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ABSTRACT

This final report of the Family Development Research Program contains a description of the program's comprehensive family service approach to promoting child development and the longitudinal findings on program effectiveness. The program offered comprehensive services to 108 families which were low in both income and education. Services included: (1) home visits for expectant mothers to teach them about nutrition and child care; (2) complete center-based child care for children from 6 to 60 months of age; (3) assistance for families with financial, emotional, social, and nutritional problems; and (4) parent involvement groups, workshops, and open-houses. Inservice training was held weekly for teachers and paraprofessional home visitors. The final report presents theoretical and research foundations of the program, curriculum objectives, selection and organization of content, staff roles, staff training, delivery systems, evaluation and conclusions. Tabular data and a bibliography are included. (JMB)

The Family Development Research Program

A Program for Prenatal, Infant & Early Childhood Enrichment

Final Report

by

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INTRODUCTION

It is important to preface this report by stating clearly that the thrust of the "Family Development Research Program" was longitudinal in nature. The major goal was the support of child and familial behaviors that sustain growth and development after intervention ceases.

It is evident that the child is elastic. The child can be changed by intervention programs, but can also "change back" when intervention ceases. This is why it is essential to make an impact on the permanent environment, usually the home, and to support parent strategies which will enhance the development of the child long after intervention ceases. The pursuit of this goal lead us to an omnibus-type program which cannot be easily categorized. Therefore a brief summary of the program is presented so that the reader can gain an early understanding of the type and style of service provided.

The Family Development Research Program offered comprehensive services to 108 families which are low in both income and education. Complete child care services, a major part of the program, were provided at the Syracuse University Children's Center for children from 6 months to 60 months of age. The program at the Children's Center is different from child-centered programs. The Center program for children was seen by the principal investigator as the back-up to family services rather than as the major input of the project. This view was not held by all the staff and families. Some people saw day care as the major thrust and benefit of the program. Nevertheless the program dealt directly with the families, and encouraged the individuality of each family with its inherent cultural background. The Children's Center staff provided relief from daily pressures without assuming the entire burden of family responsibilities or trying to be substitute parents. Emphasis on family involvement stemmed from the awareness that when most child-centered intervention programs ceased, the children from multi-problem families were soon found to be

indistinguishable in intellectual functioning from their peers. The emphasis on family involvement was based on the beliefs that affective bonds between parent and child are extremely important to early learning and that a child's identification with attitudes and values of parents is much more likely to occur than identification with attitudes and values of others.

The Center's service to families extended to include service to unborn infants. Paraprofessionals made weekly home visits to expectant parents, starting three to six months before the child was born. These visits were continued as long as the child was in the program. Early in the home visit program the home visitors helped mothers to understand their own nutritional needs and the needs of infants. The home visitors spent a major portion of their time demonstrating to parents ways and means to nurture child development from birth to five years of age. Problems--financial, emotional, social, nutritional, etc.--were dealt with as they appeared. The severity and complexity of these problems reinforced the center staff's deep conviction of the need for comprehensive family-oriented child care services.

A major component of the Children's Center was the "Infant-Fold" for children ranging from 6 months to 15 months of age. The infants attended a Center-based program on a half-day basis. Four infants were assigned to one caregiver for special loving care, cognitive and social games, and language stimulation. Materials and environment were used to promote sensory and motor skills. Teachers followed a curriculum based on the developmental theories of Jean Piaget and Erik Erikson. Play materials and games were used to help children develop means-ends relationships, object permanence, causality, and spatial concepts in a climate of basic trust. The level of a task was matched to the developmental level of each child. One program emphasis was on the use of routine caregiving activities, such as diapering, feeding, and napping, to promote a positive self-concept, joyful emotional encounters, and language experiences. Development of the Center children was assessed regularly. Comparisons of development were made with groups of infants selected from outside the Center who had not been involved in special intervention programs but many had participated in programs available in the community.

Toddlers (15 months to 60 months of age), attended a full-day,

multi-age group experience called the Family Style Program. This program was modeled after the British Infant Schools. The men and women caregivers in family-style groups provided special activities such as small-muscle games, listening, looking and other sensory experiences, large-muscle games, and expressive play. The children moved freely from one area to another and chose their activities as well as the time they wished to spend on any one activity.

Parents were often in attendance at the Center. Small groups of parents met weekly either in their homes or at the Center to discuss varying topics of interest. Some topics were teenage sexuality, sex education for the preschool child, and socialization techniques. Open-houses and other social activities were organized by the parents. Workshops were very popular and families attended them during the week. Mothers made clothes for themselves and their infants, created play materials for children, and made seasonal decorations for their homes. Parents and staff members met often to discuss Center policy, problems which arose, or other topics of interest. A formal parent organization meeting was held one evening a month. These various functions included only a few fathers and attendance was usually less than 50 percent.

In-service training was held weekly for all teachers and for home visitors. Close staff relations were furthered by frequent meetings to exchange ideas, to create new materials, and to obtain and discuss developmental assessment information which would help a caregiver to deal more efficiently with the children.

This brief program review has emphasized the comprehensive nature of the work at the Family Development Research Program. The following sections will elaborate upon the rationale and components of this omnibus model and discuss the results of program evaluation.

THEORETICAL FOUNDATIONS OF THE PROGRAM

Kohlberg (1968) in his paper dealing with a cognitive-developmental view of early education, warns the reader about dichotomizing socio-emotional and cognitive development. This dichotomy has concerned us greatly because many early childhood educators are forced to deal with socio-emotional and cognitive development separately. This separation has often been made by

practitioners because most theorists treat developmental concepts separately and because combining theoretical conceptualizations of affective and cognitive development has proved extremely difficult.

Our program for infants was based on a conscious integration of the ideas of Jean Piaget and Erik Erikson. Piaget's work adds depth and perspective to Erikson's (1950) theory of psychosocial growth. The two theories are amazingly compatible. Their stages account for the same periods of time, and in both theories the impetus for movement from one stage to the next is both biological and cultural. As in any developmental theory, one stage builds on its predecessor, and early stages are not passed through and forgotten forever. In both theories, early stages are integrated into future stages, and basic conflicts (Erikson) and basic cognitive processes and achievements (Piaget) are experienced and refined throughout life. Changes in cognitive functioning often provide explanations for changes in socio-emotional level, and socio-emotional advances often permit advancement in cognitive understandings. It seems to be no coincidence that the stage of industry versus inferiority coincides with the period of concrete operations, which is characterized by the child's mastery over objects and his understanding of reversibility and conservation. It also seems no coincidence that object premanence and object relations go hand in hand during the same time period (Ainsworth and Bell, 1972). The cognitive ability to discriminate one person from another and the knowledge that a person does not disappear forever when out of sight are both essential to the bonding of trust between the older infant and caregivers. Since Piaget states that "affectivity can be considered as the energetic force of behavior" (Inhelder and Piaget, 1958, p. 348), it makes sense that a child will have difficulty learning in an environment that is hostile or uncaring.

It was central to our work to provide the infants with adults who have good feelings about them. With the support of the parents we hoped to build a bastion of security for the infants. We felt infants should be assigned to a principal caregiver who would foster this security. Obviously, the caregivers had to work together to help each other with the many tasks involved. From the start, however, a parent knew and the infant knew (or began to get the feeling) that s/he was attached to a particular caregiver. Further, the director of the program knew that a caregiver was

responsible for particular children. The caregiver was able to follow the development of children in many ways. S/he was responsible for checking with the nurse if something was wrong with a child. S/he wrote notes home to the parents or conferred with them when they brought the children to the center and took them home.

As the infants began to grow and learn, they ventured away from their caregivers. If they ventured too far and were threatened by the strangeness of the world, they knew that they could run back to their caregivers for reassurance and a "revving up" and then return to more exploration. Without this feeling of basic trust in an adult, a child is reluctant to venture out and explore a world that could be a very risky and unloving place. When basic trust is established and maintained, experiences that expose the child to cause-and-effect relationships, classification, spatial relations, imitation, means-ends relationships and object permanence can be easily provided during daily contacts.

Saul Alinsky has provided us with a third theoretical base from which to operate. Although his background is very different from the background of Piaget and Erikson, his theory of community organization has also colored the way we see our role in the community we serve. Alinsky (1971) has pointed out that if you try to provide programs for people without giving them a say in what is happening to them, then, more often than not, they will suffer from your gift. He states, "To give people help while denying them a significant part in the action contributes nothing to the development of the individual. In the deepest sense it is not giving but taking--taking their dignity" (p. 123). The philosophy of this project--to support parents rather than to substitute for them--coincides with Alinsky's ideas. If a caregiver felt "this poor little child has such a miserable existence at home that I am going to compensate" s/he did not fit into our program. If s/he feels "I can provide experiences in the classroom which will excite the child to learning and support the family," s/he probably fits into our program.

The philosophy of the British infant school has served as another model for our program with older children. Although we did not draw on one particular theorist, the concepts of freedom of choice, encouragement of creativity, and creation of an environment that facilitates exploration

were central to our program. Finally, Dewey's ideas regarding experimental learning have also been used as a theoretical base for our program with older children.

Fellow researchers have also helped shape our ideas. The next section contains some of the research findings that have guided us in program construction.

RESEARCH FOUNDATIONS OF THE PROGRAM

Many investigators (Caldwell, 1963, 1969a; Gordon, 1967; Lally, 1968; Starr, 1971; and Weikart, 1969) have reviewed the research on the effects of environment on cognitive and affective development during early life. It is unnecessary to reevalute the works of Bowlby (1951), Dennis and Najarian (1957), Goldfarb (1955), Moss and Kagan (1964), Pavenstedt (1965), Piaget (1952), Rheingold (1961), Sayegh and Dennis (1965), Skeels and Dye (1939), Spitz (1965), White, Castle, and Held (1964), and Witkin, Dyk, Faterson, Goodenough, and Karp (1962). At present the importance of enrichment is acknowledge even by Jensen (1969), who questions the value of the type of compensatory education programs currently under way. But what happens when enrichment ceases?

Little research has been done on the long-range effects of intervention programs, but the data that have been reported seem to be consistent. In her statement prepared for the Select Subcommittee on Education, Committee on Education and Labor, U.S. House of Representative, Caldwell (1969b) interprets data from her research at the Syracuse University Children's Center and from the Karnes Project at the University of Illinois to support the position that gains made by children in pre-school programs cannot continue unattenuated unless some educational support for the child is maintained. Other data, collected at the Syracuse University Children's Center on two different groups of children (Tannenbaum, 1970), show larger drops in developmental scores for children who have little home stimulation than for those with greater amounts of home stimulation once these children leave the center program. Additionally, Schaefer (1969) found that gains made in a child-centered home visitation program began to disappear once home visitation ceased.

The Caldwell, Tannenbaum, and Schaefer data seem to support our

position that child-centered programs have not been productive in effecting long-range results. Programs that have involved parents seem to show more sustained effects. Gordon (1972), in a follow-up study of his home intervention program focusing on parents. reports small but significant differences between children and their controls three years after the termination of intervention. Resnick and Van de Riet (1973) report that two years after intervention ceased at the Sprigle Learning-to-Learn School, there were large differences between control and experimental children in school achievement, intelligence, reading, mathematics and self-concept scores. Sprigle's project, in addition to having an excellent center experience for children, had a strong parent program that stressed parental involvement in child development. Ideas and strategies from these programs were drawn on in developing the Family Development Research Program. These beliefs seem to be supported by recent descriptions of Parent Child Center and Headstart efforts.

Our position that intellectual and affective development cannot be separated seems to be supported by Bell's (1970) findings that the development of the object concept was related to the attachment of the baby to his mother and that infants so attached were more advanced in the development of the object concept than other babies at every test session. Additionally, Birns and Golden (1970) have shown very practically how measures of social and emotional behavior can be used as predictors of future intellectual functioning.

For the home visitation program, a conscious choice was made to select child development trainers who were indigenous to the low-income community they served. This choice was based largely on the experiences of others. Reissman (1966) and Levinson and Schiller (1965) report that paraprofessionals tend to increase the effectiveness of communication between program and target group. Bernstein (1964) and Riessman (1962) make the point that characteristics of lower class language expression make communication with a researcher of a different class difficult. Radin and Glasser (1965) and Hare (1960) express concern over the inability of low-income populations to handle the abstract or unfamiliar concepts often used by a researcher from a different background. Paraprofessionals from the Gordon project (1967) established rich and meaningful interactions with the families they served.

The omnibus approach to intervention was taken because of the broad objectives of the project and the demonstrated failure of many programs that were limited in scope. The fact that a home visit program is more effective or less effective than a center-based program as judged by immediate evaluation is irrelevant if the children from both programs regress in developmental scores to the level of their control groups a year or two after intervention ceases.

Biber and Franklin (1973) make the point that target-oriented programs such as early language programs or programs using one procedural technique (e.g. behavior modification) are "parts grafted onto a complex system in which other parts are often outside the purview of the psychologist program developer or are viewed as unimportant in relation to the stated aim, e.g., in programs where play is regarded as child's entertainment and, as such, not as an important activity if one is concerned with improving academic performance as manifested in elevated IQ and achievement scores" (pp. 6-7). When one is trying to make an impact on parents and children in many different areas, the omnibus model seems to make the most sense. This choice does not mean, however, that we did not pay careful attention to component parts such as language acquisition and the use of behavior modification techniques in the development of our program.

Many educators and government leaders who look at what is being discovered about the early development of intelligence feel that we should switch our educational system around. Benjamin Bloom (1964) makes the case for an increased educational input to start during the first four years of life, because he feels that this is the most critical period in the development of intelligence. Others feel that something similar to preventive medicine needs to be established in education. Preventive education does not seem to be the right phrase for the concept, but the idea is potent. It is felt that if you give the young child a strong intellectual base at the beginning of his life, you will not have to cope with reading, motivation, and intellectual failures in later life.

But an intellectual base is not the complete answer. Too many programs have interpreted the "strong intellectual base" as a purely cognitive structure and have made available to children and their families games and tasks designed to increase intellectual competency or to raise IQ without paying attention to other developmental domains. These tasks

are very profitable, and we do not deny their importance. However, we felt the base that is essential to healthy growth and development in children is not only intellectual; it must also give the children the emotional and social strength they need to function as intelligent human beings.

CURRICULUM OBJECTIVES

The objectives presented in this section fall under the heading "curriculum objectives" only when the term curriculum is defined in its broadest sense. Parents, research staff, and teaching staff pondered over a general statement of the purpose of the program and together tried to generate specific goals that could be tested.

GOALS FOR CHILDREN

The goals for children received special attention and a good deal of discussion. This list was created to help specify the program for children. The goals for children were outlined as follows:

I. Noncognitive Mediators of Achievement and Indicants of Movement to Inner Controls

- A. Makes needs known
- B. Shows curiosity and interest in the environment; tries new activities; uses materials, tools and toys in experimental ways
- C. Follows directions
- D. Responds maturely to frustration
- E. Recovers quickly from frustration or threat
- F. Initiates activities; tries more activities
- G. Shows purposeful actions
- H. Pursues difficult tasks
- I. Completes tasks
- J. Teaches peers
- K. Role-plays (includes dress-ups)
- L. Acts happy
- M. Likes and accepts self
- N. Shows responsibility for own actions
- O. Shows awareness of choices

II. Physical Skills

A. Develops large-muscle skills

B. Develops small-muscle skills

III. Personal-Social Relationships with Peers and Adults

A. Acts secure around adults

B. Acts secure around peers

C. Goes to teacher for help

D. Respects the feelings of others; identifies strongly with fellow human beings

E. Cooperates in activities with peers

IV. General Cognitive Functioning

A. Understands cause and effect relationships

B. Looks through books

C. Is attentive to being read to and being shown pictures

D. Shows basic understanding of the abstract qualifier concepts listed below:

1. Like-unlike
2. Quantity: includes number concepts
3. Quality: includes feelings such as sad and happy
4. Spatial relations: includes distance and spatial prepositions
5. Temporal relations
6. Classification; by shape, color and function and by abstract category
7. Seriation

V. Language Functioning

A. Labels and names objects, toys, pictorial representation, and people

B. Labels and names action words

C. Labels and names qualities or qualifiers

D. Labels and uses prepositions

E. Sings songs

F. Gives information about experiences

G. Imitates adult language

H. Asks questions

I. Uses verbal fantasy (role-playing)

J. Uses long phrases or complete sentences rather than single words to express thoughts or ask questions

K. Uses a common abstract verbal label to classify superficially dissimilar objects (either real or pictorial)

L. Receptive language:
   1. Understands questions
   2. Understands directions
   3. Understands offers made

M. Social-positive attributes of language functioning: Uses personal-social positive words to offer help, to praise, to encourage, to make solicitous remarks, and to greet

GOALS FOR PARENTS

The goals for parents were longitudinal goals and thus not intrinsically related to the age of the child. It was believed, however, that the earlier each parent achieved these goals, the greater would be the potential for optimal development of the child. Therefore, the achievement of these goals became a major thrust of the home visit program.

Parents will be More Potent in Facilitating the Development of Their Children.

This major program goal was a reflection of our belief that parents can be informed on a variety of child-rearing practices that will result in their increased facilitation of the development of their children. The means for achieving this goal were provided through the home visitation program, which focused on two subgoals. The first subgoal was that the parents actively and decisively were to participate in the learning experiences of the child and that they were to be aware of the child's cognitive, effective, and sensorimotor development. The second subgoal was that the mother would become more aware of the child's health and nutritional needs.

Active participation in the learning experience and development of the child. This subgoal was divided into five more specific objectives to be implemented by the child development trainer (CDT) during home visits. These objectives were:

1. To help make learning experiences with her children a part of the daily life of the mother.
2. To facilitate cognitive interactions among adults and children in the family.
3. To facilitate family involvement with educational institutions.
4. To facilitate the involvement of families in program activities.
5. To expand the maternal philosophy of child-rearing practices and discipline to include many socialization techniques.

Each of these objectives specifically reflected the CDT's role as teacher and liaison worker for the Children's Center. During home visits, CDTs shared with mothers a wide variety of games and tasks. These shared activities served as a focal point for discussions aimed at helping the mother to understand the need for provision of breadth of experiences, for closer interaction with the child, and for consistent child-rearing practices. The CDT sometimes worked directly with the child to model maternal child-rearing practices for the mother; at other times she observed the mother working with the child.

Increased awareness of health and nutrition needs. This subgoal was operationally defined by several objectives relating to the CDT's role as a social services advisor. These objectives were:

1. To facilitate the recognition of responsibility for feeding in nutritionally appropriate ways.
2. To facilitate an adequate diet for the family through education and training in appropriate foods, shopping, budgeting, use of food stamps, etc.
3. To encourage a monitoring of the diets of young children.
4. To encourage well-baby care as part of the regular medical services.
5. To facilitate an awareness of the interaction of a good diet and daily functioning.

When making home visits, the CDT periodically collected dietary information for the nutritional aspect of the study. These dietary forms were used as a springboard for moving into topics of nutrition, diet, health, and other social services. Whenever necessary, the CDT arranged for social services by contacting the appropriate agencies. In many cases she would help the mother by driving her to a health clinic, the welfare office, or another agency.

Family Cohesiveness Will be Maintained or Increased

This second major goal was a reflection of our belief that the most important influence on a child's development is his family. Thus the Family Development Research Program sought to maintain and increase family cohesiveness by providing supplemental services to the family. In no case did the Children's Center intend to supplant or diffuse family influence on the child's development. This major goal was divided into three subgoals. The first focused upon the affective relationship between the mother-child dyad and sought to intensify the positive aspects of that relationship. The

second subgoal was to enhance the quality of familial interactions with the extended family whenever possible. Our third subgoal focused upon the development of the parents.

To support an intense mother-child relationship. This subgoal was operationally defined by several specific items of maternal behavior. Each item relates to the concept that cognitive development is enhanced within a warm supportive home.

1. Picking up the young child
2. Holding the young child
3. Hugging the young child
4. Kissing the young child
5. Smiling at the young child
6. Touching the young child
7. Making or acquiring objects for the young child (toys, clothes, puzzles, games, books, etc.)
8. Responding positively to a young child's products
9. Yielding to a young child's needs for self-comforting activity

The CDT once again was instrumental in implementing this objective, particularly when she was modeling warm, supportive affect as she worked with the child in the home. As liaison worker between the Children's Center and the home, the CDT also had an opportunity to call the mother's attention to the child's achievements in the center. Occasionally, the Friday morning mother's workshop was devoted to making toys, clothing, or some other gift for the child. CDTs also encouraged mothers to take children shopping, to go walking with them, and to spend time with them in general.

To support a rich quality of familial interactions. The behaviors that operationally defined this subgoal dealt with the interactions within the immediate and extended family. Movement toward this subgoal was invited by the CDT in her roles as friend and advisor to the mother. The CDT, whenever possible, encouraged more active participation within the family. Other family members were encouraged to use the stimulation exercises when playing with the baby, to attend Friday morning workshops, and to attend the parent meetings. All activity was aimed at demonstrating to the family that early interaction with an infant is a necessary part of his or her future growth and development. The following interactions were encouraged by the CDT, and activities were structured to increase the chances that such behaviors would occur.

