one or two children 45-46
c. ____ Occasionally play with three or more children 47-48
d. ____ Usually play with three or more children 49-50
e. ____ Can't really say 51-52

11. When they could join in an activity in which other children are participating, how many of the children:

a. ____ Seldom initiate getting involved in the activity 53-54
b. ____ Sometimes initiate getting involved in the activity 55-56
c. ____ Frequently initiate getting involved in the activity 57-58
d. ____ Nearly always initiate getting involved in the activity 59-60
e. ____ Can't really say 61-62

12. When playing with others, how many of the children:

a. ____ *Typically follow* the lead of others 63-64
b. ____ Sometimes make suggestions for the direction of the play 65-66
c. ____ Frequently make suggestions for the direction of the play 67-68
d. ____ Nearly always make suggestions for the direction of the play 69-70
e. ____ Can't really say 71-72

13. How many of the children: (Deck 12)

a. ____ Frequently interrupt or push others to get ahead of them in an activity where taking turns is customary 33-34
b. ____ Attempt to take turn ahead of time but do not push or quarrel in order to do so 35-36
c. ____ Wait for turn, but tease or push those ahead of them 37-38
d. ____ Wait for turn or wait to be called on 39-40
e. ____ Can't really say 41-42

D. HOME VISITS / PARENT PARTICIPATION

1. What policy do you follow regarding home visits?

   1 ☐ There is no policy (GO ON TO QUESTION 2) 43

   2 ☐ The Head Start Policy

   3 ☐ The Planned Variation Policy

1a. What is the policy? ______________________________

______________________________ 44-45

____

2. Have any home visits been made so far this year?

   1 ☐ No (GO ON TO QUESTION 4) 46

   2 ☐ Yes--About how many? ________ 47-48

3. Who made these visits? ______________________________ 49

4. About how many home visits are planned by the end of the year?

   ________ Total 1 ☐ None 50-51

5. During this school year, how many homes will you have visited:

   _____ Once during the year 52

   _____ Twice during the year 53

   _____ Three times during the year 54

   _____ Four or more times during the year 55

   _____ Not at all 56

6. How important do you consider home visits?

   1 ☐ Very important 57

   2 ☐ Somewhat important

   3 ☐ Not very important

   4 ☐ Not important at all

7. Compared with the beginning of the school year, are more, fewer, or about the same number of parents now participating in your classroom activities?

   ☐ More 58

   ☐ Fewer

   ☐ About the same

8. Please indicate whether or not you think the parents of most of the children in your class should participate in the following, then whether or not you think they do participate.

Most Should: Yes	No	Can't Say		Most Do: Yes	No	Can't Say	
☐ 1	☐ 2	☐ 3	a. Help their children with class work at home	☐ 1	☐ 2	☐ 3	59-60
☐	☐	☐	b. Help their children develop better discipline at home	☐	☐	☐	61-62
☐	☐	☐	c. Help their children develop better work habits at home	☐	☐	☐	63-64
☐	☐	☐	d. Help teach in the classroom, under your supervision	☐	☐	☐	65-66
☐	☐	☐	e. Help on trips or other school activities outside the class	☐	☐	☐	67-68
☐	☐	☐	f. Belong to a board or committee that determines the class curriculum	☐	☐	☐	69-70
☐	☐	☐	g. Belong to an advisory committee that would help you obtain more and better materials and equipment for the children to use	☐	☐	☐	71-72
☐	☐	☐	h. Belong to a board or committee that selects program administrators	☐	☐	☐	73-74
☐	☐	☐	i. Belong to a board or committee that makes Head Start policy on teacher selection	☐	☐	☐	75-76
☐ 1	☐ 2	☐ 3	j. Belong to a board or committee that selects teachers	☐ 1	☐ 2	☐ 3	77-78

(Deck 17)

E. MATERIALS - EQUIPMENT

By using the appropriate number in the code below, please indicate the availability and use of the items to children in your class.

Code: 1 = Available, but not used; 2 = Available and used; 3 = Needed
(Blanks will indicate the item is neither available nor needed.)

1. ___ Building materials (packing boxes, sawhorses, boards, large blocks)
2. ___ Woodworking tools
3. ___ Slides, jungle gyms, or monkey bars
4. ___ Swings or other moving equipment
5. ___ Wheel toys (tricycles, cars, wagons, scooters, etc.)
6. ___ Balls
7. ___ Sandboxes and digging equipment
8. ___ Cots or beds
9. ___ Toy housekeeping equipment
10. ___ Cooking equipment and utensils
11. ___ Dramatic play clothing
12. ___ Dolls
13. ___ Puppets
14. ___ Aquarium or pets
15. ___ Nature or science materials (plants, crystals, rocks, etc.)
16. ___ Waterplay equipment
17. ___ Finger paints, water colors or tempera
18. ___ Crayons, coloring books
19. ___ Blackboard and chalk
20. ___ Printing devices (typewriters, printing sets, label makers)
21. ___ Sculpting materials (sand, clay, dough, etc.)
22. ___ Small blocks, Lincoln Logs, Tinker Toys, etc.
23. ___ Toy cars, boats, fire engines, etc.
24. ___ Puzzles, peg boards
25. ___ Quiet games
26. ___ Reading materials (pictures, books, magazines, pamphlets, etc.)
27. ___ Flash cards
28. ___ Musical instruments (drums, triangles, etc.)
29. ___ Phonograph and records
30. ___ Tape recorder for use with children
31. ___ Movie or slide projector and films
32. ___ TV receiver
33. ___ Radio receiver
34. ___ Special teaching devices (Bell and Howell Language master, etc.)
35. ___ Programmed textbooks
36. ___ Mathematical equipment (abacus, counting devices, play money, etc.)
37. ___ Science equipment
38. ___ Other (please specify) ______________

NOTE: Please rank, in order of importance, the five you consider most essential, whether or not the item is available to your class. (Record the numbers.)

1 ________ 39-40
2 ________ 41-42
3 ________ 43-44
4 ________ 45-46
5 ________ 47-48

39. Check any of the following library facilities available to the children in your class:

1 ☐ Books in the classroom for use in the classroom. 33
2 ☐ Books in the classroom for children to take home. 34
3 ☐ Books in one central school location for all classes to use. 35
4 ☐ Books in nearby library outside the school. 36
5 ☐ Other ______________________ 37
(please describe)

40. Please write in the number of times this school year the children in your class have gone on field trips or visits to any of the following:

___ Parks and woodlands 38
___ Museums 39
___ Libraries 40
___ Farms 41
___ Industries 42
___ Zoo 43
___ Seashore, waterfront, or lakefront 44
___ Musical performances 45
___ Children's plays 46
___ Post Office, Fire Station, Police Department, etc. 47
___ Airports 48
___ Shopping centers 49
___ Fairs 50

Others:
______________ 51
______________ 52
______________ 53
______________ 54

1 ☐ None Why is that? ______________ 55-57
____
____

(Deck 13)

F. BACKGROUND AND TEACHING EXPERIENCE

1. Where have you lived most of your life?

   ____________________ 33
   (state or foreign country)

2. Have you lived most of your life in a rural or urban community? 34
   1 ☐ Rural
   2 ☐ Urban

3. Do you now live in the neighborhood where most of the children in your class live? 35
   1 ☐ No (GO ON TO QUESTION 4)
   2 ☐ Yes--About how long have you lived in this neighborhood?
      3 ☐ Less than 1 year
      4 ☐ 1 to 3 years
      5 ☐ 4 to 6 years
      6 ☐ 7 to 9 years
      7 ☐ 10 years or more

4. Are you: 36
   1 ☐ Male 2 ☐ Female

5. Are you: 37
   1 ☐ Single
   2 ☐ Married
   3 ☐ Widowed
   4 ☐ Divorced
   6 ☐ Separated

6. Do you have any children? 38
   1 ☐ No (GO ON TO QUESTION 7)
   2 ☐ Yes--Have any of your children ever been in:
      Head Start? 1 ☐ Yes 2 ☐ No 39
      Follow Through? 1 ☐ Yes 2 ☐ No

7. How old were you on your last birthday?

   ______ years 42-43

8. Are you: 44
   1 ☐ Negro/Black
   2 ☐ Caucasian: Mexican American
   3 ☐ Caucasian: Puerto Rican
   4 ☐ Caucasian: Other
   5 ☐ American Indian
   6 ☐ Oriental
   7 ☐ Other ____________________
      (Please specify)

9. Please circle the highest grade completed at each level of school you attended: 45-46
   1 Elementary School............1 2 3 4 5 6 7 8
   2 High School..................1 2 3 4
   3 College (Undergraduate).......1 2 3 4
   4 College (Graduate school).....1 2 3 4 5+

10. What is your highest diploma or degree? 47
   1 ☐ None
   2 ☐ High School Diploma
   3 ☐ Associate's Degree
   4 ☐ Bachelor's Degree
   5 ☐ Master's Degree
   6 ☐ Doctor's Degree

11. Have you taken education courses leading to a degree (whether or not you received a degree) in Education or Home Economics at a college or university?

- 1 ☐ No (GO ON TO QUESTION 13) 48
- 2 ☐ Yes--In which of the following subjects have you taken one or more courses?
  - 1 ☐ Early Childhood Development 49
  - 2 ☐ Elementary Education 50
  - 3 ☐ Home Economics 51
  - 4 ☐ Secondary Education 52
  - 5 ☐ Psychology 53
  - 6 ☐ Sociology 54
  - 7 ☐ Social Work 55
  - 8 ☐ Other Education courses 56
  - 9 ☐ None of the above 57

12. What were your two major subjects? 58-59

- 1 ☐ Early Childhood Development
- 2 ☐ Elementary Education
- 3 ☐ Home Economics
- 4 ☐ Secondary Education
- 5 ☐ Psychology
- 6 ☐ Sociology
- 7 ☐ Social Studies
- 8 ☐ Other (Please specify): ____________________

____

13. Please check any of the following courses or practice teaching that you have had:

- 1 ☐ An adult education course in early childhood development 60
- 2 ☐ Nursery School teaching course 61
- 3 ☐ Supervised nursery school practice teaching 62
- 4 ☐ Kindergarten, First, or Second Grade teaching course 63
- 5 ☐ Supervised Kindergarten, First, or Second Grade practice teaching 64

14. Do you have a state or city teaching certificate?

- 1 ☐ No (GO ON TO QUESTION 15) 65
- 2 ☐ Yes--What type?
  - 3 ☐ Temporary, provisional, or emergency
  - 4 ☐ Regular, but less than the highest in the state
  - 5 ☐ Highest (life, permanent, or long-term)
  - 6 ☐ Other: ____________________ (Please specify)

15. Have you attended any summer courses or training programs where you had special training in teaching economically disadvantaged children?

- 1 ☐ No (GO ON TO QUESTION 16) 66
- 2 ☐ Yes--

Names of institutes or programs:	Dates you attended:
____________________	__________
____________________	__________
____________________	__________

16. Have you participated before this year in a *Head Start* or other compensatory education program? (Deck 14)

- 1 ☐ No (GO ON TO QUESTION 17) 33
- 2 ☐ Yes--Which of the following?

	Dates of your participation	In what capacity?	
1 ☐ Summer Head Start	__________	__________	34-42
2 ☐ Full Year Head Start	__________	__________	43-51
3 ☐ Other __________ (Please specify)	__________	__________	52-60

17. Have you been given any on-the-job or in-the-program training?

- 1 ☐ No (GO ON TO QUESTION 18) 61
- 2 ☐ Yes--How effective do you feel this is? (Please explain) 62-64

____

____

____

(Deck 15)

18. As of June 1970, how many years of full-time paid teaching experience will you have had in each of the following?

- _____ years in Head Start 33-34
- _____ years in other Pre-School 35-36
- _____ years in Kindergarten 37-38
- _____ years in First Grade 39-40
- _____ years in Second through Fourth Grade 41-42
- _____ years in Fifth Grade or higher 43-44

19. How did you happen to teach in this center rather than another? 45

- 1 ☐ I was assigned to thi center
- 2 ☐ I was asked if I wanted to teach in this center
- 3 ☐ I asked to be assigned to this center
- 4 ☐ Other: _______________

20. How did you happen to teach in this class rather than another? 46

- 1 ☐ I was assigned to this class
- 2 ☐ I was asked if I wanted to teach in this class
- 3 ☐ I asked to be assigned to this class
- 4 ☐ Other: _______________

21. Do you plan to teach in either Head Start of Follow Through next fall? 47

- 1 ☐ Yes, Head Start
- 2 ☐ Yes, Follow Through
- 3 ☐ Neither--Why is that? _______________ 48-49

____

22. Please check the months you have taught this class and write in how many days in each month the class was in session.

- 1 ☐ September 1969 _____ days 50-51
- 2 ☐ October _____ days 52-53
- 3 ☐ November _____ days 54-55
- 4 ☐ December _____ days 56-57
- 5 ☐ January 1970 _____ days 58-59
- 6 ☐ February _____ days 60-61
- 7 ☐ March _____ days 62-63
- 8 ☐ April _____ days 64-65
- 9 ☐ May (estimate) _____ days 66-67

23. Please explain briefly how you happen to become a Head Start teacher:

____

____

____

Additional comments: _______________

____

PARENT QUESTIONNAIRE

YOUR NAME: ____________________

YOUR ADDRESS: ____________________

NAME OF YOUR CHILD IN HEAD START: ____________________

NAME OF HEAD START CENTER: ____________________

DATE: ____________________

PI ____   SC ____

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Menlo Park, California 94025 · U.S.A.

APRIL 1970

(33-34) 1. How long has your child been in Head Start? _____ months

2. Since the beginning of this school year, have you visited your child's classroom while the class was in session?

(35) 1☐ No (GO ON TO QUESTION 3a)
2☐ Yes--How did you happen to make the last visit?
- 3☐ The teacher asked me to come
- 4☐ I decided to go
- 5☐ Other ____________________ (Please explain)

3a. Do you work regularly in your child's classroom?

(36) 1☐ No (GO ON TO QUESTION 3b)
2☐ Yes--Are you paid, or do you volunteer your time?
- 3☐ Paid
- 4☐ Volunteer

3b. Do you work elsewhere in the Head Start Center?

(37) 1☐ No (GO ON TO QUESTION 4)
2☐ Yes--Are you paid, or do you volunteer your time?
- 3☐ Paid
- 4☐ Volunteer

4. Since the beginning of this school year, have you talked privately *with your child's teacher about your child?*

(38) 1☐ No :O ON TO QUESTION 5)
2☐ Yes--How long ago was the last time?
- 3☐ Less than a week ago
- 4☐ One or two weeks ago
- 5☐ Three or four weeks ago
- 6☐ One or two months ago
- 7☐ Two or three months ago
- 8☐ Over three months ago

5. Have you talked privately with anyone else from your child's Head Start Center this year, either at home or at school?

(39-40)
- 1☐ No (GO ON TO QUESTION 6)
- 2☐ Yes--Who have you talked with?
  - 3☐ Head Start Director
  - 4☐ Nurse/doctor/dentist
  - 5☐ Social worker
  - 6☐ Other ______________ (Please specify)

6. About how often does your child talk about what happens in Head Start?

(41)
- 1☐ Every day
- 2☐ Several times a week
- 3☐ Several times a month
- 4☐ Less often

7. What are some of the things that your child especially likes about Head Start?

(42-43)
- 1☐ Playing with other children
- 2☐ Show and tell
- 3☐ Trips to the park and visits to places such as the fire station
- 4☐ Learning to read, or write, or count
- 5☐ Other ______________ (Please specify)

8. What are some of the things that your child dislikes about Head Start?

(44-45)
- 1☐ Some of the children
- 2☐ Sitting still and being quiet for a long time
- 3☐ Having to learn ABC's and counting
- 4☐ Sharing toys and books with other children
- 5☐ Other ______________ (Please specify)

9. In general, how does your child feel about the Head Start teacher?

(46)
- 1☐ Likes her a lot
- 2☐ Feels so-so about her
- 3☐ Doesn't like her at all

10. About how often does your child bring home any work he (or she) has done at Head Start?

(47)
- 1☐ Every day
- 2☐ Several times a week
- 3☐ Several times a month
- 4☐ Less often than that

11. In general, how satisfied are you with your child's progress in Head Start?

(48)
- 1☐ Very satisfied (GO ON TO QUESTION 12)
- 2☐ Fairly satisfied--What would have to be different for you to be <u>very</u> satisfied?
- 3☐ Not satisfied-- What would have to be different for you to be <u>very</u> satisfied?

(49-50)
  - 1☐ More discipline and stricter learning
  - 2☐ More meaningful work
  - 3☐ Less playing
  - 4☐ More talks with the teacher
  - 5☐ Other ______________ (Please specify)

12. Are there any groups of parents or organizations in your community that work with Head Start?

(51-52)
- 1☐ No (GO ON TO QUESTION 13)
- 2☐ Yes--Who are they?
  - 3☐ CAP OR CAA (Community Action Program or Agency)
  - 4☐ PTA (Parent-Teachers Association) (PA)
  - 5☐ PAC (Policy Advisory Committee)
  - 6☐ Other ______________ (Please specify)

13. If you have not already mentioned PAC, have you heard of a group called the Policy Advisory Committee?

(53) 1☐ No (GO ON TO QUESTION 22)

2☐ Yes

14. Have you or your husband ever been a member of the Policy Advisory Committee?

(54) 1☐ No (GO ON TO QUESTION 16)

2☐ Yes-- Were you a general member or were you a member of the executive committee, or both?

3☐ General member

4☐ Executive committee

5☐ Both

15. Are you or your husband now a member of the Policy Advisory Committee?

(55) 1☐ No (GO ON TO QUESTION 16)

2☐ Yes--Are you a general member or are you a member of the executive committee, or both?

3☐ General member

4☐ Executive committee

5☐ Both

16. Do you or your husband go to the Policy Advisory Committee's general meetings?

(56) 1☐ Yes (GO ON TO QUESTION 17)

2☐ No-- Could you or your husband go to the general meetings if you wanted to?

(57) 1☐ Yes (GO ON TO QUESTION 17)

2☐ No-- Why are you not able to go?

3☐ Meetings are for members only

4☐ No babysitter

5☐ No time

6☐ Other ______________________ (Please specify)

17. How often does the Policy Advisory Committee meet?

(58) 1☐ Weekly

2☐ Twice a month

3☐ Once a month

4☐ Several times a year

5☐ Once a year or less

18. How do people get to be members of the Policy Advisory Committee?

(59) 1☐ They are elected

2☐ They are appointed

3☐ Any parent can join

4☐ Other ______________________ (Please specify)

19. Does the Policy Advisory Committee have anything to say about hiring Head Start teachers and aides?

(60) 1☐ No

2☐ Yes

20. Does the Policy Advisory Committee have anything to say about the way Head Start's money is spent?

(61) 1☐ No

2☐ Yes

21. Does the Policy Advisory Committee have anything to say about what the children are taught in Head Start?

(62) 1☐ No

2☐ Yes

22. Are you or your husband active in any other Head Start parents' group-- that is, do you attend meetings regularly?

(63) 1☐ No

2☐ Yes

23. Now we would like to have your opinion on some statements about parents and schools. After reading each statement, please check the box under the heading that applies to how you feel.

		Strongly Agree 1	Slightly Agree 2	Slightly Disagree 3	Strongly Disagree 4	Can't Say 5
(64)	a. There's nothing parents can do to change the schools.	☐	☐	☐	☐	☐
(65)	b. In this community the parents have a say about how the schools are run.	☐	☐	☐	☐	☐
(66)	c. If the parents disagree with the teacher or the principal, there's nothing parents can do about it.	☐	☐	☐	☐	☐
(67)	d. In this community, people *who run the schools really* care about what parents think.	☐	☐	☐	☐	☐
(68)	e. People who run the schools really know what the parents want.	☐	☐	☐	☐	☐
(69)	f. If parents wanted something changed about the schools, there would be a good chance of getting it changed.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

24. We would like to know how you feel about the following statements. After reading each statement, please check the box under the heading that applies to how you feel.

		Strongly Agree 1	Slightly Agree 2	Slightly Disagree 3	Strongly Disagree 4	Can't Say 5
(70)	a. Many of the unhappy things that happen to people are just plain bad luck.	☐	☐	☐	☐	☐
(71)	b. Many of the unhappy things that happen to people come from the mistakes they make.	☐	☐	☐	☐	☐
(72)	c. Sooner or later, people get what they deserve in this world.	☐	☐	☐	☐	☐
(73)	d. The sad part is, a person's true value isn't often noticed no matter how hard he tries.	☐	☐	☐	☐	☐
(74)	e. I have found that what is going to happen, will happen.	☐	☐	☐	☐	☐
(75)	f. I have found that it's better to plan ahead than to just let things happen.	☐	☐	☐	☐	☐
(76)	g. If the child has studied his lessons every day, tests will not bother him very often.	☐	☐	☐	☐	☐
(77)	h. Tests often aren't related to classroom work so there is no use studying.	☐	☐	☐	☐	☐
(78)	i. Becoming successful is a matter of hard work, not luck.	☐	☐	☐	☐	☐
(79)	j. Becoming successful depends a lot on being in the right place at the right time.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

		Strongly Agree 1	Slightly Agree 2	Slightly Disagree 3	Strongly Disagree 4	Can't Say 5
(33)	k. Most people don't realize how much their lives are controlled by things that happen by accident.	☐	☐	☐	☐	☐
(34)	l. There really is no such thing as luck.	☐	☐	☐	☐	☐
(35)	m. The average citizen can change the government's way of doing things.	☐	☐	☐	☐	☐
(36)	n. This world is run by a few big shots, and there isn't much the little guy can do about it.	☐	☐	☐	☐	☐
(37)	o. When I make plans, I am sure that I can make them work.	☐	☐	☐	☐	☐
(38)	p. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad luck anyhow.	☐	☐	☐	☐	☐
(39)	q. In the long run, the bad things and the good things that happen to us are about 50-50.	☐	☐	☐	☐	☐
(40)	r. Most "bad luck" comes to people because they are ignorant, lazy, have no ability, or all three.	☐	☐	☐	☐	☐
(41)	s. Many times I feel that I can't do much about the things that happen to me.	☐	☐	☐	☐	☐
(42)	t. Chance and luck are not important in my life.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

25. About how often do you take your child along when you go shopping?

(43)
- 1☐ Daily
- 2☐ Weekly
- 3☐ Monthly
- 4☐ Less than once a month
- 5☐ Never

26. About how often do you talk with your child about the things he (or she) has seen on TV?

(44)
- 1☐ Daily
- 2☐ Weekly
- 3☐ Monthly
- 4☐ Less than once a month
- 5☐ Never

27. If your child asks you a question you can't answer, about how often *do you try to find the answer* by looking in a book?