1. Families participate in varied types of activities together.
2. Members of the family show an interest in the development of the young children.
3. Family members (mother, father, grandparents, siblings, aunts, and uncles) participate in program activities.

To support the self-improvement of parents. If family cohesiveness is to be maintained or enhanced, persons in the family must be capable of functioning within our modern society as competent adults. Attention should be paid to their own personal development in career opportunities, their economic independence, and their satisfaction with their ability to provide for the necessary creature comforts within the home.

The following six aspects of self-improvement were fostered principally by the CDT, in her role as social services advisor:

1. Use of community facilities for self.
2. Use of community facilities for children.
3. Independent contact with social, health and educational agencies.
4. Economic independence.
5. Career movement: job, schooling, training.
6. Increased comfort of home environment.

Whenever possible, the CDT helped parents to become aware of various programs and services available within the community. As she shared information with families about community resources and opportunities, the CDT acknowledged in myriad ways the worth of individual family members.

GOALS FOR TEACHERS

An indication of curriculum objectives can also be gained by looking at the goals set for teachers in the program. Later in this chapter we will discuss particular behavior that we encouraged our teachers to exhibit. The brief list that follows summarizes those behaviors.

Goals for Teachers in the Infant Fold (6 to 15 Month-Old Children):

1. Facilitation of early language in the infant.
2. Exhibition of socio-emotional positive behaviors.
3. Elimination of socio-emotional negative behaviors.
4. Presentation of Piagetian games to the infants.
5. Provision of caregiving routines to the infants.
6. Performance of necessary housekeeping tasks.
7. Provision of motoric and kinesthetic experiences to the infants.

Goals for Teachers in the Family-Style Group (15 to 60 Month Old Children):

1. Facilitation of language in the child.
2. Facilitation of social-personal and physical skills among the children.
3. Facilitation of concept development.
4. Exhibition of socio-emotional positive behaviors.
5. Elimination of socio-emotional negative behaviors.
6. Provision of caregiving routines to the children.
7. Performance of necessary housekeeping tasks.

THE SELECTION AND ORGANIZATION OF CONTENT

The content of the Family Development Research Program was selected to achieve the program goals enumerated in the previous section. Because these goals were based on a somewhat eclectic theoretical foundation, the content was also eclectic. Many of the specific activities used in the home-visit program were added to from the work of others which appeared either before or during the years the program was in operation. Some of the materials used were Intellectual Stimulation for Infants and Toddlers (Gordon and Lally, 1967), Getting Your Baby Ready to Talk (John Tracy Clinic, 1968), the teacher's guides for the Infant/Toddler Learning Program (Badger and Edufax, Inc., 1971a, 1971b), and Home Activities for Preschool Children (Adkins, 1971). Other materials were created by our program people for use by CDTs with children from the ages of two to five.

A library of books and toys for young children was created and shared with our families. In addition, the families constructed their own books and toys. An adult library, including books, films, and filmstrips on sex education, socialization, early childhood education, women's liberation, self-concept development, and other topics, was used by the parents and the CDTs.

Constant contact with service agencies in the city helped to keep the CDTs up to date with regard to agency regulations and services. CDTs also had a working relationship with a staff member at each agency so that they could minimize the red-tape confusions that often arose when dealing with service agencies. Therefore, they were extremely efficient and accurate in their referral work.

Nutrition and health information was provided by the nutritionist

and pediatrician who worked part-time with the project. General nutrition and health were discussed in in-service training sessions so that CDTs could become aware of danger signs. Individual counseling dealing with particular issues followed the CDT's or family's identification of a need. Periodic health and nutrition checks also acted as a signal for specific nutrition or health counseling.

Information on human relations and human dynamics was gained through role-playing and discussion. These important sessions stressed the style and process of interaction between the CDT, the family (particularly the mother), and the children.

THE INFANT CURRICULUM

The selection of content for the Infant-Fold (half-day care five days a week for children from 6 to 15 months) was strongly influenced by Eriksonian, Piagetian, and language development principles. Stimulation materials were homemade as well as store- and catalogue-bought. Caregivers were encouraged to use their own ingenuity with discarded or inexpensive materials. For example, with three different-sized orange-juice cans or with colorful ribbons tied to squeak toys, teachers created learning opportunities and learning games for infants. The infant rooms were arranged to nurture sensorimotor activities and explorations. Low toy shelves were easily reached by creepers or toddlers who could thus discover the potentialities of many items on their own. Mobiles hanging from walls near the diapering tables and wall mirrors at floor level were grist for the infant's visual and tactual explorations. Divider screens, furniture pieces, and area rugs were arranged to outline special areas for a variety of activities.

The more formal infant curriculum has been described in Lally (1971a). Briefly this program emphasized the following:

Development of Prehension Skills

- Reaching for toys
- Shaking toys
- Hitting suspended toys
- Pulling suspended toys
- Squeaking toys
- Grasping and handling objects of different sizes and shapes

Development of Object Permanence (Concept that an Object Exists Independent of a Child's Own Actions)

Playing peek-a-boo

Horizontal following of toys

Finding toys after visible displacements under screens

Finding toys after invisible displacements under screens

Putting toys into containers and finding toys under containers

Development of Means for Achieving Desired Environmental Ends (Using Objects as Instruments in Attaining Goals)

Reaching over obstacles for toys

Using a support, such as a pillow to obtain a toy placed on top of the support but out of the child's reach

Using a string horizontally to obtain a toy tied to the string

Using a string vertically to obtain a toy tied to the string

Putting a chain into a box

Using a stick to obtain an object

Development of New Schemas in Relation to Objects (Finding Ways of Acting on Objects and of Using Toys and Materials Apprppriately)

Hitting two toys together

Patting a toy animal

Making a doll walk

Stretching an elastic bracelet

Throwing toys

Adorning one's self (with pop-it bead necklace, for example)

Drinking from a cup

Development of Causality (Forming a Distinction Between Act and External Result)

Bringing an unseen object to sight

Ringing a bell to make a sound

Turning a key to make a mechanical toy run

"Zooming" a friction car to make it go

Working a jack-in-the-box

Developmental Achievement of the Construction of the Objects in Space (Conceiving of a Single, Objective Space Within Which All Objects are Contained and Interrelated)

Finding a toy by its sound

Following the trajectory of a toy

Bunching a chain and putting it into a box

Nesting several boxes

Rolling objects down a plane

Creeping around a barrier, such as a rocking chair, to retrieve a ball rolled underneath the chair

Development of Gestural Imitation

Imitating a familiar visible gesture, such as pat-a-cake

Imitating an unfamiliar visible gesture, such as crooking a finger

Imitating a familiar invisible gesture, such as an eye wink

Development of Verbal Learning

Imitating baby sounds

Imitating unfamiliar sounds, such as "la-la"

Labeling objects, people, feelings, actions, places, times, questions, and directions

Listening to stories

Carrying out verbal requests with appropriate gestures

Physical Development and Exercises

Stretching and flexing legs

Rolling body into a ball

Rocking on the stomach

Doing somersaults

Bouncing the body to music

Bending to pick up objects

Pulling up on heavy furniture

Development of Sense Organs

Producing and listening to sounds (e.g., music boxes, rattles, wrist bells, records, tapes)

Producing tactual experiences (e.g., feel boxes, fur collars, nylon net, styrofoam)

Producing kinesthetic experiences (e.g., swinging, tickling with a feather, running a hair brush along the arm)

Producing visual experiences (e.g., looking at pictures, books, mobiles)

Tasting new foods and new textures of familiar foods

THE PROCESS OF GENERATING CURRICULUM ACTIVITIES

Infant caregivers, with help of supervisory personnel, used their ingenuity and their sensitivity to individual infant functioning to create curriculum activities. This was not difficult once the caregivers had learned the basic curriculum components and understood the child's need

for tender loving care. On the walls of the Infant-Fold room were hung large wall charts on which teachers initialed, each day, those activities of the Infant Curriculum which they carried out in some fashion with a particular baby.

One activity could be presented differently to different babies. For example, to present the horizontal-string problem to one baby, the caregiver could tie a couple of feet of thick colorful yarn to a large favorite toy so that the baby, with one tug, could recuperate the toy. For another baby, this problem could involve three long, thin strings stretched out close to one another in front of the baby. Only one of the strings was attached to a toy. For a third baby, this three-strong problem was made more attractive by setting the far string ends on top of three upturned colorful orange-juice cans. Under these conditions, the string to which the lure is attached is more clearly visible, since the toy itself rests on a can top. This last variant could induce a baby to find the toy more easily if the multiple-string problem were still difficult for him. This variant incidentally, was devised by a teacher who learned the basic curriculum well. Her ingenious variations provided tiny steps up and steps down that closely matched the task level to the child's ability and willingness, increasing the child's chances for successful problem solutions.

The Use of Praise

Another important aspect of learning games was the use of positive reinforcement to reward babies for trying, or for persevering at, slightly difficult or new tasks. The infant caregiver used body caresses, smiles, handclaps, verbal cheering on, and occasional whirl-around-hugs to express her pleasure at infant accomplishment of many kinds.

Happy Endings for Learning Games

Caregivers were taught to end learning games on a nondiscouraging note whenever possible. For example, a baby could be having trouble with the two-string problem, only solving it occasionally. The teacher was encouraged to end the game with a couple of one-string presentations so that the fatigued infant could enjoy some successes and his caregiver's appreciation of them before the game ended.

Games with Multiple Purposes

Because the Infant-Fold curriculum was so flexible and individually

tailored to the teacher's discretion and infant's needs, many activities occurred spontaneously and served several curricular goals. For example, a corridor of sorts was able to be set up within the large infant classroom by placing some three-foot-high divider screens in a line parallel to one wall and about four feet from the wall. Infants enjoyed a "run-run-run" game with their caregiver in this corridor. She sometimes popped behind one of the screens and poked out her head at the side. Then she called "peek-a-boo Jimmy!" before ducking back behind the screen. The infant, with peals of laughter, toddled to the screen and peered around to find his teacher. The screen and corridor provided opportunities for gestural imitation, large-muscle play, and object permanence games and for developing a joyous relationship between caregiver and child.

Relationship of Curriculum to Child Functioning

The Infant-Fold curriculum thus emerged as a function of the total environment of materials, people, and locale in which the babies were cared for. The curriculum promoted all aspects of the child's development. It consisted not only of more formal or staged games and activities, but also of all the incidental learning experiences that can occur in a varied environment with loving personnel.

THE TRANSITION GROUP

Babies from 15 to 18 months were in a special group with full-day care five days a week. They were offered an enriched and varied program of activities that went beyond the predominantly sensorimotor activities of the Infant-Fold. Infants who had only recently begun to develop skills in locomotion, self-feeding, or coping with large spatial areas and a great deal of freedom of choice developed assurance, experience, and competence to deal with the family style world of the older toddler.

FAMILY STYLE EDUCATION (MULTI-AGE DIFFERENTIATED ENVIRONMENT GROUPINGS)

The program for children 18 to 60 months old was somewhat akin to the British infant school in its philosophy and structure. This program was called Family Style, since children of varying ages were together daily as they would be in typical family settings. The children had freedom of access to many classrooms during their full-day's activities, and they had

freedom of choice in their selection of activities (Lally & Smith, 1974).

Two replicated modules of this Family Style structure existed. (One is illustrated in Figure 1.) In each module, four major environmental areas were offered to the children. One or two teachers offered their wares, their help, and their encouragement in each of the following areas.

1. Large-Muscle Area--Walkboards, large building blocks and cardboard boxes, slides, rocking boats, climbers, tumbling mats, and other such equipment encouraged the children to try activities involving larg-muscle and kinesthetic development. A housekeeping corner and dress-up corner invited children to carry out dramatic play and bodily expression.
2. Small-Muscle Area--Fine-motor coordination was encouraged by a plethora of materials (for example: pegboards, puzzles, and stringing beads) that invited practice of prehension skills. Many of these toys were made at the Children's Center. Often they consisted of items with which the toddler was already familiar at home. (For example, coffee cans that the child can fill with clothespins and bottle caps.)

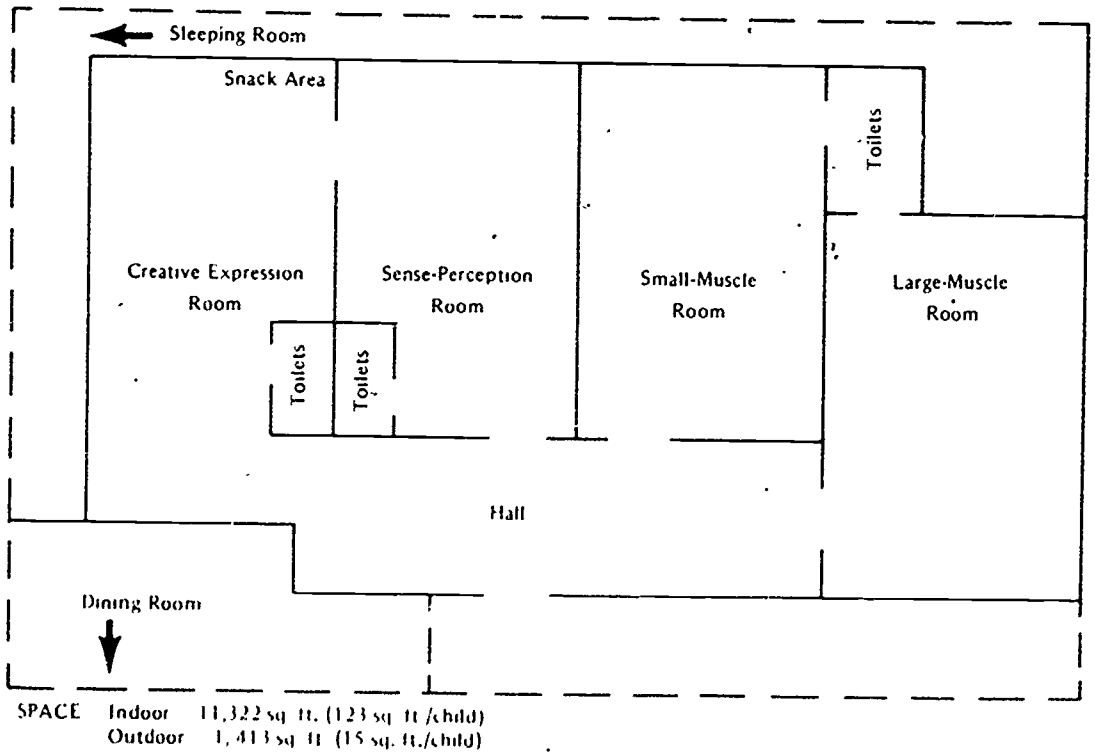


Figure 1 Family-Style Spatial Arrangements

3. Sense-Perception Area--In this area materials and opportunities were provided for sensory experiences. Pasted in a cluster on a cardboard were bumpy kidney beans to touch. Stitched onto a burlap wall-hanging was a puppy whose body was made of plush. Record players and rhythm and music instruments were available here. A reading corner had a comfortable couch and reachable shelves of attractive books. Taste sampling (for example, sweet honey, followed by sour lemon) and taste mixing (honey on lemon) were included in this area's ventures. Assorted gerbils, goldfish, and terraria were also available for sensory explorations--always, of course, with the teacher's gentle assistance.
4. Creative Expression and Snack Area--Furniture groupings permitted several subdivisions of this major area, so that painting easels, a table for clay-work or plastic arts, water-play tubs, sand or sawdust boxes, and a table set with mid-morning and mid-afternoon snacks were available choices for the children.

Additionally, the children had a large variety of wheeled toys and equipment in the large gymnasium that was used in inclement weather. Part of the gym served as a dormitory for the toddlers at nap-time. A large dining area comfortably accommodated the toddlers, who ate lunch family-style in groups with a teacher at each table.

Many educators have referred to educational arrangements similar to the one just described as unstructured. We felt that the Family Style setting was very structured, but that the structure was spatial rather than time-oriented.

The program structure and accompanying limits were defined mainly by the ares set aside for particular activities. Since concepts transcend rooms, concept links had to be made from one type of activity to another. Teachers would not, for example, initiate running games in the Sense-Perception room; but the concept of faster-slower could be used in all the rooms, the gymnasium, and the playground. One constant limit was that all materials were to stay in the appropriate room. At first the teachers had to repeat many times, "Where does the book belong, Dougie?" or "Does that play dough belong in here, Angie?" but the children learned the limits quickly. Soon the children, knowing that the materials were not to leave

the room, would drop the materials in the doorway. Finally, more and more items were returned to the shelves or tables where they had been found. The older children had a great influence on the younger ones and helped them to understand the limits. Sometimes an older child would help a younger one take a toy back to the appropriate room or would take it back himself. Often the older child would say, "No, no Billy, take the car back," or "Look what Sharon has in here." The defined space also sets the behavioral limitation of each room. If a child wanted to run and happened to be in the Creative Expression room, he would be given the choice of going to the Large-Muscle room to run or of staying in the Creative Expression room and doing some of the activities available there.

A second rule was that materials had to be cared for and respected. This meant that books could not be walked on, puzzle pieces could not be in the water-play tub, and dolls could not be banged with a hammer. These restrictions did not mean that materials were not to be used in novel ways. They simply meant that children were not allowed to destroy materials.

The family-style arrangement was selected as an alternate to teacher-centered and task-centered day-care programs. We thought that a sound day-care model would give the children access to room areas and interactions similar to those they had at home. We also thought that it would be easier to solve Hunt's "problem of the match" by providing children with many experiences from which they could choose, rather than by having a teacher choose experiences for the children. Most important, we believed that many day-care programs stressed cognitive skills with little regard for social skills. We felt that emphasis should be placed on giving very little children experiences and choices that would help them to develop a concern for their needs and rights in relation to the needs and rights of others. We wanted to accomplish this socialization in a way that would not curtail cognitive growth, but would actually enrich it. We hoped to provide a structure in which children could feel good about themselves and their actions--a structure in which they could enjoy themselves.

To allow movements and interactions that were similar to those found in the home, the program had to provide children with daily contacts with children of varying ages and allow them freedom of movement between rooms. We thought that these daily contacts and freedoms would increase the number and kind of socializing experiences a child could have each day. We thought

that by choosing whom and what to play with, the children would create situations in which they could learn to consider and respect the needs, rights, and responsibilities of others in relation to their own needs, rights, and responsibilities. These choices would also limit the number of power confrontations between teachers and children, thus making it easier for the children to feel good about themselves and to enjoy themselves. The overall structure and rules for governance of the program were based on the idea that children are human, and have rights as individuals as do adults. The curriculum reflected choice within the context of respect for the rights of others.

STAFF ROLES

ROLES FOR INFANT-FOLD TEACHERS

Teachers of younger infants performed the innumerable small daily nurturing and loving actions that build trust between infant and caregiver and make them comfortable with each other. Few of the Piagetian sensorimotor games or sound-and-word games that teachers tried seemed to work with new arrivals into the Infant-Fold; but once the basic caring relationship had been established, the babies became responsive to adult teaching, modeling, suggestions, and game offerings. Patience and persistence were the hallmark of the teacher who eventually got even a fairly inert and unresponsive baby to interact happily with the people, places, and toys in the nursery would.

Maintaining safety, health, and nutrition standards within an environment that also promoted trust and free choice by babies required a good deal of adult skill. Infant teachers were expected to embed learning and language encouragements within daily routines such as soothing, washing, diapering, dressing, and feeding infants. Crumbled hard-boiled egg yolk and grated raw apple on a high chair tray provided enticing motives for a ten-month old to practice pincer prehension skills. Table 1 contains the specific skills we encouraged in teachers of young infants.

ROLES FOR TODDLER-TEACHERS

Family-style grouping within differentiated activity areas encouraged (even demanded) the creativity and responsive ingenuity of each caregiver. Toddlers were free to involve themselves in activity areas and games of their own choosing.

TABLE 1 SPECIFIC SKILLS ASSESSED IN INFANT-FOLD CAREGIVERS

I. Facilitates Language Development

Elicits vocalization
Converses with child
Praises, encourages verbally
Offers help or solicitous remarks
Inquires of child or makes requests
Gives information or culture rules
Provides and labels sensory experience
Reads or shows pictures to child
Sings to or plays music for child

II. Social-Emotional: Positive

Smiles at child
Uses raised, loving, or reassuring tones
Provides physical, loving contact
Plays social games with child
Eye contact to draw child's attention

*III. Preferred Social-Emotional Negative Behaviors**

Frowns, restrains physically
Isolates child physically—behavior modification
Forbids, negative mands

*Inappropriate Social-Emotional Negative Behaviors**

Criticizes verbally, scolds, threatens
Ignores child when child shows need for attention
Punishes physically
Gives attention to negative behavior which should be ignored

IV. Piagetian Tasks

Object permanence
Means and ends
Imitation
Causality
Prehension (small-muscle skills)
Space
New Schemas

V. Caregiving: Child

Feeds
Diapers or toilets child
Dresses or undresses child
Washes or cleans child
Prepares child for sleep
Physically shepherds child
Eye checks on child's well being

VI. Caregiving: Environment

Prepares food
Tidies up room
Helps other caregiver(s)

VII. Physical Development

Provides kinesthetic stimulation
Provides large-muscle play

*Our teachers are instructed that all social-emotional negative behavior can be decreased by concentration on social-emotional positive behavior and by providing an interesting environment. Some behaviors under the category of "social-emotional negative behaviors" are preferred over others. Some are considered inappropriate

The teacher's role was to nurture a toddler's explorations and involvements with the physical world, self-help skills, budding sociabilities, and increasing responsiveness to and reliance on language. The teacher invited a child to grow in understanding and skills, but did not conceive of that growth within narrowly didactic or prescriptive confines.