(45)
- 1☐ Always
- 2☐ Usually
- 3☐ Once in a while
- 4☐ Not often
- 5☐ Never

28. About how much do you talk with your child at mealtime?

(46)
- 1☐ A great deal
- 2☐ Quite a bit
- 3☐ Some
- 4☐ Just a little
- 5☐ Not much

29. About how often do you take your child on a trip out of town?

(47)
- 1☐ Once a week
- 2☐ Once a month
- 3☐ *A few times a year*
- 4☐ Less than once a year
- 5☐ Never

30. When your child has a chance to choose what to do around the house, about how often does he (or she) choose to look at a book or magazine?

(48)
- 1☐ Almost every day
- 2☐ Often
- 3☐ Once in a while
- 4☐ Seldom
- 5☐ Never

31. If your child graduates from high school, what do you expect are his (or her) chances of getting a good job?

(49)
- 1☐ Excellent
- 2☐ Good
- 3☐ Fair
- 4☐ Poor
- 5☐ Very poor

32. In general, what kind of grades do you expect your child to get as he (or she) goes through school?

(50)
- 1☐ Excellent
- 2☐ Above average
- 3☐ Average
- 4☐ Below average
- 5☐ Failing

33. How much do you read to your child?

(51)
- 1☐ A great deal
- 2☐ Quite a bit
- 3☐ Some
- 4☐ Just a little
- 5☐ Not at all

34. About how often do you visit someone who is not related to you?

(52)
- 1☐ Daily
- 2☐ Weekly
- 3☐ Monthly
- 4☐ Less than once a month
- 5☐ Never

35. About how often do you visit with friends who live in a different part of the city than you?

(53)
- 1☐ Daily
- 2☐ Weekly
- 3☐ Monthly
- 4☐ Less than once a month
- 5☐ Never

36. How often does your child see you reading books, papers, or magazines?

(54)
- 1☐ Daily
- 2☐ Weekly
- 3☐ Monthly
- 4☐ Less than once a month
- 5☐ Never

37. How many different newspapers do you buy regularly?

(55)
- 1☐ A daily paper
- 2☐ A daily and a weekly paper
- 3☐ More than one daily and weekly paper
- 4☐ None

38. Do you take any magazines that come every week or every month?

(56)
- 1☐ No
- 2☐ Yes--How many? ________

39. How often does your child help his (or her) father when he is working on some project?

(57)
- 1☐ Very often
- 2☐ Quite often
- 3☐ Sometimes
- 4☐ Not often
- 5☐ Never

40. What chance does your husband have to get ahead in his job?

(58)
- 1☐ Excellent
- 2☐ Good
- 3☐ Fair
- 4☐ Poor
- 5☐ Very poor

41. If you are employed outside your home, who takes care of your child when you are working?

(59-60)

1☐ I don't work outside my home

2☐ An adult member of my household

3☐ Another member of my household

4☐ Another relative, not in my household

5☐ An unrelated person, not in my household

6☐ School

7☐ Child care center

8☐ Other ____________________
(Please specify)

(61) 42. How many different houses or apartments have you lived in during the last year--including the one you now live in? ____

43. Now, let's go back to Head Start. What are the things you like most about Head Start?

____

____

____

44. What are the things you don't like about Head Start?

____

____

____

45. What difference has Head Start made in your own life this year?

____

____

____

46. Is there anything else about Head Start that you think we should be interested in hearing about?

____

____

____

____

____

TEACHER RATING FORM USED BY SPONSORS

Community ____________________

Sponsor ____________________

We need your judgment as to how well your teachers implement your model. The table below contains the teachers' names and the centers or schools in which they teach. Please rate each of them for three time periods:

Code to Use

O = Her performance as of October 1, 1969.

M = Her performance as of May 1, 1970.

P = Your prediction of how well she will do next year (by May 1, 1971).

	Center / School	Teacher	Not Acceptable	Barely Acceptable								Completely Acceptable
			0	1	2	3	4	5	6	7	8	9
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
			0	1	2	3	4	5	6	7	8	9

TEACHER RATING FORM USED BY HEAD START DIRECTORS

Community ________________________

Head Start Director ____________________________

We need your judgment as to how well the teachers of the classes that were tested as comparison groups for the Planned Variation Evaluation perform as Head Start teachers. The table below contains the names of the teachers and the centers or schools in which they teach. Please rate each of them for three time periods:

Code to Use

O = Her performance as of October 1, 1969.

M = Her performance as of May 1, 1970.

P = Your prediction of how well she will do next year (by May 1, 1971)

For each teacher there should be three entries made on the line (use letters O, M and P) to show how acceptable you judge her to be as a Head Start teacher. You may write the letters over one another, i.e., O/M or O/M, to show that you rate her the same for two time periods.

	Center / School	Teacher	Not Acceptable	Barely Acceptable								Completely Acceptable
			0	1	2	3	4	5	6	7	8	9
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
			0	1	2	3	4	5	6	7	8	9

Appendix D

CHILD PERFORMANCE DATA

Table D-1

VALUES OF U FOR SPONSORED BEST CLASS CONTRASTS
BY PROGRAM TYPE
(Mann-Whitney Nonparametric Test)

Program Contrast	Fall	Spring	Change
Discovery vs Cognitive Discovery (N = 2) (N = 8)			
Variable 1 (preacademic)	3.5	4.5	3.5
Variable 2 (general cognition)	6.0	5.0	6.0
Critical level:	U < 1.2		
Discovery vs Prescriptive (N = 2) (N = 10)			
Preacademic skills	7.5	1.5	3.0
General cognition	0.5	3.0	5.5
Critical level:	U = 0.0		
Cognitive Discovery vs Prescriptive (N = 8) (N = 10)			
Preacademic skills	29.5	26.0	38.5
General cognition	18.5	31.0	18.5
Critical level:	U < 17		

Table D-2

PREACADEMIC MEASURES: EFFECT OF DIFFUSION IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LOW	FREQ	31	31	31	6.02 **
	MEAN	49.93	56.59	6.67	
	VAR	16.17	29.73	15.02	
2- MEDIUM	FREQ	9	9	9	2.79 *
	MEAN	49.9	57.17	7.27	
	VAR	24.26	25.44	13.27	
3- HIGH	FREQ	5	5	5	4.35 **
	MEAN	45.64	55.52	10.83	
	VAR	4.14	20.93	40.92	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.02	.32	.40
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-2.28 †	-.03	1.94
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.6[illegible]	-.22	1.23

Table D-3

GENERAL COGNITIVE MEASURES: EFFECT OF DIFFUSION IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LOW	FREQ	31	31	31	5.66 **
	MEAN	50.38	57.05	6.82	
	VAR	25.46	16.26	15.45	
2- MEDIUM	FREQ	9	9	9	1.94 *
	MEAN	50.27	56.68	6.41	
	VAR	58.37	25.67	23.76	
3- HIGH	FREQ	5	5	5	3.41 *
	MEAN	45.47	56.38	10.84	
	VAR	11.19	29.51	66.54	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.05	-.22	-.25
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-2.04	-.32	1.71
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.23	-.1[illegible]	1.18

Table D-4

PREACADEMIC MEASURES: LEVEL OF SERVICE TRAINING IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	27	27	27	5.90 **
	MEAN	49.23	56.56	7.27	
	VAR	20.10	20.10	25.28	
2- MEDIUM	FREQ	15	15	15	3.86 **
	MEAN	50.10	56.80	6.71	
	VAR	16.96	24.16	7.07	
3- LOW	FREQ	3	3	3	2.34
	MEAN	50.56	58.31	7.75	
	VAR	11.02	10.93	43.59	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.67	.16	-.39
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.44	.53	.15
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.14	.48	.43

Table D-5

GENERAL COGNITIVE MEASURES: LEVEL OF SERVICE TRAINING IN UNSPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	27	27	27	5.29 **
	MEAN	49.12	56.57	7.58	
	* VAR	32.49	19.07	32.00	
2- MEDIUM	FREQ	15	[illegible]	15	3.63 **
	MEAN	[illegible]	57.47	6.82	
	VAR	[illegible]	20.15	10.54	
3- LOW	FREQ	3	3	3	.89
	MEAN	55.68	57.53	1.84	
	VAR	.88	7.64	4.04	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.85	.62	-.47
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.92	.36	-1.69
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	1.51	[illegible]	-2.41*

Table D-6

PREACADEMIC MEASURES: SPONSORED IMPLEMENTATION LEVEL FROM OBSERVATION-BASED RATINGS

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	10	10	10	3.49**
	MEAN	52.83	59.22	6.39	
	VAR	8.12	21.97	30.10	
2- MEDIUM	FREQ	5	5	5	6.70**
	MEAN	48.94	59.07	10.13	
	VAR	7.57	1.59	14.84	
3- LOW	FREQ	6	4	4	1.20
	MEAN	51.7[illegible]	61.35	9.66	
	VAR	2.51	191.71	220.28	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-2.35 †	-.07	1.27
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.69	.4[illegible]	.56
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	1.57	.32	-.06

Table D-7

GENERAL COGNITIVE MEASURES: SPONSORED IMPLEMENTATION LEVEL FROM OBSERVATION-BASED RATINGS

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	10	10	10	3.15**
	MEAN	50.90	57.90	7.00	
	VAR	33.[illegible]8	11.23	15.99	
2- MEDIUM	FREQ	5	5	5	8.55**
	MEAN	48.26	58.[illegible]1	9.66	
	VAR	4.14	1.05	5.01	
3- LOW	FREQ	4	4	4	2.96*
	MEAN	54.24	61.70	7.47	
	VAR	1.61	17.42	12.38	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.93	.07	1.29
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.06	1.65	.19
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	4.53 ‡	1.68	-1.00

Table D-8

PREACADEMIC MEASURES: LEVEL OF SERVICE TRAINING IN SPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-HIGH	FREQ	35	35	35	6.47**
	MEAN	50.05	58.15	8.04	
	VAR	16.95	36.35	41.93	
2-MEDIUM	FREQ	20	20	20	5.80**
	MEAN	51.47	59.04	7.47	
	VAR	8.46	23.87	36.56	
3-LOW	FREQ	5	5	5	3.31*
	MEAN	51.00	59.94	8.96	
	VAR	5.76	23.05	21.95	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.34	.55	-.32
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.54	.63	.30
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.26	.37	.49

Table D-9

GENERAL COGNITIVE MEASURES: LEVEL OF SERVICE TRAINING IN SPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	35	35	35	8.38**
	MEAN	49.71	58.48	8.59	
	VAR	20.21	16.99	18.82	
2- MEDIUM	FREQ	20	20	20	6.43**
	MEAN	50.66	58.76	8.44	
	VAR	22.33	7.78	21.99	
3- LOW	FREQ	5	5	5	2.40*
	MEAN	51.30	59.83	8.67	
	VAR	2.69	47.74	46.32	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.73	.27	-.12
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.76	.60	.03
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.29	.52	.09

Table D-10

PREACADEMIC MEASURES: LEVEL OF TEACHER COGNITIVE ORIENTATION IN SPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	9	9	9	3.29**
	MEAN	52.04	59.76	7.65	
	VAR	10.84	33.16	31.09	
2- MEDIUM	FREQ	46	46	46	7.72**
	MEAN	50.65	58.20	7.51	
	VAR	13.46	24.62	35.96	
3- LOW	FREQ	7	7	7	4.29**
	MEAN	47.95	59.11	11.00	
	VAR	6.76	33.79	46.21	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-1.04	-.76	-.06
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-2.52 †	-.21	1.01
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.84	.40	1.38

Table D-11

GENERAL COGNITIVE MEASURES: LEVEL OF TEACHER COGNITIVE ORIENTATION IN SPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	9	9	9	4.23**
	MEAN	49.99	59.24	8.98	
	VAR	18.47	19.77	12.49	
2- MEDIUM	FREQ	46	46	46	9.32**
	MEAN	50.41	58.82	8.47	
	VAR	21.18	15.41	21.84	
3- LOW	FREQ	7	7	7	4.78**
	MEAN	47.38	56.51	9.22	
	VAR	7.69	14.31	28.79	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.25	-.28	-.30
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-1.31	-1.22	.10
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.66	-1.43	.38

Table D-12

PREACADEMIC MEASURES: LEVEL OF TEACHER AFFECTIVE ORIENTATION IN SPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	11	11	11	3.59**
	MEAN	51.90	57.69	5.79	
	VAR	9.41	16.63	17.85	
2- MEDIUM	FREQ	49	49	49	8.40**
	MEAN	50.26	58.67	8.33	
	VAR	13.82	34.23	40.97	
3- LOW	FREQ	2	2	2	2.13
	MEAN	50.05	59.66	9.61	
	VAR	18.92	1.43	9.95	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		-1.34	.52	1.24	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1		-.67	.62	1.12	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2		-.08	.23	.28	

Table D-13

GENERAL COGNITIVE MEASURES: LEVEL OF TEACHER AFFECTIVE ORIENTATION IN SPONSORED CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- HIGH	FREQ	11	11	11	4.80**
	MEAN	51.33	58.31	6.93	
	VAR	13.14	7.96	13.03	
2- MEDIUM	FREQ	49	49	49	10.11**
	MEAN	49.60	58.58	9.02	
	VAR	20.16	17.74	22.61	
3- LOW	FREQ	2	2	2	.88
	MEAN	52.79	61.11	8.33	
	VAR	59.94	29.26	5.44	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		-1.17	.20	1.35	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1		.39	1.00	.49	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2		.93	.81	-.20	

Table D-14

PREACADEMIC MEASURES: SCORES FOR ALL CHILDREN WITH NO PRIOR HEAD START

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	2	0
30	1	0
32	3	0
34	11	1
36	14	1
38	27	2
40	51	4
42	59	5
44	97	9
46	116	10
48	132	12
50	118	11
52	106	9
54	84	7
56	69	6
58	60	5
60	33	3
62	21	1
64	22	2
66	13	1
68	10	0
70	7	0
72	4	0
74	1	0
76	5	0
78	5	0
80	0	0
82	0	0
84	1	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 1072 M= 49.18 V= 60.88

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	1	0
16	0	0
18	0	0
20	0	0
22	0	0
24	1	0
26	0	0
28	1	0
30	0	0
32	3	0
34	1	0
36	8	0
38	4	0
40	14	1
42	20	1
44	40	3
46	47	4
48	70	6
50	70	6
52	90	8
54	71	6
56	76	7
58	88	8
60	58	5
62	61	5
64	58	5
66	55	5
68	46	4
70	49	4
72	31	3
74	19	1
76	8	0
78	8	0
80	6	0
82	6	0
84	3	0
86	1	0
88	4	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 1018 M= 56.34 V= 97.30

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	1	0
-20	4	0
-16	7	0
-12	14	1
-8	33	3
-4	58	5
0	89	8
4	167	16
8	191	18
12	177	17
16	106	10
20	84	8
24	46	4
28	17	1
32	12	1
36	9	0
40	2	0
44	1	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 1018 M= 7.13 V= 92.63

SPRING - FALL CHANGE, T= 18.46

Table D-15

GENERAL COGNITIVE MEASURES: SCORES FOR ALL CHILDREN WITH NO PRIOR HEAD START

FALL SC	FREQ	PCT	SPRING SC	FREQ	PCT	SPRING-FALL CHANGE SC	FREQ	PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	0	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	1	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	1	0	18	0	0	-64	0	0
20	1	0	20	0	0	-60	0	0
22	1	0	22	1	0	-56	0	0
24	3	0	24	1	0	-52	0	0
26	2	0	26	2	0	-48	0	0
28	5	0	28	2	0	-44	0	0
30	13	1	30	2	0	-40	0	0
32	20	1	32	3	0	-36	0	0
34	18	1	34	5	0	-32	0	0
36	37	3	36	6	0	-28	0	0
38	36	3	38	9	0	-24	0	0
40	38	3	40	8	0	-20	0	0
42	80	7	42	13	1	-16	3	0
44	87	7	44	22	2	-12	2	0
46	87	7	46	30	2	-8	15	1
48	94	8	48	46	4	-4	43	4
50	102	9	50	58	5	0	86	8
52	79	7	52	67	6	4	132	12
54	84	7	54	86	8	8	222	21
56	73	6	56	86	8	12	211	20
58	69	6	58	86	8	16	166	16
60	40	3	60	93	8	20	89	8
62	51	4	62	92	8	24	34	3
64	25	2	64	84	8	28	16	1
66	15	1	66	82	7	32	10	0
68	16	1	68	72	6	36	4	0
70	5	0	70	37	3	40	2	0
72	8	0	72	17	1	44	1	0
74	3	0	74	15	1	48	0	0
76	0	0	76	7	0	52	0	0
78	0	0	78	2	0	56	0	0
80	0	0	80	1	0	60	0	0
82	1	0	82	0	0	64	0	0
84	0	0	84	1	0	68	0	0
86	0	0	86	0	0	72	0	0
88	0	0	88	0	0	76	0	0
90	0	0	90	0	0	80	0	0
92	0	0	92	0	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	0	0	100	0	0

N= 1095 M= 48.49 V= 85.98 | N= 1036 M= 56.92 V= 77.27 | N= 1036 M= 8.37 V= 65.48

SPRING - FALL CHANGE, T= 21.51

Table D-16

PREACADEMIC MEASURES: SCORES FOR ALL CHILDREN WITH LESS THAN FOUR MONTHS OF HEAD START

FALL SC	FREQ	PCT	SPRING SC	FREQ	PCT	SPRING-FALL CHANGE SC	FREQ	PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	0	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	0	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	0	0	18	0	0	-64	0	0
20	0	0	20	0	0	-60	0	0
22	0	0	22	0	0	-56	0	0
24	0	0	24	0	0	-52	0	0
26	0	0	26	0	0	-48	0	0
28	0	0	28	0	0	-44	0	0
30	0	0	30	0	0	-40	0	0
32	0	0	32	1	0	-36	0	0
34	4	1	34	0	0	-32	0	0
36	0	0	36	0	0	-28	0	0
38	4	1	38	3	1	-24	0	0
40	4	1	40	1	0	-20	1	0
42	14	6	42	3	1	-16	2	0
44	19	8	44	9	4	-12	3	1
46	16	7	46	8	3	-8	4	1
48	27	12	48	14	6	-4	15	6
50	27	12	50	10	4	0	33	15
52	20	9	52	18	8	4	29	13
54	12	5	54	12	5	8	27	12
56	15	6	56	16	7	12	39	17
58	17	7	58	22	10	16	28	12
60	9	4	60	18	8	20	19	8
62	7	3	62	7	3	24	9	4
64	6	2	64	14	6	28	4	1
66	3	1	66	12	5	32	3	1
68	3	1	68	12	5	36	0	0
70	1	0	70	9	4	40	0	0
72	4	1	72	13	5	44	1	0
74	2	0	74	7	3	48	0	0
76	0	0	76	0	0	52	0	0
78	1	0	78	2	0	56	0	0
80	1	0	80	2	0	60	0	0
82	1	0	82	2	0	64	0	0
84	0	0	84	0	0	68	0	0
86	0	0	86	0	0	72	0	0
88	0	0	88	0	0	76	0	0
90	0	0	90	1	0	80	0	0
92	0	0	92	1	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	0	0	100	0	0

FALL: N= 217 M= 50.91 V= 73.34

SPRING: N= 217 M= 57.76 V= 102.27

SPRING-FALL CHANGE: N= 217 M= 6.86 V= 95.53

SPRING - FALL CHANGE, T= 7.60

Table D-17

GENERAL COGNITIVE MEASURES: SCORES FOR ALL CHILDREN WITH LESS THAN FOUR MONTHS OF HEAD START

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	1	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	2	0
28	0	0
30	1	0
32	2	0
34	4	1
36	4	1
38	8	3
40	7	3
42	11	5
44	10	4
46	11	5
48	13	5
50	19	8
52	20	9
54	13	5
56	15	6
58	15	6
60	19	8
62	20	9
64	10	4
66	4	1
68	3	1
70	4	1
72	0	0
74	0	0
76	3	1
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 219 M= 51.26 V= 100.76

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	1	0
26	0	0
28	0	0
30	1	0
32	1	0
34	0	0
36	4	1
38	1	0
40	1	0
42	5	2
44	3	1
46	6	2
48	9	4
50	11	5
52	10	4
54	18	8
56	12	5
58	23	10
60	20	9
62	19	8
64	23	10
66	15	6
68	10	4
70	11	5
72	7	3
74	5	2
76	3	1
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 219 M= 57.36 V= 85.58