By arranging experiences that would tempt the child's curiosity, the teacher encouraged the child to find out how the world worked. A teacher, for example, arranged a matching-forms learning experience by cutting square and round holes in plastic lids of empty coffee cans. Pegs of both shapes were set out invitingly next to the lidded cans. On their own, toddlers tried to fit the pegs to matching holes. The teacher helped only when necessary. When s/he did help, the teacher translated knowledge about relevant attributes to clear talk about the feel and look of a peg and a hole. S/he gave names to shapes and encouraged the child to try the feel-and-look technique. When finished, the baby could rattle the peg-filled cans in vigorous expression of pleasure of accomplishment.

But the arranging skills of caregivers do not just serve cognitive goals. The teacher also planned happy mealtime experiences and arranged a clothing locker to encourage self-help. To help a child identify a locker, the teacher might simply paste on it the child's photograph or a favorite picture. Thus, the children knew where to place belongings, and could retrieve a treasure from a coat pocket.

Another aspect of the teacher's role was to adapt learning experiences to the ability and interest of the toddler. If a commercially produced book was too long or complex to hold baby's attention, the teacher might create a three-to-five-page picture book, pasting single-subject pictures on construction paper.

The teacher's role involved a great deal of demonstration. Babies can learn by watching an adult demonstrate skills in personal interaction. For example, a teacher, seated on the floor, rolls a ball smoothly so that it lands between the spread legs of the child with whom she is playing this "roll the ball back and forth" game.

Modeling social skills--such as courtesy, patience, and willingness to help, to listen, and to show interest--was as important as demonstrating toys and puzzles.

Teachers primed themselves to make language an integral part of children's daily living. Squishing finger paints, licking buttered squash from a spoon, patting the gerbil's soft fur, noticing that a smaller cup fits into a larger--these are a few of the myriad child gestures and actions teachers used as cues to introduce words. Words were offered to enlighten; they also focused attention on events and feelings, making them more pleasurable.

During naptimes, teachers often created learning materials that were more appropriate or easier for a toddler than commercially produced toys. They cut up merchandise catalogues to prepare lotto games with household or clothing items of personal interest to young children. They sewed corduroy and plush animals onto burlap to create a wall hanging that delighted baby's hands as well as eyes.

Teachers maintained positive relationships with parents. Parents were made to feel welcome whether they visited toddlers at play or came in to share lunch with a toddler group. Teachers prepared a daily "Memo to Mommy" to be safety-pinned to each child's clothing. The memo might have contained an appreciation of Henrietta's new skill at stacking several small blocks to form a tower, a comment on her enjoyment of a new vegetable introduced at lunch that day, or her fondness for playing near or with a special friend, or even an appreciation of the fact that she spent the day without biting anyone!

To become more and more responsive in their teaching within the open classroom settings, caregivers were expected and helped to become better and better observers--of themselves and of infants. Noticing their own behaviors in relation to the given needs and interests of a particular child gave the teachers special insight into the appropriateness or inappropriateness of some habits. For example, a teacher not only needed to remember the rules governing the use of special materials and toys within each differentiated area, but also needed to learn to remind rather than to dictate if a toddler ran into the large-muscle room with a handful of clay from the expressive area. A teacher needed to notice whether s/he was moving too fast or too slowly in encouragement of autonomy and self-help as a particular baby grew older. Table 2 contains the specific skills we encouraged in teachers of children from 18 to 36 months of age. Please remember that these skills were integrated into the daily flow of our open setting.

TABLE 2 SPECIFIC SKILLS ASSESSED IN TODDLER-TEACHERS

I. Facilitates Language Development

Converses
Models language
Expands language
Praises, encourages
Offers help and solicitous remarks, or makes verbal promises
Inquires of child or makes request
Gives information
Gives culture rules
Labels sensory experiences
Reads or identifies pictures
Sings or plays music with child
Role-plays with child

II. Facilitates Development of Skills: Social-Personal

Promotes child-child play (cognitive and sensorimotor)
Gets social games going
Promotes self-help and social responsibility
Helps child recognize his own needs
Helps child delay gratification
Promotes persistence, attention span

Physical

Small-muscle, perceptual motor
Large muscle, kinesthesis

III. Facilitates Concept Development

Arranges learning of space and time
Arranges learning of seriation, categorization, and polar concepts
Arranges learning of number concepts
Arranges learning of physical causality

IV. Social-Emotional: Positive

Smiles at child
Uses raised, loving, or reassuring tones
Provides physical loving contact
Uses eye contact to draw child's attention

*V. Preferred Social Emotional Negative Behaviors**

Frowns, restrains physically
Isolates child physically—behavior modification
Forbids, negative mands

*Inappropriate Social-Emotional Negative Behaviors**

Criticizes verbally, scolds, threatens
Ignores child when child shows need for attention
Punishes physically
Gives attention to negative behavior that should be ignored

VI. Caregiving: Baby

Diapers, toilets, dresses, washes, cleans
Gives physical help, help to sleep, shepherds
Eye-checks on child's well being
Carries child

VII. Caregiving: Environment

Prepares and serves food
Tidies up room
Helps other caregiver(s)
Prepares activities, arranges environment to stimulate the child

VIII. Qualitative Categories

Encourages creative expression
Matches tempo and/or developmental level of child
Actively engages child's interest in activity or activity choice
Follows through on requests, promises, directions, discipline

*Our teachers are instructed that all social-emotional negative behavior can be decreased by concentration on social-emotional positive behavior and by providing an interesting environment. Some behaviors under the category of "social emotional negative behaviors" are preferred over others. Some are considered inappropriate

ROLES FOR HOME VISITORS

The role of the home visitor, or child development trainer (CDT), changed constantly, becoming more and more relevant as the program progressed. The longer a CDT worked with a family to share nutrition and child development information and activities, the more s/he became aware of the family's needs and problems. To help these problems the CDT needed further knowledge and training. The CDT's role expanded to include (1) referrals to legal and medical neighborhood services, (2) dissemination of sex education information, (3) sharing with families the numerous ways to discipline children, and (4) leadership of group meetings where mothers could learn about and discuss issues of interest to themselves.

CDTs did a great deal of liaison work with teachers. They eased misunderstandings that could arise over messed rompers or lost mittens. CDTs alerted teachers to situations at home that could change a child's sociableness or responsiveness to adult expectations and to newly introduced learning situations.

CDTs were data collectors. Week by week and month by month they kept track of the family's interest in, and involvement with, the target child. They also collected other data about the family, such as the members' interest in self-advancement and the decisions that benefited all members of the family.

CDTs, together with mothers, assumed active leadership roles in the parent workshops held every Friday morning at the Children's Center. The projects carried out included sewing clothes, making candles and cardboard furniture, and turning household cast-offs (such as orange-juice cans and egg cartons) into stacking and nesting toys and infant mobiles.

ADMINISTRATIVE AND RESEARCH ROLES

Administrative personnel were responsible for ensuring the effective delivery of services to babies and their families. This function involved close liaison with service staff. Some staff members carried out a variety of roles. For example, one master teacher in toddler classrooms was also responsible for coordinating the weekly meetings, reports, and in-service training of CDTs. She worked closely with the Principal and with another master teacher in in-service training of teachers. The project's bookkeeper and administrative assistant was also a toddler tester.

Testers needed to know not only standard psychometric tests, such as

the Cattell Infant Intelligence Scale and the Stanford-Binet, but also language and Piagetian task measures developed at the Children's Center to assess infant development more directly related to specific program efforts. Testers were expected to maximize the performance of all infants scheduled for assessments. Therefore, an experimental infant or a control infant might receive warming-up sessions that included much personal attention and might go back to the testing room several times before completing the battery of assessments.

Recruiters spent long hours doing the door-to-door convassing that was necessary for recruiting matched control families into the project.

Research staff members were variously responsible for gathering observational data and conducting interviews. They created and adapted tests to our uses, devised observational schemes and interview techniques and consulted frequently with out computer programmer. The Program Director was responsible for facilitating all of the above activities as well as participating in data evaluation and writing.

The Information Director was responsible for coordinating the activities and informational needs of the hundreds of persons who visited the Children's Center each year. She responded to the thousands of requests for information, article reprints, and unpublished assessment instruments that are directed to the project from all over the United States and from other nations.

Figures 2 & 3 adapted from Abt Associates (1971), illustrates how the Project Director and the Children's Center Principal spent their time.

ROLES OF OTHER STAFF MEMBERS

Every staff member was considered vital to the infant's world at the Children's Center. Bus drivers and riders, kitchen personnel, testers, pediatrician, and secretaries have all attended child development in-service training sessions. All contributed in unique and often delightful ways to give young children special experiences and special relationships. For example, our bus driver was responsible for compiling a list of sites for field trips; in his report he explained how each site might be used to give the children experiences that would relate to sensorimotor and pre-operational thinking.

The entire project staff was involved in several large, two-week training efforts with personnel from other states who wanted to start quality infant care programs and home visitation services in their communities.

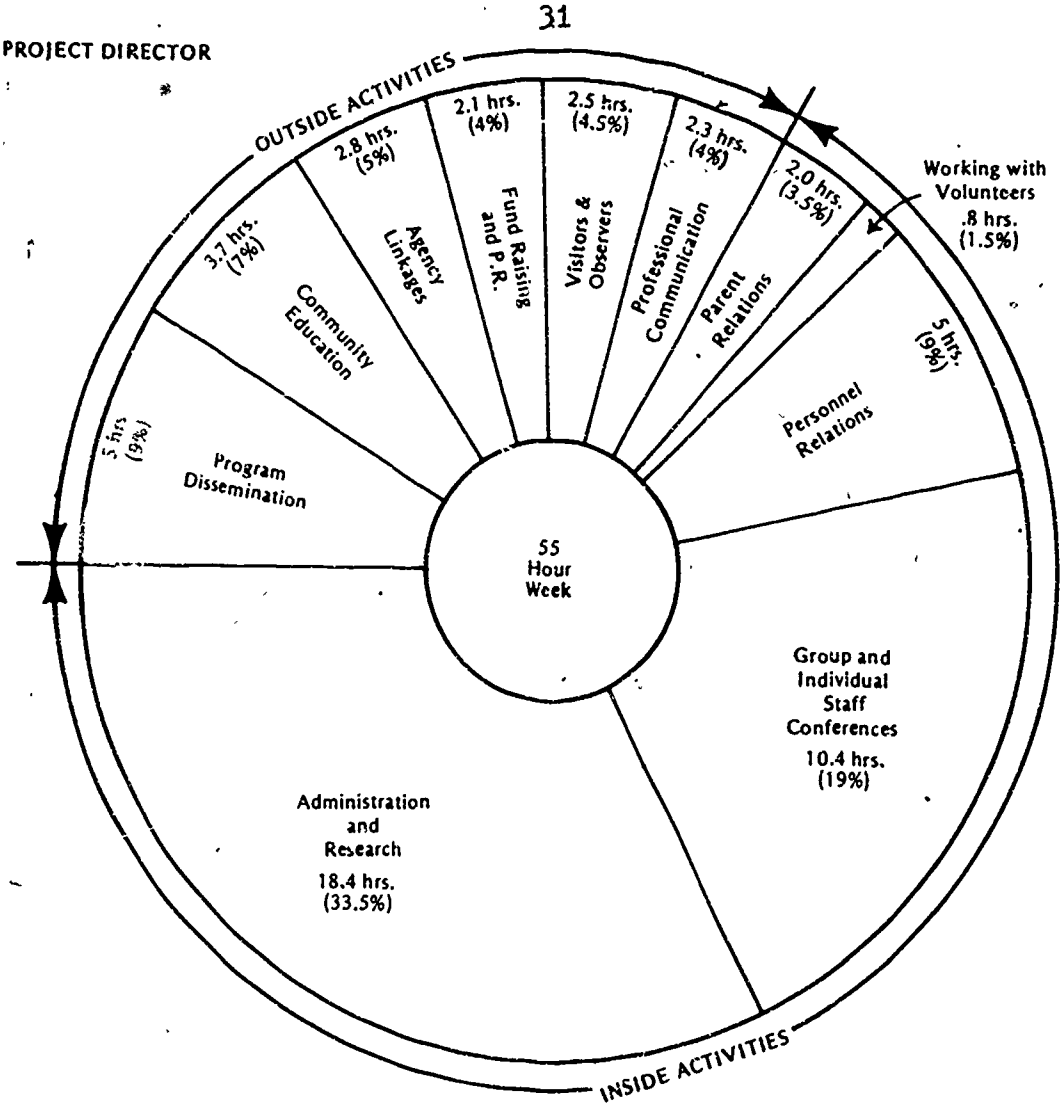


Figure 2 Time Expended on Various Activities by Project Director and by Children's Center Principal

PARENT ROLES

The parents' role in this project was complex. Parents participated in defining goals, providing experiences for their children, sharing information with other parents and community members, clarifying the roles of service staff, arranging parent seminars, and evaluating the program. The multifaceted role played by the parents was basic to our philosophy of operating in support of rather than as a substitute for parents. Parents were not forced to assume all or any of these functions. However, we have found that the longer parents stayed in the program the more active they became. We viewed parent involvement as crucial to the success of the project. Parents made important contributions to all aspects of program operation. As the project continued the role of parents expanded to include positive social action regarding their children's schools and their own community resources.

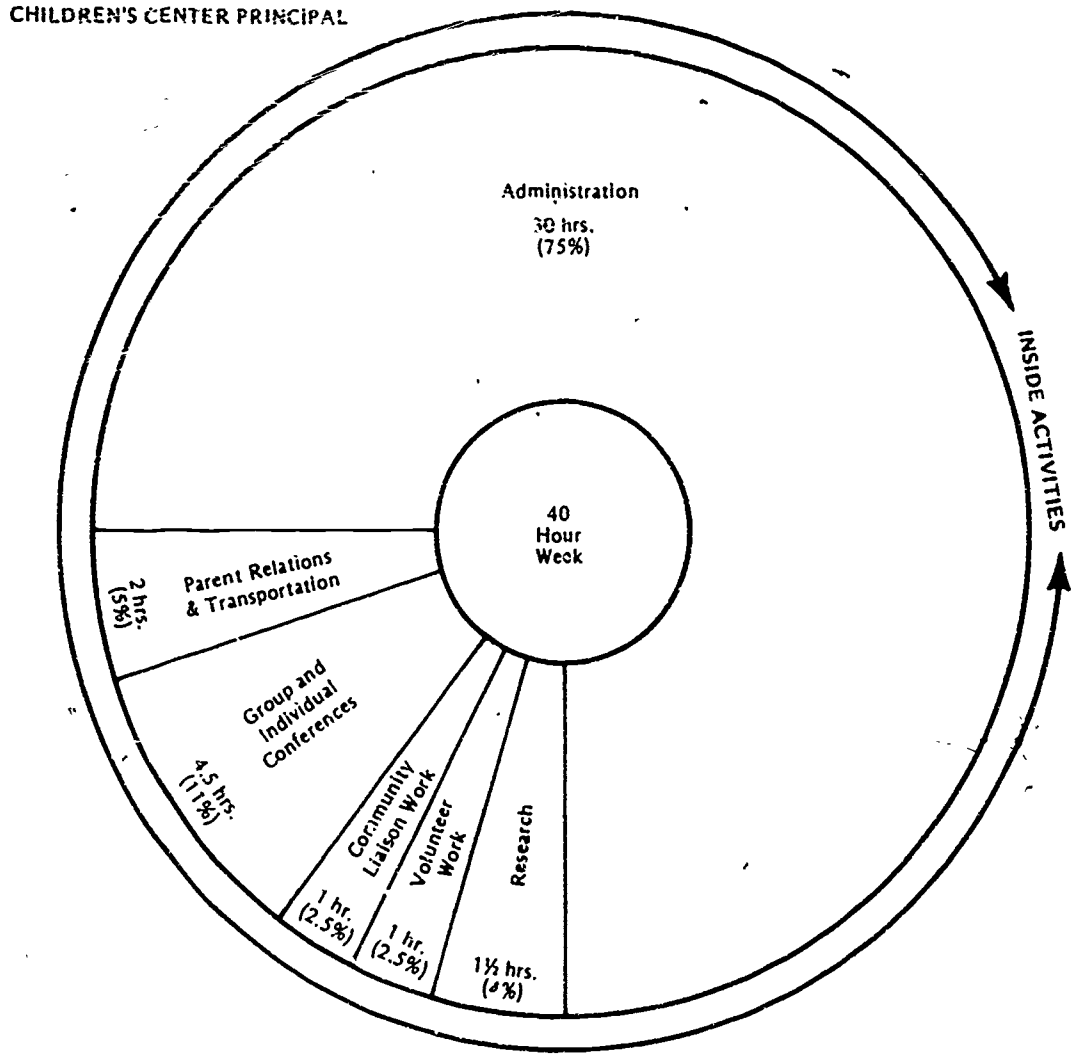


Figure 3

STAFF TRAINING

Both preservice and in-service staff training were important, integral components of theproject. All project staff, including researchers, teachers, CDTs, bus drivers, and food preparation personnel, actively participated in intensive two-week training sessions early every autumn. During the year, a variety of in-service training sessions were held on a regular basis with the entire staff and, more frequently, with special sub-groups such as the home visitors.

A variety of techniques for selecting and training paraprofessionals for many center positions havebeen developed and actively applied (Lally, Honig and Caldwell, 1973).

A TYPICAL AUTUMN TRAINING SESSION

In the intensive autumn training sessions, less emphasis was placed on long lectures and more on demonstrations, workshops, small-group discussions, and role-playing. Assigned reading materials have not proven too useful, but a large assortment of relevant materials as displayed throughout the sessions. and participants could browse during coffee breaks and between scheduled sessions. Table 3, adapted from the handbook (Honig & Lally, 1972) used in conducting some of the training sessions, suggests in outline form the broad range of theoretical and pragmatic topics covered during the training sessions. Major training topics in general included the following:

1. Information about How Babies and Young Children Develop. These sessions focused on personal-social, cognitive, sensorimotor, language, and familial aspects of cultural development. Films such as Caldwell's How Babies Learn were extensively used.
2. Eriksonian Concepts of the Development of Trust, Autonomy, and Initiative in Infancy and Toddlerhood. Emotional needs of babies were explained, and behavioral management of "problems" such as excessive irritability, food refusal, and short attention span were discussed.
3. Nutrition and Dietary Facts, Fictions, and Recommended Practices not only for Infants but also for Pregnant and Lactating Mothers. The setting up of family-style dining was explained. Safety and health standards and routines were carefully defined.
4. Demonstation and Explanation of Competencies that Reflect Piaget's Six Sensorimotor Stages as well as the Preoperational Stage of Infant Development. Ways were suggested for adults to facilitate and encourage infant exploration and learning in areas such as "object permanence" and "imitation of invisible unfamiliar gestures." Opportunities to practice Piagetian and language games with babies, who were invited to training sessions with their mothers, were provided. Trainees also role-played with each other to gain familiarity with task and toy presentation.
5. Sharpening Observation Skills and Attention to the Problem of the Match between Task Presentation and Infant Development.

TABLE 3 MAJOR TOPICS COVERED IN AUTUMN TWO-WEEK TRAINING SESSIONS

Developing a Healthy Personality

The importance of responsive feedback
Consistent care and the growth of trust
Teacher tempo and timing
What "No-No" means
The distraction technique
Needs for grasping and biting
Physical punishment and why not
Use of positive reinforcers
Independence and initiative
Ways to end learning games happily

Nutrition

Sucking
Solid foods appropriate for babies
Meals: A sociable time
Finger foods
What baby learns with feeding

Large-Muscle Skills

Description of motor skill development
Body games with babies
The inactive baby: do's and don'ts
Readiness for learning motor skills

Pick-up and Handling Skills

Description of infant small-muscle development
Small-muscle toys and games: what they are and how to make them
Finger games for finger control

Sense Experiences

Ways in which babies experience the world
Sensory stimulation: dosage cautions
Sensations and body feelings
Taking advantage of daily routines to provide sense experiences

Understanding Piaget

The sensorimotor period: 0–2 years
Concrete operations period: 2–11 years
Diagnosis: how a caregiver learns to make good "matches"
Discovery games
Trainees make-up Piagetian games

Infant Language

How vocalizing and talking develop
Words as tools to make things happen
Varieties in adult voice and tone
Tape recorder use
Making sounds and music: songs to sing
Appropriate action words, quality words, and when-where-how-why words
Name games
How to promote interest and joy in books
Making books for babies
Role-playing reading skills

Use of Living Spaces

Feeding space; toileting space; storage space
Places for play; places for privacy; book places
Wall decor; mirrors
Rug- and furniture-defined activity areas
Taking advantage of building and room features for adventures
A place for sick babies; sleep spaces
A space for living and growing creatures
Outdoor worlds to explore

Assorted Extra Topics for Teachers

Who does what?
How are young infants assigned to caregivers?
Who keeps records? What kinds of records need to be kept?
Caregiver clothing
How do we communicate with parents?
Whom does a caregiver see when she has a problem?
Beginnings and endings of days, bus experience

Assorted Extra Topics for Home Visitors

Pregnancy, lactation, and nursing
Dietary considerations for mothers and children
How to work in the home when many children are around
Making toys with mothers
Sex education and resources
Community resources a family can use

Adapted from Honig and Lally (1972)

During and following role-playing sessions and practice with invited infants, ways of reorienting non-attentive babies were suggested and demonstrated. Trainees were encouraged to comment on and question their own and each other's activities in an informal manner. Is X's approach able to arouse and hold the baby's interest? Does Y modify a task that seems too difficult by using a more attractive toy or by simplifying the requirements of the game? For example, if one baby did not attempt prehension of a toy held (a) about a foot away from him, (b) near the midline of his body, and (c) not in the same visual field as his hands, the trainee was encouraged to try spatial variants of toy presentation so that reaching and grasping could be elicited from the infant. Suggestions offered by the teachers to one another as they work with an infant provided evidence of their increasing sensitization to child behavior, attention span, and fatigue level.

6. Sensory Experiences and Toys. Teachers were themselves introduced to a variety of experiences of smelling, feeling, hearing, and looking. Cut grapefruits, vanilla extract, burlap and velvet cloths, and other items were used to awaken the trainees to the world of sensory experiences.

The sensory development of infants was discussed in terms of appropriate tasks and stimulation that could be devised for encouraging learning and differentiation within each system. In connection with auditory stimulation, sound toys such as assorted bells, music boxes, xylophones, and chime toys were provided. Some toys were made in afternoon sessions. Tactual-kinesthetic material was designed by the teachers using carved styrofoam, old mink collars, nylon net, and other materials. Afternoon toy-making sessions for trainees provided an opportunity to carry out ideas culled from or engendered by morning sessions. Emphasis in toymaking was on the responsive toy, just as emphasis in teaching Piagetian skills was on the responsive adult. For example, small macaroni were colored with nontoxic colors and enclosed in clear plastic jars that produce interesting noises when shaken.

The use of a tape recorder was demonstrated. Teachers learned to record so that they could tape various sounds, including the child's own vocalizations, and play them for the children.

7. Physical Development and Exercises for Infants. Contractions and stretches of muscles, rocking-on-stomach games, pull-ups from supine position, bouncing to rhythms or to music, and other body games that helped develop an infant's muscular strength and coordination were demonstrated.

8. Language and Reading Skills. Language was stressed as an important component of adult responsivity to infant and toddler actions. Relevant verbal signals and labels for objects, persons, actions, feelings, and physical or aesthetic qualities were suggested. For example: "Jamey is pouring the sawdust," "Sally looks so happy today," "Do you want more juice, James Jo?"

   With younger babies, practice was given in eliciting vocalizing and keeping babbling "conversations" going.

   Reading to babies with appropriate intonations and gestures was demonstrated. In workshops, trainees learned how to choose suitable magazine pictures and create construction-paper-and yarn books on a variety of topics. The staff was also familiarized with commercially available books of interest to babies.

9. Ecology of the Classroom and Home as an Incentive to Infant Learning and Development. CDTs were encouraged to think about such areas as kitchen baseboard cupboards with their nestable, bangable pots and pans. Family-style teachers spent time thinking about and arranging the differentiated open-classroom areas so that each area, with its equipment, wall, and furniture arrangements, best reflected the experiences and skills infants could gain there.

10. Interpersonal Relations. Role-playing and discussions were used to clarify teacher-parent and CDT-parent interactions. The fostering of techniques to promote good interpersonal relations was explored. Teachers learned, for example, to share and switch housekeeping and child-care tasks. CDTs learned, for example, to focus home visits on the mother as the important and primary person for teaching rather than on the baby, who might be more responsive. Researchers learned to arrange informal luncheon get-togethers with teaching and testing staff.

11. Creation of Learning Games. Teachers and CDTs were given a number of assignments such as, "Create a causality game for a child 15 months of age." They were asked to give the purpose, materials

used, and method of presentation. Then they were asked to modify the game for younger and older children and to demonstrate their game to other teachers.

12. Topics Often Forgotten. We found that many details of day-to-day operations needed to be considered in training sessions. Questions such as, "What are the caregivers' rights and responsibilities with regard to visitors?" "Who keeps records?" "What kind of records need to be kept?" and "How are babies assigned to a caregiver?" were discussed with the staff.

In general, staff training emphasized the non-fragmented nature of children's experiences and learnings. A teacher covered slippery ice cubes with a wash cloth, broke them into small ice-chips with a hammer, and talked about what she was doing. Toddlers, clustered animatedly around her, tasted and felt and explored the ice-chips. They learned words like "cold." They observed causal relationships between the teacher's actions and the resultant slippery bits of ice.

During the intensive annual in-service training period, we found it useful to provide daily diaries for trainees. Their records and comments about what they learned, their criticisms, puzzlements and summaries of the material presented, helped us to provide better training. These diaries ultimately served as a personal resource and refresher book for the caregiver on the job.

TESTER TRAIN

Infant and toddler assessments were usually taught to testers over several weeks of intensive training and practice. This length of time ensured the high level of interobserver and interscorer reliabilities required, for example, for the Piagetian and early language instruments used.

IN-SERVICE TRAINING

Research Staff. Researchers, testers, and administrators met together on a weekly basis. Information-sharing, problem-sharing and setting work priorities were major topics of discussion. The research staff also read and discussed on a bi-monthly basis, articles that were relevant to the ongoing research concerns of the project. Articles by Campbell and Stanley (1960), by Jean Piaget (1972), and by Bettye Caldwell (1971) were among those that were discussed.

Teachers. Teachers met with the Principal and supervisors almost every day for some kind of training session during toddler nap times. The topics were practical and crucial. For example, one topic discussed was how to improve communications with parents who telephoned a request, demand, or complaint to a teacher.

Workshop sessions, also held during nap times, allowed teachers to develop their own games and toys to help particular children in particular kinds of learning situations. One teacher was dissatisfied with the complexity of a commercial shoe-lacing toy, which was too frustrating for her toddlers. She designed a square board with large screw-in eyelets at each corner for toddlers to practice threading shoe laces. One teacher built a low basketball post and hoop outdoors for his toddlers.

Teachers sometimes met with researchers in order to learn and carry out evaluation procedures. The invaluable cumulative first-hand observations of each child by his teachers were utilized in a variety of rating and ranking measures with particular focus on social-personal development.

Teachers from time to time requested special in-service training topics, such as how to handle discipline problems, child biting, or particular developmental difficulties. Often teachers gave helpful suggestions to each other. One youngster's eye-and-hand coordination was causing his teacher concern. His pick-up skills were much improved when another teacher suggested that he be given a daily snack of breakfast cereal bits to pick up from a high-chair tray.

Food Service Personnel. The nutrition supervisor worked closely all through the year with food personnel to plan appetizing and healthy meals and snacks for babies and toddlers. The variety of textures and tastes and the range of foods sampled with relish by the babies were extraordinarily diverse. Cultural preference and diet specialties were also taken into consideration by the nutritionist in consultation with parents and CDTs.

Home Visitors. The home visitors, or CDTs, met weekly to share their experiences and know-how and to learn to provide more effective services to families. For example, as babies grew older, CDTs learned an ever increasing repertoire of activities with which mothers could engage their infants' interests and understandings. At first, activities and materials (referred to in the Content sections) were mimeographed for CDTs

to share with families. CDTs, however, continued to grow with the families they served and, as they saw gaps in their own training, they requested further materials and special assistance. How does one apply artificial respiration? What are the facts about early sexual development and preschool interests in sexuality? During weekly in-service training sessions CDTs developed toy-and book-lending kits to share with families who needed such materials.

In-service activities included monthly visits of CDTs to teachers of Children's Center graduates who were attending the Syracuse University Early Childhood Education Center's open education program. The CDTs shared their knowledge of the children's home circumstances with the teachers, since that factor affected the pre-schoolers' classroom functioning. In turn, teachers shared their knowledge of the youngsters' classroom functioning with CDTs who were working with the families.

CDTs were given in-service training in group techniques. A few years after the project began we were able to use Earladeen Badger's (1972) videotapes of her work with groups of low-income mothers of infants. These provided a rich source of ideas for working with mothers in small groups as well as during home visits. Small-group topics included sex education, legal problems, group trips, Women's Liberation, sorting and seriation activities for young children, and children's literature.

DELIVERY SYSTEMS

Dissemination of the philosophy, program practices, and training procedures of the Family Development Research Program has been extensive at the university, community, and national levels. In addition, expertise gained with infants during the operation of the program has been used actively to promote research and program management practices in infant development in collaboration with other child development specialists.

Training. Infant Caregiving: A Design for Training (Honig and Lally, 1972) is an easy-to-use guide for preservice or in-service training of caregivers to children under three years of age.

Guidelines for training of child care personnel, including paraprofessionals, have been presented in a variety of articles. Examples include: Honig, 1976a, 1976b, 1977b, 1977c; Lally, 1971b, 1976; and Lally, Honig and Caldwell, 1973.

Summaries and trainees' commentaries describing and critiquing their

daily lectures and workshops during in-service training sessions are available in packets. These packets represent a summary of content plus the trainee's responses to project training efforts. Their dissemination has been primarily to trainees and to project staff. Feedback from these summaries has been exceedingly valuable in improving project training and dissemination activities.

Materials for working with parents have been created (Honig 1975b, 1976c) and for working with teenage parents specifically (Honig 1976c).

Assessment Instruments. Mimeograph copies of infant, parent, and teacher assessment measures developed in the project or revised for use in the project were disseminated widely, and several are presently available through the ERIC retrieval systems for Early Childhood Education and the Disadvantaged Child, Research for Better Schools, and the Educational Testing Service. The Adult Behaviors in Caregiving (ABC) checklists which assess caregiver behaviors have been disseminated in articles (Honig & Lally, 1973a, 1974, 1975a, 1975b). An abstract of initial findings at 12 months with the Piagetian Infancy Scales was published by the Consortium on Early Childbearing and Childrearing (Honig & Brill, 1972, pp. 150-51). A final report of findings at 12 months is also available (Honig, 1975c). Research using our APPROACH technique has been summarized in Honig & Caldwell, 1974.

Curriculum. The curriculum has been elaborated in several Progress Reports, particularly Lally (1971a), in Honig 1974 and 1977a, Lally, Honig, Wright, Smith, Tannenbaum & Dibble (1970) and Lally & Smith (1974).

Nutrition. Extensive descriptions and analyses of the nutrition and diet information collected from project families are available in Dibble and Lally (1973) and Maurelli and Lally (1972).

Health. In an interesting collaboration between the project and Upstate Medical Center, the family Development Research Program trained pediatric residents in the area of child development. In return, the residents supplied free pediatric services to the families of the Family Development Research Program.

Project Description, Research Design. Progress Reports and Narrative Descriptions submitted by the Project Director to the Office of Child Development have delineated the design strategies and ongoing characteristics of project functions and findings. Abt Associates (1971) has published an extensive case study of the program. A series of filmstrips on early learning has been produced as a result of project experiences (Honig & Lally, 1973b). In addition, experiences with many kinds of problems that arise in the course of conducting infant and family intervention research

have resulted in a publication designed to clarify strategies and decision-making in such a project (Honig, 1972).

Visitation of the Center and Dissemination of Materials. Our Information Director was responsible for arranging visits to the center, escorting visitors, and responding to all requests for materials and information about the project. People from as far as Australia, Russia, and Africa have come to the center for information about designing and implementing day-care services for infants and their families. From 1970 to the present, approximately 5,500 people have come to the Family Development Research Program for assistance and information.

EVALUATION

A longitudinal comparison study was instituted when program children reached their 36th month of life. At that time the families of program children were matched to control families on a number of variables. These matched pairs were compared when the target child was 36, 48 and 60 months and 72 months of age on various measures.

Because randomization of subjects to treatment and contrast groups was impossible at the beginning of this study, careful matching procedures were instituted to help alleviate some of the design problems, especially those dealing with internal validity. The longitudinal sample was divided into two groups. The major group was called the X group. Children in the X group and their matches in the second group called the Y group come from a population which has been carefully selected. This selection minimizes somewhat the dissemination of results to a broader population, but increases the probability that differences among groups will be due to program rather than to uncontrolled variables. This sample included only families with first or second born children or families expecting their first or second child. This sample was selected for it was felt that these families would be more amenable to parent education because their child-rearing patterns had not yet been fully established, and they could more easily cope with a home visit program if they did not have a number of children requiring attention and care.

All the newly selected families and their matches, (X and Y groups), fit the following definition of disadvantaged at the birth of the child:

1. family income of $5,000 or less
2. mother with less than a high school education
3. mother with no work history or an unskilled or semi-skilled work history
4. father with high school education or less if he is living in the home

Within the broad definitions of the population of the X and Y groups, matches were made.

1. maternal age--matched in four groups

   10-14 | 15-17 | 18-20 | 20→

2. sex of child
3. race of child
4. birth order--two groups

   first born | not first born

5. age of the child
   a) at testing points + or - 2 weeks
   b) age of match within 6 months of the target child
6. marital status at birth of the child

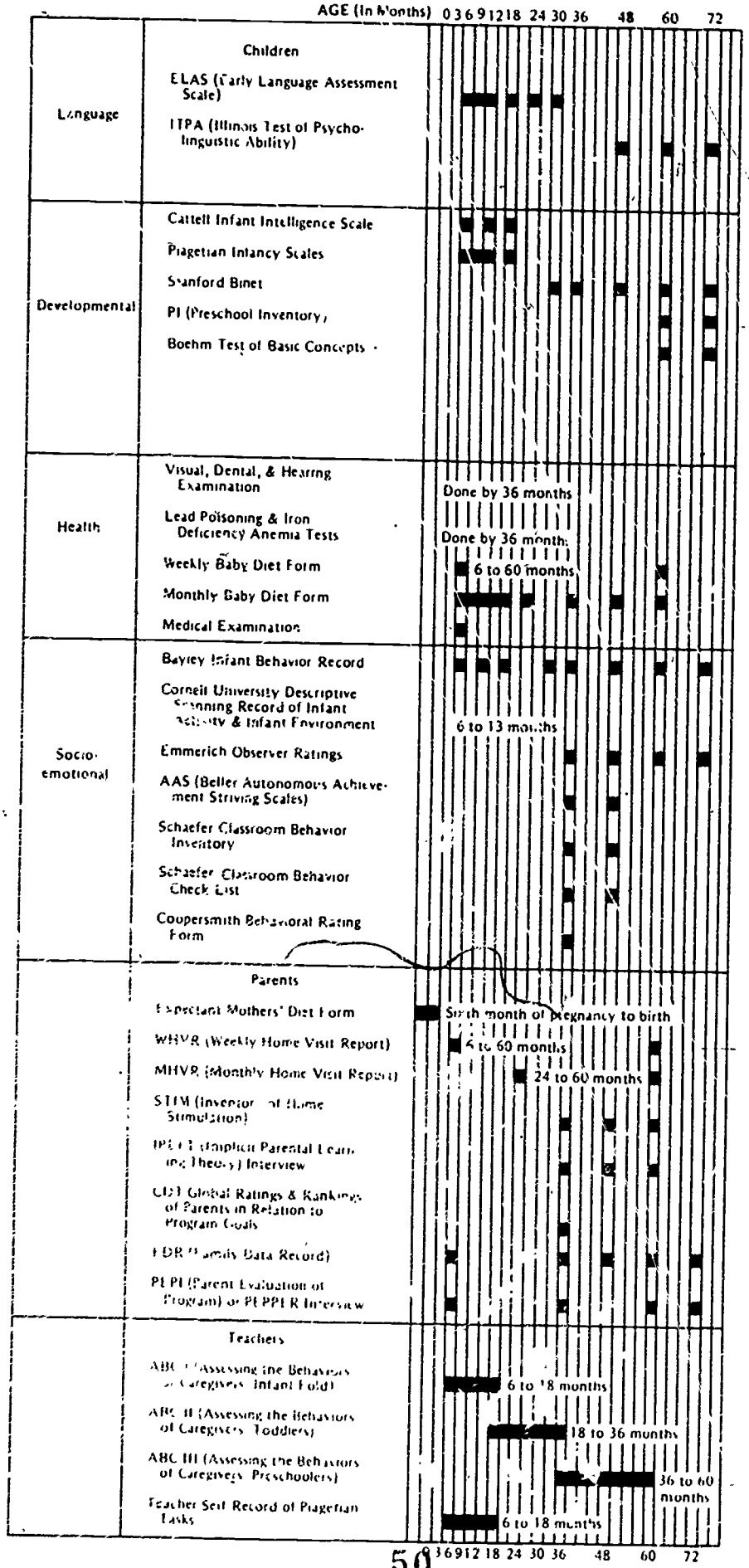
In addition to longitudinal comparisons at the four points mentioned above, some cross-sectional data was collected. Any data discussed in the report comparing X group children with other children before their thirty-sixth month of life is cross-sectional data. The same matching procedures were used for the early data but the analyses were separate one from another. You will notice small N studies before 36 months of age. Remember the X group children are the same as those studied at later ages but none of the control children before 36 months are part of the longitudinal study. Other studies, the Emmerich study and the ABC study, also use controls that were not part of the longitudinal control group. This is because it was essential to compare the X group with children of particular school experiences that many of our longitudinal controls did not have. These groups will be discussed when the ABC and Emmerich data are presented.

The format for this section is simple. Results will be presented to reflect program evaluation in the four major areas of study:

1. Evaluation of Children
2. Parent Evaluation of Program
3. Evaluation of Parents
4. Evaluation of Teachers

Table 4 shows the measures used in the evaluation.

TABLE 4 SCHEDULE OF PROJECT ASSESSMENTS



EVALUATION OF CHILDREN

Since the effectiveness of much of the home-visiting-plus-center program must ultimately be reflected in the progress of the children themselves, much of our evaluation effort has concentrated on the child.

Developmental and Language Measures. The Cattell Infant Intelligence Scale was administered to infants under 24 months, and the Stanford-Binet was administered thereafter. At six months, Cattell IQ scores of 40 infants whose families had participated in the perinatal home visiting program for 9 months were significantly superior (mean IQ = 113.5) to scores of 46 infants whose families had no program (mean IQ = 101) prior to Center entry at 6 months. However, these gains were no longer in evidence by 12 months of age.

At 12 & 18 months of age a cross sectional comparison of Center Children with control groups of infants from low education and high education families showed little difference in score among the three different groups. Table 5 presents these Cattell comparisons.

Table 5: Cattell Mean IQ Scores for Center, Low Education Control & High Education Contrast Children

Age	12 Months			18 Months		
Group	Center	Low Ed.	High Ed.	Center	Low Ed.	High Ed.
IQ Score	107.18	105.89	107.49	114.68	112.22	115.46
Number	100	66	39	100	60	30

The Early Language Assessment Scale (ELAS) (Honig and Caldwell, 1966) has been used repeatedly from 6 to 30 months, both to monitor the development of an infant's decoding and communication skills and to provide feedback data to teachers on areas of language development that needed increased curricular emphasis or increased ingenuity in programming. ELAS data have also served as a reassurance for teachers who were overly concerned about a lag in language production by particular infants. The infants' ELAS responses might reveal that language comprehension, the precursor to communication, was well developed, and thatgestural responses to language requests were well established.

A variety of Piagetian scales (Honig and Lally, 1970) were administered

periodically between 6 and 18 months. The sensorimotor areas of competence sampled were object permanence, means-ends relation. causality, understanding of spatial relations, new schemas with objects, vocal and gestural imitations, and visual-prehension coordinations. Center infants accomplish these tasks as well as home-reared middle-class infants. Analysis to date suggests that 12 month old center infants tended to perform significantly better than low-income control infants on the object permanence tasks (Honig, 1974). The Piagetian data provided valuable feedback for Infant-Fold teachers. Teachers tried to arrange environmental and interpersonal events so that infants could acquire sensorimotor competencies through active exploration on their own and through personal interactions.

We continued over time to look at the IQ scores of Center children, both to detect areas where our program needed strengthening with respect to particular children and to compare Center children with low-education control children. At thirty-six months of age a longitudinal control group was established for the duration of the program. The control children were carefully matched in pairs with Center children with respect to sex, ethnicity, birth ordinality, age, family income, family marital status, maternal age, and maternal education status at time of the infant's birth. None of the mothers had a high school diploma at the time of birth of the child tested. Figure 4 demonstrates clearly that at 36 months the Center children were performing quite satisfactorily in comparison to low-education controls. The low-education controls very closely approximated the normal distribution. Their mean and median IQ scores fell in the 90-109 range and represented a significant difference in score from the mean of the low-education experimental group. This finding is especially important in the light of Jensen's (1969) threshold hypothesis that early intervention will do little to change IQ scores of children who are not functioning at an extremely low cognitive level.