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	0	0
-20	0	0
-16	0	0
-12	1	0
-8	5	2
-4	16	7
0	25	11
4	43	19
8	45	20
12	37	16
16	23	10
20	13	5
24	5	2
28	6	2
32	0	0
36	0	0
40	0	0
44	0	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 219 M= 6.10 V= 63.18

SPRING - FALL CHANGE, T= 6.60

Table D-18

PREACADEMIC MEASURES: SCORES FOR ALL CHILDREN WITH MORE THAN FOUR MONTHS OF HEAD START

FALL

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	1	0
26	0	0
28	0	0
30	0	0
32	1	0
34	0	0
36	0	0
38	3	1
40	4	1
42	6	2
44	18	7
46	25	9
48	19	7
50	23	9
52	31	12
54	15	5
56	11	4
58	20	7
60	15	5
62	20	7
64	10	3
66	6	2
68	13	5
70	5	1
72	3	1
74	1	0
76	0	0
78	0	0
80	0	0
82	0	0
84	0	0
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 250 M= 52.97 V= 70.25

SPRING

SC	FREQ	PCT
0	0	0
2	0	0
4	0	0
6	0	0
8	0	0
10	0	0
12	0	0
14	0	0
16	0	0
18	0	0
20	0	0
22	0	0
24	0	0
26	0	0
28	0	0
30	0	0
32	1	0
34	1	0
36	0	0
38	1	0
40	3	1
42	1	0
44	7	2
46	5	2
48	3	1
50	11	4
52	11	4
54	14	5
56	22	9
58	18	7
60	25	10
62	19	7
64	15	6
66	22	9
68	17	7
70	19	7
72	11	4
74	1	0
76	1	0
78	4	1
80	1	0
82	1	0
84	5	2
86	0	0
88	0	0
90	0	0
92	0	0
94	0	0
96	0	0
98	0	0
100	0	0

N= 239 M= 59.76 V= 85.65

SPRING-FALL CHANGE

SC	FREQ	PCT
-100	0	0
-96	0	0
-92	0	0
-88	0	0
-84	0	0
-80	0	0
-76	0	0
-72	0	0
-68	0	0
-64	0	0
-60	0	0
-56	0	0
-52	0	0
-48	0	0
-44	0	0
-40	0	0
-36	0	0
-32	0	0
-28	0	0
-24	0	0
-20	0	0
-16	2	0
-12	3	1
-8	5	2
-4	17	7
0	28	11
4	38	15
8	44	18
12	33	13
16	30	12
20	22	9
24	9	3
28	3	1
32	2	0
36	0	0
40	2	0
44	1	0
48	0	0
52	0	0
56	0	0
60	0	0
64	0	0
68	0	0
72	0	0
76	0	0
80	0	0
84	0	0
88	0	0
92	0	0
96	0	0
100	0	0

N= 239 M= 6.94 V= 91.42

SPRING - FALL CHANGE, T= 8.49

Table D-19

GENERAL COGNITIVE MEASURES: SCORES FOR ALL CHILDREN WITH MORE THAN FOUR MONTHS OF HEAD START

FALL SC	FALL FREQ	FALL PCT	SPRING SC	SPRING FREQ	SPRING PCT	SPRING-FALL CHANGE SC	SPRING-FALL CHANGE FREQ	SPRING-FALL CHANGE PCT
0	0	0	0	0	0	-100	0	0
2	0	0	2	0	0	-96	0	0
4	0	0	4	0	0	-92	0	0
6	0	0	6	0	0	-88	0	0
8	0	0	8	0	0	-84	0	0
10	0	0	10	0	0	-80	0	0
12	0	0	12	0	0	-76	0	0
14	0	0	14	0	0	-72	0	0
16	0	0	16	0	0	-68	0	0
18	0	0	18	0	0	-64	0	0
20	0	0	20	0	0	-60	0	0
22	0	0	22	0	0	-56	0	0
24	0	0	24	0	0	-52	0	0
26	1	0	26	0	0	-48	0	0
28	0	0	28	0	0	-44	0	0
30	0	0	30	0	0	-40	0	0
32	3	1	32	0	0	-36	0	0
34	2	0	34	1	0	-32	0	0
36	0	0	36	1	0	-28	0	0
38	3	1	38	0	0	-24	0	0
40	8	3	40	2	0	-20	0	0
42	5	1	42	4	1	-16	2	0
44	9	3	44	3	1	-12	0	0
46	19	7	46	3	1	-8	6	2
48	13	4	48	9	3	-4	18	7
50	7	2	50	6	2	0	41	16
52	20	7	52	9	3	4	61	25
54	21	8	54	13	5	8	41	16
56	17	6	56	15	6	12	40	16
58	31	11	58	35	14	16	15	6
60	32	12	60	31	12	20	12	4
62	18	6	62	28	11	24	5	2
64	18	6	64	17	6	28	1	0
66	20	7	66	24	9	32	1	0
68	8	3	68	26	10	36	1	0
70	6	2	70	7	2	40	0	0
72	1	0	72	5	2	44	0	0
74	0	0	74	2	0	48	0	0
76	0	0	76	0	0	52	0	0
78	0	0	78	1	0	56	0	0
80	0	0	80	1	0	60	0	0
82	0	0	82	1	0	64	0	0
84	0	0	84	0	0	68	0	0
86	0	0	86	0	0	72	0	0
88	0	0	88	0	0	76	0	0
90	0	0	90	0	0	80	0	0
92	0	0	92	0	0	84	0	0
94	0	0	94	0	0	88	0	0
96	0	0	96	0	0	92	0	0
98	0	0	98	0	0	96	0	0
100	0	0	100	0	0	100	0	0

FALL: N= 262 M= 54.49 V= 73.23

SPRING: N= 244 M= 58.99 V= 56.32

SPRING-FALL CHANGE: N= 244 M= 4.46 V= 58.82

SPRING - FALL CHANGE, T= 6.25

Table D-20

PREACADEMIC MEASURES:
EFFECT OF TIME BEFORE TEST ON CHILDREN WITHOUT PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-LESS THAN 15 DAYS	FREQ	39	39	39	3.12**
	MEAN	47.73	53.82	6.09	
	VAR	61.89	82.64	68.88	
2-15 TO 30 DAYS	FREQ	286	281	281	7.05**
	MEAN	49.81	55.19	5.42	
	VAR	61.12	103.99	107.58	
3-MORE THAN 30 DAYS	FREQ	724	680	680	17.00**
	MEAN	49.01	56.98	7.95	
	VAR	60.51	94.53	85.85	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.55	.79	-.39
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.00	1.98 †	1.22
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.47	2.56 †	3.71 ‡

Table D-21

GENERAL COGNITIVE MEASURES:
EFFECT OF TIME BEFORE TEST ON CHILDREN WITHOUT PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-LESS THAN 15 DAYS	FREQ	40	40	40	2.36**
	MEAN	47.25	52.43	5.19	
	VAR	76.84	111.82	121.19	
2-15 to 30 DAYS	FREQ	285	279	279	9.48**
	MEAN	49.76	57.02	7.35	
	VAR	91.34	73.39	70.85	
3-MORE THAN 30 DAYS	FREQ	718	675	675	18.86**
	MEAN	48.39	57.37	8.97	
	VAR	82.68	74.45	59.68	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.57	3.06 ‡	1.45
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.77	3.46 ‡	2.92 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-2.12	.57	2.87 ‡

Table D-22

PREACADEMIC MEASURES:
EFFECT OF TIME BEFORE TEST ON CHILDREN WITH PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	13	12	12	6.68 **
	MEAN	48.41	63.43	15.18	
	VAR	26.35	31.96	24.18	
2- 15 to 30 DAYS	FREQ	122	122	122	4.06 **
	MEAN	53.19	57.97	4.78	
	VAR	68.97	98.85	119.47	
3- MORE THAN 30 DAYS	FREQ	319	313	313	9.96 **
	MEAN	51.65	58.87	7.25	
	VAR	73.86	91.84	79.39	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	2.02 *	-1.86	-3.24 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.35	-1.63	-3.06 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.70	.87	2.43 †

Table D-23

GENERAL COGNITIVE MEASURES:
EFFECT OF TIME BEFORE TEST ON CHILDREN WITH PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	13	12	12	3.15 **
	MEAN	51.33	62.66	9.69	
	VAR	110.05	35.63	61.63	
2- 15 to 30 DAYS	FREQ	123	123	123	2.78 **
	MEAN	55.95	58.80	2.85	
	VAR	65.18	62.80	48.16	
3- MORE THAN 30 DAYS	FREQ	322	316	316	8.28 **
	MEAN	52.08	57.90	5.85	
	VAR	90.01	67.02	61.76	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.89 *	-1.63	-3.20 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.28	-1.99 †	-1.66
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-3.99	-1.04	3.70 ‡

Table D-24

PREACADEMIC MEASURES:
EFFECT OF TIME BEFORE TEST ON SPONSORED CHILDREN - ALL WITHOUT PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	38	38	38	2.93**
	MEAN	47.92	53.76	5.83	
	VAR	62.06	84.72	68.10	
2- 15 TO 30 DAYS	FREQ	75	75	75	2.89**
	MEAN	50.63	54.88	4.25	
	VAR	44.31	115.77	120.92	
3- MORE THAN 30 DAYS	FREQ	477	450	450	13.59**
	MEAN	49.61	57.42	7.75	
	VAR	58.78	94.89	87.55	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.90 *	.54 †	-.77
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.30	2.23 †	1.22
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.09	2.05 †	2.92 ‡

Table D-25

GENERAL COGNITIVE MEASURES:
EFFECT OF TIME BEFORE TEST ON SPONSORED CHILDREN - ALL WITHOUT PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	39	39	39	2.19*
	MEAN	47.48	52.39	4.91	
	VAR	76.59	114.68	121.18	
2- 15 TO 30 DAYS	FREQ	76	75	75	4.89**
	MEAN	50.56	57.74	7.00	
	VAR	100.43	59.87	63.19	
3- MORE THAN 30 DAYS	FREQ	469	443	443	14.73**
	MEAN	49.37	58.04	8.73	
	VAR	87.43	69.64	56.90	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.61	3.03 ‡	1.15
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.22	3.94 ‡	2.90 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.02	.29	1.82

Table D-26

PREACADEMIC MEASURES:
EFFECT OF TIME BEFORE TEST ON SPONSORED CHILDREN - ALL WITH PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	13	12	12	6.68**
	MEAN	48.41	63.43	15.18	
	VAR	26.35	31.96	24.18	
2- 15 TO 30 DAYS	FREQ	19	19	19	6.00**
	MEAN	50.52	65.09	14.57	
	VAR	39.85	66.31	51.53	
3- MORE THAN 30 DAYS	FREQ	203	199	199	8.22**
	MEAN	52.51	60.07	7.50	
	VAR	76.91	92.43	91.23	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		.97	.60	-.25	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1		1.66	-1.19	-2.75 ‡	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2		.96	-2.19 †	-3.13 ‡	

Table D-27

GENERAL COGNITIVE MEASURES:
EFFECT OF TIME BEFORE TEST ON SPONSORED CHILDREN - ALL WITH PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	13	12	12	3.15**
	MEAN	51.33	62.66	9.69	
	VAR	110.05	35.63	61.63	
2- 15 TO 30 DAYS	FREQ	19	19	19	3.58**
	MEAN	54.07	63.00	8.93	
	VAR	52.7[illegible]	59.07	36.42	
3- MORE THAN 30 DAYS	FREQ	206	202	202	7.75**
	MEAN	52.31	58.95	6.67	
	VAR	85.42	63.48	63.06	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		.85	.13	-.29	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1		.37	-1.58	-1.27	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2		-.80	-2.12 †	-1.20	

Table D-28

PREACADEMIC MEASURES:
EFFECT OF TIME BEFORE TESTS ON UNSPONSORED CHILDREN - ALL WITHOUT PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	1	1	1	-0.00
	MEAN	42.00	58.00	16.00	
	VAR	0.00	0.00	0.00	
2-15 TO 30 DAYS	FREQ	211	206	206	6.45**
	MEAN	49.52	55.31	5.84	
	VAR	67.01	100.20	102.62	
3- MORE THAN 30 DAYS	FREQ	246	230	230	10.25**
	MEAN	47.85	56.13	8.35	
	VAR	62.32	93.14	82.64	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	0.00	0.00	0.00
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	0.00	0.00	0.00
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-2.21	.87	2.72 ‡

Table D-29

GENERAL COGNITIVE MEASURES:
EFFECT OF TIME BEFORE TEST ON UNSPONSORED CHILDREN - ALL WITHOUT PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	1	1	1	-0.00
	MEAN	40.00	56.00	20.00	
	VAR	0.00	0.00	0.00	
2- 15 TO 30 DAYS	FREQ	209	204	204	8.09**
	MEAN	49.47	56.75	7.48	
	VAR	88.18	78.42	73.93	
3- MORE THAN 30 DAYS	FREQ	248	232	232	12.01**
	MEAN	46.55	56.08	9.43	
	VAR	69.12	81.45	64.94	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	0.00	0.00	0.00
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	0.00	0.00	0.00
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-3.52	-.78	2.44 †

Table D-30

PREACADEMIC MEASURES:

EFFECT OF TIME BEFORE TEST ON UNSPONSORED CHILDREN - ALL WITH PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	0	0	0	-0.00
	MEAN	-0.00	-0.00	-0.00	
	VAR	-0.00	-0.00	-0.00	
2- 15 TO 30 DAYS	FREQ	103	103	103	2.32 *
	MEAN	53.68	56.65	2.97	
	VAR	73.21	94.38	111.50	
3- MORE THAN 30 DAYS	FREQ	116	114	114	5.77 **
	MEAN	50.15	56.77	6.81	
	VAR	65.56	84.65	59.05	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	0.00	0.00	0.00
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	0.00	0.00	0.00
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-3.12	.09	3.07 ‡

Table D-31

GENERAL COGNITIVE MEASURES:

EFFECT OF TIME BEFORE TEST ON UNSPONSORED CHILDREN - ALL WITH PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- LESS THAN 15 DAYS	FREQ	0	0	0	-0.00
	MEAN	-0.00	-0.00	-0.00	
	VAR	-0.00	-0.00	-0.00	
2- 15 TO 30 DAYS	FREQ	104	104	104	1.56
	MEAN	56.29	58.03	1.74	
	VAR	67.22	60.21	42.60	
3- MORE THAN 30 DAYS	FREQ	116	114	114	3.61 **
	MEAN	51.67	56.04	4.40	
	VAR	98.70	68.43	56.67	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	0.00	0.00	0.00
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	0.00	0.00	0.00
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-3.72	-1.82	2.76 ‡

Table D-32
PREACADEMIC MEASURES:
EFFECT OF ATTENDANCE ON SPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-1-140 DAYS	FREQ	648	634	634	13.92**
	MEAN	50.45	57.26	6.80	
	VAR	62.93	90.53	82.84	
2-140 DAYS OR MORE	FREQ	162	148	148	7.45**
	MEAN	50.80	58.00	7.00	
	VAR	59.29	85.42	71.74	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.50	.86	.24

Table D-33
GENERAL COGNITIVE MEASURES:
EFFECT OF ATTENDANCE ON SPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-1-140 DAYS	FREQ	639	626	626	14.67**
	MEAN	50.48	57.86	7.42	
	VAR	92.57	67.26	55.89	
2-140 DAYS OR MORE	FREQ	159	145	145	8.29**
	MEAN	50.29	58.80	8.50	
	VAR	77.44	81.90	76.20	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-.23	1.22	1.51

Table D-34

PREACADEMIC MEASURES:
EFFECT OF ATTENDANCE ON UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-1-140 DAYS	FREQ	553	543	543	11.68**
	MEAN	49.52	55.67	6.15	
	VAR	66.02	85.33	77.29	
2-140 DAYS OR MORE	FREQ	147	134	134	4.96**
	MEAN	50.56	56.01	5.53	
	VAR	76.13	92.93	105.47	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		1.36	.39	-.71	

Table D-35

GENERAL COGNITIVE MEASURES:
EFFECT OF ATTENDANCE ON UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-1-140 DAYS	FREQ	544	534	534	11.60**
	MEAN	49.84	56.08	6.25	
	VAR	87.62	67.96	57.21	
2-140 DAYS OR MORE	FREQ	143	130	130	6.34**
	MEAN	50.63	57.71	6.74	
	VAR	103.39	63.73	67.09	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		.88	2.03 †	.65	

Table D-36

COMPARISON OF FALL INTERCORRELATIONS FOR SPONSORED AND UNSPONSORED CHILDREN

	Unsponsored			Sponsored		
MI	1.00			1.00		
N =	690			828		
SE	-.05	1.00		-.08	1.00	
N =	330	375		384	443	
P/S	.00	.22**	1.00	-.06	.29**	1.00
N =	332	375	377	384	443	443
	MI	SE	P/S	MI	SE	P/S

Table D-37

COMPARISON OF SPRING INTERCORRELATIONS FOR SPONSORED AND UNSPONSORED CHILDREN

	Unsponsored			Sponsored		
MI	1.00			1.00		
N =	663			795		
SE	.06	1.00		-.00	1.00	
N =	320	364		373	417	
P/S	-.01	-.07	1.00	-.01	-.01	1.00
N =	320	364	364	373	417	417
	MI	SE	P/S	MI	SE	P/S

Table D-38

COMPARISON OF FALL-SPRING CORRELATIONS FOR SPONSORED AND UNSPONSORED CHILDREN

	Sponsored	Unsponsored
MI	.027	.109**
N =	795	662
SE	.101*	.033
N =	417	362
P/S	.182**	.089
N =	417	364

Table D-39

MOTOR INHIBITION MEASURE:
EFFECT OF SPONSORSHIP ON ALL CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- SPONSORED CHILDREN	FREQ	828	795	795	5.14 **
	MEAN	50.07	53.68	3.61	
	VAR	81.87	323.84	397.40	
2-UNSPONSORED CHILDREN	FREQ	690	663	662	4.78 **
	MEAN	49.51	52.73	3.13	
	VAR	84.18	225.48	278.88	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		-1.19	-1.08	-.49	

Table D-40

MOTOR INHIBITION MEASURE:
EFFECT OF PRIOR HEAD START ON ALL CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- NONE	FREQ	1000	948	947	6.38 **
	MEAN	49.78	53.84	3.98	
	VAR	79.43	322.10	386.89	
2-1-3 MONTHS	FREQ	200	200	200	1.22
	MEAN	49.56	51.00	1.44	
	VAR	68.90	207.29	282.93	
3-4 OR MORE MONTHS	FREQ	226	218	218	1.99 *
	MEAN	49.82	52.27	2.52	
	VAR	103.12	232.75	298.30	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		-.32	-2.10 †	-1.70	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1		.06	-1.20	-1.01	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2		.29	.87	.65	

Table D-41

MOTOR INHIBITION MEASURE: EFFECT OF SES ON ALL CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Low SES	Freq	1290	1242	1242	8.58‡
	Mean	49.85	53.44	3.60	
	Var	99.67	121.75	184.85	
2-High SES	Freq	228	216	216	3.15‡
	Mean	50.85	53.79	3.01	
	Var	94.39	97.85	180.55	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		1.40	.44	.59	

Table D-42

MOTOR INHIBITION MEASURE: EFFECT OF SEX ON ALL CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Boys	Freq	730	705	705	5.09**
	Mean	49.58	52.78	3.14	
	Var	75.89	209.19	266.04	
2-Girls	Freq	788	753	752	4.91**
	Mean	50.02	53.69	3.63	
	Var	89.48	344.63	416.21	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		.94	1.04	.50	

Table D-43

MOTOR INHIBITION MEASURE:
EFFECT OF CLASSIFICATION BY PROGRAM TYPE FOR SPONSORED BEST CLASSES

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1- DISCOVERY	FREQ	2	2	2	.80
	MEAN	48.16	59.62	11.46	
	VAR	41.71	161.98	39.30	
2- COGNITIVE/DISCOVERY	FREQ	8	8	8	.52
	MEAN	50.26	51.29	.32	
	VAR	8.66	18.66	24.78	
3- PRESCRIPTIVE	FREQ	10	10	10	.27
	MEAN	49.90	50.61	.69	
	VAR	12.32	68.38	53.42	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.61	-1.37	-2.27 †
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.47	-1.16	-1.78
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.28	-.20	-.07

Table D-44

SPONTANEOUS EXTENSION MEASURE:
FALL-SPRING RAW CORRELATIONS FOR ALL CHILDREN

(N = 848)

Delimited Verbal	.212**
Delimited Nonverbal	-.008
Extended: Verbal	.016
Nonverbal	.141**
Total Delimited	.076*
Total Extended	.142**

* $p < .05$
** $p < .01$

Table D-45

SPONTANEOUS EXTENSION MEASURE: EFFECT OF SPONSORSHIP FOR ALL CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Sponsored Children	Freq	443	417	417	-3.99‡
	Mean	49.16	47.33	-1.85	
	Var	67.14	21.17	80.44	
2-Unsponsored Children	Freq	375	364	362	-2.70‡
	Mean	50.99	48.75	-2.21	
	Var	133.26	120.75	246.31	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		2.64‡	2.40†	-.40	