Only 7.5 percent of the Center children fell below the average range of intelligence, and 50 percent scored at 110 IQ or better. These data were particularly interesting baseline data, for one expected that controls would move downward toward 80 IQ (Hawkridge, Campeau, Chalupsky, and Dewitt, 1968) as the children grew older.

The high-education longitudinal contrast group had a mean and median IQ score in the 120-129 range, and the children scored significantly higher

E = Experimental Group
N = 81

L = Low-education Control
N = 68

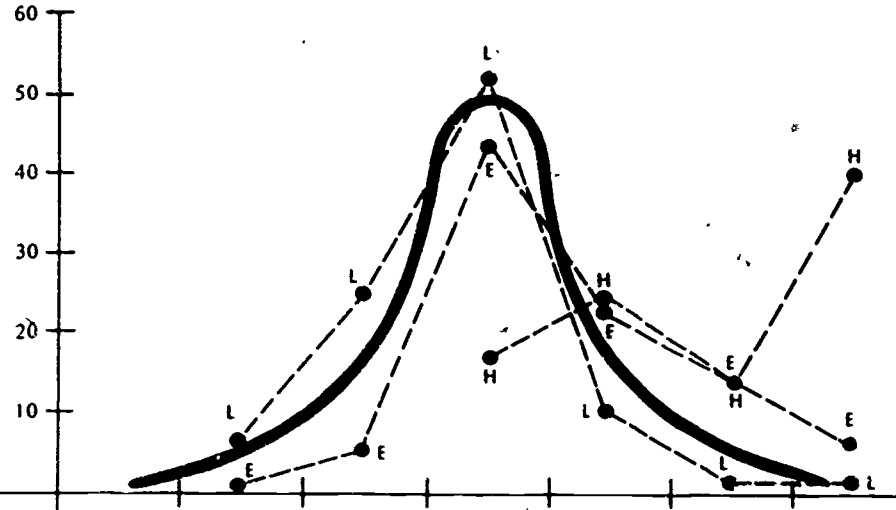
H = High-education Contrast
N = 47

Percent Within the Average Range of Intelligence or Above

E Group = 92.5%

L Group = 66.2%

H Group = 100.0%



IQ Distribution Range	69	70-79	80-89	90-109 Avg. Range	110-119	120-129	130
Percent Within Normal Distribution*	2.2%	6.7%	16.1%	50.0%	16.1%	6.7%	2.2%
Experimental Group Percent Within Distribution	0.0%	1.2%	6.3%	42.5%	22.5%†	20.0%	7.5%
Low-education Controls—Percent Within Distribution	0.0%	7.4%	26.5%	52.9%†	10.3%	1.5%	1.5%
High-education Contrasts—Percent Within Distribution	0.0%	0.0%	0.0%	15.6%	24.4%	20.0%†	40.0%

*1960 Normative Distribution of the Stanford-Binet.
†Range in which the median and mean scores for the different treatment groups is found.

Figure 4 A 36-month-old Stanford Binet IQ Distribution Comparison for Experimental Children and Their Controls and Contrasts

than low-education control and experimental children. The high-education control group was tested at matched ages with Center children. Each family was an intact two-parent family with one spouse having at least a four-year college degree and the other at least two years of college.

Binet comparisons among the three groups continued throughout the life of the program. Table 6 shows longitudinal data on the groups from 36 months (the beginning of longitudinal comparisons) to 72 months, (an age some children still haven't reached) or reached after June of 1976 when data collection ceased.

Table 6: One Way Analysis of Variance Comparing the Stanford-Binet Means of Center, Control & Contrast Children

	36 Months				48 Months			
Group	N	$\bar{x}$	SD	F Ratio	N	$\bar{x}$	SD	F Ratio
Children's Center	81	110.33	13.78	Center & Low Ed. 41.54*	75	109.97	10.67	Center & Low Ed. 21.73*
Low Ed. Controls	68	96.59	11.89	High Ed. & Center 32.69*	71	100.77	13.11	High Ed. & Center 108.24*
High Ed. Controls	47	125.87	16.45	High Ed. & Low Ed. 122.78*	43	136.05	16.54	High Ed. & Low Ed. 158.64*

	60 Months				72 Months			
	N	$\bar{x}$	SD	F Ratio	N	$\bar{x}$	SD	F Ratio
Children's Center	64	106.59	12.39	Center & Low Ed. 2.55	38	109.05	12.84	Center & Low Ed. 1.10
Low Ed. Controls	52	102.63	14.34	High Ed. & Center 121.03*	15	105.07	11.40	
High Ed. Controls	30	138.26	14.26	High Ed. & Low Ed. 117.97*				

* $p < .001$

Differences in IQ were found between the Children's Center children and their low education controls at 36 and 48 months. The thirty-six month test was seen as partial validation of the success of the first three years of the program. Remember that few differences were found on the infant tests among any of the three groups. Figures 5 & 6 contain similar information to Figure 4 for children tested at 48 and 60 months of age. Note that at 48 and 60 months the Center had respectively only 1.3 percent and 7.9 percent of its children in the below average ranges as compared with 21.7 percent and 20.8 percent for the low education controls. It was felt that the differences uncovered at thirty-six months would increase as program continued. This, in fact, did not occur. Low education control and high education contrast mean scores got better every year while Children's Center scores remained relatively unchanged. Because this trend was in the opposite direction to predictions about low education populations (Hawkridge, Campeau, Chalupsky, and Dewitt, 1968) a trend analysis was run to determine the effects of differential attrition on the mean scores of the Center & low education groups for the Stanford Binet & the Illinois Test of Psycholinguistic Ability. The results of that analysis indicated similar attrition patterns in the control and experimental groups. Therefore one sub hypothesis generated to explain the increase in low education scoring (that over time low scoring low education controls dropped from the program and high scoring controls remained) was rejected.

Other Cognitive Data

The Illinois Test of Psycholinguistic Abilities was administered when children were 48, 60 and 72 months old. Tables 7, 8, & 9 contain the data used to compare the three groups in the area of language.

At 48 months 72 Center children, 70 low-ed controls and 39 high-ed contrast children were administered the ITPA. Table 7 contains the mean age scores, the scaled scores, the raw scores and the tests for significance among the groups. Center children performed at psycholinguistic age norms (4-0) or better on all subtests administered. Significant differences were found between the Center children and their low education controls on the 7 subtests administered. The only subtest where there was not a great difference was Grammatic Closure. As stated in earlier reports, grammar was not emphasized as part of the curriculum in the family-style classrooms, and we did not expect that there would be a difference on that subtest. The high-education contrast group performed significantly better than Center

E = Experimental Group
N = 75

L = Low-education Control
N = 71

H = High-education Contrast
N = 43

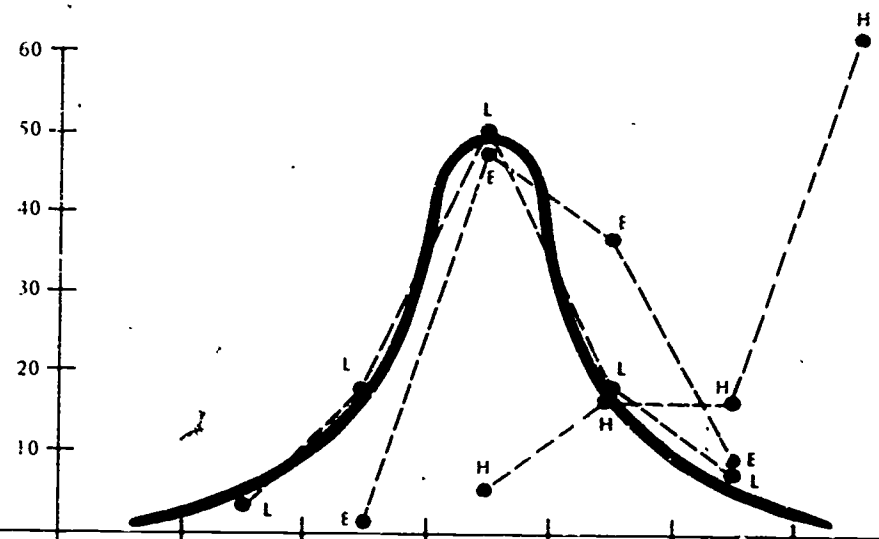
Percent Within the Average Range of Intelligence or Above

E Group = 98.7%

L Group = 78.3%

H Group = 100.0%

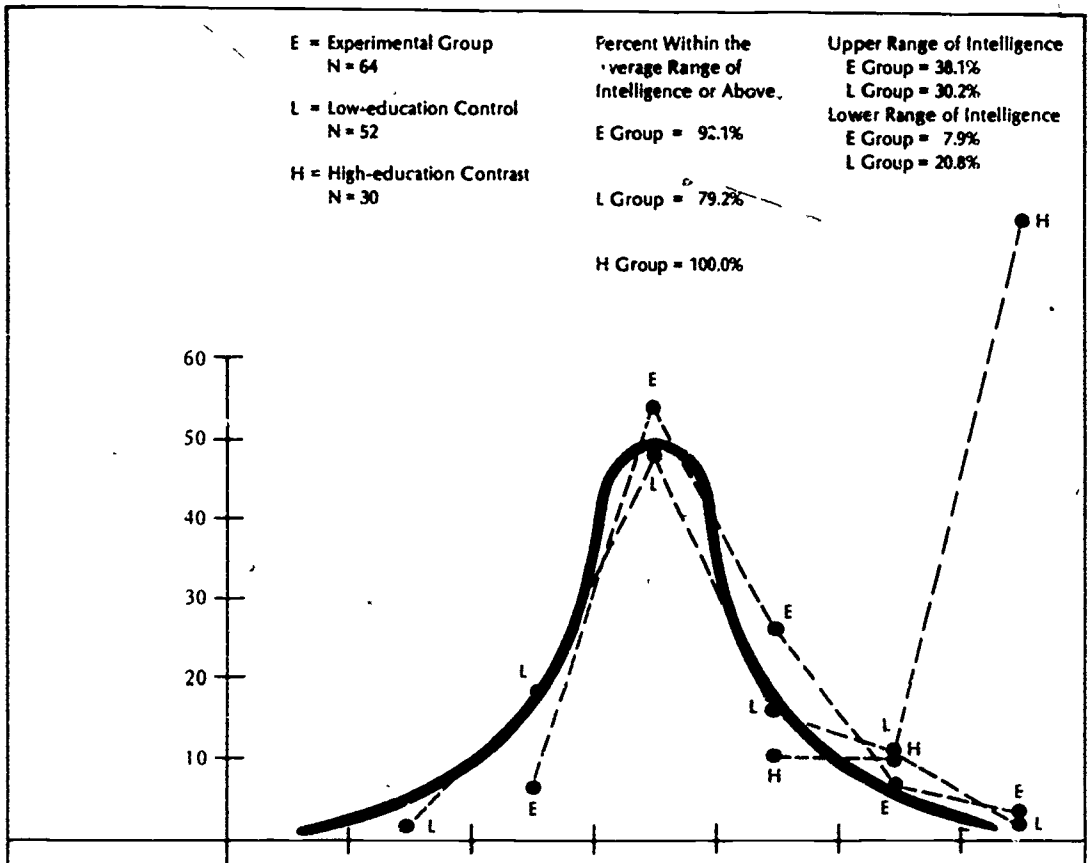
Upper Range of Intelligence
E Group = 49.9%
L Group = 27.5%
Lower Range of Intelligence
E Group = 1.3%
L Group = 21.7%



IQ Distribution Range	69	70-79	80-89	90-109 Avg. Range	110-119	120-129	130
Percent Within Normal Distribution*	2.2%	6.7%	16.1%	50.0%	16.1%	6.7%	2.2%
Experimental Group Percent Within Distribution	0.0%	0.0%	1.3%	48.7%†	36.8%	9.2%	3.9%
Low-education Controls Percent Within Distribution	0.0%	2.9%	18.8%	50.7%†	18.8%	8.7%	0.0%
High-education Contrasts - Percent Within Distribution	0.0%	0.0%	0.0%	4.7%	16.6%	16.6%	62.8%†

*1960 Normative Distribution of the Stanford-Binet
†Range in which the median and mean scores for the different treatment groups is found.

Figure 5 A 48-month old Stanford Binet IQ Distribution Comparison for Experimental Children and Their Controls and Contrasts



IQ Distribution Range	69	70-79	80-89	90-109 Avg. Range	110-119	120-129	130
Percent Within Normal Distribution*	2.2%	6.7%	16.1%	50.0%	16.1%	6.7%	2.2%
Experimental Group Percent Within Distribution	0.0%	0.0%	7.9%	54.0%†	27.0%	7.9%	3.2%
Low-education Controls - Percent Within Distribution	0.0%	1.9%	18.9%	49.1%†	17.0%	11.3%	1.9%
High-education Contrasts--Percent Within Distribution	0.0%	0.0%	0.0%	0.0%	10.7%	10.7%	78.6%†

*1960 Normative Distribution of the Stanford-Binet.
†Range in which the median and mean scores for the different treatment groups is found.

Figure 6 A 60-month old Stanford Binet IQ Distribution Comparison for Experimental Children and Their Controls and Contrasts

Table 7: ITPA Subtest Scores for 48 Month Old Center Children, Contrasts, and Control Groups

Subtest and Groups	Mean Scaled Scores	Age Scores	Mean Raw Scores	SD	F Ratios[d] Center and Low Ed.	Low Ed. and High Ed.	Center and High Ed.
1. Auditory Reception							
Center[a]	35.75	4- 1	13.76	3.42	7.57***	31.34****	21.35****
Low Ed.[b]	33.73	3-10	12.06	5.18			
High Ed.[c]	39.23	4- 7	17.49	4.40			
2. Visual Reception							
Center	40.98	5-0	12.54	4.42	4.92*	21.54****	10.83***
Low Ed.	39.17	4-7	11.26	5.23			
High Ed.	44.18	5-5	14.67	5.69			
3. Auditory Association							
Center	37.17	4-1	10.24	5.81	22.22***	158.01****	68.18****
Low Ed.	32.69	3-9	7.59	5.51			
High Ed.	46.56	5-3	17.13	5.55			
4. Visual Closure							
Center	40.71	4-8	11.92	7.30	9.36***	20.75****	4.96*
Low Ed.	37.00	4-4	10.19	7.14			
High Ed.	44.28	5-0	13.82	9.36			
5. Verbal Expression							
Center	42.72	4-10	14.33	8.31	7.17****	56.85****	30.261****
Low Ed.	38.96	4- 6	12.10	8.45			
High Ed.	52.33	6- 0	21.00	9.61			
6. Grammatical Closure							
Center	35.21	4- 2	6.64	4.86	4.80*	181.09****	168.63****
Low Ed.	33.26	3-10	5.83	5.73			
High Ed.	51.30	5- 8	14.54	8.21			
7. Manual Expression							
Center	49.21	7-11	25.51	5.09	13.52****	6.75**	9.36
Low Ed.	46.07	6- 9	22.76	5.07			
High Ed.	48.62	7- 2	24.10	4.57			

[a] Center group = 72

[b] Low Ed. group = 70

[c] High Ed. group = 39

[d] SDs and F Ratios are reported for scaled scores only

* $p<.03$

** $p<.01$

*** $p<.008$

**** $p<.001$

and low-education children on six of the seven subtests. The only test without such a significant difference is Manual Expression, where all groups scored very high. Tables 8 & 9 show ITPA data at 60 and 72 months. Note that, as with the Binet score comparisons, by 72 months of age significant differences disappear between Center children and their low education controls.

Table 10 compares the experimental and control children of the Family Development Research Program with children from other programs and contains some data with fascinating implications. Notice the varying levels of proficiency among the different groups. Many of the experimental groups from other projects do not score as high as the Family Development Research Program controls. What does it mean when children score below age norms but are significantly different from their controls who are even further below age norms? Such comparisons can help us to be alert to the need to focus on national goals for competency in cognitive achievements rather than to be satisfied more narrowly with the indeed significant but perhaps more limited developmental advances of enrichment children in comparison with their low-income controls. We present these comparisons as a fruitful base for your own further heuristic speculations.

The Preschool Inventory and the Boehm Test of Basic Concepts were administered at 60 and 72 months. The data for these tests are presented in Table 11. A small but significant difference was found between Center children and low-education controls on the Preschool Inventory at 60 months. This difference is not evident at 72 months. No differences were found at 60 or 72 months when the Boehm Test scores of Center children were compared with those of low-education controls. Notice the consistent high scores of the high education contrasts on both measures.

Child Health Measures. Several different assessments of the children's health and nutritional status were made. At 36 months, tests for visual, dental, and hearing problems were carried out. Lead poisoning tests have also been administered, since many of our families lived in high-risk housing for lead poisoning. Negative results were found. These results were reassuring as to the effectiveness of the home visitors' efforts to have families provide regular pediatric care for their children. The results also reflect the continual alertness of teachers, who informed parents if infants seemed to exhibit physical symptoms of ill health.

Table 8: ITPA Subtest Scores for 60 Month Old Center Children, Contrasts, and Control Groups

Subtest and Groups	Mean Scaled Scores	Age Scores	Mean Raw Scores	SD	F. Ratios[d] Center and Low Ed.	Low Ed. and High Ed.	Center and High Ed.
1. Auditory Reception							
Center[a]	34.27	4- 7	17.10	2.77	0.36	46.74****	66.78****
Low Ed.[b]	33.86	4- 6	16.82	4.46			
High Ed.[c]	42.67	5-11	24.70	7.08			
2. Visual Reception							
Center	40.92	5-10	16.98	5.26	0.35	19.72****	16.57****
Low Ed.	40.32	5- 8	16.29	5.24			
High Ed.	45.63	6- 6	20.70	5.08			
3. Auditory Association							
Center	34.66	5-0	15.33	6.11	5.64**	107.85****	87.79****
Low Ed.	31.76	4-7	12.82	6.80			
High Ed.	47.07	6-8	23.54	5.61			
4. Visual Closure							
Center	39.39	5- 5	15.75	6.87	9.13***	22.27****	5.46**
Low Ed.	35.30	4-10	13.20	7.41			
High Ed.	42.80	5-10	17.91	5.88			
5. Verbal Expression							
Center	45.19	6-2	22.10	8.45	3.67*	44.38****	18.18****
Low Ed.	42.42	5-9	19.42	6.44			
High Ed.	52.90	7-5	28.91	7.40			
6. Grammatical Closure							
Center	32.68	4-9	9.7	4.67	3.42	113.41****	135.32****
Low Ed.	30.74	4-6	8.3	6.41			
High Ed.	48.10	6-4	18.6	8.03			
7. Manual Expression							
Center	47.10	8-9	28.10	4.85	8.97***	1.84	1.33
Low Ed.	44.50	8-4	25.50	4.18			
High Ed.	45.87	8-9	26.86	4.67			

[a] Center Group = 62

[b] Low Ed. group = 50

[c] High Ed. group = 30

[d] SD and F Ratios are reported for scaled scores only

* $p < .055$

** $p < .025$

*** $p < .005$

**** $p < .001$

Table 9: ITPA Subtest Scores for 72 Month Old Center Children, Contrasts, and Control Groups

	Subtest and Groups	Mean Scaled Scores	Age Scores	Mean Raw Scores	SD	F Ratios[d] Center and Low Ed.	Low Ed. and High Ed.	Center and High Ed.
1.	Auditory Reception							
	Center[a]	34.17	5-6	23.16	5.96	0.46		
	Low Ed.[b]	33.14	5-6	22.00	5.03			
	High Ed.[c]	45.00	7-9	33.00	5.48		18.42**	12.01**
2.	Visual Reception							
	Center	41.40	7-0	22.40	5.16	0.18		
	Low Ed.	40.82	6-9	21.80	4.91			
	High Ed.	45.75	8-7	26.69	2.99		3.70	2.70
3.	Auditory Association							
	Center	35.11	6- 0	21.11	5.71	0.87		
	Low Ed.	33.73	5-10	20.30	5.10			
	High Ed.	51.00	8-10	31.00	6.48		36.04**	27.17**
4.	Visual Closure							
	Center	35.77	6-0	18.70	5.75	2.37		
	Low Ed.	32.55	5-7	16.52	10.09			
	High Ed.	42.75	7-4	24.73	5.44		3.80	5.34*
5.	Verbal Closure							
	Center	41.57	6-11	26.52	6.04	-0.56		
	Low Ed.	42.77	7- 4	28.40	5.69			
	High Ed.	48.50	9- 0	35.50	8.35		3.00	4.40*
6.	Grammatical Closure							
	Center	31.20	5-0	14.20	6.16	-0.45		
	Low Ed.	32.45	5-3	15.22	7.91			
	High Ed.	47.75	8-0	24.33	5.68		3.48**	26.70**
7.	Manual Expression							
	Center	44.71	9-0	28.72	4.51	2.35		
	Low Ed.	41.63	8-2	26.60	10.47			
	High Ed.	44.00	8-8	28.00	3.56		0.19	.09

[a] Center group = 35

[b] Low Ed. group = 22

[c] High Ed. group = 4

[d] SDs and F ratios reported for scaled scores only

* $p<.05$

** $p<.001$

Group	Mean Age	N	Auditory Reception	Visual Reception	Auditory Association	Visual Association	Verbal Expression	Manual Expression	Grammatic Closure	Visual Closure	Auditory Sequential	Visual Sequential
Family Development Research Program												
Experimentals	4-0	72	35.8	41.0	37.2		42.7	49.2	35.2	40.7		
Controls	4-0	70	33.7	39.2	32.7		39.0	46.1	33.3	37.0		
Durham EIP												
Experimentals	5-0	16	31.3	38.5	29.7	35.3	33.8	40.3	24.8		41.2	30.5
Controls												
Group 1	4-6	7										
Group 3	4-4.9	9										
Total	4-5.4	16	33.0	36.0	33.5	34.0	30.5	37.5	28.0		39.0	34.0
Karnes' Programs	Too Old											
Experimentals												
Controls												
Traditional	4-5.4	25										
Community	4-1.3	16										
Montessori	4-2.2	13										
Ameliorative	4-4.6	24										
Direct	4-3.1	23										
Total	4-3.6	101	35.0	34.5	30.0		29.5	34.0	30.0			
Milwaukee Project (Heber)												
Experimentals	4-7	18	36.8	46.1	40.7	41.1	42.3	43.9	42.2	43.5	40.6	39.9
Controls	4-7	18	28.8	37.8	29.4	31.8	34.4	38.2	28.7	31.8	33.1	29.3
Learning to Learn (Sprigle)												
Experimentals	5-0	22		33.3	29.5		38.0					36.6
Controls	4-10	20		29.0	26.0		30.5					31.0
Bereiter-Englemann Program												
Experimentals	Too Old											
Controls	4-4	15			24.0		30.0		25.0			
Horner Preschool Program (Costello)												
Experimentals	4-1.7	150[a] 94[b]			25.2		30.7					
Controls	4-5.2	132[c] 67[d]			25.0		26.5					

Table 11: Mean Scores on the Preschool Inventory and the Boehm Test of Basic Concepts at 60 and 72 Months of Age for Experimental, Control and Contrast Children

Test and Group	Age	N	Mean	SD	F. Ratios Center and Low Ed.	Low Ed. and High Ed.	Center and High Ed.
Preschool	60 Months						
Center		62	45.19	6.42	6.65*	97.55***	96.86***
Low Ed.		56	41.64	8.43			
High Ed.		31	57.58	3.93			
Boehm	60 Months						
Center		64	28.38	5.64	2.81	102.70***	83.38***
Low Ed.		47	26.55	5.68			
High Ed.		27	39.74	4.84			
Preschool	72 Months						
Center		35	54.69	4.79	0.20	6.57*	11.01**
Low Ed.		21	54.00	6.69			
High Ed.		4	62.75	1.25			
Boehm	72 Months						
Center		32	36.65	5.41	0.04	19.28***	8.97**
Low Ed.		16	36.31	3.35			
High Ed.		4	45.00	3.56			

* < .02

** < .005

*** < .001

General medical examinations of the children when they entered the Center uncovered infants with special health problems, such as asthma, eczema, and heart murmurs. These children are now under more rigorous medical supervision. The staff pediatrician, after reviewing each child's health records, alerted the home visitors to contact parents and arrange for visits to appropriate facilities. S/he also arranged for adequate immunization of all children according to the schedule recommended by the American Academy of Pediatrics.