Table D-46

SPONTANEOUS EXTENSION MEASURE: EFFECT OF SES FOR SPONSORED CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Low SES	Freq	371	349	349	-3.25‡
	Mean	48.80	47.21	-1.64	
	Var	63.70	20.12	78.83	
2-High SES	Freq	72	68	68	-2.43†
	Mean	51.00	47.93	-2.93	
	Var	81.86	26.46	88.59	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		2.09†	1.18	1.08	

Table D-47

SPONTANEOUS EXTENSION MEASURE: EFFECT OF SES FOR UNSPONSORED CHILDREN

		Fall	Adjusted Spring	Difference	T
1-Low SES	Freq	330	320	320	-2.42†
	Mean	50.83	48.70	-2.05	
	Var	124.05	125.88	245.72	
2-High SES	Freq	45	44	44	-1.21
	Mean	52.24	49.12	-3.35	
	Var	203.38	85.34	255.13	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		.77	.24	.48	

Table D-48

SPONTANEOUS EXTENSION MEASURE: EFFECT OF TEACHER EDUCATION LEVEL FOR SPONSORED CHILDREN

		Fall	Adjusted Spring	Difference	T
1-High	Freq	15	15	15	.22
	Mean	48.56	48.82	.26	
	Var	8.93	10.19	8.32	
2-Medium	Freq	34	34	34	-2.21†
	Mean	48.13	46.69	-1.43	
	Var	12.55	1.45	11.83	
3-Low	Freq	8	8	8	-1.36
	Mean	52.08	48.05	-4.06	
	Var	44.20	17.06	56.48	
T-Tests for all possible pairs...					
T-Test values for Category 2 vs Category 1		-.40	-3.31‡	-1.63	
T-Test values for Category 3 vs Category 1		1.67	-.47	-1.88	
T-Test values for Category 3 vs Category 2		2.28†	1.61	-1.45	

Table D-49

SPONTANEOUS EXTENSION MEASURE:
EFFECT OF LEVEL OF TEACHER COGNITIVE ORIENTATION FOR SPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-HIGH	FREQ	9	9	9	-3.26 ‡
	MEAN	53.12	46.50	-6.59	
	VAR	31.16	1.79	31.34	
2-MEDIUM	FREQ	43	43	43	-.81
	MEAN	48.34	47.79	-.55	
	VAR	11.73	7.83	11.64	
3-LOW	FREQ	7	7	7	-.21
	MEAN	47.03	46.75	-.31	
	VAR	5.68	4.68	2.83	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	-3.29 ‡	1.32	4.16 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-2.53 †	.27	2.68 †
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.95	-.92	.18

Table D-50

SPONTANEOUS EXTENSION MEASURE:
EFFECT OF LEVEL OF TEACHER COGNITIVE ORIENTATION FOR UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-HIGH	FREQ	2	2	2	.57
	MEAN	50.49	71.94	21.91	
	VAR	69.37	1356.45	849.55	
2-MEDIUM	FREQ	31	31	31	-.73
	MEAN	51.36	49.73	-1.90	
	VAR	39.63	109.55	157.38	
3-LOW	FREQ	13	13	13	-1.58
	MEAN	51.52	47.54	-4.00	
	VAR	70.34	5.72	54.46	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.18	-2.17 †	-2.24 †
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.15	-2.19 †	-2.51 †
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	.07	-.73	-.55

Table D-51

PASSIVITY/SUBSTITUTION MEASURE: EFFECT OF SPONSORSHIP FOR ALL CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-SPONSORED CHILDREN	FREQ	443	417	417	-1.72
	MEAN	49.98	48.80	-1.21	
	VAR	98.89	100.87	165.33	
2-UNSPONSORED CHILDREN	FREQ	377	364	364	-1.99†
	MEAN	50.03	48.41	-1.71	
	VAR	97.32	146.63	222.55	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		.07	-.49	-.50	

Table D-52

PASSIVITY/SUBSTITUTION MEASURE: EFFECT OF TIME BEFORE TEST ON CHILDREN WITHOUT PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-LESS THAN 15 DAYS	FREQ	19	19	19	-.89
	MEAN	50.06	47.32	-2.74	
	VAR	73.46	98.32	102.22	
2-15 TO 30 DAYS	FREQ	149	146	146	-1.97†
	MEAN	49.05	47.14	-1.87	
	VAR	67.57	68.64	130.50	
3-MORE THAN 30 DAYS	FREQ	324	308	308	-3.17‡
	MEAN	49.34	47.03	-2.31	
	VAR	96.26	69.70	150.78	
T-TESTS FOR ALL POSSIBLE PAIRS...					
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1		-.50	-.09	.31	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1		-.31	-.14	.15	
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2		.31	-.13	-.36	

Table D-53

PASSIVITY/SUBSTITUTION MEASURE: EFFECT OF TIME BEFORE TEST ON CHILDREN WITH PRIOR HEAD START

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-LESS THAN 15 DAYS	FREQ	5	4	4	1.05
	MEAN	49.47	58.00	6.05	
	VAR	89.36	143.19	36.33	
2-15 TO 30 DAYS	FREQ	62	62	62	-.12
	MEAN	51.52	51.30	-.22	
	VAR	92.39	128.39	200.16	
3-MORE THAN 30 DAYS	FREQ	166	163	163	.20
	MEAN	51.46	51.77	.21	
	VAR	128.28	257.57	347.82	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.45	-1.12	-.87
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	.39	-.77	-.62
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.04	.21	.16

Table D-54

PASSIVITY/SUBSTITUTION MEASURE: EFFECT OF PRIOR HEAD START FOR ALL CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-NONE	FREQ	523	498	498	-3.75‡
	MEAN	49.41	47.28	-2.14	
	VAR	89.30	74.99	145.56	
2-1-3 MONTHS	FREQ	100	100	100	.14
	MEAN	52.05	52.34	.28	
	VAR	111.47	295.66	406.05	
3-4 OR MORE MONTHS	FREQ	147	133	133	.42
	MEAN	50.77	51.36	.26	
	VAR	114.31	162.63	220.53	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	2.51 ‡	4.36 ‡	1.60
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	1.49	4.32 ‡	1.93
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-.92	-.50	-.01

Table D-55

PASSIVITY/SUBSTITUTION MEASURE: EFFECT OF PRIOR HEAD START FOR SPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-NONE	FREQ	289	275	275	-1.80
	MEAN	49.49	48.05	-1.42	
	VAR	96.28	85.20	155.36	
2-1-3 MONTHS	FREQ	48	48	48	-1.27
	MEAN	53.67	50.70	-2.96	
	VAR	126.25	129.67	237.14	
3-4 OR MORE MONTHS	FREQ	89	77	77	1.08
	MEAN	48.91	50.64	1.69	
	VAR	69.34	146.48	132.02	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	2.67 ‡	1.76	-.76
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.50	2.02 †	1.96
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-2.79 ‡	-.03	1.91

Table D-56

PASSIVITY/SUBSTITUTION MEASURE: EFFECT OF PRIOR HEAD START FOR UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1-NONE	FREQ	234	223	223	-3.76 ‡
	MEAN	49.30	46.32	-3.03	
	VAR	81.03	61.07	132.68	
2-1-3 MONTHS	FREQ	52	52	52	1.00
	MEAN	50.57	53.84	3.28	
	VAR	95.32	449.61	550.61	
3-4 OR MORE MONTHS	FREQ	58	56	56	-.51
	MEAN	53.63	52.35	-1.71	
	VAR	172.02	186.19	340.06	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	.90	4.19 ‡	2.81 ‡
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	2.96 ‡	4.33 ‡	.67
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	1.36	-.43	-1.22

Table D-57

PASSIVITY/SUBSTITUTION MEASURE:
EFFECT OF LEVEL OF INSERVICE TEACHER TRAINING FOR UNSPONSORED CHILDREN

		FALL	ADJUSTED SPRING	DIFFERENCE	T
1 HIGH	FREQ	27	27	27	-.87
	MEAN	49.94	48.30	-1.81	
	VAR	40.32	51.55	61.75	
2- MEDIUM	FREQ	13	13	13	-3.50‡
	MEAN	52.51	45.71	-6.83	
	VAR	33.69	11.71	25.09	
3- LOW	FREQ	3	3	3	1.81
	MEAN	44.46	54.93	6.47	
	VAR	18.24	7.29	5.63	

T-TESTS FOR ALL POSSIBLE PAIRS...

	FALL	ADJUSTED SPRING	DIFFERENCE
T-TEST VALUES FOR CATEGORY 2 VS. CATEGORY 1	1.20	-1.20	-2.05 †
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 1	-.38	1.53	1.75
T-TEST VALUES FOR CATEGORY 3 VS. CATEGORY 2	-1.07	4.08 ‡	4.19 ‡

Appendix E

METHODOLOGY OF ANALYSIS BY CLASSROOM ON CLASSROOM OBSERVATION

Appendix E

METHODOLOGY OF ANALYSIS BY CLASSROOM ON CLASSROOM OBSERVATION

When data were summarized by classroom rather than by site, the following procedures were used. A score to represent implementation was prepared from the data for the 17 classroom observation variables listed in Table E-1. These 17 variables are concerned with such components of the sponsors' models as size of interaction groups, apportionment of time to various types of activities, and amount and kind of communication in the classroom. Several steps were involved in using the data from these 17 variables to construct an implementation score.

The first step was to rank the 24 classrooms on each variable for which there were classroom observation data. The classrooms were labeled Low, Medium, or High, according to whether they ranked in the bottom, middle, or top one-third of scores for a given variable. Since there are 17 variables and three categories each, there were 317 possible patterns. The 24 patterns of Lows, Mediums, and Highs that actually occurred are given in Table E-1. It should be noted that there are not always eight Lows, eight Mediums, and eight Highs for each row (i.e., each variable) because tied ranks sometimes occurred in a way that prevented the neat division of classrooms into three groups of equal size.

The next step involved the comparison of each classroom's ordinal status (High, Medium, or Low) on each variable with the sponsor's expectations for that variable. These "expectations" are indicated by the "+" entries in the column. A "+" for a given sponsor for a given variable indicates that the sponsor's model calls for a relatively high score on that variable. For example, the fact that sponsor 1 feels a variety of activities is an important inducement to learning is reflected in the "+" mark next to CO variable 4 in Table E-1. The absence of a "+" indicates that the variable is relatively unimportant for the sponsor's model. Thus, the absence of a "+" does not imply that the sponsor's model calls for low scores on the variables so marked; rather, it implies that the variable is not of major concern to the sponsor. For example, the fact that sponsor 2 is less concerned about whether a great deal of classroom time is spent on academic activities does not imply that sponsor 2 desires few academic activities.

Table E-1

ORDINAL CLASSIFICATION OF CLASSROOMS FOR IMPLEMENTATION AS REFLECTED IN CLASS OBSERVATION VARIABLES

	Preacademic						Discovery Oriented						Cognitive Discovery											
Sponsor	4			5			3			8			1			2			6			7		
Classes	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Distribution of classroom activities recorded																								
1. Relatively high proportion of academic work	+H	H	H	+H	H	H	L	H	M	L	M	M	L	M	M	H	L	L	L	L	L	M	M	H
2. Inquiry	L	L	L	M	H	L	+M	M	H	+M	M	L	+H	M	M	+H	M	L	+M	L	L	+H	H	H
3. Relatively high proportion arts and crafts	L	M	H	H	L	H	+H	H	M	+H	M	M	+H	M	H	H	M	M	L	L	L	L	M	L
4. Wide variety child play	L	H	H	+M	M	M	+H	H	L	+M	M	H	+H	M	M	+M	M	M	+L	L	L	+H	M	H
Grouping of Adults and Children in Classroom																								
5. Single-child units with adults or without	L	M	H	L	M	L	+M	H	M	+H	M	H	+H	H	H	L	M	M	+M	L	L	+M	M	L
6. Small groups	+M	H	H	+H	H	H	M	L	L	L	L	M	M	H	M	+M	M	M	+L	M	M	+H	H	H
7. Independent child units	+L	M	H	L	L	L	+M	H	H	+H	M	H	+H	M	H	L	M	M	+M	L	L	+M	M	L
8. Large groups	M	L	L	L	M	L	H	H	L	M	M	M	L	H	H	M	M	H	H	H	M	M	M	L
Amount and Kind of Communication in Classroom																								
9. Adult talk (greater proportion)	+H	H	M	+H	H	H	M	L	M	H	L	M	M	M	H	L	L	L	M	M	M	M	H	H
10. Child talk (greater proportion)	L	H	M	M	M	M	+L	M	L	+M	H	M	+H	H	H	+M	H	M	H	H	H	L	L	M
11. Direct request	+H	H	H	+M	M	M	L	L	L	H	M	H	M	M	L	L	M	L	H	H	H	M	L	M
12. Choice request	M	L	L	L	L	H	+H	H	H	M	L	L	+L	L	H	+L	M	H	+L	L	L	H	H	H
13. Positive feedback: praise	M	L	L	+H	H	H	L	M	L	L	M	M	L	L	M	H	M	L	+L	H	M	M	M	M
14. Positive feedback: acknowledgment	H	H	H	L	L	L	H	H	H	M	H	M	M	M	L	L	M	H	M	L	L	L	H	H

Table E-1 (concluded)

	Preacademic						Discovery Oriented						Cognitive Discovery											
Sponsor	4			5			3			8			1			2			6			7		
Classes	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Focus of Adult Communication																								
15. One child	+M	L	L	+H	H	H	+M	M	M	+H	M	M	+H	M	M	+L	L	L	+H	H	H	H	M	H
16. Small group	+H	H	H	+M	M	M	L	L	L	H	L	M	L	H	L	+M	H	M	+M	M	M	H	H	H
17. Large group	M	L	L	L	M	L	H	M	H	L	M	M	L	L	H	M	L	H	+M	M	M	M	L	M
Sponsor Summary																								
Row																								
1. Weighted score	16	17	17	21	21	21	17	21	15	18	15	15	21	16	21	11	14	11	13	12	11	13	12	9
2. Maximum possible weights	21	21	21	24	24	24	24	24	24	21	21	21	24	24	24	21	21	21	30	30	30	15	15	15
3. Percent implementation score	76	81	81	88	88	88	71	88	63	86	71	71	88	67	88	52	67	52	43	40	37	87	80	60
4. Average percent implementation		79.4%			87.5%			73.6%			76.2%			80.6%			58.1%			40.0%			75.6%	
5. Assigned rank*		2.5			1			6			4.5			2.5			7			8			4.5	
6. Implementation level	H	H	H	H	H	H	M	H	M	H	M	M	H	M	H	L	M	L	L	L	L	H	H	M

+ = The sponsor expects the variable so marked to be present in his program.

* Tied rank given if difference less than 2.

In five cases the pluses shown in Table E-1 were provided by the sponsors themselves in response to a request to rate their objectives. The remaining sponsors did not return these forms; for them, the pluses were assigned according to available sources of information about the models such as written documents and, more informally, conversations with the sponsors at meetings or on the phone.

Each expected (+) variable was weighted for each classroom according to the degree to which that classroom's relative standing on the variable approximated expectation. A "+L" combination is the worst possible correspondence between expectation and outcome; it indicates that a classroom performed in the bottom third of classes on a variable considered important to the sponsor's model. This outcome was assigned a weight of zero. The outcome "+M" was considered moderately good implementation and was assigned a weight of 2. The number 1 was left to represent a hypothetical point of neutrality with regard to implementation and was not assigned to any actual events. The event "+H" was considered the best possible implementation and was assigned a weight of 3.

Next, the weights for each classroom were summed across variables. Each "+" variable could receive a 0, 2, or 3. Thus, the maximum possible total of weights for any one classroom is equal to three times the number of "+'s" for its model. The actual totals are given in Summary Row 1 of Table E-1 and the maximum possible weights are immediately underneath in Summary Row 2.

Appendix F

DIFFUSION

Appendix F

DIFFUSION

Inevitably, some teachers from unsponsored classrooms became aware of the local sponsor's model characteristics. In communities with the comparison classes on-site there are numerous opportunities for diffusion to occur: social gatherings, teachers association meetings, and the informal exchange of materials and ideas between teachers who are friends. To examine diffusion the nine items presented on Table F-1 were analyzed. The total weighted score on Table 24 in the main text can be taken as one indicator of the degree of diffusion among the unsponsored teachers.

It was suspected that the term "sponsor" may have been an ambiguous one to many unsponsored teachers and that, as a consequence, their relatively high scores might not reflect authentic diffusion. Telephone calls were made to 13 of the teachers who rated High and Medium to investigate this concern. It was discovered that teachers who did not know the name of the local PV sponsor usually construed the term sponsor to mean either the U.S. Department of HEW or their local Head Start director.

In view of this problem of the ambiguity of the term "sponsor", classification of unsponsored teachers into categories of Low, Medium, and High diffusion was based on two criteria: (1) the ordinal category--Low, Medium, High--of the teacher's score in the frequency distribution shown in Table F-2 and (2) whether or not she answered Question 1 with the correct name of the Person or Institution serving as the local PV sponsor.

High diffusion teachers were those who scored 10 to 15 on the nine items and knew the name of the local PV Sponsor. Moderate diffusion teachers were those who scored 2 to 9 on nine items and knew the name of the local PV Sponsor. Low Diffusion teachers were those who scored 0 to 1 on the nine items or who scored higher but did not know the name of the local PV Sponsor.

Table F-2 describes the frequency of Low, Medium, and High diffusion by site for both sponsored and unsponsored classrooms. Site D had three out of five unsponsored classrooms with High diffusion. On this site some

Table F-1

RESPONSES TO IMPLEMENTATION DIFFUSSION ITEMS ON THE TEACHER QUESTIONNAIRE

Sponsor No.	1		2				3				4				5				6				7				8							
Site =	A		B		C		D		E		F		G		H		*I		J		K		L		M		N		O		Total			
Questions Asked of Teachers	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S		NS	
Total N	4	2	7	1	4	5	6	5	6	1	4	4	2	5	6	2	2	5	3	3	12	4	3	2	4	2	4	5	5	5	N = 72		N = 51	
																															N	%	N	%
What is the name of the Head Start PV sponsor in your community? (number that responded correctly)	4	0	5	0	4	0	5	3	3	0	3	3	2	1	5	0	1	0	3	1	10	2	3	1	4	1	3	0	5	5	60	83	17	33
Have you attended meetings where the model was presented? (number answering "yes")	4	0	4	0	4	0	3	3	5	0	4	1	1	1	5	0	2	0	3	0	10	2	2	0	4	1	3	0	5	4	59	82	12	24
Have you discussed the model with other teachers? (number answering "yes")	4	0	7	0	4	0	5	3	5	0	4	2	2	1	5	0	2	0	3	0	11	1	3	0	4	1	2	0	5	5	66	92	13	26
Have you received pre-service training from the sponsor? (number answering "yes")	4	0	3	0	3	0	3	3	1	0	4	1	2	1	3	0	2	0	3	0	10	1	2	0	4	1	1	0	5	0	50	69	7	14
Have you received in-service training from the sponsor? (number answering "yes")	4	0	4	0	4	0	6	3	5	0	4	0	2	1	4	0	2	0	3	0	11	1	3	0	4	1	3	0	5	0	64	89	6	12
Have you received equipment from the sponsor? (number answering "yes")	3	0	3	0	4	0	5	3	5	0	2	0	1	1	5	0	2	0	3	0	12	1	0	0	0	0	3	0	5	0	53	74	5	10
Have you received teaching materials from the sponsor? (number answering "yes")	4	0	4	0	4	0	6	3	5	0	4	1	2	1	5	0	2	0	3	0	12	1	0	0	1	0	3	0	5	0	60	83	6	12
Have you received individual consultation from the sponsor? (number answering "yes")	2	0	5	0	4	0	5	3	5	0	2	0	2	0	3	0	2	0	3	0	8	1	2	0	4	1	1	0	4	0	52	72	5	10
Have you received visits in your classroom from the sponsor training staff? (number answering "yes")	4	0	6	0	4	0	6	3	5	0	3	0	2	1	5	0	2	0	3	1	12	1	3	0	4	1	2	0	5	0	66	92	7	14

* One sponsored teacher omitted this section of the questionnaire.

Table F-2

DIFFUSION OF MODEL CHARACTERISTICS
TO SPONSORED AND UNSPONSORED TEACHERS

		Sponsored Teachers			Unsponsored Teachers		
Sponsor	Sites	Low	Medium	High	Low	Medium	High
1	A			4	2		
2	B	1	2	4	1		
	C			4	5		
3	D		1	5	2		3
	E	1		5	1		
4	F		1	3	2	2	
	G			2	4		1
5	H	1		5	2		
	I*			2	5		
6	J			3	2	1	
	K		1	11	2	1	1
7	L		1	2	2		
	M			4	1	1	
8	N		3	1	5		
	O			5		5	
Total Teachers		3	9	60	36	10	5

* One sponsored teacher omitted this section on questionnaire.

of the sponsored and unsponsored classrooms were in the same school building; sharing new educational ideas was natural. How this diffusion of information affected the comparison data of pupil outcomes will be considered in Chapter IX.

Appendix G

THE EIGHT-BLOCK SORT TASK VARIABLES
AND PARENT QUESTIONNAIRE

Appendix G

THE EIGHT-BLOCK SORT TASK VARIABLES AND PARENT QUESTIONNAIRE

One-half the children tested in each classroom, the complementary sample to the Stanford-Binet sample of children, participated with their mothers in the Eight-Block Sort Task situation. From the 1970 Spring Rating Form, five variables have been defined as summary variables designed to investigate aspects of mother-child interaction:

Aspects of Mother-Child Interaction	Summary Variables
1. Modes of communication	Variable 1 - Total Verbal Communication
2. Transmission of information	Variable 2 - Task Description
3. Modes of control	Variable 3 - Regulation
4. Child behavior and performance	Variable 4 - Child Verbal Responsiveness
	Variable 5 - Child Success

Although the Fall and Spring Rating Forms* varied in format, definition of identical Fall and Spring Summary variables was possible for variable 5 (Child Success). For the other four variables, comparable Fall and Spring summary variables were defined. Adjustments in ranges of summary variables were needed for variables 2 (Task Description), 3 (Regulation), and 4 (Child Verbal Responsiveness). In each case, the Spring summary variable was scaled to the same range as the corresponding Fall summary variable. For all summary variables, a higher score would indicate more positive behavior on the part of the mother or the child in the Eight-Block Task situation. Fall and Spring summary variables were defined in the following manner.

* Copies of the Fall and Spring Rating Forms are available from Stanford Research Institute on request.

Variable 1: Total Verbal Communication. A score indicating the mother's use of a verbal mode of communication or a verbal mode in conjunction with a nonverbal mode of communication during the entire task period: child orientation, child training, and child testing.

S1: Spring Summary Variable 1: Total Verbal Communication

Child Orientation Period

S1a.	Did the mother verbally orient the child toward the height of the blocks?	Yes, if the mother was rated as using "verbalization", "focusing" or "contrasting" in orienting her child toward the height of the blocks. Score: 1 point.
S1b.	Did the mother verbally orient the child toward the mark on the blocks?	Yes, if the mother was rated as using "verbalization", "focusing", or "contrasting" in orienting her child toward the marks on the blocks. Score: 1 point.

Child Training Period

S1c.	Did the mother make (verbal) requests of the child for verbal labeling involving more than one aspect of the task at one time?	Yes, if the mother made 4 or more such requests during the training period. Score: 1 point.
S1d.	Did the mother make (verbal) requests of the child for verbal labeling involving one aspect of the task?	Yes, if the mother made 4 or more such requests during the training period. Score: 1 point.
S1e.	Did the mother tend to describe the task verbally to the child in teaching the child about the task?	Yes, if the mother was rated "usually" or "always" on verbalization. Score: 1 point.

S1f. Did the mother tend to use both verbal description and gestures in teaching the child about the task? — Yes, if the mother was rated "usually" or "always" on focusing. Score: 1 point.

Child Testing Period

S1g. Did the mother give the child verbal support during the test involving the short O block? — Yes, if the mother was rated as providing "verbal support" during the test period (short O). Score: 1 point.

S1h. Did the mother give the child verbal support dur- the test involving the tall X block? — Yes, if the mother was rated as providing "verbal support" during the test period (tall X). Score: 1 point.

A mother could score from 0 to 8 points on this variable. A high score would indicate that the mother did tend to use a verbal mode of communication in interacting with her child in the Eight-Block Task situation, and a low score would indicate that she did not tend to use a verbal mode of communication.

F1: Fall Summary Variable 1: Total Verbal Communication

Child Orientation Period

F1a. Did the mother verbally orient the child toward the height of the blocks? — Same as S1a. Score: 1 point.

F1b. Did the mother verbally orient the child toward the mark on the blocks? — Same as S1b. Score: 1 point.

Child Training Period

F1c. Did the mother verbally praise the child during the teaching period? — Yes, if the mother was rated "yes" on giving verbal praise. Score: 1 point

F1d. Did the mother verbally express affirmation of her child's behavior (give positive feedback)? — Yes, if the mother was rated "yes" on giving verbal affirmation. Score: 1 point.

F1e. Did the mother verbally offer encouragement to her child? — Yes, if the mother was rated "yes" on giving verbal encouragement. Score: 1 point.

F1f. Did the mother verbally show impatience with the child's behavior? — Yes, if the mother was rated "yes" on showing impatience verbally. Score: 1 point.

Child Testing Period

F1g. Did the mother give the child verbal support during the test involving short O block? — Same as S1g. Score: 1 point.

F1h. Did the mother give the child verbal support during the test involving the tall X block? — Same as S1h. Score: 1 point.

A mother could score from 0 to 8 points on this variable. A high score would indicate that the mother did tend to use a verbal mode of communication in interacting with her child in the Eight-Block Task situation, and a low score would indicate that she did not tend to use a verbal mode of communication.

Variable 2: Task Description. A score indicating whether the mother oriented the child toward stimulus and task dimensions and trained the child in discriminating these dimensions.

S2: Spring Summary Variable 2: Task Description

Child Orientation Period

S2a.	Did the mother orient the child toward the height of the blocks?	Yes, if the mother was rated as providing any form of orientation toward the height of the blocks. Score: 1 point.
S2b.	Did the mother orient the child toward the mark on the blocks?	Yes, if the mother was rated as providing any form of orientation toward the mark on the blocks. Score: 1 point.
S2c.	Did the mother orient the child toward the grouping (height & mark) of the blocks?	Yes, if the mother was rated as providing any form of orientation toward the grouping of the blocks. Score: 1 point.

Child Training Period

S2d.	Did the mother teach the child about the height of the blocks?	Yes, if the mother was rated as having taught height separately. Score: 1 point.
S2e.	Did the mother teach the child about the mark on the blocks?	Yes, if the mother was rated as having taught mark separately. Score: 1 point.
S2f.	Did the mother teach the child about the grouping (height x mark) of the blocks?	Yes, if the mother was rated as having taught the grouping of the blocks. Score: 1 point.

F2: Fall Summary Variable 2: Task Description

F2a to F2f: Same as S2a to S2f.

However, the Fall and **Spring** scoring methods differed. In the fall, the tester could only indicate whether the mother taught her child about the height, mark on, and grouping of the blocks, while in the spring the tester could also record the sequence of teaching steps for five steps. Thus if the mother taught her child first about the height of the blocks, then about the mark on the blocks and then again about the height, the tester could indicate that height had been taught twice. Therefore, the Spring summary variable ranged from 0 to 8, and had to be scaled down to a range of 0 to 6, the range of the Fall summary variable 2.

A high score would indicate that the mother did orient the child toward and teach the child about the height, mark, and grouping (height & mark) of the blocks, and a low score would indicate that she did not orient the child toward or teach the child about the height, mark, and grouping of the blocks.

Variable 3: Regulation. A score indicating whether the mother used more positive and verbal means or more negative and physical means of directing and regulating her child's behavior during the training period and the testing period.

S3: Spring Summary Variable 4: Regulation

S3a.	Did the mother praise the child for his behavior?	Yes, if the mother was rated medium high ("3") or high ("4") on praise. Score: 2 points. Yes, if the mother was rated low ("1") or medium low ("2") on praise. Score: 1 point.
S3b.	Did the mother use verbal positive or physical and negative means to control the child's behavior?	Yes, if the mother used "reasoning" or "encouragement" most often. Score: 2 points.

Yes, if the mother used "pleads" or "bribes" most often.
Score: 1 point.

No points if the mother used "firm command," "threat," "physical restraint," or "physical punishment" most often.

S3c. Did the mother criticize the child for his behavior?

Yes, if the mother was rated medium high ("3") or high ("4") on criticism.
Score: -1 point.

Child Testing Period

S3d. Did the mother offer support to the child during the test involving the short O block?

Yes, if the mother was rated as providing either "verbal support" or "nonverbal support" during testing with the short O block.
Score: 1 point.

S3e. Did the mother offer support to the child during the test involving the tall X block?

Yes, if the mother was rated as providing either "verbal support" or "nonverbal support" during testing with the tall X block.
Score: 1 point.

A mother could score from 0 to 6 points on this variable. A high score would indicate that the mother tended to direct and regulate her child's behavior through positive and verbal means rather than through negative and physical means, and a low score would indicate that the mother tended to use more negative and physical means.

F3: Fall Summary Variable 3: Regulation

Child Training Period

F3a.	Did the mother praise the child for his behavior?	Yes, if the mother was rated as giving both verbal or nonverbal praise. Score: 2 points. Yes, if the mother was rated as gi\ ng either verbal or nonverbal praise, but not both. Score: 1 point.
F3b.	Did the mother use praise and encouragement or coercion to control the child's behavior?	Yes, if the mother was rated high ("5" or "6") on a scale indicating the control system used by the mother. Score: 2 points. Yes, if the mother was rated medium ("3" or "4") on a scale indicating the control system used by the mother. Score: 1 point. No points, if the mother was rated low ("0," "1," or "2") on a scale indicating the control system used by the mother.
F3c.	Did the mother criticize the child for his behavior?	Yes, if the mother was rated as giving either verbal or nonverbal criticism. Score: -1 point.

Child Testing Period

F3d.	Did the mother offer support to the child during the test involving the short O block?	Same as S4d. Score: 1 point.

F3e. Did the mother offer support to the child during the test involving the tall X block? | Same as S4e. Score: 1 point.

A mother could score from -1 to 6 points* on this variable. A high score would indicate that the mother tended to direct and regulate her child's behavior through positive and verbal means rather than through negative and physical means, and a low score would indicate that the mother tended to use more negative and physical means.

Variable 4: Verbal Labeling. A measure of the amount of verbal labeling elicited from or volunteered by the child during the training period.

S4: Spring Summary Variable 4: Verbal Responsiveness

S4. Did the child respond verbally when the mother was teaching him about task and stimulus dimensions? | Frequency of verbal labeling responses by the child (recoded with range 0 - 9). Score:

A child may score from 0 to 9 points on this variable. A high score would indicate that the child was participating during the teaching session with relevant verbal responses, labeling stimulus and task dimensions, and a low score would indicate that he was not responding verbally.

F4: Fall Summary Variable 4: Verbal Responsiveness

F4a. Did the child respond verbally to instruction about the height of the blocks? | Ratio of verbal to nonverbal responses (recoded with range 1 - 5). Score:

F4b. Did the child respond verbally to instruction about the mark on the blocks? | Ratio of verbal to nonverbal responses (recoded with range 1 - 5). Score:

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* The range from -1 to 6 rather than 0 to 6 is an unfortunate consequence of the different rating forms and subsequently different coding of F4a and S4a from Fall to Spring.

A child may score from 2 to 10 points on this variable. A <u>high score</u> would indicate that the child was <u>responding verbally</u> to the mother's teaching of height and mark characteristics of the blocks, and a <u>low score</u> would indicate that he was <u>not responding verbally</u>.

<u>Variable 5: Success</u>. A score indicating whether the child successfully placed test blocks and gave verbal reasons for the placement of the blocks when he was tested by the SRI tester after the child's training by the mother.

<u>S5: Spring Summary Variable 5: Success</u>

S5a.	Did the child place the short O test block correctly?	Yes, on both criteria (height and mark). Score: 2 points. Yes, on one criterion (height or mark). Score: 1 point.
S5b.	Did the child place the tall X test block correctly?	Yes, on both criteria (height and mark). Score: 2 points. Yes, on one criterion (height or mark). Score: 1 point.
S5c.	Did the child correctly explain verbally his placement of the short O test block:	Yes, on both criteria (height and mark). Score: 2 points. Yes on one criterion (height or mark). Score: 1 point.
S5d.	Did the child correctly explain verbally his placement of the tall X test block?	Yes, on both criteria (height and mark). Score: 2 points. Yes, on one criterion (height or mark). Score: 1 point.

F5: Fall Summary Variable 5: Success

F5a. - F5d.: same as S5a. - S5d.

A child may score from 0 to 8 points on this variable. A high score would indicate that the child tended to place test blocks correctly in one of the four groups of blocks defined by height and mark and to give correct reasons verbally for block placement, and a low score would indicate that the child tended not to place test blocks correctly and/or not to give correct reasons verbally for block placement.

Table G-1

EIGHT-BLOCK SORT TEST: EFFECT OF SPONSORSHIP

Group		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. Sponsored	N	325	310	310	3.94
	$\bar{X}$	49.64	52.97	3.21	
	V	100.02	126.80	219.47	
2. Unsponsored	N	325	313	311	2.30
	$\bar{X}$	50.36	52.31	2.08	
	V	95.09	132.79	198.77	
T-test values for Category 2 vs Category 1		.93	-.72	-.97	
Task Description					
1. Sponsored	N	301	294	294	.85
	$\bar{X}$	49.97	50.55	.42	
	V	96.57	43.68	117.40	
2. Unsponsored	N	325	313	311	.09
	$\bar{X}$	50.03	50.09	-.07	
	V	98.85	49.18	136.96	
T-test values for Category 2 vs Category 1		.08	-.83	-.53	
Regulation					
1. Sponsored	N	316	302	302	8.17
	$\bar{X}$	50.52	56.29	5.71	
	V	91.50	61.64	144.04	
2. Unsponsored	N	315	301	301	9.49
	$\bar{X}$	49.48	56.84	7.24	
	V	102.90	80.93	146.50	
T-test values for Category 2 vs Category 1		-1.32	.80	1.56	
Child Verbal Responsiveness					
1. Sponsored	N	301	294	294	3.86
	$\bar{X}$	51.08	53.89	2.76	
	V	106.83	49.42	148.17	
2. Unsponsored	N	322	313	308	7.19
	$\bar{X}$	48.99	54.39	5.24	
	V	87.45	91.[illegible]	160.93	
T-test values for Category 2 vs Category 1		-2.65	.73	2.44	
Child Success					
1. Sponsored	N	325	311	311	10.37
	$\bar{X}$	50.31	59.21	8.69	
	V	99.09	135.08	168.37	
2. Unsponsored	N	327	313	313	7.00
	$\bar{X}$	49.70	55.96	6.12	
	V	95.81	160.51	147.60	
T-test values for Category 2 vs Category 1		-.79	-3.33	-2.55	

Table G-2

EIGHT-BLOCK SORT TEST: EFFECT OF DIFFUSION ON UNSPONSORED CLASSES

Rank		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. High	N	5	5	5	-8.4
	$\bar{X}$	52.80	49.85	-2.95	
	V	26.79	22.53	22.87	
2. Medium	N	9	9	9	1.03
	$\bar{X}$	47.02	51.18	4.16	
	V	112.93	18.09	88.33	
3. Low	N	30	30	29	.98
	$\bar{X}$	50.09	51.55	1.53	
	V	29.28	35.07	48.17	
T-test values for Category 2 vs Category 1		-1.06	.50	1.46	
T-test values for Category 3 vs Category 1		-1.01	.59	1.35	
T-test values for Category 3 vs Category 2		1.13	.17	-.88	
Task Description					
1. High	N	5	5	5	-1.68
	$\bar{X}$	52.83	47.51	-5.32	
	V	23.27	16.88	23.00	
2. Medium	N	9	9	9	-.49
	$\bar{X}$	50.18	48.76	-1.41	
	V	45.55	20.09	61.05	
3. Low	N	30	30	29	1.43
	$\bar{X}$	49.50	51.85	1.81	
	V	54.14	23.79	54.00	
T-test values for Category 2 vs Category 1		-.72	.48	.94	
T-test values for Category 3 vs Category 1		-.95	1.83	2.03	
T-test values for Category 3 vs Category 2		-.24	1.65	1.10	
Regulation					
1. High	N	5	5	5	.93
	$\bar{X}$	52.02	56.73	4.72	
	V	98.82	5.04	85.32	
2. Medium	N	9	9	9	2.37
	$\bar{X}$	48.39	55.29	6.90	
	V	45.10	22.92	66.66	
3. Low	N	30	30	30	5.14
	$\bar{X}$	49.51	58.05	8.38	
	V	53.29	26.93	69.22	
T-test values for Category 2 vs Category 1		-.75	-.59	.42	
T-test values for Category 3 vs Category 1		-.6[illegible]	.54	.87	
T-test values for Category 3 vs Category 2		.4[illegible]	1.39	.46	
Child Verbal Responsiveness					
1. High	N	5	5	5	.60
	$\bar{X}$	49.88	52.06	2.17	
	V	32.21	20.22	50.66	
2. Medium	N	9	9	9	4.65
	$\bar{X}$	45.59	57.47	11.88	
	V	28.16	24.10	92.22	
3. Low	N	30	30	29	2.15
	$\bar{X}$	49.80	52.89	3.15	
	V	40.88	18.81	52.31	
T-test values for Category 2 vs Category 1		-1.31	1.88	1.83	
T-test values for Category 3 vs Category 1		-.03	.38	.27	
T-test values for Category 3 vs Category 2		1.75	-2.62	-2.83	
Child Success					
1. High	N	5	5	5	1.25
	$\bar{X}$	49.52	57.59	8.06	
	V	56.94	108.58	71.26	
2. Medium	N	9	9	9	1.30
	$\bar{X}$	52.08	59.20	7.12	
	V	145.49	96.39	66.03	
3. Low	N	30	30	30	2.71
	$\bar{X}$	51.45	56.64	4.92	
	V	40.12	66.59	46.33	
T-test values for Category 2 vs Category 1		.40	.27	-.19	
T-test values for Category 3 vs Category 1		.59	-.22	-.89	
T-test values for Category 3 vs Category 2		-.20	-.77	-.79	

Table G-3

EIGHT-BLOCK SORT TEST: LEVEL OF TEACHER EDUCATION IN UNSPONSORED CLASSES

Level		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. High	N	19	19	18	.33
	$\bar{X}$	50.38	50.97	.72	
	V	29.69	26.94	41.24	
2. Medium	N	20	20	20	1.54
	$\bar{X}$	47.43	50.92	3.53	
	V	62.46	35.29	83.56	
3. Low	N	6	6	6	0.00
	$\bar{X}$	54.31	54.31	-.28	
	V	16.00	15.28	16.85	
T-test values for Category 2 vs Category 1		-1.32	-.03	1.05	
T-test values for Category 3 vs Category 1		1.57	1.39	-.34	
T-test values for Category 3 vs Category 2		1.97	1.26	-.95	
Task Description					
1. High	N	19	19	18	-.19
	$\bar{X}$	50.70	50.35	-1.33	
	V	31.46	29.42	51.61	
2. Medium	N	20	20	20	1.15
	$\bar{X}$	48.03	50.43	2.45	
	V	62.22	20.30	55.15	
3. Low	N	6	6	6	-.42
	$\bar{X}$	54.29	53.05	-1.54	
	V	26.09	18.25	52.45	
T-test values for Category 2 vs Category 1		-1.18	.05	1.55	
T-test values for Category 3 vs Category 1		1.34	1.07	-.06	
T-test values for Category 3 vs Category 2		1.76	1.21	-1.12	
Regulation					
1. High	N	19	19	19	2.47
	$\bar{X}$	51.28	57.05	5.83	
	V	66.55	31.75	74.53	
2. Medium	N	20	20	20	6.34
	$\bar{X}$	46.94	57.33	10.32	
	V	36.48	14.60	58.82	
3. Low	N	6	6	6	1.19
	$\bar{X}$	53.86	58.41	3.76	
	V	36.37	36.53	42.78	
T-test values for Category 2 vs Category 1		-1.85	.18	1.67	
T-test values for Category 3 vs Category 1		.69	.49	-.52	
T-test values for Category 3 vs Category 2		2.37	.50	-1.82	
Child Verbal Responsiveness					
1. High	N	19	19	18	2.61
	$\bar{X}$	49.09	53.25	4.49	
	V	29.52	15.94	34.55	
2. Medium	N	20	20	20	3.27
	$\bar{X}$	48.04	53.86	5.72	
	V	37.09	22.90	86.27	
3. Low	N	6	6	6	.78
	$\bar{X}$	50.81	54.80	3.77	
	V	82.51	49.44	146.47	
T-test values for Category 2 vs Category 1		-.55	.42	.47	
T-test values for Category 3 vs Category 1		.54	.65	-.18	
T-test values for Category 3 vs Category 2		.83	.36	-.40	
Child Success					
1. High	N	19	19	19	1.39
	$\bar{X}$	52.18	56.34	3.90	
	V	83.70	77.94	50.64	
2. Medium	N	20	20	20	2.86
	$\bar{X}$	50.63	57.85	7.10	
	V	42.50	78.81	55.64	
3. Low	N	6	6	6	1.65
	$\bar{X}$	51.58	58.97	7.26	
	V	48.96	51.34	28.00	
T-test values for Category 2 vs Category 1		-.60	.52	1.33	
T-test values for Category 3 vs Category 1		-.14	.64	1.02	
T-test values for Category 3 vs Category 2		.30	.27	.05	