Infant nutritive status was monitored through weekly and monthly diet forms filled out by the home visitors. Information from these forms helped the CDTs to focus on poor dietary practices, such as over-salting food for very small infants. The data have also been used by Infant-Fold teachers to give special attention to the feeding of infants whose home nutrition was poor.

Some of the dietary assessments have pointed up how interdependent nutritional and social problems sometimes are. For example, at six months, the ascorbic acid intake of Center infants was somewhat low. The nutrient comes from citrus fruits, and orange juice is expensive. Less costly substitutes used by families frequently do not contain sufficient Vitamin C. This condition may change now that some of the lower priced fruit drinks have been fortified with Vitamin C.

Iron-deficiency anemia was found in ten children tested at 36 months. Six of these children had low iron intake, according to their infant diet forms. Serving iron-enriched infant cereals is often more costly and involves more effort than serving family table food to the older infant. It is difficult to change a family's dietary practices, even by providing information, demonstrations, and explanations of proper nutritional choices. However, health assessments have been extremely helpful as guidelines for improving the health of our children.

Noncognitive Mediators of Child Behavior. The personal, social, and motivational functioning of children is often a critical factor in predicting later intellective success. The variety of such measures listed in Table 4 testifies to the strong emphasis the Center placed on helping children to become friendly and successful interactors with their peers, with adults, and with their own work and interests.

The Cornell Descriptive Scanning Record of Infant Activity, developed

by Dr. Henry Ricciuti, has been applied to document the very satisfactory level of visual, vocal, and physical activity, as well as social responses, of 6 to 13 month old Center infants, compared with a Cornell University nursery group of middle-class infants fron intact homes. The Center infants were observed to smile, vocalize, and engage in playful interactions more frequently than the contrast babies from optimal home environments.

One of the social-emotional goals set for 36 month old toddlers was a positive self-concept, or sense of well-being. All teachers who came into daily contact with a child near his or her third birthday were asked to rate the child on the Coopersmith Behavioral Rating Form. The scores of 81 children, 36 months old, indicated a mean self-esteem score of 50 out of a possible 65 points with a range of 34 to 60 points. The standard deviation was 5 points. An analysis of the mean scores for individual items on the self-esteem rating scale showed that the group of 36 month olds rated high (above midpoint) on all thirteen items and that the group mean for the entire scale was relatively high (75% of possible score).

Movement toward noncognitive program goals was also being assessed with the Beller Autonomous Achievement Striving Scales (Beller, 1969), the Schaefer Classroom Behavior Inventory (Schaefer, 1970b), and the Schaefer Classroom Behavior Check List (Schaefer, 1970a). Data on 32 children, 36 months old, assessed with the Schaefer Classroom Behavior Inventory show that program children have achieved markedly greater than median responses on all the items reflecting social and emotional developmental maturity. They have also fallen far below median responses on social and emotional items reflecting developmental immaturity. On the five social and emotional items (such as: "Slow to forgive when offended," and "Stays angry for a long time after a quarrel") the modal response was "Almost never." This means that most of the children rarely acted in the ways specified as socially or emotionally negative. These data on the program children indicate extremely positive functioning.

Some data have also been analyzed for the Schaefer Classroom Check Lists. Teachers were required to rank children on each of the items appearing in the Table. A Spearman R was run correlating checklist rankings with Binet IQ at 36 months. The checklist was found to be a powerful predictor of 36 month IQ. Table 12 contains the Spearman correlations between IQ scores and the Schaefer Checklist.

It seems clear to us after looking at these data that there is a direct link between motivation toward, and interest in, cognitive achievement and IQ scores. There also seems to be a link between personal-social positive behavior and IQ. Three of the four items that show no significant correlation with IQ are "seeks constant reassurance," "disrupts other," and "possessive of teacher." One would not particularly expect those items to be correlated with IQ. The fourth item, "easy to get along with," can certainly be seen as a neutral item. The negative correlation found between IQ and the item "enters into role play" is puzzling; it seems to fly in the face of logic. Baldwin (1968) has discussed the cognitive richness of fantasy play. We have posed this question about the negative correlation: Is it possible that gross dramatic play manifestations, such as "monster man," are easily noticed by teachers, but that the subtle or quieter dramatic role-play techniques associated with high IQ escape teachers' notice?

TABLE 12 SPEARMAN R CORRELATING SCHAEFER CLASSROOM CHECK LIST ITEMS WITH STANFORD-BINET IQ SCORES FOR 36-MONTH-OLD PROGRAM CHILDREN (N = 32)

	SPEARMAN R	SIGNIFICANCE LEVEL
Possessive of teacher	0.25	n.s.
Easy to get along with	0.26	n.s.
Accepts criticism or discipline without restraint	0.28	n.s.
Grasps concepts readily	0.66	$p < .01$
Extends learning to new situation	0.60	$p < .01$
Disrupts others	0.04	n.s.
Enters into role-play	−0.65	$p < .01$
Carries through a series of events	0.63	$p < .01$
Obeys	0.43	$p < .01$
Motivated to academic performance	0.65	$p < .01$
Initiates friendship with others	0.32	$p < .05$
Has sense of humor	0.39	$p < .05$
Talks at free time	0.47	$p < .01$
Participates in group discussion	0.59	$p < .01$
Seeks constant reassurance	0.27	n.s.

Another instrument that is being used for assessing the personal-social behaviors of children is Emmerich's (1971) Observer Rating of Children. The classroom behavior of 20 program children and a separate group of 20 low-income controls attending city preschools was analyzed when our children were 36 months old. Six half-hours of systematic morning, afternoon, early-in-the-week, and late-in-the-week observations were completed for each child. Not all of the items were used for comparisons. Items that depended upon a child's behavior being elicited by another person were not included in the analysis because of coding difficulties. Differences at the .05 level or better were found on a number of items. Program children scored significantly higher than controls on the following unipolar scale items:

1. Exhibits interest in or concern for others in distress
2. Friendly toward adult
3. Friendly toward child
4. Gets intrinsic satisfaction from activity or task
5. Attempts to communicate verbally to child
6. Seeks physical affection from other child
7. Seeks help or guidance from adult
8. Engages in complementary behavior
9. Praises or expresses approval toward other child
10. Nurturant toward other child
11. Engages in gross motor activity
12. Engages in fantasy activity
13. Takes initiative in carrying out own activity
14. Threatens to act aggressively toward other child
15. Imitates behavior of adult

Control children scored significantly higher on the following behaviors:

1. Restlessness
2. Does not concentrate on activity

Program children also score much more positively than control children on Emmerich bi-polar behavioral items. Center children were more involved, expressive, relaxed, active, energetic, stable, social, assertive, independent, constructive, purposeful, affectionate to others, socially secure, and flexible. They were also more rebellious.

Emmerich Observer Ratings of Children were also collected after Center children left the program. Children were observed in kindergarten

and first grade. These studies attempted to determine those personal-social behaviors in schools which were more frequent among Children's Center graduates than among children from the same kindergartens and first grades.

Subjects consisted of 37 Children's Center graduates and 37 matched controls enrolled within the same kindergarten classroom and 20 Children's Center graduates and 20 matched controls enrolled within the same first grade classroom throughout 15 public schools within the Syracuse Public School District. Each Center child was matched to a non-Center child by similar variables of race, sex, socio-economic background, school, and teacher. The kindergarten and first grade teachers cooperating in this study were questioned as to appropriate matches within their classrooms. Permission for observation of control children was then obtained from each of the control families, with the condition that the observational assessment for their child would be available for their information if they so desired. This was only necessary for control families as permission had already been obtained from Children's Center parents.

Procedure. The Emmerich scale of Social-Emotional Observer Ratings of Children, designed by Emmerich and Wilder in 1969, was used to rate each child. The scale was used to measure social-emotional behaviors of the target child toward peers and teachers within the school setting. The 127 Unipolar items assessed specific categories of social and emotional behavior, such as social motives, coping mechanisms, and activities or interests. In addition, general personality items were included in 19 Bipolar Scales to give a general description of the child. Each Unipolar item called for an estimate of a behavior's frequency of occurrence during a 20-minute observation period. The Emmerich scale for this study was modified into a five-point scale: (0) totally absent; (1) occurred once; (2a) seldom occurred; (2b) occurred frequently; (3) occurred constantly. In addition, verbal items were included for some Unipolar items. Each Bipolar Scale contained seven points and called for a judgment on the relative strengths of the attributes defining each pole. Observers were instructed to make judgments regarding the child's personality dimensions, based upon ratings obtained from the specific behavioral Unipolar items. This thereby allowed observers to use their Unipolar Scale ratings on each subject as behavioral cues when forming judgments on the Bipolar Scales. Five of the Bipolar items--Sensitive to Others vs. Self-centered, Submissive vs. Dominant, Dependent vs. Independent, Aggr ve Toward Others vs.

Affectionate Toward Others, and Socially Secure vs. Socially Insecure--were modified to include separate measures of child and adult orientation, thereby giving additional weight toward those behaviors designed to indicate Child versus Adult-orientation between experimental and control groups. Five observers collected data for these studies. Each child was observed for four 20-minute time periods.

Several studies of social behaviors of children have been done. One, by Ogilvie (1969), attempted to locate environmental and experiential variables that influenced the development of the variety of behaviors and skills of well developed children, aged 3-6 years, in coping effectively with social and intellectual tasks. He found that well developed children seemed to be able to: get and maintain the attention of adults, use adults as sources of information, express affection and hostility to adults and peers under appropriate circumstances, lead and follow peers, compete, show pride in their work, resist distractions, and involve themselves in adult role-playing behaviors. He found less competent children to: look to adults to satisfy emotional needs (emotional rather than instrumental dependency), seek the attention of adults through misbehavior, show hostility to adults, imitate adults and peers, play the role of children or infants, and resist or ignore adult instructions.

Beller (1969) investigated the effects of early education intervention on intellectual development and on the interplay between motivational and cognitive variables. He felt that motivation and personality functioning were tapped by: dependency of children on adults, independence striving, dependency conflict, and aggression. He defined dependency striving as the frequency and persistance with which the child seeks help, attention, recognition, physical contact, and proximity to adults; independence or autonomous achievement striving as the frequency with which the child initiates his activity, tries to overcome obstacles and to complete activities by himself, the frequency with which he derives satisfaction from the whole process, and the extent to which he desires or enjoys doing things or solving problems by himself; aggression as the frequency with which the child threatens, derogates, attacks others physically, and destroys materials; and dependency conflict as difficulty in accepting dependency needs and in permitting himself to seek emotional physical support from his protective environment. Thus the child conflicted over

dependency will be inhibited in expressing his needs for help, affection, and attention. Beller found that the more conflicted the child was over dependency, the more impaired s/he was in autonomous achievement striving or self-sufficiency. Thus, disadvantaged children who are inhibited in seeking help and support from the adult environment fail to develop a high enough level of motivation to function independently and self-sufficiently.

With these studies and the goals of the program for children well in mind, the data were analyzed. The Mann-Whitney Rank Order procedure was run. It was found that numerous items statistically differentiated between Children's Center graduates and their school matches at the $p \leq .05$ level. For the kindergarten study:

A. Children's Center graduates exhibited the following Unipolar behaviors more frequently than their matches:

1. Seeks help or guidance from adult
2. Seeks physical proximity of adult
3. Seeks attention from adult through positive bid (overall and verbal)
4. Conforms to routine or routine request of adult
5. Friendly toward adult (overall and verbal)
6. Friendly toward other child
7. Exhibits leadership
8. Behaves competitively
9. Smiles and/or laughs
10. Engages in fine manipulative activity
11. Engages in cognitive activity
12. Exhibits persistence
13. Completes activity by himself
14. Praises self
15. Exhibits active curiosity
16. Responsive to teaching by adult
17. Instructs or demonstrates (overall and verbal)
18. Attempts to communicate verbally to adult
19. Attempts to communicate verbally to other child
20. Verbally loud

B. The non-Children's Center matches exhibited the following Unipolar behavior more frequently than the Children's Center graduates:

1. Restlessness

C. The Bipolar items indicated that Children's Center graduates were more involved, relaxed, dominant, energetic, social, independent, purposeful, affectionate to others, and flexible than their school matches. They were more sensitive to adults and other children, less submissive to adults and other children, less dependent on adults and other children, more affectionate toward adults and other children and more socially secure around adults and other children.

D. The Bipolar items also indicated that the non-Children's Center kindergarteners were more restrained, self-centered, passive, unstable, timid, destructive, socially insecure and unhappy than the Children's Center graduates.

In first grade 20 Children's Center graduates were matched with 20 first graders in the classroom. Again it was found that a number of items statistically differentiated between Children's Center graduates and their school matches at the $P \leq .05$ level.

For the first grade study:

A. Children's Center graduates exhibited the following Unipolar behaviors more frequently than their matches:

1. Seeks attention from adult through positive bid
2. Seeks attention from other child through positive bid (overall and verbal)
3. Seeks attention from adult through deliberate negative bid
4. Possessive
5. Bosses adult
6. Physically aggressive toward adult
7. Deliberately aggressive toward property
8. Expresses negative feelings about self, possession or own product
9. Exhibits active curiosity
10. Seeks information from adult
11. Attempts to communicate verbally to adult
12. Communicates meaningful complex idea to other child
13. Verbally loud
14. Talks to self
15. Difficult to understand
16. Incomplete communicative act
17. Becomes defiant, rebellious in response to frustration or threat
18. Increased quietness in response to frustration or threat

B. The non-Children's Center matches exhibited the following Unipolar behaviors more frequently than the Children's Center graduates:

1. Seeks or makes a comparative evaluation
2. Expresses criticism of adult
3. Expresses criticism of other child
4. Smiles and/or laughs
5. Threatens to [redacted] aggressively toward other child

C. None of the Bipolar items show differences between the two groups.

From the overwhelming positive kindergarten findings one might expect that the Children's Center graduates would sustain a personal-social style that would serve them well in first grade. It is interesting to note that only four of the eighteen items reported as occurring significantly more frequently (1, 9, 12 & 13) in first grade were also significant in kindergarten. It seems that the setting affects personal-social style in experimental and control children. Note the increase in negative behavior toward adults on the part of the Center children and negative behavior toward other children by the control children. Observers reported that all children were less active in first grade and that most first grades were dominated by teacher initiated activities. Is the combination of curiosity and verbal expression causing the Children's Center graduates to become angry with or rebel against the dominant teacher?

Also at 60 months the APPROACH system (Caldwell & Honig, 1971) was used to measure child interaction skills. The APPROACH method involves a series of six digit codes designed to provide a fine-grained description and analysis of interactions between people. The videotape recording session of the 60 month assessment battery was used as the data base for this analysis. The videotape depicted the mother-child dyad in a 10 minute learning task. The material used for the learning task was an Etch-a-Sketch toy, with which the mother was asked to teach her child to make a triangle, and a drawing of a triangle on a sheet of paper. The instructions given were as follows:

"Mrs. Y, look at the triangle on the paper. What I would like you to do is to teach X how to make a triangle as close to that triangle on the paper as possible. You have to cooperate in order to make the triangle. You will be using the left-hand knob, which goes acr ss, and X will be using the right-hand knob which goes up and down. It is a difficult task.

You will have to turn the knobs together to make the triangle as best you can. To erase, you just hold the board and shake it hard. Remember, we want you to make the triangle together."

Each videotape was coded using the APPROACH system. These codes were keypunched for computer analysis. The end of each minute of coding was indicated on the computerized data sets.

Each six digit code contains a subject code, a verb code, an object code and an adverbial code. For example, mother (subject) hugged (verb) child (object) tenderly (adverb).

The first analysis involved a simple breakdown of the types of modifiers (adverbs) and their frequency employed by each child (subject). A similar analysis has been done for the adverbs coded for each mother. These adverb types and frequencies were compared between groups (Children's Center vs. Low Education Controls and boys vs. girls). The 24 modifiers analyzed using the APPROACH system are listed below in Tables 13 & 14. The frequencies indicate the styles of interaction that the children had with their mothers at 60 months

PARENT EVALUATION OF PROGRAM

A potent evaluation of program effectiveness comes from the people being served. This section of the report contains information gathered from interviews to date with parents of program children who were at least 36 months of age. During the Parent Evaluation of Program Interviews the parents were asked for their views of the child's functioning in comparison with peers and siblings. Parents were also asked how the program and the home visitor had been helpful and how the program could have been more helpful.

Parents' Evaluation of Program as It Relates to Their Children. Table 15 shows how low-income parents of Center and control children view the functioning of their children. One gratifying finding is that both groups of parents see their children in a more positive light than they see the children of others. When we asked 54 Center parents and 26 control parents to compare their children with their children's peers, we found that both groups of parents saw their children as more sharing, less shy, less a fighter, more inquisitive, and more sensitive to the feelings of others. The parents felt that their children tried more new and difficult tasks, pouted less, stood up for themselves more, and made more of their own choices.