Table G-4

EIGHT-BLOCK SORT TEST: LEVEL OF SERVICE TRAINING IN UNSPONSORED CLASSES

Level		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. High	N	27	27	26	1.35
	$\bar{X}$	48.47	50.85	2.56	
	V	57.05	23.47	71.81	
2. Medium	N	15	15	15	.28
	$\bar{X}$	51.30	51.95	.53	
	V	26.86	44.89	40.82	
3. Low	N	2	2	2	-.17
	$\bar{X}$	55.02	54.08	-.94	
	V	5.70	24.05	6.33	
T-test values for Category 2 vs Category 1		1.26	.60	-.79	
T-test values for Category 3 vs Category 1		1.18	.88	-.56	
T-test values for Category 3 vs Category 2		.94	.41	-.30	
Task Description					
1. High	N	27	27	26	.70
	$\bar{X}$	48.77	49.90	.54	
	V	43.17	24.81	53.64	
2. Medium	N	15	15	15	.05
	$\bar{X}$	51.95	52.06	-.01	
	V	42.88	17.46	44.02	
3. Low	N	2	2	2	-.52
	$\bar{X}$	57.55	52.06	-5.49	
	V	6.01	104.90	161.14	
T-test values for Category 2 vs Category 1		1.47	1.39	-.23	
T-test values for Category 3 vs Category 1		1.81	.52	-1.01	
T-test values for Category 3 vs Category 2		1.13	0.00	-.90	
Regulation					
1. High	N	27	27	27	4.34
	$\bar{X}$	48.87	56.46	7.58	
	V	58.75	21.08	88.69	
2. Medium	N	15	15	15	4.00
	$\bar{X}$	50.60	58.99	8.08	
	V	40.30	21.46	37.38	
3. Low	N	2	2	2	.45
	$\bar{X}$	56.65	61.82	5.16	
	V	129.19	1.01	107.31	
T-test values for Category 2 vs Category 1		.73	1.66	.18	
T-test values for Category 3 vs Category 1		1.28	1.59	-.34	
T-test values for Category 3 vs Category 2		1.06	.81	-.54	
Child Verbal Responsiveness					
1. High	N	27	27	26	4.14
	$\bar{X}$	48.05	53.88	6.05	
	V	32.16	19.28	75.74	
2. Medium	N	15	15	15	1.26
	$\bar{X}$	49.21	52.02	2.72	
	V	52.27	17.36	64.59	
3. Low	N	2	2	2	1.64
	$\bar{X}$	53.08	62.07	8.99	
	V	.59	29.42	38.38	
T-test values for Category 2 vs Category 1		.56	-1.31	-1.18	
T-test values for Category 3 vs Category 1		1.21	2.41	.45	
T-test values for Category 3 vs Category 2		.71	2.89	1.00	
Child Success					
1. High	N	27	27	27	2.71
	$\bar{X}$	51.82	58.34	6.25	
	V	77.47	72.86	56.83	
2. Medium	N	15	15	15	1.40
	$\bar{X}$	51.56	55.64	4.03	
	V	35.47	82.95	37.06	
3. Low	N	2	2	2	4.38
	$\bar{X}$	47.47	60.52	13.05	
	V	7.48	1.41	15.37	
T-test values for Category 2 vs Category 1		-.10	-.94	-.94	
T-test values for Category 3 vs Category 1		-.67	.35	1.20	
T-test values for Category 3 vs Category 2		-.90	.71	1.92	

Table G-5

EIGHT-BLOCK SORT TEST: EFFECT OF TEACHER QUALITY IN UNSPONSORED CLASSES

Teacher Quality		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. High	N	11	11	11	.77
	$\bar{X}$	51.27	52.93	1.65	
	V	28.05	18.53	36.37	
2. Medium	N	21	21	21	.84
	$\bar{X}$	51.28	53.10	1.77	
	V	59.06	34.56	62.66	
3. Low	N	6	6	6	.47
	$\bar{X}$	51.38	52.86	1.24	
	V	25.96	23.09	38.88	
T-test values for Category 2 vs Category 1		.00	.08	.04	
T-test values for Category 3 vs Category 1		.04	-.03	-.12	
T-test values for Category 3 vs Category 2		.03	-.09	-.15	
Task Description					
1. High	N	11	11	11	-.41
	$\bar{X}$	52.55	51.83	-.72	
	V	20.32	10.67	17.58	
2. Medium	N	21	21	21	-.63
	$\bar{X}$	51.39	50.30	-1.20	
	V	34.26	24.86	58.75	
3. Low	N	6	6	6	-1.27
	$\bar{X}$	53.16	50.54	-2.63	
	V	14.86	6.39	14.17	
T-test values for Category 2 vs Category 1		-.56	-.89	-.19	
T-test values for Category 3 vs Category 1		.26	-.79	-.87	
T-test values for Category 3 vs Category 2		.67	.11	-.43	
Regulation					
1. High	N	11	11	11	2.39
	$\bar{X}$	51.51	55.66	4.14	
	V	18.15	12.00	7.83	
2. Medium	N	21	21	21	3.22
	$\bar{X}$	50.69	56.86	5.93	
	V	53.73	19.59	50.08	
3. Low	N	6	6	6	2.65
	$\bar{X}$	46.81	54.52	8.13	
	V	18.96	23.31	43.77	
T-test values for Category 2 vs Category 1		-.33	.76	.78	
T-test values for Category 3 vs Category 1		-2.03	-.53	1.63	
T-test values for Category 3 vs Category 2		-1.19	-1.08	.66	
Child Verbal Responsiveness					
1. High	N	11	11	11	3.35
	$\bar{X}$	47.33	53.97	6.63	
	V	27.16	12.05	57.46	
2. Medium	N	21	21	21	3.68
	$\bar{X}$	47.82	56.27	8.64	
	V	25.79	79.37	115.01	
3. Low	N	6	6	6	2.42
	$\bar{X}$	45.90	56.81	9.57	
	V	28.71	73.28	65.01	
T-test values for Category 2 vs Category 1		.25	.80	.54	
T-test values for Category 3 vs Category 1		-.50	.91	.70	
T-test values for Category 3 vs Category 2		-.78	.13	.19	
Child Success					
1. High	N	11	11	11	1.24
	$\bar{X}$	55.69	60.78	5.09	
	V	117.16	51.02	44.76	
2. Medium	N	21	21	21	3.62
	$\bar{X}$	48.93	56.50	7.47	
	V	20.17	67.29	56.57	
3. Low	N	6	6	6	2.28
	$\bar{X}$	47.42	58.83	11.96	
	V	32.05	95.86	42.06	
T-test values for Category 2 vs Category 1		-2.40	-1.42	.85	
T-test values for Category 3 vs Category 1		-1.64	-.44	1.92	
T-test values for Category 3 vs Category 2		-.66	.56	1.28	

Table G-6

EIGHT-BLOCK SORT TEST: LEVEL OF TEACHER EDUCATION IN SPONSORED CLASSES

Level		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. High	N	15	15	15	.18
	$\bar{X}$	49.44	48.77	-1.72	
	V	43.99	142.20	238.47	
2. Medium	N	34	34	34	2.42
	$\bar{X}$	49.53	53.64	4.10	
	V	44.45	50.19	108.79	
3. Low	N	8	7	7	.76
	$\bar{X}$	51.07	53.68	2.31	
	V	11.35	68.21	63.07	
T-test values for Category 2 vs Category 1		.04	1.74	1.51	
T-test values for Category 3 vs Category 1		.62	.94	.62	
T-test values for Category 3 vs Category 2		.62	.01	-.42	
Task Description					
1. High	N	15	15	15	.90
	$\bar{X}$	45.98	48.51	2.25	
	V	81.88	27.87	44.92	
2. Medium	N	31	31	31	.03
	$\bar{X}$	50.66	50.68	.09	
	V	28.10	8.93	40.41	
3. Low	N	6	6	6	-.30
	$\bar{X}$	52.65	51.62	-1.03	
	V	43.87	13.37	83.31	
T-test values for Category 2 vs Category 1		2.15	1.74	-1.04	
T-test values for Category 3 vs Category 1		1.56	1.26	-.86	
T-test values for Category 3 vs Category 2		.79	.66	-.35	
Regulation					
1. High	N	15	15	15	3.19
	$\bar{X}$	48.63	55.14	5.81	
	V	33.98	24.35	31.12	
2. Medium	N	34	34	34	5.17
	$\bar{X}$	49.99	57.62	7.52	
	V	48.35	23.71	78.37	
3. Low	N	8	7	7	-.44
	$\bar{X}$	54.[illegible]1	53.50	-1.50	
	V	29.45	38.89	74.60	
T-test values for Category 2 vs Category 1		.65	1.60	.68	
T-test values for Category 3 vs Category 1		2.41	-.63	-2.27	
T-test values for Cagegory 3 vs Category 2		1.83	-1.89	-2.40	
Child Verbal Responsiveness					
1. High	N	15	15	15	2.24
	$\bar{X}$	48.47	52.92	4.20	
	V	32.93	22.41	33.95	
2. Medium	N	31	31	31	2.90
	$\bar{X}$	50.70	54.43	3.72	
	V	37.12	12.65	45.70	
3. Low	N	6	6	6	-.29
	$\bar{X}$	53.67	52.43	-1.24	
	V	74.72	16.43	122.34	
T-test values for Category 2 vs Category 1		1.16	1.18	-.23	
T-test values for Category 3 vs Category 1		1.53	0.21	-1.39	
T-test values for Category 3 vs Category 2		.99	-1.20	-1.42	
Child Success					
1. High	N	15	15	15	3.70
	$\bar{X}$	48.08	58.34	9.64	
	V	24.30	83.17	133.81	
2. Medium	N	34	34	34	6.09
	$\bar{X}$	50.81	60.01	9.20	
	V	27.54	47.86	40.42	
3. Low	N	8	7	7	1.87
	$\bar{X}$	52.93	59.33	5.90	
	V	32.67	43.74	37.83	
T-test values for Category 2 vs Category 1		1.67	.69	-.17	
T-test values for Category 3 vs Category 1		2.03	.25	-.77	
T-test values for Category 3 vs Category 2		.99	-.23	-1.23	

Table G-7

EIGHT-BLOCK SORT TEST: SPONSOR RATINGS OF IMPLEMENTATION LEVEL IN SPONSORED CLASSES

Level		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. High	N	13	13	13	1.41
	$\bar{X}$	48.13	53.79	5.88	
	V	40.54	154.43	223.05	
2. Medium	N	25	24	24	-.20
	$\bar{X}$	51.32	50.92	-1.13	
	V	28.87	63.65	145.55	
3. Low	N	16	16	16	1.38
	$\bar{X}$	48.91	52.28	3.37	
	V	45.63	44.22	54.86	
T-test values for Category 2 vs Category 1		1.58	-.83	-1.51	
T-test values for Category 3 vs Category 1		.31	-.49	-.57	
T-test values for Category 3 vs Category 2		-1.23	.55	1.30	
Task Description					
1. High	N	10	10	10	.63
	$\bar{X}$	46.04	48.30	2.16	
	V	84.54	33.14	41.02	
2. Medium	N	23	23	23	-.56
	$\bar{X}$	50.67	49.72	-1.11	
	V	43.82	20.65	40.75	
3. Low	N	16	16	16	.25
	$\bar{X}$	50.64	51.06	.51	
	V	35.79	5.88	48.57	
T-test values for Category 2 vs Category 1		1.58	.74	-1.31	
T-test values for Category 3 vs Category 1		1.48	1.63	-.58	
T-test values for Category 3 vs Category 2		-.01	1.05	.73	
Regulation					
1. High	N	13	13	13	3.33
	$\bar{X}$	49.83	59.10	9.08	
	V	45.35	47.85	123.56	
2. Medium	N	25	24	24	2.38
	$\bar{X}$	53.24	56.93	3.33	
	V	34.11	22.12	44.79	
3. Low	N	16	16	16	3.42
	$\bar{X}$	48.40	54.25	5.75	
	V	22.72	21.21	48.62	
T-test values for Category 2 vs Category 1		1.58	-1.10	-1.91	
T-test values for Category 3 vs Category 1		-.64	-2.18	-.95	
T-test values for Category 3 vs Category 2		-2.71	-1.74	1.07	
Child Verbal Responsiveness					
1. High	N	10	10	10	1.37
	$\bar{X}$	49.20	52.49	3.76	
	V	22.67	29.27	38.40	
2. Medium	N	23	23	23	1.08
	$\bar{X}$	51.39	53.40	1.78	
	V	63.79	12.50	58.46	
3. Low	N	16	16	16	4.06
	$\bar{X}$	49.04	55.09	6.13	
	V	24.20	9.14	42.05	
T-test values for Category 2 vs Category 1		.78	.56	-.70	
T-test values for Category 3 vs Category 1		-.08	1.51	.89	
T-test values for Category 3 vs Category 2		-1.02	1.52	1.81	
Child Success					
1. High	N	13	13	13	2.28
	$\bar{X}$	51.46	59.39	7.42	
	V	25.90	119.81	91.80	
2. Medium	N	25	24	24	5.16
	$\bar{X}$	50.39	59.54	8.84	
	V	26.86	47.32	52.86	
3. Low	N	16	16	16	4.94
	$\bar{X}$	49.13	58.99	9.77	
	V	24.82	34.85	69.82	
T-test values for Category 2 vs Category 1		-.59	.05	.49	
T-test values for Category 3 vs Category 1		-1.20	-.12	.68	
T-test values for Category 3 vs Category 2		-.75	-.26	.36	

Table G-8

EIGHT-BLOCK SORT TEST: OBSERVATION-BASED RATINGS OF IMPLEMENTATION LEVEL IN SPONSORED CLASSES

Level		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. High	N	10	10	10	.51
	$\bar{X}$	51.25	52.61	1.36	
	V	31.57	32.01	46.56	
2. Medium	N	5	5	5	1.19
	$\bar{X}$	51.22	56.83	5.61	
	V	36.27	52.84	57.76	
3. Low	N	4	4	4	-.69
	$\bar{X}$	48.64	45.83	-2.82	
	V	47.52	2.69	53.83	
T-test values for Category 2 vs Category 1		-.01	1.15	1.02	
T-test values for Category 3 vs Category 1		-.68	-2.18	-.94	
T-test values for Category 3 vs Category 2		-.53	-2.62	-1.48	
Task Description					
1. High	N	10	10	10	-.78
	$\bar{X}$	52.28	50.52	-1.76	
	V	41.07	5.15	57.38	
2. Medium	N	5	5	5	-.24
	$\bar{X}$	53.10	52.39	-.71	
	V	17.23	19.20	30.28	
3. Low	N	4	4	4	1.28
	$\bar{X}$	47.21	50.72	3.51	
	V	13.34	9.39	9.54	
T-test values for Category 2 vs Category 1		.24	1.01	.26	
T-test values for Category 3 vs Category 1		-1.38	.12	1.25	
T-test values for Category 3 vs Category 2		-1.97	-.57	1.20	
Regulation					
1. High	N	10	10	10	2.85
	$\bar{X}$	50.92	60.44	9.52	
	V	59.78	40.91	91.21	
2. Medium	N	5	5	5	1.39
	$\bar{X}$	51.52	56.52	5.00	
	V	41.33	10.56	29.07	
3. Low	N	4	4	4	.33
	$\bar{X}$	53.48	54.72	1.24	
	V	13.19	29.00	65.88	
T-test values for Category 2 vs Category 1		.14	-1.20	-.91	
T-test values for Category 3 vs Category 1		.59	-1.46	-1.41	
T-test values for Category 3 vs Category 2		.48	-.55	-.73	
Child Verbal Responsiveness					
1. High	N	10	10	10	1.15
	$\bar{X}$	51.00	53.73	2.73	
	V	41.85	8.49	53.96	
2. Medium	N	5	5	5	.87
	$\bar{X}$	53.84	56.90	3.06	
	V	25.68	23.27	71.35	
3. Low	N	4	4	4	-1.98
	$\bar{X}$	58.66	52.74	-5.92	
	V	21.97	4.75	19.93	
T-test values for Category 2 vs Category 1		.80	1.47	.07	
T-test values for Category 3 vs Category 1		1.99	-.57	-2.04	
T-test values for Category 3 vs Category 2		1.29	-1.41	-1.70	
Child Success					
1. High	N	10	10	10	4.36
	$\bar{X}$	51.39	59.95	8.56	
	V	7.68	27.01	18.29	
2. Medium	N	5	5	5	2.33
	$\bar{X}$	52.37	63.60	11.23	
	V	34.07	59.01	34.66	
3. Low	N	4	4	4	.41
	$\bar{X}$	52.42	54.72	2.30	
	V	2.74	90.71	80.04	
T-test values for Category 2 vs Category 1		.41	1.01	.93	
T-test values for Category 3 vs Category 1		.64	-1.22	-1.63	
T-test values for Category 3 vs Category 2		.01	-1.37	-1.59	

Table G-9

EIGHT-BLOCK SORT TEST: ANALYSIS OF BEST SPONSORED CLASSES BY PROGRAM TYPE

Sponsors		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. Discovery	N	2	2	2	-1.28
	$\bar{X}$	58.40	53.60	-4.79	
	V	4.02	10.02	1.35	
2. Cognitive Discovery	N	8	8	8	.50
	$\bar{X}$	46.78	49.80	3.47	
	V	44.13	212.78	285.75	
3. Prescriptive	N	9	9	9	2.15
	$\bar{X}$	48.69	55.69	6.91	
	V	28.12	56.35	112.95	
T-test values for Category 2 vs Category 1		-2.19	-.33	.62	
T-test values for Category 3 vs Category 1		-2.31	.35	1.41	
T-test values for Category 3 vs Category 2		.62	1.00	.48	
Task Description					
1. Discovery	N	2	2	2	-4.81
	$\bar{X}$	57.26	50.32	-6.94	
	V	1.93	.15	3.17	
2. Cognitive Discovery	N	8	8	8	1.41
	$\bar{X}$	42.15	47.83	5.55	
	V	68.83	44.69	50.39	
3. Prescriptive	N	6	6	6	-1.65
	$\bar{X}$	53.62	50.30	-3.32	
	V	17.21	3.01	15.70	
T-test values for Category 2 vs Category 1		-2.30	-.47	2.02	
T-test values for Category 3 vs Category 1		-1.06	-.01	1.08	
T-test values for Category 3 vs Category 2		2.88	.82	-2.37	
Regulation					
1. Discovery	N	2	2	2	.32
	$\bar{X}$	58.38	60.17	1.80	
	V	22.58	9.65	2.71	
2. Cognitive Discovery	N	8	8	8	1.87
	$\bar{X}$	51.42	57.61	6.25	
	V	54.72	21.76	38.47	
3. Prescriptive	N	9	9	9	2.85
	$\bar{X}$	48.53	59.03	10.17	
	V	41.72	67.12	154.70	
T-test values for Category 2 vs Category 1		-1.13	-.66	.90	
T-test values for Category 3 vs Category 1		-1.84	-.18	.86	
T-test values for Category 3 vs Category 2		-.81	.41	.76	
Child Verbal Responsiveness					
1. Discovery	N	2	2	2	-.70
	$\bar{X}$	57.49	52.35	-5.14	
	V	52.05	1.14	37.78	
2. Cognitive Discovery	N	8	8	8	1.16
	$\bar{X}$	48.64	51.63	3.58	
	V	15.00	31.20	27.23	
3. Prescriptive	N	6	6	6	1.72
	$\bar{X}$	49.06	54.49	5.43	
	V	36.85	13.24	48.46	
T-test values for Category 2 vs Category 1		-2.12	-.16	1.82	
T-test values for Category 3 vs Category 1		-1.40	.71	1.66	
T-test values for Category 3 vs Category 2		.15	1.01	.53	
Child Success					
1. Discovery	N	2	2	2	3.50
	$\bar{X}$	51.13	57.98	6.85	
	V	2.69	1.14	.33	
2. Cognitive Discovery	N	8	8	8	.92
	$\bar{X}$	49.18	52.29	2.47	
	V	8.90	71.65	68.13	
T-test values for Category 2 vs Category 1		-.80	-.85	-.67	
T-test values for Category 3 vs Category 1		.52	1.31	.89	
T-test values for Category 3 vs Category 2		1.84	3.21	2.34	

Table G-10

EIGHT-BLOCK SORT TEST: ANALYSIS OF BEST SPONSORED CLASSES BY LEVELS OF PARENT INVOLVEMENT

Sponsor		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. Preacademic/Reinforcement	N	6	6	6	2.38
	$\bar{X}$	48.51	58.77	10.13	
	V	38.63	54.65	130.15	
2. Parent educator	N	4	4	4	-.70
	$\bar{X}$	46.12	40.45	-4.79	
	V	9.46	186.51	252.20	
3. Other models	N	9	9	9	1.15
	$\bar{X}$	50.41	54.71	4.30	
	V	60.11	51.18	149.51	
T-test values for Category 2 vs Category 1		-.64	-2.45	-1.55	
T-test values for Category 3 vs Category 1		.47	-.99	-.86	
T-test values for Category 3 vs Category 2		.98	2.27	1.03	
Task Description					
1. Preacademic/Reenforcement	N	3	3	3	-.91
	$\bar{X}$	54.01	50.96	-3.06	
	V	19.24	3.41	7.22	
2. Parent educator	N	4	4	4	.29
	$\bar{X}$	40.85	42.96	1.87	
	V	132.76	30.72	69.57	
3. Other models	N	9	9	9	.50
	$\bar{X}$	49.78	51.15	1.37	
	V	53.29	6.85	79.00	
T-test values for Category 2 vs Category 1		-1.59	-2.03	.83	
T-test values for Category 3 vs Category 1		-.87	.11	.78	
T-test values for Category 3 vs Category 2		.55	3.33	-.09	
Regulation					
1. Preacademic/Reenforcement	N	6	6	6	1.83
	$\bar{X}$	49.91	57.87	7.47	
	V	39.86	54.48	131.21	
2. Parent educator	N	4	4	4	1.74
	$\bar{X}$	48.97	57.79	8.94	
	V	32.98	44.28	13.95	
3. Other models	N	9	9	9	1.95
	$\bar{X}$	52.17	59.35	7.17	
	V	71.79	37.17	118.04	
T-test values for Category 2 vs Category 1		-.21	-.02	.22	
T-test values for Category 3 vs Category 1		.52	.39	-.05	
T-test values for Category 3 vs Category 2		.64	.38	-.29	
Child Verbal Responsiveness					
1. Preacademic/Reenforcement	N	3	3	3	-.20
	$\bar{X}$	53.84	53.32	-.52	
	V	7.40	6.02	.55	
2. Parent Educator	N	4	4	4	.60
	$\bar{X}$	48.16	51.62	4.65	
	V	27.10	71.62	48.88	
3. Other models	N	9	9	9	1.51
	$\bar{X}$	49.37	53.14	3.77	
	V	39.49	10.00	55.02	
T-test values for Category 2 vs Category 1		-1.46	-.29	1.08	
T-test values for Category 3 vs Category 1		-1.09	-.08	.91	
T-test values for Category 3 vs Category 2		.31	.43	-.18	
Child Success					
1. Preacademic/Reenforcement	N	6	6	6	3.24
	$\bar{X}$	53.54	66.50	12.72	
	V	39.85	40.21	42.98	
2. Parent educator	N	4	4	4	.55
	$\bar{X}$	47.86	49.34	.18	
	V	1.90	20.15	39.46	
3. Other models	N	9	9	9	2.14
	$\bar{X}$	51.35	57.98	6.63	
	V	7.93	69.03	57.17	
T-test values for Category 2 vs Category 1		-1.58	-4.19	-2.69	
T-test values for Category 3 vs Category 1		-.85	-1.98	-1.50	
T-test values for Category 3 vs Category 2		2.17	1.80	1.37	

Table G-11

EIGHT-BLOCK SORT TEST: EFFECT OF SES ON ALL CHILDREN

Amount of SES		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. Low	N	541	518	516	3.87
	$\bar{X}$	49.73	52.29	2.56	
	V	98.94	133.30	215.41	
2. High	N	109	105	105	2.20
	$\bar{X}$	51.35	54.36	3.06	
	V	89.20	109.50	179.52	
T-test values for Category 2 vs Category 1		1.56	1.70	.32	
Task Description					
1. Low	N	518	503	501	1.21
	$\bar{X}$	49.68	50.32	.55	
	V	97.82	45.79	12[illegible].93	
2. High	N	108	104	104	-1.07
	$\bar{X}$	51.54	50.28	-1.66	
	V	94.54	50.40	111.72	
T-test values for Category 2 vs Category 1		1.78	-.05	-1.82	
Regulation					
1. Low	N	527	503	503	11.00
	$\bar{X}$	49.89	56.20	6.17	
	V	96.60	72.02	144.17	
2. High	N	104	100	100	6.12
	$\bar{X}$	50.57	58.42	7.99	
	V	101.46	63.72	151.62	
T-test values for Category 2 vs Category 1		.64	2.41	1.38	
Child Verbal Responsiveness					
1. Low	N	516	503	499	8.08
	$\bar{X}$	49.52	54.10	4.49	
	V	93.17	69.50	150.78	
2. High	N	107	104	103	1.52
	$\bar{X}$	52.29	52.29	1.79	
	V	114.51	78.42	175.81	
T-test values for Category 2 vs Category 1		2.65	.30	-2.00	
Child Success					
1. Low	N	543	51[illegible]	519	10.95
	$\bar{X}$	49.97	57.51	7.36	
	V	99.17	153.02	160.46	
2. High	N	109	105	105	5.32
	$\bar{X}$	50.13	57.90	7.61	
	V	89.35	137.77	155.30	
T-test values for Category 2 vs Category 1		.15	.30	.18	

Table G-12

EIGHT-BLOCK SORT TEST: EFFECT OF SEX ON ALL CHILDREN

Sex		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. Male children	N	324	312	312	3.81
	$\bar{X}$	49.42	52.17	3.21	
	V	107.51	129.13	217.83	
2. Female children	N	326	311	309	2.41
	$\bar{X}$	50.58	52.57	2.08	
	V	87.25	130.70	200.28	
T-test values for Category 2 vs Category 1		1.50	-1.15	-.97	
Task Description					
1. Male children	N	314	304	304	.88
	$\bar{X}$	49.91	50.53	.44	
	V	103.48	47.05	131.96	
2. Female children	N	312	303	301	.02
	$\bar{X}$	50.09	50.10	-.11	
	V	91.98	46.00	122.88	
T-test values for Category 2 vs Category 1		.23	-.78	-.60	
Regulation					
1. Male children	N	314	302	302	8.52
	$\bar{X}$	49.54	55.86	6.18	
	V	96.20	72.29	144.16	
2. Female children	N	317	301	301	9.22
	$\bar{X}$	50.45	57.27	6.77	
	V	98.29	69.40	147.38	
T-test values for Category 2 vs Category 1		1.16	2.05	.60	
Child Verbal Responsiveness					
1. Male children	N	313	304	303	5.08
	$\bar{X}$	50.59	54.38	3.56	
	V	104.31	66.58	171.90	
2. Female children	N	310	303	299	6.11
	$\bar{X}$	49.40	53.91	4.50	
	V	90.74	75.38	139.92	
T-test values for Category 2 vs Category 1		-1.50	-.69	.92	
Child Success					
1. Male children	N	324	312	312	7.80
	$\bar{X}$	49.91	56.71	6.69	
	V	91.98	149.79	159.01	
2. Female children	N	328	312	312	9.41
	$\bar{X}$	50.09	58.45	8.12	
	V	103.02	149.67	159.17	
T-test values for Category 2 vs Category 1		.23	1.77	1.41	

Table G-13

EIGHT-BLOCK SORT TEST: EFFECT OF PRIOR HEAD START ON ALL CHILDREN

Prior Head Start		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. None	N	436	411	409	2.48
	X	50.43	52.27	1.79	
	V	94.39	139.86	212.25	
2. < 4 months	N	84	84	84	3.14
	X	48.41	53.60	5.20	
	V	102.60	124.36	185.44	
2. > 4 months	N	83	81	81	2.28
	X	49.51	53.20	3.87	
	V	116.32	96.23	226.89	
T-test values for Category 2 vs Category 1		-1.73	.95	1.97	
T-test values for Category 3 vs Category 1		-.77	.66	1.16	
T-test values for Category 3 vs Category 2		.68	-.24	-.59	
Task Description					
1. None	N	419	401	399	1.49
	X	49.49	50.38	.67	
	V	95.58	48.73	121.53	
2 < 4 months	N	84	84	84	.09
	X	50.22	50.33	.11	
	V	95.97	42.44	131.98	
3. > 4 months	N	76	75	75	-2.44
	X	53.10	49.89	-3.14	
	V	93.95	34.88	136.29	
T-test values for Category 2 vs Category 1		.62	-.06	-.42	
T-test values for Category 3 vs Category 1		2.96	-.57	-2.71	
T-test values for Category 3 vs Category 2		1.85	-.44	-1.76	
Regulation					
1. None	N	424	398	398	8.52
	X	50.13	55.58	5.28	
	V	92.46	74.70	141.57	
2. < 4 months	N	82	82	82	8.78
	X	47.72	59.73	12.00	
	V	96.58	54.85	121.96	
3. > 4 months	N	79	77	77	4.06
	X	51.85	57.84	6.07	
	V	105.38	61.49	169.83	
T-test values for Category 2 vs Category 1		-2.07	4.04	4.70	
T-test values for Category 3 vs Category 1		1.44	2.13	.52	
T-test values for Category 3 vs Category 2		2.59	-1.55	-3.08	
Child Verbal Responses					
1. None	N	416	401	396	7.68
	X	49.28	54.16	4.74	
	V	87.99	76.07	145.50	
2. < 4 months	N	84	84	84	.95
	X	53.00	54.39	1.39	
	V	120.84	59.25	167.10	
3. > 4 months	N	76	75	75	3.38
	X	49.62	54.68	5.02	
	V	116.43	50.44	183.91	
T-test values for Category 2 vs Category 1		3.21	.22	-2.27	
T-test values for Category 3 vs Category 1		.28	.49	.18	
T-test values for Category 3 vs Category 2		-1.95	.24	1.72	
Child Success					
1. None	N	438	412	412	10.06
	X	49.51	57.15	7.39	
	V	93.49	152.86	164.63	
2. < 4 months	N	84	84	84	8.07
	X	51.53	57.17	5.64	
	V	102.34	178.31	154.71	
3. > 4 months	N	83	81	81	4.62
	X	51.90	59.72	7.84	
	V	116.68	114.98	166.11	
T-test values for Category 2 vs Category 1		1.74	.01	-1.14	
T-test values for Category 3 vs Category 1		2.02	1.74	.29	
T-test values for Category 3 vs Category 2		.23	1.34	1.11	

Table G-14

EIGHT-BLOCK SORT TEST: EFFECT OF ATTENDANCE ON ALL CHILDREN

Attendance		Fall	Adjusted Spring	Difference	T
Verbal Communication					
1. ≤ 140 days	N	433	427	427	4.27
	$\bar{X}$	50.03	53.02	2.99	
	V	99.98	110.98	203.21	
2. > 140 days	N	100	93	93	1.15
	$\bar{X}$	50.54	52.46	2.17	
	V	92.30	174.34	224.22	
T-test values for Category 2 vs Category 1		.46	-.44	-.50	
Task Description					
1. ≤ 140 days	N	426	423	422	.02
	$\bar{X}$	50.36	50.38	-.04	
	V	95.76	43.08	127.82	
2. > 140 days	N	95	90	90	-.68
	$\bar{X}$	50.04	49.19	-.89	
	V	94.39	47.99	109.81	
T-test values for Category 2 vs Category 1		-.29	-1.54	-.65	
Regulation					
1. ≤ 140 days	N	417	410	410	10.45
	$\bar{X}$	50.12	56.69	6.61	
	V	94.09	69.08	141.70	
2. > 140 days	N	99	92	92	5.10
	$\bar{X}$	49.60	56.86	7.12	
	V	103.30	87.27	159.95	
T-test values for Category 2 vs Category 1		-.47	.17	.37	
Child Verbal Responsiveness					
1. ≤ 140 days	N	425	423	421	7.16
	$\bar{X}$	49.93	54.22	4.19	
	V	98.35	53.18	148.18	
2. > 140 days	N	93	90	88	3.06
	$\bar{X}$	50.76	55.72	4.76	
	V	98.72	140.62	203.77	
T-test values for Category 2 vs Category 1		.73	1.56	.39	
Child Success					
1. ≤ 140 days	N	434	427	427	10.81
	$\bar{X}$	50.38	57.79	7.34	
	V	96.89	105.02	141.64	
2. > 140 days	N	100	93	93	2.92
	$\bar{X}$	50.28	55.01	4.73	
	V	89.60	162.83	164.42	
T-test values for Category 2 vs Category 1		-.09	-2.26	-1.89	

Table G-15

ITEM CORRELATIONS FOR PARENT CONTACT WITH HEAD START CLASSROOM

Item		2	3a	3b	4	5	Total Score
2	2		.29	.12	.25	.11	.60
3a	3a			.27	.13	.19	.67
3b	3b				.09	.12	.51
4	4					.12	.53
5	5						.58

An item was scored 0 if parent answered "No" or did not respond; it was scored 1 otherwise.

Variable range: 0-5.

Total score = Sum of items 2 + 3a + 3b + 4 + 5.

Item

2 Since the beginning of this school year, have you visited your child's classroom while the class was in session?

3a Do you work regularly in your child's classroom?

3b Do you work elsewhere in the Head Start Center?

4 Since the beginning of this school year, have you talked privately with your child's teacher about your child?

5 Have you talked privately with anyone else from your child's Head Start Center this year, either at home or at school?

Table G-16

ITEM CORRELATIONS FOR CHILD ATTITUDE
TOWARD HEAD START

Item		6	7	8	10	Total Score
6	6		.10	.08	.20	.57
7	7			-.02	.04	.50
8	8				.04	.60
10						.53

Variable range: 0-9.

Total Score = Sum of items 6 + 7 + 8 + 10.

Item

6 About how often does your child talk about what happens in Head Start?

7 What are some of the things that your child especially likes about Head Start?

8 What are some of the things that your child dislikes about Head Start?

10 About how often does your child bring home any work he (or she) has done at Head Start?

Table G-17

ITEM CORRELATIONS FOR PARENT INVOLVEMENT
IN COMMUNITY HEAD START AGENCIES

Item		12	13	15	16	17	18	19	20	21	Total Score
12	12		.30	.26	.22	.33	.35	.32	.32	.33	.50
13	13			.38	.38	.63	.65	.61	.62	.62	.75
15	15				.62	.45	.45	.44	.44	.46	.60
16	16					.47	.45	.47	.48	.49	.62
17	17						.89	.82	.84	.84	.90
18	18							.86	.86	.86	.91
19	19								.92	.93	.91
20	20									.93	.92
21	21										.93

An item was scored 0 if no response or a "No" answer; it was scored 1 otherwise.

Variable range: 0-1.

Total score = 12 + 13 + 15 + 16 + 17 + 18 + 19 + 20 + 21.

Item

12 Are there any groups of parents or organizations in your community that work with Head Start?

13 If you have not already mentioned PAC, have you heard of a group called the Policy Advisory Committee?

15 Are you or your husband now a member of the Policy Advisory Committee?

16 Do you or your husband go to the Policy Advisory Committee's general meetings?

17 How often does the Policy Advisory Committee meet?

18 How do people get to be members of the Policy Advisory Committee?

19 Does the Policy Advisory Committee have anything to say about hiring Head Start teachers and aides?

20 Does the Policy Advisory Committee have anything to say about the way Head Start's money is spent?

21 Does the Policy Advisory Committee have anything to say about what the children are taught in Head Start?

Table G-18

ITEM CORRELATIONS FOR PARENT FEELING OF ABILITY
TO CHANGE THE SCHOOLS

Item		23a	23b	23c	23d	23f	Total Score
23a	23a		-.03	.42	-.07	.02	.51
23b	23b			.15	.32	.35	.61
23c	23c				-.01	.08	.60
23d	23d					.33	.52
23f	23f						.61

Variable range: 0-3.

Total score = Sum of items (23a + 23b + 23c + 23d + 23f)/5.

Item

23a There's nothing parents can do to change the schools.

23b In this community the parents have a say about how the schools are run.

23c If the parents disagree with the teacher or the principal, there's nothing parents can do about it.

23d In this community, people who run the schools really care about what parents think.

23f If parents wanted something changed, there would be a good chance if getting it changed.

Table G-19

ITEM CORRELATIONS FOR PARENT FEELINGS OF ABILITY TO CONTROL THEIR LIVES

Item		24a	24c	24d	24e	24h	24k	24n	24p	24s	Total Score
24a	24a		.17	.16	.16	.26	.17	.23	.19	.23	.53
24c	24c			.16	.30	.08	.26	.12	.12	.10	.47
24d	24d				.24	.15	.25	.17	.18	.21	.52
24e	24e					.08	.18	.15	.29	.25	.55
24h	24h						.12	.23	.19	.23	.48
24k	24k							.18	.22	.25	.52
24n	24n								.28	.27	.57
24p	24p									.30	.59
24s	24s										.59

Variable range: 0-3.

Total score = sum of items (24a + 24c + 24d + 24e + 24h + 24k + 24n + 24p + 24s)/9.

Item

24a Many of the unhappy things that happen to people are just plain bad luck.

24c Sooner or later, people get what they deserve in this world.

24d The sad part is, a person's true value isn't often noticed no matter how hard he tries.

24e I have found that what is going to happen, will happen.

24h Tests often aren't related to classroom work so there is no use studying.

24k Most people don't realize how much their lives are controlled by things that happen by accident.

24n This world is run by a few big shots, and there isn't much the little guy can do about it.

24p It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad luck anyhow.

24s Many times I feel that I can t do much about the things that happen to me.

Table G-20

ITEM CORRELATIONS FOR CULTURAL ENRICHMENT
IN THE HOME

Item		25	26	27	28	29	30	33	34	35	35	Total Score
25	25		.18	.15	.16	.30	.15	.11	.17	.20	.16	.48
26	26			.25	.14	.07	.19	.16	.23	.13	.24	.51
27	27				.24	.09	.23	.33	.07	.13	.24	.54
28	28					.06	.16	.30	.03	.09	.17	.48
29	29						.05	.12	.12	.31	.07	.44
30	30							.31	.16	.16	.31	.51
33	33								.12	.21	.36	.58
34	34									.39	.22	.50
35	35										.22	.56
36	36											.55

Variable range: 0-4.

Total score = Sum of items (25 + 26 + 27 + 28 + 29 + 30 + 33 + 34 + 35 + 36)/10.

Item

25 About how often do you take your child along when you go shopping?

26 About how often do you talk with your child about the things he (or she) has seen on TV?

27 If your child asks you a question you can't answer, about how often do you try to find the answer by looking in a book?

28 About how much do you talk with your child at mealtime?

29 About how often do you take your child on a trip out of town?

30 When your child has a chance to choose what to do around the house, about how often does he (or she) choose to look at a book or magazine?

33 How much do you read to your child?

34 About how often do you visit someone who is not related to you?

35 About how often do you visit with friends who live in a different part of the city then you?

36 How often does your child see you reading books, papers, or magazines?

Table G-21

INTERCORRELATIONS AMONG THE VARIABLES
OF THE PARENT QUESTIONNAIRE
N = 781

	1	2	3	4	5	6
1. Parent contact		.05	.33*	.11*	.03	.18*
2. Child attitude			.05	.02	-.07	.19*
3. Parent involvement				.13*	.13*	.11*
4. Parent . . . schools					.24*	.19*
5. Parent . . . lives						.11*
6. Cultural enrichment						

Note: These correlations are based on raw scores, not high, medium, and low groupings.

* For P = .05, r ≥ .07.

Table G-22

PARENT QUESTIONNAIRE: SAMPLE SIZES
FOR CHILD MEASURE RELATIONSHIP

Sponsor	Site	Questionnaire Completed S	Questionnaire Completed U	Preacademic Measure S	Cognitive Measure S
1	A	24	24	8	8
2	B	38	20	39	38
	C	32	23		
3	D	15	34	58	59
	E	49	38		
4	F	17	17	26	25
	G	22	28		
5	H	40	21	32	27
	I	20	34		
6	J	17	28	55	56
	K	61	20		
7	L	19	12	21	22
	M	13	15		
8	N	7	19	24	24
	O	20	24		

S = Sponsored.
U + Unsponsored.

Table G-23

PARENT QUESTIONNAIRE: PARENT CONTACT WITH THE CLASSROOM

Child Measure	Level	N	Value	Fall	Spring	Difference	T Test (one-tailed)
A. Preacademic	1. Low	99	$\bar{X}$	50.05	58.00	7.94	5.92*
			SD	7.35	11.07	10.67	
	2. Medium	313	$\bar{X}$	52.60	58.60	5.99	7.71*
			SD	9.24	10.17	9.78	
	3. High	139	$\bar{X}$	53.08	59.48	6.39	5.66*
			SD	8.50	10.17	9.15	
B. General Cognitive	1. Low	95	$\bar{X}$	48.80	56.64	7.84	5.57*
			SD	9.91	9.39	9.36	
	2. Medium	310	$\bar{X}$	50.34	56.96	6.62	8.51*
			SD	10.31	9.00	9.08	
	3. High	140	$\bar{X}$	50.89	57.93	7.04	6.01*
			SD	10.68	8.76	9.03	

T-test (two-tailed) values for categories:

		Fall	Spring	Difference
A.	1 vs 2	2.81*	0.48	-1.61
	1 vs 3	2.92*	1.05	-1.17
	2 vs 3	0.54	0.84	0.42
B.	1 vs 2	1.30	0.30	-1.11
	1 vs 3	1.53	1.06	-0.65
	2 vs 3	0.51	1.07	0.45

* $p < .05$.

Table G-24

PARENT QUESTIONNAIRE: CHILD ATTITUDE TOWARD HEAD START

Child Measure	Level	N	Value	Fall	Spring	Difference	T Test (one-tailed)
A. Preacademic	1. Low	52	$\overline{X}$	52.58	59.93	7.35	4.34*
			SD	6.95	9.89	9.14	
	2. Medium	351	$\overline{X}$	51.99	58.36	6.37	8.67*
			SD	8.99	10.39	10.31	
	3. High	148	$\overline{X}$	52.81	59.12	6.31	5.59*
			SD	8.91	10.38	8.79	
B. General Cognitive	1. Low	56	$\overline{X}$	50.22	55.80	5.59	2.71*
			SD	10.50	9.87	9.55	
	2. Medium	348	$\overline{X}$	49.88	57.32	7.44	10.16*
			SD	10.45	8.79	9.35	
	3. High	147	$\overline{X}$	51.06	57.22	6.22	5.50*
			SD	10.05	9.23	8.33	
T-test (two-tailed) values for categories:							
		A.	1 vs 2	0.54	1.05	0.70	
			1 vs 3	0.19	0.50	0.11	
			2 vs 3	0.94	0.74	0.07	
		B.	1 vs 2	0.21	1.02	1.28	
			1 vs 3	0.46	0.88	0.41	
			2 vs 3	1.12	0.12	1.44	

* $p < .05$.

Table G-25

PARENT QUESTIONNAIRE: PARENT INVOLVEMENT IN COMMUNITY HEAD START ACTIVITIES

Child Measure	Level	N	Value	Fall	Spring	Difference	T Test (one-tailed)
A. Preacademic	1. Low	278	$\bar{X}$	51.02	57.46	6.44	7.94*
			SD	8.79	10.25	9.92	
	2. Medium	69	$\bar{X}$	52.91	59.21	6.30	4.08*
			SD	8.16	9.80	9.55	
	3. High	204	$\bar{X}$	53.75	60.26	6.51	6.79*
			SD	8.78	10.45	9.78	
B. General Cognitive	1. Low	272	$\bar{X}$	48.95	55.80	6.84	8.01*
			SD	10.43	9.45	9.57	
	2. Medium	70	$\bar{X}$	49.91	58.58	8.67	5.70*
			SD	10.07	7.62	9.33	
	3. High	203	$\bar{X}$	52.00	58.48	6.48	6.94*
			SD	10.10	8.61	8.36	
T-test (two-tailed) values for categories:							
		A.	1 vs 2	1.69	1.31	0.10	
			1 vs 3	3.37*	2.93*	0.08	
			2 vs 3	0.72	0.75	0.15	
		B.	1 vs 2	0.70	2.57*	1.45	
			1 vs 3	3.20*	3.21*	0.44	
			2 vs 3	1.49	0.09	1.73	

* $P < .05$.