Table 13: Frequencies and Adjusted Frequencies of Styles of Interaction Used by Experimental and Control Children With Their Mothers During a Learning Task

	Center Children (N = 43)		Low Education Children (N = 23)
Style of Interaction	Frequency	Adjusted Frequency[a]	Frequency
Ineptly	58	43.01	23
Accompanied by non-verbalization	2	0	0
Involving interpersonal contact	47	41.14	22
With intensity, excitingly	88	56.10	30
In a specified manner, time or place	80	24.31	13
In a nonspecified manner, time or place	0	0.0	0
Imitatively	29	20.57	11
Positive, gently, softly warmly	496	228.14	122
Persistently, reflectively	2	0.0	0
Harshly	10	1.87	1
Passively, Helplessly	42	54.23	29
Inattentively	4	24.31	13
Impulsively, Impatiently	90	57.97	31
Confidently	25	13.09	7
Uneasily, uncertainly anxiously	39	57.97	31
Restless & nervous manner	47	129.03	69
Mildly (used to modify negative verbs)	73	44.88	24
Smilingly	668	497.42	266
Frustrated manner	116	82.28	44
Firmly (in an authoritative way)	38	11.22	6
Attentively	584	435.71	233
Curious manner	128	44.88	34
With gesture	90	57.97	31
Vigorously	166	72.93	39

[a] Adjusted to make allowance for different group numbers (1.87x)

Table 14: Frequencies and Adjusted Frequencies of Styles of Interaction Used by Experimental and Control Males and Females With Their Mothers During a Learning Task

Style of Interaction	Center Males N = 23 Frequency	Low.Ed. Males N = 10 Adjusted Freq.[a]	Center Females N = 20 Frequency	Low Ed. Females N = 13 (1.54x) Adj. Freqs.[b]
Ineptly	30	32.20	28	13.86
Accompanied by non-verbalization	1	0.0	1	0.0
Involving interpersonal contact	45	46.0	2	3.08
With intensity, excitingly	61	27.60	27	27.72
In a specified manner, time or place	25	29.90	55	0.0
In a nonspecified manner time or place	0	0.0	0	0.0
Imitatively	16	11.50	13	11.61
Positive, gently, softly warmly	294	27.60	202	169.40
Persistently, reflectively	2	0.0	0	0.0
Harshly	4	0.0	6	1.54
Passively, helplessly	30	11.5	12	36.96
Inattentively	4	25.3	0	3.08
Impulsively, Impatiently	59	25.3	31	30,80
Confidently	16	2.3	9	9.24
Uneasily, uncertainly anxiously	20	32.2	19	26.18
Restless & nervous manner	19	82.8	28	50.82
Mildly (used to modify negative verbs)	46	27.6	27	18.48
Smilingly	424	328.9	244	189.42
Frustrated Manner	68	57.5	48	29.26
Firmly (in an authoritative way)	12	4.6	26	6.16
Attentively	353	59.8	231	318.78
Curious manner	69	48.3	59	4.62
With gesture	53	4.6	37	44.66
Vigorously	94	34.5	72	36.96

[a] Adjusted to make allowance for different group numbers (2.3x)

[b] Adjusted to make allowance for different group numbers (1.54x)

Center parents differed from control parents on some items. Center parents saw their children as more bossy than peers; control parents saw their children as less bossy than peers. Center parents saw their children as much less shy and more sensitive to others' feelings when compared to peers than did controls. In school-related areas (asking questions, teaching other children, and making his own choices) Center parents rated their children higher than did controls. It could be said, generally, that both groups of parents saw their children in a positi e light when compared with peers, but Center parents saw their children in a more positive light than did control parents.

Thirty-two mothers' evaluations of the effect of the day-care program upon the children have been coded and summarized.

TABLE 15 A COMPARISON BY PARENTS OF 54 CENTER AND 26 CONTROL CHILDREN WITH THEIR PEERS ON TWELVE PERSONAL-SOCIAL VARIABLES

	COMPARED TO PEERS			
	CENTER		CONTROL	
	more	*less*	*more*	*less*
1. Sharing	74%	26%	65%	35%
2. Shy	9%	91%	38%	62%
3. A fighter	24%	76%	27%	73%
4. Bossy	57%	43%	31%	69%
5. Needs to be center of attention	46%	54%	35%	65%
6. Teaching other children	89%	11%	53%	47%
7. Asking questions	85%	15%	65%	35%
8. Pouting	39%	61%	23%	77%
9. Sensitive to others' feelings	80%	20%	65%	35%
10. Trying new and difficult tasks	89%	11%	77%	23%
11. Standing up for himself	78%	22%	62%	38%
12. Making his own choices	91%	9%	73%	27%

The 32 mothers cited 91 behaviors that they felt would not have occurred if the child had not participated in the program. Of these behaviors, 48 reflected a greater interest in educational activities, 18 reflected more responsibility assumed in home activities, and 7 reflected more positive social-emotional behaviors. Only 7 responses reflected negative behavior that parents thought might be the result of Center attendance.

In evaluating child behaviors considered to be due to the home visit program, mothers stressed the educational activities. Of 43 behaviors noted by mothers, 38 reflected the child's increased interest in educational activities.

The mothers see themselves as stricter and more severe disciplinarians than the Center teachers. Despite this difference, the mothers approve the Center's positive reward methods of discipline with children.

When mothers were asked what they might have done differently if there had not been a weekly home visit program, 16 freely admitted they would have given far less educational input to their children.

Parent Evaluation of Center Staff. When evaluating the staff of the Children's Center, the 32 mothers generally described them as friendly, informative, considerate, helpful, and welcoming. However, mothers reported that because of their other day-time activities, such as going to school, working, and caring for other children in their families, they were unable to visit the Center as often as they would have liked. Each mother has visited the Center at least once. Many mothers came on Fridays to the weekly mothers' workshops.

Parent Evaluation of Home Visiting Staff. The 32 mothers were almost unanimous in describing the "help" factors that made the child development trainers effective in their jobs. Statements included "can talk to her about anything," "she is always available when I need her," "visits with me also and not just the child," "understanding," "never puts me down," and "doesn't make me feel like just another visit in the work day." The CDTs were seen as people who genuinely care about the entire family. They were seen as truly involved with each family. In more than one instance home visitors were described as "my best friend." The CDTs maintained flexible hours and an open phone for their mothers, and this consideration for their parents' needs was reflected in the parents' evaluation of the CDTs as effective and helpful adjuncts to the family's life.

EVALUATION OF PARENTS

Table 4 lists a number of familial measures that have been gathered by recruiters, home visitors, research staff interviews, and administrators. Many of these data, especially the data found on the Family Data Record (FDR) reflect demographic variables and changes over time in such characteristics as family size, family composition, and number of household moves. Table 16 contains information from the FDR.

Table 16: Demographic Descriptions Collected at the End of 5 Program Years

Item	Group	Group N	Answer	N	% of Own Group	Answer	N	% of Own Group
Satisfaction With Current Housing	Center	50	Yes	29	58.0	No	21	42.0
	Low Ed	32	Yes	22	68.8	No	10	31.3
	High Ed	24	Yes	21	87.5	No	3	12.5
Currently Married	Center	50	Yes	19	38.0	No	31	62.0
	Low Ed.	34	Yes	17	50.0	No	17	34.0
	High Ed.	24	Yes	22	91.7	No	2	4.0
Finished High School	Center	50	Yes	23	46.0	No	27	54.0
	Low Ed.	32	Yes	11	34.4	No	21	65.6
	High Ed.	24	Yes	24	100.0	No	0	0.0
Current Working Status of Mother	Center	50	Yes	24	48.0	No	26	52.0
	Low Ed.	33	Yes	15	45.5	No	18	54.5
	High Ed.	24	Yes	9	37.2	No	15	62.5
Current Principal Wage Earner	Center	49	Father	9	18.4	Mother	18	36.7
	Low Ed.	34	Father	11	32.4	Mother	12	35.3
	High Ed.	24	Father	23	95.8	Mother	1	4.2
	Center	49	Grandfather	6	12.2	Welfare	15	30.6
	Low Ed.	34	Grandfather	3	8.8	Welfare	8	23.5
	High Ed.	24	Grandfather	0	0.0	Welfare	0	0.0
Income of Principal Wage Earner	Center	50	More than $5,000 /yr	22	44.0	Less than $5,000 /yr.	28	56.0
	Low Ed.	33	More than $5,000	19	57.6	Less than $5,000	14	42.4
	High Ed.	24	More than $5,000	23	95.8	Less than $5,000	1	4.2

Table 16 Continued▸ Demographic Descriptions Collected at the End of 5 Program Years

Item	Group	Group N	Answer	N	% of Own Group	Answer	N	% of Own Group
Mothers'	Center	50	Professional	8	16.0	Semi-skilled	16	32.0
	Low Ed.	32	Professional	7	21.9	Semi-skilled	8	24.0
	High Ed.	24	Professional	9	37.5	Semi-skilled	0	0.0
Present								
	Center	50	Housewife	26	52.0			
	Low Ed.	32	Housewife	17	53.0			
Occupation	High Ed	24	Housewife	15	62.5			
Educational	Center	50	Less than H.S.	0	0.0	High School	8	16.0
	Low Ed.	32	Less than H.S.	0	0.0	High School	5	15.6
	High Ed.	24	Less than H.S.	1	4.2	High School	1	4.2
Aspirations	Center	50	Some College	0	0.0	Coll. Grad	29	58.0
	Low Ed.	32	Some College	2	6.3	Coll. Grad.	14	43.8
	High Ed.	24	Some College	0	0.0	Coll. Grad.	9	37.5
for your	Center	50	Post Grad.	1	2.0	As much as child wants	12	24.0
	Low Ed.	32	Post Grad	4	12.5	" "	7	21.9
Child	High Ed.	24	Post Grad.	2	8.3	" "	11	45.8
Educational	Center	50	Less than 7th	4	8.0	Ninth Grade	2	4.0
	Low Ed.	32	"	2	6.3	"	0	0.0
	High Ed.	24	"	1	4.2	"	0	0.0
Expectations	Center	50	10th & H.S.	1	2.0	High School	23	46.0
	Low Ed.	32	"	1	3.1	" "	15	46.9
	High Ed.	24	"	0	0.0	" "	1	4.2
for your	Center	50	Some College	2	4	Coll. Grad.	18	36.0
	Low Ed.	32	" "	2	6.3	" "	10	31.3
	High Ed.	24	" "	0	0.0	" "	17	70.8
	Center	50	Post Grad.	0	0.0			
	Low Ed.	32	" "	2	6.3			
Child	High Ed.	24	" "	5	20.8			

One constant report from recruiters and home visitors to the research staff was that control families didn't seem as "bad off" as experimental families. Although the matches were carefully made this still remains a possibility.

Although all the families in the program had an income of less than five thousand dollars per year, had less than a high school education, and by and large were in their teens and early twenties, we found that each family needed different treatment from us. The amount of money and education a person had did not tell us very much about the needs, hopes, fears, goals and motives by which a person guided his or her life, and did not often say very much about the quality of care that a young child received. As one looks at Table 16 one finds that Center families, after five years of program support, had little to show that their lives were any more comfortable or enriching than control families. They were less satisfied with their current housing, the majority of principal wage earners still earned less than $5,000 a year and their education expectations for their children included 14% of the group that expected their children wouldn't finish high school and 8% that expected that their children wouldn't finish 7th grade. Similarly when asked what the minimum education desired for that child would be, 21% said less than high school as compared with 10% of the controls.

Additional analyses are planned to compare growth scores for both groups over the five years of program in search of the observed differences expressed by the recruiters and home visitors.

The Home Visit Reports were filled out on a continuing basis by the CDTs as a formative evaluation procedure. These reports suggest strengths and insufficiencies in service delivery and communication effectiveness in the home visiting program. As these reports were collected they gave a clear picture of which mothers were becoming or staying "tuned" to developmental awareness, to educational goals for their children, and to increasing awareness of their own competencies and potentialities. The CDTs used these reports to improve their own efforts with families. To prepare the reports, they had to activate their observational skills and their sensitivities to families.

STIM (Inventory of Home Stimulation) is an instrument used for interviewing the parents of three-to-six year old children (Caldwell, Heider, and Kaplan, 1966). A score of 162 is the highest score that a

parent of a six year old can attain. The ceiling for parents of three year old children is somewhat lower because some items are inappropriate for three year olds. To date, we have interviewed mothers of 36, 48 and 60 month old children on the STIM. Table 17 contains the mean scores for the different groups at 36 months, 48 and 60 months.

These data, which reflect the amount of home stimulation available to target children from the various groups, follow the same pattern as the cognitive data reported earlier. The mean score for the high-education group is significantly higher than the mean scores of the two other groups. Also similar to the cognitive findings is the fact that a significant difference exists between the experimental group and the low-education control group at 48 months.

It is clear that the amount of stimulation available to the Experimental Children at 60 months of age as noted by STIM is almost identical to the amount available to their low education controls. This similarity might reflect the termination of the home visiting section of the program at or around the fifth birthday. High-education contrast families score exceedingly high.

During the fifth year of the program, each mother was interviewed by a staff member with whom she was familiar. The interview took the form of asking the mothers about their child-rearing perspectives and practices. The interview was based on 11 brief questions about children's behavior generally thought to be representative of characteristics of competence which the project had sought to encourage, e.g., initiative, perseverance, co-operation, etc. The specific questions used were derived from an interviewing instrument called the Implicit Parental Learning Theory designed by Caldwell & Honig (1965). As an example of an IPLET item, each mother was asked whether her child finished puzzles or games s/he tried out on his/her own. She was then asked if she wanted her child to behave in such a fashion, why, and how she managed to get him/her to do so. These latter questions specifically were designed to find out whether the mothers agreed with project goals, why they did or did not, and how they sought to manage their children's behavior with regard to these matters.

At the time of the interview brief handwritten notes were made of the content of the mother's responses to these questions. The handwritten notes constituted the data base upon which subsequent analyses were performed.

Table 17: STIM (Inventory of Home Stimulation) Scores at 36, 48 & 60 Months for the Parents of Experimental, Control and Contrast Children

Age and Group	N	Mean	SD	F Ratios Center and Low Ed.	Low Ed. and High Ed.	Center and High Ed.
36 Months						
Center	81	93.53	15.48	3.17	104.21**	89.02**
Low Ed.	53	88.54	16.42			
High Ed.	45	117.78	10.12			
48 Months						
Center	65	98.83	13.71	6.11*	120.75**	98.70**
Low Ed.	48	91.94	15.85			
High Ed.	36	123.44	7.66			
60 Months						
Center	44	100.05	16.58	1.0	36.95**	42.04**
Low Ed.	35	100.03	17.55			
High Ed.	22	124.86	9.59			

* < .02

** < .001

Because of the prosodic character of the raw data, it was necessary to design a post-hoc scheme for structuring the data which would allow for statistical analysis.

The objectives of the IPLET analysis were to determine the amount of agreement between the mothers' goals and the Family Development Research Program's goals, and to examine the mothers' philosophies and methods of child rearing. For the initial analysis, the mothers' responses on the eleven items to the questions concerning the mothers' reasons for wanting or not wanting the behaviors (their philosophy) and the mothers' actions in implementing their philosophy (their method) were content analyzed.

Establishing whether or not the children performed the behaviors in question and whether or not the mother approved simply involved recording yes or no responses. However, when the mothers were asked <u>why</u> they approved or disapproved and <u>how</u> they sought to manage their children's behavior, responses were quite varied. Therefore, it was decided to score each why and how response in terms of whether or not it conformed to the project's view of what constitutes good parenting attitides and practices. If a mother's response indicated understanding of the underlying reasons for the desirability of each child behavior about which she was asked, she was awarded a score of one. Numbers of agreements were then tallied for every mother across the 11 items. Each mother thus was assigned a why score between 0 and 11, which constituted a relative ranking of agreement with the project's perspective on good parenting. The same scoring procedure was followed for the how questions. If a mother's answer to a how question was consonant with the project's view of good parenting practice the mother received a score of one point. The total number of such agreements across the 11 items constituted the mother's relative ranking on the <u>how</u> scale.

Two coders independently scored the mothers' responses. Their reliability co-efficient was .86. Those items about which there was initial disagreement the coders resolved through brief discussion. The eleven items to which the mothers' responses were coded were:

1. Finishes puzzles or games he tries out on his own
2. Is thoughtful when someone is sleeping or ill
3. Is polite
4. Allows a visiting child to play with his toys

5. Feels free to disagree with you
6. Uses words to settle disagreements
7. When he can't get his own way he hits or tries to fight
8. Asks a lot of questions
9. Wants to choose his own clothes
10. Gives up easily when he tries to do something that is hard
11. Is willing to try new things on his own without depending on mother

The analysis of the agreement between the mothers' goals and the FDRP goals for each of the eleven behaviors showed that the total group of mothers were in 85% or more agreement with the FDRP goals on nine of the eleven items. The exceptions were: "Feels free to disagree with you," (67.3%), "Wants to choose his own clothes," (70%). These results indicate that the mothers from each of the groups, experimental, control and contrast, showed little variation in their agreement with the Family Development Research Program goals. No test for significant differences among the groups was performed because of the small amount of variation with respect to mothers' agreement and FDRP goals.

Table 18 contains the data from the IPLET analysis of the How and Why questions. Once again the High Education Contrast group scored the highest. There was little difference found between the scores of the experimental and low education control group.

Tables 19 & 20 show data collected on the interaction styles of mothers during the same (etch-a-sketch) learning task described earlier in the evaluation section dealing with children's interaction styles. The APPROACH Coding system used for children was also used to analyze the behavior of mothers. Fewer differences were found when the behavior of experimental and control mothers were compared than when child behaviors were compared. The control mothers did seem to express themselves with less interpersonal contact, and more confidently, harshly, firmly, and with more mildly negative and restlessly acted behaviors.

EVALUATION OF TEACHERS

The project has been very active in developing and applying measures of adult behaviors in caregiving. ABC-1 is a 40-item checklist of objectives in seven behavioral areas for teachers of infants 6 to 18 months (see Table 21). ABC-11 is a 44-item checklist (with 5 optional additional items) which was developed to reflect teacher involvement with

Table 18: Mann-Whitney U Test Summary for the Parents of Five Year Old Experimental, Control and Contrast Children on IPLET Questions.

Groups Compared	N	Questions	Adjusted T value
Center vs	50	How?	.36
Low Ed.	35	Why?	1.45
High Ed. vs	50	How?	3.29****
Center	25	Why?	1.23
High Ed. vs	25	How?	2.62***
Low Ed.	35	Why?	2.47***
Center Prenatal Program Group vs	15	How?	.43
Low Ed.	35	Why?	1.77*
Those That finished High Schl. After Start of Program			
Center	23	How?	- .20
Low Ed.	11	Why?	2.12**

* < .05

** < .025

*** < .01

**** < .001

Table 19: Frequencies and Adjusted Frequencies of Styles of Interaction Used by Experimental and Control Mothers With Their Children During a Learning Task

	Center (N = 43)	Low Education (N = 23)	
Style of Interaction	Frequency	Adjusted Freqs.[a]	Frequency
Ineptly	4	16.83	9
Accompanied by non-verbalization	0	1.87	1
Involving interpersonal contact	76	29.92	16
With intensity, excitingly	94	.72	56
In a specified manner, time or place	13	3.74	2
In a nonspecifi manner, time or place	0	0.0	0
Imitatively	2	1.87	1
Positive, gently, softly warmly	1,717	1,570.80	840
Persistently, reflectively	3	11.22	6
Harshly	13	63.58	34
Passively, helplessly	170	119.68	64
Inattentively	2	7.48	4
Impulsively, impatiently	178	170.17	9
Confidently	5	20.57	11
Uneasily, uncertainly anxiously	30	18.70	10
Restless & nervous manner	41	86.02	46
Mildly (used to modify negative verbs)	106	254.32	136
Smiling	446	484.33	259
Frustrated manner	203	231.88	124
Firmly (in a authoritative way)	183	321.64	172
Attentively	517	424.49	227
Curious manner	24	20.57	11
With gesture	156	158.95	85
Vigorously	291	233.75	125

[a] Adjusted to make allowance for different group numbers (1.87x).

Table 20: Frequencies and Adjusted Frequencies of Styles of Interaction Used by Experimental and Control Mothers with Male and Female Children During a Learning Task

Style of Interaction	Center Males (N =23) Frequency	Low Ed. Males (N=10) Adj. Freqs.[a]	Center Females (N=20) Frequency	Low Ed. Females (N=13) Adj. Freqs.[b]
Ineptly	3	18.4	1	1.54
Accompanied by non-verbalization	0	2.3	0	0.0
Involving interpersonal contact	42	16.1	34	13.86
With intensity, excitingly	55	64.4	39	64.40
In a specified manner, time or place	7	4.6	6	0.0
In a nonspecified manner, time or place	0	0.0	0	0.0
Imitatively	0	0.0	2	1.54
Positive, gently, softly warmly	957	519.8	760	945.56
Persistently, reflectively	3	0.0	0	9.24
Harshly	8	13.8	5	43.12
Passively, helplessly	126	55.2	44	61.60
Inattentively	0	6.9	2	1.54
Impulsively, impatier y	77	165.6	101	29.26
Confidently	1	0.0	4	16.94
Uneasily, uncertainly anxiously	12	4.6	18	17.32
Restless & nervous manner	29	92.0	12	9.24
Mildly (used to modify negative verbs)	55	170.2	51	95.48
Smilingly	223	248.4	223	232.54
Frustrated manner	103	220.8	100	43.12
Firmly (in an authoritative way)	96	48.3	87	232.54
Attentively	307	52.9	210	314.16
Curious manner	13	11.5	11	9.24
With gesture	85	32.2	71	109.34
Vigorously	179	48 3	112	160.61

[a] Adjusted to make allowances for different group numbers (2.3x)

[b] Adjusted to make allowances for different group numbers (1.54x)

Table 21 Percentage of Caregiver Behaviors Recorded for Two Master Teachers of 6 to 15 Month Old Infants During 552 Two-Minute Observations, ABC I

Items	% Tallied
I. Language Facilitation	
1. Elicits vocalization (through initiation and contingent responses)	42.5
2. Converses: Chats to infant	79.2
3. Praises or encourages child	36.1
4. Offers help or solicitous remarks	30.6
5. Inquires of child; requests	19.2
6. Gives explanation, information, or culture rules	28.4
7. Labels sensory experiences	4.0
8. Reads to or shows pictures	3.3
9. Sings to or plays music for	6.0
II. Social-Emotional Positive Inputs	
1. Smiles at child	56.5
2. Uses loving or reassuring tones	55.8
3. Provides physical loving contact	17.0
4. Plays social games with child	6.0
5. Uses eye contact to arouse, orient, or sustain infant's attention	50.2
III. Social-Emotional Negative Inputs	
* 1. Criticizes verbally; scolds;	0.0
* 2. Forbids; negative mands	9.1
* 3. Acts angry; is physically impatient; frowns; restrains child physically	0.1
4. Punishes physically	0.9
5. Isolates child (as behavior modification technique for unacceptable behaviors)	0.0
6. Ignores child when child shows need for attention	0.1
IV. Presentation of Piagetian Tasks and Opportunities for Sensorimotor Development	
1. Object Permanence	29.3
2. Means and Ends	27.0
3. Imitation	34.4
4. Causality	27.1
5. Prehension	30.3
6. Space	11.6
* 7. New schemes	8.3
V. Caregiving Routines: with child	
1. Feeds	22.3
2. Diapers; Toilets	7.8
3. Dresses; Undresses	4.3
4. Washes; Cleans	10.7
* 5. Prepares child for sleep	5.2
* 6. Physical shepherding	7.5
* 7. Eye-checks on child's well-being	78.3
VI. Caregiving Routines: with environment	
1. Prepares food	6.3
2. Tidies room or environment	28.1
* 3. Helps other caregivers	0.0
VII. Physical Development	
1. Provides kinesthetic stimulation	38.8
2. Provides large-muscle play	14.5
VIII. Does nothing	0.0

All starred items were added to the ABC (Assessing Behaviors of Caregivers) checklist subsequent to initial data collection. Percent tallied was based on 120 two-minute observations for these items.

special developmental concerns for children from 18 to 36 months. The areas of behavior measured were specified in Table 22. ABC-111 is a 58-item checklist to assess the behavior of caregivers of preschoolers from 36 to 60 months and has been used in preschools and kindergartens.