Table G-26

PARENT QUESTIONNAIRE: PARENT ABILITY TO INFLUENCE THE SCHOOLS

Child Measure	Level	N	Value	Fall	Spring	Difference	T Test (one-tailed)
A. Preacademic	1. Low	64	$\bar{X}$	52.14	58.10	5.95	3.57*
			SD	8.60	10.08	10.16	
	2. Medium	332	$\bar{X}$	51.65	58.41	6.77	9.26*
			SD	8.17	10.48	9.93	
	3. High	155	$\bar{X}$	53.65	59.61	5.96	5.21*
			SD	9.96	10.12	9.41	
B. General Cognitive	1. Low	62	$\bar{X}$	50.76	56.22	5.47	3.32*
			SD	9.71	8.41	8.61	
	2. Medium	326	$\bar{X}$	49.14	57.12	7.98	10.58*
			SD	10.11	9.09	8.36	
	3. High	157	$\bar{X}$	52.22	57.59	5.38	4.76*
			SD	10.79	9.09	9.56	

T-test (two-tailed) values for categories:

		Fall	Spring	Difference
A.	1 vs 2	0.42	0.23	0.58
	1 vs 3	1.12	1.00	0.00
	2 vs 3	2.18*	1.19	0.86
B.	1 vs 2	1.18	0.76	2.08*
	1 vs 3	0.96	1.05	0.07
	2 vs 3	2.98*	0.53	2.86*

* $p < .05$.

Table G-27

PARENT QUESTIONNAIRE: PARENT FEELINGS OF ABILITY TO CONTROL THEIR OWN LIVES

Child Measure	Level	N	Value	Fall	Spring	Difference	T Test (one-tailed)
A. Preacademic	1. Low	57	$\bar{X}$	50.08	56.54	6.47	3.66*
			SD	8.57	10.07	7.98	
	2. Medium	439	$\bar{X}$	52.29	58.61	6.32	9.71*
			SD	8.92	10.29	10.11	
	3. High	55	$\bar{X}$	54.34	61.75	7.41	4.24*
			SD	7.48	10.45	9.09	
B. General Cognitive	1. Low	59	$\bar{X}$	47.47	54.99	7.52	4.18*
			SD	10.16	9.18	9.59	
	2. Medium	431	$\bar{X}$	50.28	57.01	6.72	10.17*
			SD	10.31	9.04	9.07	
	3. High	55	$\bar{X}$	52.59	60.63	8.04	4.60*
			SD	10.30	7.68	8.97	

T-test (two-tailed) values for categories:

		Fall	Spring	Difference
A.	1 vs 2	1.81	1.45	0.12
	1 vs 3	2.78*	2.66*	0.58
	2 vs 3	1.86	2.09*	0.82
B.	1 vs 2	1.98*	1.58	0.60
	1 vs 3	2.65*	3.54*	0.30
	2 vs 3	1.55	3.20*	1.02

* $P < .05$.

Table G-28

PARENT QUESTIONNAIRE: CULTURAL ENRICHMENT IN THE HOME

Child Measure	Level	N	Value	Fall	Spring	Difference	T Test (one-tailed)
A. Preacademic	1. Low	45	$\overline{X}$	50.01	56.12	6.11	3.16*
			SD	8.21	9.87	10.08	
	2. Medium	312	$\overline{X}$	52.14	58.54	6.40	8.43*
			SD	8.58	10.29	10.21	
	3. High	194	$\overline{X}$	52.99	59.59	6.59	6.59*
			SD	9.18	10.44	9.09	
B. General Cognitive	1. Low	37	$\overline{X}$	46.93	54.40	7.48	3.15*
			SD	10.61	9.49	8.77	
	2. Medium	312	$\overline{X}$	50.16	56.82	6.66	8.76*
			SD	9.97	8.97	9.05	
	3. High	196	$\overline{X}$	50.91	58.20	7.29	7.29*
			SD	10.79	8.87	9.31	

T-test (two-tailed) values for categories:

		Fall	Spring	Difference
A.	1 vs 2	1.60	1.52	0.18
	1 vs 3	2.13*	2.08*	0.29
	2 vs 3	1.04	1.10	0.22
B.	1 vs 2	1.74	1.46	0.53
	1 vs 3	2.06*	2.23*	0.11
	2 vs 3	0.78	1.69	0.75

* $P < .05$.

Table G-29

CODES FOR RESPONSES TO THE OPEN-ENDED QUESTIONS
ON THE PARENT QUESTIONNAIRE

Relationships Involving the Head Start Child

Code

11 Race situation

Give this code in preference to any other if there is any mention at all of race in the response

12 Child to himself

He/she's developed courage; is happier, more self-assured; better person; concentrates; cleanliness of the child; making him/her aware of his/her environment; bravery; content; matured; likes values taught to child

13 Child to classmates and friends

Considering others, learning to work in groups, learning to share with others, learning to play with others

14 Child to teacher and feelings about teaching method or atmosphere

Good teacher; my child loves the teacher; the individual attention given; the care, love, patience, lack of force; the way the teacher handles the children

15 Child to "school"

Is learning to be away from home, accepts going to school, helps toward kindergarten and 1st grade, helps them in life, the future, gives them hope, has a place to go to during the day

16 Parent to his/her own child

It's helped me to learn about my child's needs; parent is learning from child or for her child; parent has learned own responsibility for educating her child; parent and child get along better together; parent gets pleasure, peace of mind, because child's experiences with Head Start; parent can teach child at home now

17 Child to other adults

Has friends (adult) besides parents, learns to mind others

19 Child, other

Table G-29 (continued)

Relationships not Including the Head Start Child

Code

21 Parent to teachers, school and/or other adults, and children not in the family

Parent comes to school more often; parent likes to interact with; help, volunteer for working with the teachers or classes, parent enjoys seeing how the program is run; parents meet new friends, enjoy the other children.

22 Parent to himself/herself

Parent learning things for himself with no mention of a relationship, learned to express himself/herself verbally, learned promptness

29 Parent, other

Behavior

31 General behavior

The way he is taught to behave, working off excess energy, manners learned, makes him sit down, helps around the house

39 Other specific behavior problems or changes

Academic

41 Verbal

Reading, writing, speech

42 Nonverbal academic

Drawing, painting, coloring, art, music

44 Academic culture

45 Learning - general

Like it that they're doing things, helping my child, the light in his eyes when he has achieved something, teaching him things I can't do or don't have time to

49 Other academic

Table G-29 (concluded)

Ancillary

Code

51 Recess, free play, naps, field trips

52 Games, toys, sports

53 Physical arrangements

54 Medical, dental care

55 Physical aspects of the school plant
Playground equipment, school buses

56 Continue or expand Head Start program

57 Get more community, parent participation

58 Hot lunch, food program

59 Other

Miscellaneous

91 Head Start acts as a babysitting or daycare service

92 Gives jobs to community people or helps financially

93 Nothing (question answered with some form of no)

94 Everything (question answered with some form of this word)

97 Other

98 No answer

99 Vague, irrelevant, unreadable

Appendix H

STATISTICAL METHODOLOGY ISSUES

Appendix H

STATISTICAL METHODOLOGY ISSUES

I METHODOLOGICAL LIMITATIONS OF THE ANALYSIS OF CHILD PERFORMANCE

A number of sources of error in the analytic design will be identified below. For each an estimate of the possible consequences will be attempted, and an alternative course of action to remedy the error will be suggested.

The Analytical Model

To avoid reducing the size of the norming sample beyond strictly essential levels, children with prior Head Start experience (approximately 30% of the norming sample) were not excluded from the initial norming sample. This is a flaw in the design because the overall estimation of the effects of Head Start is made in terms of increases beyond (maturation-adjusted) initial levels. The consequences of this step are that initial scores are higher than they would be for the correct norming group, as can be seen in the section of Chapter XI on the effects of Head Start; this in turn implies that increases beyond initial levels are underestimated, and hence the error is a conservative one. Future studies based on norming should exclude children with prior Head Start experience from the initial norming sample to avoid this error.

Standardization of the normed data was achieved by a simple linear transformation that gave each cell of the norming sample a mean of 50.0 and a standard deviation of 10.0 (see Chapter XI for a description of the transformation). In cases where the raw norm group variance is related to the mean and in cases where variance changes markedly from Fall to Spring (the motor inhibition variable illustrates both of these conditions very well) suitable preliminary transformations must be used on both Fall and Spring data to make the variance uniform for cells of the norming matrix that belong to the same ethnic group. Since tests of significance depend crucially on equality of variance, such transformations are essential to further study, in particular of noncognitive measures (in the case of the motor inhibition variable, a simple logarithmic transformation was found to make variances highly uniform. The discovery came too late to be used in revisions of the data).

The use of six-month age intervals introduced a fair amount of "noise" into the estimation of change beyond initial maturation-adjusted levels. Since birthdates for each child were known to the day and testing dates were also recorded, the use of intervals as narrow as one month was not unreasonable. A better alternative might have been the simple establishment of the regression of the score or the child's exact age at time of test. Such a regression could then be fitted by least-squares techniques with a best-fitting curve, and the curve could be used for imputation of a predicted score of the date of the final test. The consequences of six-month age cells were an increase in "noise" variance and a consequent reduction in significance levels.

The present model of analysis ignores the possibility of systematic regional and site effects. The consequences of this procedure are visible principally in analyses with small numbers of children and classes, where initial levels can differ quite considerably because of the various factors not taken into account. One alternative procedure would have been to standardize by site or region, age, and ethnicity; it was judged that the consequent reduction in norming group cell sizes would have done more damage (in terms of increasing variance instability) than the change would have helped. The problem deserves careful study, consideration of procedures used in other evaluations (such as that being performed by SRI for the national Follow Through evaluation), and primarily study of the raw data grouped by various alternative rural-urban, site, regional, and other geographical categories.

A major criticism by readers will be the lack of the use of more sophisticated analytic techniques in the study of the data--in particular, in the analysis of variance and covariance. Indeed, the original analytic plan entailed a multiple analysis of variance with covariance adjustment (on a linear regression model) of dependent variable values on the basis of a number of independent-variable criteria. There were a number of problems with the model, and it had to be discarded. Briefly, it can be pointed out that:

- There is no randomness in the selection of data to be studied--in particular, there is no random allocation of children to treatment groups or even random allocation of classes to treatment. The biases thus introduced are almost impossible to estimate.

- There is no reason to assume that there is a normal distribution of data values (although this can be helped by transformations) or that linear regression models are suitable for the phenomena under study, or that (as is essential for the analysis-of-covariance adjustments) different treatment levels of covariates have the same slope.

- For multivariate analysis of variance, markedly unequal cell sizes introduce potential sources of error that are maximized in situations where variances are unstable (again, this may be helped by appropriate transformations).

The problems mentioned are not unsolvable, and will be carefully considered in the course of making decisions about revisions of the present analytic model.

The Child Performance Measures

For both the preacademic and general cognition variables, final scores were obtained by summing and averaging standard scores for two component variables; if values were missing for one of the component variables, the value of the other was used. Although this procedure resulted in an overall measure mean that did not differ from the standardized values for each of the component variables, it did lead to a reduction in the variance. The variance for a measure found by averaging two variables is given by

$$\frac{1 + \rho_{xy}}{2} ,$$

where

x and y are the two component variables

ρ_{xy} is the correlation between them.

This equation implies that the variance of the averaged measure is reduced unless x and y are perfectly related ($\rho_{xy} = 1.0$). Because of the use of one variable value when the other is missing, the variance reduction will be partial. This is a serious error and its correction is straightforward; only the fact that it was discovered at the end of the report-writing period prevented its elimination. Transformation of the standardized scores will accomplish this.

The measures of preacademic readiness and general cognition are not unrelated to each other. The Fall intercorrelation of the two variables is .59 (N=1614, $p < .01$) and the Spring intercorrelation is .66 (N=1551, $p < .01$). Further, the intercorrelations in the Fall between the various raw measures that make up the two variables of interest are as follows (the N is shown in parentheses):

Fall Intercorrelations

Preacademic	1.	2.	3.	4.
1. Book 3D	1.00 (1687)			
2. Book 4A	.39 (1667)	1.00 (1671)		
General Cognitive				
3. PSI	.68 (1641)	.42 (1634)	1.00 (1654)	
4. Stanford Binet	.47 (855)	.28 (847)	.51 (847)	1.00 (925)

Spring Intercorrelations

Preacademic	1.	2.	3.	4.
1. Book 3D	1.00 (1687)			
2. Book 4A	.46 (1667)	1.00 (1671)		
General Cognitive				
3. PSI	.64 (1641)	.59 (1634)	1.00 (1654)	
4. Stanford-Binet	.44 (855)	.32 (847)	.45 (847)	1.00 (925)

All $p < .01$.

It is also the case that both the preacademic and general cognition variables have substantial Fall-Spring correlations: for the measure of preacademic skills over all children, $r = .44$ (N = 1578, $p < .01$). Given the high relationships between Fall and Spring values and between the two measures at each time, errors enter into significance tests using these measures. Two corrective measures might be suggested:

1. The use of a bivariate T statistic that would take into account the relationship between the two "academic" variables

2. An adjustment to the formula for Student's _t_ that would take into account the Fall-to-Spring correlation for each of the variables.

These two possibilities have not been implemented for reasons of expediency; such considerations will certainly be taken into account in the planning of the analytical procedures for future volumes in the present study.

What are the consequences of ignoring the two sources of error here discussed? With regard to the Fall-Spring correlations, it can be pointed out that for correlation coefficients greater than 0.0, the necessary adjustment to the equation for Student's _t_ results in an increase in the value of _t_, which implies that the error involved results in values of _t_ smaller than they should be and hence is conservative; any findings here established can only be strengthened by application of such a correction factor. With regard to the use of bivariate measures rather than the simpler univariate _t_-statistic found throughout this report, a suitable caution is one of presentation of the findings rather than methodology. It is well known in the educational world that measures in the area of preacademic and general cognition readiness produce strongly correlated results, and the reason is one of overlap between the properties of children being measured rather than of identity between the measures themselves. Even if the results of tests of significance for the two measures are reported separately, the reader will recognize that there are underlying factors that are being acted on by the various forms of experimental treatment and that these factors are related to both variables and cause them to vary in similar ways. Again, the error--if any--is conservative in that the analyses are not specifying the full strength of the effect of treatment on the underlying factors.

Instability of variances and lack of normal distributions for some of the variables have already been discussed earlier in this appendix as well as in the section on the noncognitive measures in Chapter XI. Because of variance instability, lack of substantial Fall-to-Spring change, and the lack of normal distributions, it was decided not to consider the noncognitive measures on the same footing as the better behaved preacademic and general cognition variables. Instead, it was decided to present them in a separate section, discuss their behavior fully, and present findings based on them as preliminary and tentative.

There is no doubt that the failure to use reliable noncognitive measures that meet the needs of the PV sponsors is a serious shortcoming of the study, and one that urgently demands redress in future sections of the Head Start PV longitudinal experiment evaluation.

II THE MEASURE OF SOCIOECONOMIC STATUS

A measure for SES was obtained by forming and combining scales for:

1. Annual family income per person

2. Education level in years of schooling of head of household

3. Education level in years of schooling of spouse of household head

4. Occupation of head of household

5. Occupation of spouse.

Much information for these variables was missing. Out of an absolute total of 3,132 children for whom <u>any</u> data were collected, information was missing for the following numbers of cases:

1. Annual family income--623 cases
2. Number of persons in family--1,093 cases
3. Education level of household head--1,855 cases
4. Education level of spouse--2,215 cases
5. Occupation of household head--937 cases
6. Occupation of spouse--1,780 cases
7. Sex of household head[*]--773 cases.

Because of the extensiveness of missing data it was felt that some sort of imputation technique was essential to avoid the loss of an extraordinary number of cases. At this point it was necessary to decide whether imputation would be used on one status indicator, on several, or

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* This variable was investigated for its effects in terms of criterion scores. Its effect overall was not found to be large enough to warrant its inclusion in the scale for socioeconomic status.

on all of them. Several problems must be considered here. For one thing, there were systematic errors related to answering questions for the two educational scales for parents, which meant that these data--apart from having especially high levels of missing information--had unreliable figures between the 2-year and 12-year levels.* For another, imputation techniques are most effective in terms of accuracy where they are least needed--where there are few, definitely randomly scattered cases of missing data. Imputation under the present circumstances of large numbers of missing data seemed risky.

Because it was felt that income per person was the most sensitive indicator of SES and that this indicator scaled equally well for all ethnic groups and had a relatively small amount of missing data, an imputation procedure was used to ascribe to every child in the sample a value for this variable. Because of the large amount of missing information for the education variables (and also because of the aforementioned error in the data), it was decided not to use imputation for these variables; in cases where this information was missing, no education figure was entered into the SES index. In addition, for those districts where inspection showed there was an observably large proportion of errors in the years of schooling between 2 and 12 (confusion about the instructions resulting in a "2" being entered instead of the number that represented the years completed) all codes of "2" were considered as missing information.

On the basis of both the 1970 Bureau of the Census publication† on consumer income in 1969 and the scales suggested by Dr. W. G. Madow of SRI, this relative occupation level SES scale was formed:

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* See page 87.

† Bureau of the Census, U.S. Department of Commerce: "Current Population Reports: Consumer Income," Series P-60, No. 72; Washington, D.C.: Government Printing Office, August 14, 1970.

Occupation Code (used in Classroom Information Form)	SES Scale Value
1 = Managerial (except agriculture) or professional	10
2 = Nonmanual work (clerical, sales, and the like)	9
3 = Manual work--skilled and semiskilled	8
4 = Manual work--unskilled	5
5 = Agricultural--farm owner or manager	6
6 = Agricultural--labor	3
7 = Unemployed--if the head or spouse is unemployed but in the labor force (i.e., looking for work, but does not have a job or is out of work or on welfare)	2
8 = Housewife (and not looking for work)	No scale value - treated as missing data
9 = Other (i.e., student, retired, and so forth).	No scale value - treated as missing data

Occupation category codes 8 and 9 were not positioned on the SES scale a priori since they did not appear on any of the scales used as references and it seemed as though they would differ in scale position by ethnic group involved. Imputation techniques were then employed for each ethnic group to obtain mean scores for all categories of occupation (including the "missing information" category). The tests used as criterion references for imputation were the Stanford-Binet IQ and the total score for the Book 3D Preacademic Test (the Fall 1969 administrations of each were used). The IQ was preferred over Book 3D results whenever possible because it is age normed and is known from the literature to be highly reliable as a measure of acculturation toward white middle-class standards and hence was felt to be itself akin to a measure of socioeconomic status. The main disadvantage of the Binet measure was that the test was administered to a randomly chosen half of the children and occasionally ethnic group-occupation category cells were vacant; in those cases the Book 3D measure was used to provide a basis for imputation.

Imputation was made as follows: for each ethnic group, mean values for each occupation category and for the missing information category were calculated for both criterion references; then the category values were checked against the previously determined SES scale values. Initial results were disappointing; for all ethnic groups, there was little or no relationship between the rankings and score distances for criterion references and those for the SES scale. Since the latter made intuitive sense, it was decided to abandon the attempt to impute SES scale values for the 937 missing data cases on occupation, as well as for the 319 cases of codes 8 and 9. In such cases, as with education, the occupation of household head was not used. With regard to occupation of spouse, the large number of cases of missing data made imputation unreasonable.

For income per person, imputation was used. The same procedure and criterion references were used as described above for the occupation measure. Imputation was made separately for each ethnic group, obtaining the Binet and Book 3D total score for each income/person category (in units of $100 per person per year) and for the missing data category. Results were consistent, at least for some ethnic groups; scores and income levels were closely related for Caucasian children and, to a lesser extent, for Negro children. For the American Indian children no such relation seemed to hold and, as a least harmful alternative, those children without information on income or family size were assigned the mean ethnic group income value.

At the conclusion of this procedure, there were no missing data on income level for any child. Missing data for occupation and education were ignored. Scales were then formed with a range of 0.0 to 10.0 points for each of the categories mentioned above; thus, education was simply converted from a scale with a range of 0 to 20 to one with a range of 0.0 to 10.0. The occupation data were already on such a scale, as described above.

The final SES value for each child was computed by averaging all the values for which information was present. The final values obtained were then standardized to an overall mean of 50 and a standard deviation of 10. To investigate the effects of SES, the sample was split into two groups above and below a standard score of 60, or 1 standard deviation above the mean. Of a total of 1,676* children, 283 (17%) had values higher than 60, and 637 (38%) had standard scores higher than 50 points on this scale. The measure thus has the appropriate characteristic of status measures: a distribution skewed toward its upper end.

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* Children with Fall and Spring values on the preacademic measure.

The measure of SES used in this evaluation has not been checked against other measures of SES. Thus, in the succeeding years of the study, a considerably revised and improved measure will be formulated and validated against other socioeconomic and ethnic measures from child and family demographic information.