Brevity, reliability, ease of use, and sensitivity both to caregiver differences and to the influence of in-service training characterize the ABC checklists. Extensive data collection and analysis (Honig and Lally, 1975a, 1975b) have confirmed to date the high levels of language input and social-emotional positive behaviors that the caregivers of infants and toddlers provided. The data also show satisfactory frequencies of provision of opportunities for sensori-motor and preoperational learning. Very low levels of social-emotional negative behaviors and an almost zero level of "Do Nothing" were recorded. Very gratifying was the finding that neither time of day nor day of week reflected any declines in the high quality of the caregivers' repertoire.

"Master" teachers (those with long years of Center experience) of both infants and toddlers showed higher frequencies of many of the developmental inputs sampled. These data, then seem to reflect the influence that cumulative in-service training experiences have in helping teachers provide the kind of responsitivity and facilitative care that is a high priority of the Center program. The ABC scales have also proved very valuable as formative evaluation measures. As such, they have revealed program areas that needed more emphasis from teachers. For example, one set of Infant-Fold ABC-1 observations revealed that teachers were reading very little to babies. These data were used for feedback to teachers.

The behaviors of two master teachers, one black and one white, each with four years of experience with younger infants and frequent in-service training, will be used to illustrate the use of the ABC-1 checklist and to show qualitative contacts with children.

The behaviors of two master teachers, one black and one white, each of whom had frequent in-service training during seven years of experience caring for children from 18 to 36 months, will be used to illustrate the use of the ABC-11 checklist.

What kinds of behaviors did these master teachers carry out with babies? Languange inputs were very prominently contributed by teachers of

Table 22: Percentage of Caregiver Behaviors Recorded for Two Master Teachers of Infants 18-36 Months of Age During 708 Two-Minute Observations, ABC II

Items	% Tallied
I. Facilitates Language Development	
1. Converses	64.7
2. Models language	78.2
3. Expands language	52.0
4. Praises, encourages	48.9
5. Offers help, solicitous remarks, or makes verbal promises	
6. Inquires of child or makes request	73.7
7. Gives information	66.8
8. Gives culture rules	39.7
9. Labels sensory experiences	29.9
10. Reads or identifies pictures	17.8
11. Sings or plays music with child	11.0
12. Role- plays with child	15.3
II. Facilitates Development of Skills	
Social Personal	
1. Promotes child-child play (e.g., with puzzles, blocks, etc.)	11.6
2. Gets social games going (e.g., London Bridges)	7.1
3. Promotes self-help and social responsibility	24.7
4. Helps child recognize his own needs	16.4
5. Helps child delay gratification	20.3
6. Promotes persistence, attention span	6.8
Motoric Inputs	
7. Small muscle, perceptual motor	14.7
8. Large muscle, kinesthesis	15.4
III. Facilitates Concept Development	
1. Arranges learning of space & time	34.2
2. Arranges learning of seriation, categorization, & polar concepts	47.6
3. Arranges learning of number	20.2
4. Arranges learning of physical causality	23.4
IV. Social-Emotional: Positive Inputs	
1. Smiles at child	41.4
2. Uses raised, loving or reassuring tones	18.5
3. Provides physical loving contact	13.0
4. Uses eye contact to draw child's attention	11.9
V. Social-Emotional: Negative Inputs	
1. Criticizes verbally, scolds, threatens	.3
2. Forbids, negative mands	42.5
3. Frowns, restrains physically	53.8
4. Isolates child physically (behav. mod.)	16.5
5. Ignores child when child shows need for attention	0.0
6. Punishes physically	0.0
7. Gives attention to negative behavior which should be ignored	
VI. Caregiving Routines with Child	
1. Diapers, toilets, dresses, washes, cleans	13.7
2. Gives physical help, helps to sleep, shepherds	23.0
3. Eye-checks on child's well-being	41.7
4. Carries child	5.9
VII. Care-giving: Environment	
1. Prepares/serves food	10.6
2. Tidies up room	20.1
3. Helps other caregiver	9.2
4. Prepares activities, arranges environment to stimulate child	14.8
VIII. Qualitative Categories	-
IX. Does Nothing	0.0

both younger and older babies. Table 23 indicates that with younger babies a variety of language interactions accounted for about one-third of all teacher behaviors. Teachers of older infants, however, provided language in almost half of their total behavioral repertoire. Further analysis confirmed that neither time of day nor day of week was associated with changes of more than a few percentage points in these input patterns. Master teachers talked a lot with babies every day.

Place of observation did affect the language facilitation frequency of toddler teachers. The differentiated environments of the open-education model in which the older infants participated might have been expected to affect the level or quality of teacher inputs. Children chose freely the activity areas in which they wished to play and learn. The Sensory Experience and lunch areas (where toddlers ate family-style with teachers) were found to be associated with more teacher language, compared to the other areas. In these areas the highest rate of verbalizing by adults was recorded. This seems highly reasonable since reading to children is an important activity in the one area and close contact at a single lunch table characterizes the other area. Yet in none of the areas, even in the outdoor play area where child motoric behaviors were predominant, did teachers fail to input a good deal of language to the children. "Giving information" to and "asking questions" of children were very frequent among all four teachers. Teachers of toddlers, however, gave information and questioned or made requests in 66% and 73% respectively of the two-minute rating intervals sampled. Teachers of younger infants did so in about 28% and 19% of the rating intervals. Toddler teachers also used a great deal of what Cazden (1965) has called "modeling" and "expanding" language for children. Toddler teachers provided more reading experiences for children (in about 16% of the sampled intervals) than infant teachers (3% of the intervals sampled). This low reading percentage, incidentally, prompted us to work on increasing the frequency of teacher reading to and talking about picture books with babies.

Solicitous remarks were offered in almost one-quarter of sampled intervals to older infants and somewhat more (30%) to younger babies. Verbal praise was offered in about one-third of the rating intervals to younger infants, but in almost half of the rating intervals by teachers of toddlers. To sum up the language findings then, we note that the appropriate

Table 23: Percentage of Master Teachers' Repertoire Represented by each Behavioral Category

Behavioral Category	ABC-I Repertoire Percentages during 46 half-hours of Observations	ABC-II Repertoire Percentages during 59 half-hours of Observations
Language Facilitation	33.3	47.2
Positive Social-Emotional Input	23.8	8.1
Negative Social-Emotional Input	2.4	9.3
Piagetian:		
a. Sensorimotor Skills	18.3	-
b. Concept Development	-	11.6
Social-Personal Skills	-	7.5
Caregiving Routines With Infants	7.6	7.5
Room Care	7.7	5.8
Motoric Inputs	6.7	2.6
Do Nothing	.1	0.0

uses of language in a variety of settings can offer a wealth of both emotionally and cognitively facilitating language experiences, regardless of the nature of the activity areas where children prefer to play and participate. It is interesting that, although inputs of all kinds were frequently delivered to younger babies, a rich smorgasbord of verbal communications was offered to the toddlers. That such inputs did not decrease as the teachers' working day went on with its attendant drain on energy is a tribute to the effectiveness of the teachers observed. Their language input stayed at high levels throughout the days of the week. This again reflects the fact that neither 'Friday-fatigue' nor 'slow-to-start Monday' factors affected verbal interactions of highly trained and sensitive teachers with children.

Considering the importance given by Erikson (1950) to the development of autonomy and of initiative in toddlers and preschoolers, it was hoped that teachers would give children freedom but still remain close to them. The findings with regard to provision of praise and of positive social-emotional behaviors for these children were very gratifying. The data indicate that a teacher's sensitivity to a young child's increasing needs for independence (as indicated by ABC-II items such as "promotes self-help") did not preclude her offering positive and happy responses to older toddlers. The lack of punitive or harsh behaviors by teachers who were helping young children learn behavioral limits or rules was also entirely consistent with developmental goals for managing child behavior.

All master teachers smiled a great deal to children, but loving tones were far more prevalent among caregivers of younger babies. Physical loving contacts were provided slightly more to younger babies.

The relation of teacher repertoire to time of day is examined in Table 24. Younger babies who were in either the morning or the afternoon program received about the same amount of positive social interactions. In contrast, such inputs to toddlers did vary with time of day, and occurred twice as frequently (13%) during afternoons compared to mornings (6%). Negative social inputs to the younger babies, although quite rare (1 to 4% of all recorded teacher behaviors) occurred almost three times more often in afternoons than in mornings.

The finding of more positive social-emotional behaviors by toddler teachers in the afternoon is very much a function of the daily nap taken by infants. Before and after nap time teachers often soothe, cuddle, or

Table 24: Percentage of Master Teachers' Repertoire Represented by each Behavioral Category During Mornings and Afternoons

Behavioral Category	ABC-I Teachers		ABC-II Teachers	
	A.M.[a]	P.M.[b]	A.M.[c]	P.M.[d]
Language Facilitation	33.8	32.5	46.9	48.5
Positive Social-Emotional Input	22.8	25.7	6.5	13.2
Negative Social-Emotional Input	1.2	4.6	11.0	4.0
Piagetian:				
a. Sensorimotor Skills	19.7	15.8	-	-
b. Concept Development	-	-	11.6	11.2
Social-Personal Skills	-	-	7.9	6.4
Caregiving Routines With Infants	9.2	4.7	7.0	8.9
Room Care	6.7	9.5	6.0	5.5
Motoric Inputs	6.6	6.9	3.0	1.9
Do Nothing	0.0	0.0	.1	.3

[a] N = 30 half hours of observations

[b] N = 16 half hours of observations

[c] N = 45 half hours of observations

[d] N = 14 hal. hours of observations

reassure youngsters for whom either getting to sleep or waking up are times when they require such extra adult support. Also toddler caregivers had a respite from active teaching while toddlers napped. Teachers of younger babies had no such rest, since afternoon infants arrived relatively soon after the morning group left. This scheduling pattern may account for the occurrence of some 4% of negative social inputs in afternoons compared to the almost nonexistent percentage recorded during mornings with young infants.

Place as well as time was somewhat related to teachers' social-emotional contacts. In the lunch area, positive social-emotional behaviors represented only 2% of the total behaviors recorded for toddler teachers. Negative social-emotional behaviors, usually verbal or gentle physical restraints, represented about 20% of the behaviors recorded there.

In general, negative social-emotional inputs such as frowns, verbal or gentle physical restraints were more frequently used with older infants. None of the four master teachers used physical punishment. Never did a toddler teacher and exceedingly rarely (under 1% of intervals) did an infant teacher ignore a child who showed need for attention. Verbal criticisms or scolds by toddler teachers very rarely occurred. Isolation as a behavior-modification technique to decrease unacceptable behaviors occurred in fewer than 1% of the sampled intervals with young babies, but in about 16% of sampled intervals with older babies.

The amount of child care and room care varied with children's age. Twice as much preparing and feeding of food and one-and-a-half times as much room-tidying was done by teachers of younger babies compared to their colleagues working with toddlers.

Activities which would help babies develop sensorimotor skills were recorded for infant teachers whereas facilitation of Piagetian preoperational concept learning was recorded for toddler teachers. Appropriate games and opportunities for Piagetian learning were carried out by all four teachers in about one-fourth of the time periods sampled. Toddler teachers arranged learning of categorization and seriation concepts twice as frequently, however, as they arranged for learning of number or physical causality concepts.

Social personal skills were facilitated by the teachers of older infants to the same extent regardless of time of day. Such encouragement

represented about 6 to 10% of the total behavioral inputs by teachers whether in the morning or afternoon.

The learning of Piagetian sensorimotor and preoperational concepts was encouraged through a goodly amount of teacher arrangement of materials and provision of opportunities for special games. The data show that the years of in-service training which all four teachers had experienced were quite successful in helping them become familiar with and proficient at such specialized skills.

The value of observational monitoring. The kinds and frequencies of behaviors exhibited by four experienced caregivers have been shown to reflect exceedingly well the social-emotional and cognitive goals of a developmental day-care program for children. When group care is provided for children from disadvantaged homes, such monitoring is particularly important to ensure the translation of program philosophy and objectives into positive living and learning experiences. Data reported for experienced teachers can then serve to focus in-service training efforts in such a way as to help inexperienced teachers to optimize their caregiving interactions with children.

CONCLUSIONS

To conclude very much from the data reported in this study would be a mistake. We feel that the intervention programs initiated in the late sixties were exploratory in nature and not indicative of what can really be done with families. Both programs and measurement techniques were too simplistic. For the Family Development Research Program many differences, not present at the final data collection points of this report, may appear later. Some of the differences apparent now will disappear. Complexities in the data will possibly be explained as future subanalyses are run. Other trends may become more confusing.

One major insight gained from this program deals with the creation of programs for low-education and low-income families. Mid-way through the program we found that the descriptors used to select people for the program did not really define them very well. Variation in family functioning within both the control and experimental groups was great. We found that support strategies must be sought to deal with people who are at many different levels and who are functioning in very different ways.

Some families might have needed us only as deliverers of materials through which they could create a stimulating and enriched environment for their children. Other families sought us out to help them with the process of using materials, games, tasks and books with infants and toddlers in ways which effectively enriched the lives of their children. Still other families demanded information about socialization, sex-education, etc. All the preceding families seemed to be at a different needs level from still other families who came to the CDTs in need of emotional support and psychological counseling, or saw themselves as unable to function as parents because of personal blocks. We realized that people belonged to more than one of these groups at the same time, or they changed rapidly as situations in their life changed. We have learned over the last seven years the differing conditions in which our families live. Some anecdotal incidents are reported below to illustrate these differences.

Mrs. Beta lives alone with her two children. When the CDT first started visiting, Mrs. Beta was 16 years old and didn't pay much attention to her children. She married at 17 and her care for her children increased. The marriage broke up during the first year and the mother was so distraught that she became short-tempered with the children and said that she had no patience to deal with them. She started going out a good deal and left the children with her mother and friends. This lasted for about a year-and-a-half. She has expressed the feeling that she needs a man to love her. Recently she has found a steady male companion, has been spending more time with her children, and treats them with tenderness.

Mrs. Gamma is in her late twenties and very heavy. She has no friends her own age but like to socialize. Usually she spends most of her time with people who are in their forties. She is very positive toward her child and enjoys hearing about his activities at the Center. She likes to talk with the CDT about many topics and often calls the CDT for advice and support. She seldom visits the Center.

Mrs. Epsilon lives in a violent world. She has been beaten by more than one boy friend and is the only member of a family who has not spent time in jail. She spends very little time with her son. Her child is often out in the neighborhood until 7:00 or 8:00 o'clock at night playing with older children. She is struggling economically. She wants to keep up her payments on her car and move to a safer neighborhood. She works two jobs

seven days a week. She has remarked that if she can keep the car and move she feels that she can do anything.

Mrs. Zeta is in her middle twenties. She was interested in working with her child but had the tendency to want to do things for her son rather than to let him try to do them for himself. Often games turned into frustrating experiences with her yelling at the children. She felt that she is not good at handling discipline. Competition among her three young children for her affection and praise usually results in her retreat from the scene. She and her husband work different hours, she at night and he during the day; but they have arranged their lives so that the children have one or the other parent available to them during each day.

Mrs. Alpha is in her middle twenties and has five children. Three of the children live with her and two live with her mother. When we started working with her, Mrs. Alpha stayed at home almost every day and often didn't dress or take care of her physical appearance. Her shades remained drawn and the house was dark. She had no clock, no television, no radio, and she said that she slept and ate whenever she felt like it. Even when she was ill she did not seek medical help. Her CDT was often unable to get Mrs. Alpha to open her door and allow a visit. Many men visited Mrs. Alpha in her home and her relationship with men was seen as her major interest and activity. She did think that her son, who participated in the program, was smart and she enjoyed talking about him with the CDT. She also enjoyed talking with the CDT about other happenings in her life.

Mrs. Kappa reached the age of twenty during a conflict-filled interaction with her mother for control of her three children. Her mother has told her she is no good and can't care for her children. Mrs. Kappa feels that she takes better care of the children than her mother does, but often moves back into her mother's house when crises arise. She feels that her mother likes her sister's children better than hers and that her mother shows them preferential treatment. She vacillates between trying to show her mother that she is a good daughter, i.e., doing what the mother wants, and breaking from the mother and living alone.

As one might guess, the records we have just presented could have been expanded to show the complex interaction of personal, social and economic variables that affect the day-to-day functioning of our families. What was presented, however, was ample evidence to make our point. Families are motivated by many factors that must be taken into consideration by outside

agents if they expect to have a meaningful impact on family functioning. What may serve as a strength and source of resilience and security for one family--for example, three generations within the household--has occasioned conflicting interactions for another family. Therefore stereotypic views must be transcended so that one can react to the particular family dynamics of each family.

We feel that programs of the future will be successful if they can learn some major lessons from our work. The first lesson is to develop programs based on the observed and reported needs and goals of families. Some families need minimal supportive interventions--in terms of parenting skills and knowledge about community resources. Other families require more thoroughgoing clinically oriented help in order to strengthen personality and strengthen problem-solving patterns where there are disturbances in social-personal interactions.

We have found that a program needs to be responsive to meet the changing needs of families. Changes may occur in many areas. For example, children grow through different stages, which require new understandings from family members; family crises arise, such as the sudden departure of family members and lovers; and economic recession may cause the sudden loss of a job which took months to get.

Thus family crisis factors may necessitate changes in the kind, intensity and duration of family supports. A flexible mix of program personnel, both paraprofessional and professional, may be necessary for optimal delivery of program services. For example, a psychiatric social worker who could have dealt with the relatively few families with disturbed familial interactions would have been a welcome addition to the staff. For s/he could have dealt with the families directly and also counseled with the paraprofessional home visitors to make them more aware of psychological needs.

Another lesson from our work is of a different nature and has to do with measurement issues. More non-obtrusive measures which reflect family needs and goals as evidence of program success are seen as essential adjuncts to traditional measures. We have used such measures in this program. One measure involved the unobtrusive assessment of child language competence and another involved observing personal-social transactions among children and adults in natural classroom situations.

Both of these measures provided us with very useful information.

This project also raises some questions about the wisdom of abrupt educational transitions for children. Children may have adjustment troubles in moving from the innovative and responsive preschool involvement of a program with low child to adult ratios to a more conventional elementary school world where there are many children and few adults. Possibly some of the frustrations which Center children in first grade responded to by occasional inappropriate demands on teachers may have been magnified by the contrast between the quality of positive highly motivating interactions and rewards experienced in the Center and different patterns of expectations and learning conditions in the elementary school.

Thus we conclude that future programs which intend to serve and support family functioning will need to respond more individually, more intensively and perhaps more extensively over time to particular families with particular strengths and vulnerabilities. If a program wishes to sustain the positive growth patterns engendered through the provision of quality group care and education for parent involvement, then the program may have to maintain greater flexibility.

The final lesson of our work deals with a theoretical concept believed by us and stated in the first section of this paper under theoretical foundations. The concept of continuous development theoretically explained by Piaget and Erikson seems to hold for families as well as individuals. Environmental supports need to continue. As the child grows his/her environment grows. Links must be made through the family to the school and peer groups so that program gains may be supported and nurtured rather than discouraged. To assume that a program can be established as an innoculation procedure which will sustain growth for indefinite periods of time when children and families no longer receive support for survival in a relatively hostile environment might be an inaccurate assumption.

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