Evaluation of Head Start Family Child Care Demonstration

Final Report

February 2000

Commissioner's Office of Research and Evaluation
and the Head Start Bureau
Administration on Children, Youth and Families
U.S. Department of Health and Human Services

ACKNOWLEDGMENTS

Evaluation of Head Start
Family Child Care Demonstration

Prepared for:

Louisa B. Tarullo, Ed.D.
Commissioner's Office of Research and Evaluation
Administration on Children, Youth, and Families
Department of Health and Human Services
Washington, D.C.

Prepared by:

RMC Research Corporation
Bonnie J. Faddis, Ph.D., Project Director
Paul Ahrens-Gray
Portland, Oregon

With
Elisa L. Klein, Ph.D.
Associate Professor, Human Development
University of Maryland

Special thanks to:
Participating program staff, parents and children
Robert Bradley, Ph.D., University of Arkansas
Trellis Waxler, Head Start Bureau

Contents

Exhibits v

Executive Summary xi
- Program Implementation Characteristics xii
- Child and Family Background Characteristics xiv
- Characteristics of Family Child Care Providers and Center Classroom Teachers xv
- Implementation of Head Start Program Performance Standards xvi
- Characteristics of Program Structure xvii
- Characteristics of Program Dynamics xvii
- Child Cognitive Outcomes xviii
- Child Social-Emotional Outcomes xix
- Child Physical Outcomes xix
- Parent Outcomes xix
- Kindergarten Follow Up xx
- Policy Implications xxi

I. Introduction 1
- Background and Rationale for Family Child Care Services in Head Start 1
- The Evaluation of the Head Start Family Child Care Homes Demonstration 3
- Overview of Evaluation Findings 4
- Framing the Issues in Alternative Delivery of Head Start Services 5
  - Head Start 5
  - Child Care 7
  - Family Child Care 8

II. Evaluation Design and Demonstration Site Characteristics 9
- Purpose of the Evaluation 10
- Recruitment and Random Assignment 12
  - Recruitment Methods 13
  - Random Assignment 14
  - The Number Recruited and Enrolled 15
  - Attrition 19
  - Barriers to Recruitment and Enrollment 22
- Agency Characteristics 23
  - Years in Operation 24
  - Agency Size and Type 24
  - Community Description 25
  - Race/Ethnicity 25
- Family Child Care Program Characteristics 26
  - Geographic Distribution of Family Child Care Homes 27
  - Family Child Care Provider Employment Terms 27
  - Service Provision Schedules and Adaptations 29

Cost of Providing Family Child Care Services 31

III. Data Collection Instruments 35
Criteria for Selecting Measures 35
Child and Family Background Information 38
Family Data Interview 38
Parent Perceptions of Head Start Services 39
Family Routines Inventory Modified 40
Family Resource Scale 40
Parenting Dimensions Inventory 41
Significant Life Events Checklist 41
Program Comprehensiveness and Quality 42
Head Start On-Site Program Review Instrument (OSPRI) 42
Developmental Practices Inventory 44
Arnett Scale of Caregiver Behavior 45
Agency Staff Questionnaire 45
Caregiver Characteristics Form 46
Child Outcome Measures 46
Cognitive Functioning 47
Social Functioning 47
Physical Functioning 48
Instrument Selection 48
The Peabody Picture Vocabulary Test Revised 49
Daberon 2 50
Concepts About Print 50
Child Observation Record 51
Child Adaptive Behavior Inventory Modified 52
Kindergarten Teacher Interview 52

IV. Program Quality 53
Head Start Program Performance Standards 53
Types of Items: Records, Observations, and Interviews 53
Ability of Family Child Care Homes and Center Classrooms to Meet Head Start Program Performance Standards 55
Caregiver Characteristics 57
Gender 57
Age 58
Race 58
Primary Language 58
Education 59
Coursework and Training in Early Childhood Education 60
Experience in Child Care 61
Experience in Head Start Settings 62
Family Child Care Provider Compensation and Benefits 62
Absenteeism 63
Turnover 63

Program Structure 64
Child/Staff Ratio 64
Group Size 64
Providing Care for Other Children 66
Scheduling, Planning, and Organization 67
Curricular Materials and Equipment 69
Arrangement of Materials 70
Furniture and Equipment 70
Safety 70
Program Dynamics 73
Curricular and Learning Activities 74
Learning Approach 75
Atmosphere 76
Displays 77
Teaching Methods and Developmentally Appropriate Practices 77
Adult-Child Interactions 79
Relationships Among Measures of Program Quality 82
Meal Times 83
Race and Language Diversity 84

V. Child Outcomes 87
Child Background Characteristics 87
Language 87
Race/Ethnicity 87
Special Needs 88
Child Care Experiences 89
Child Outcomes During the Head Start Year 91
Data Analytic Approach 91
Cognitive Outcomes 93
Social-Emotional Outcomes 101
Physical Outcomes 103
Summary Across Outcome Domains 106
Kindergarten Follow Up 107
Kindergarten Teacher Questionnaire 107
Parent Involvement 108
Child Outcomes During Kindergarten 109
Child Outcome Trend Analysis 116

VI. Parent Outcomes 123
Family Characteristics 123
Family Structure 123
Family Income 124
Public Assistance 125
Race and Language of Primary Caregivers 125
Education 125
Health 126

Parent Involvement 127
Setting Preference and Satisfaction 128
Relative Advantages of Family Child Care Homes and Center Classrooms 128
Importance of Child Care Attributes 130
Parent Participation 131
Parent Involvement with Head Start Program Activities 134
Other parent involvement indicators 134
Parent Self-Sufficiency 135
Parenting Skills 137
Summary of Parent Findings 140
Summary 143
References 147

Exhibits

Exhibit II-1 Locations of Head Start Family Child Care Demonstration Sites 9

Exhibit II-2 Key Indicators in the Evaluation Framework 12

Exhibit II-3 Evaluation Design 12

Exhibit II-4 Recruitment Strategies 14

Exhibit II-5 Number of Head Start Family Child Care Children Recruited, Enrolled, and Retained in Cohort 2 17

Exhibit II-6 Numbers of FCC Homes and Center Classrooms by Agency for Cohorts 1 and 2 18

Exhibit II-7 Cohort 2: Number of Children Withdrawn by Reason as Reported by Agency 21

Exhibit II-8 Barriers to Enrolling Families as Reported by Agencies 22

Exhibit II-9 Summary of Agency Characteristics During Demonstration Project Implementation 25

Exhibit II-10 Percentage of Children by Race in Demonstration Project Compared to Agency and National Data 26

Exhibit II-11 Hours of Care Used in Family Child Care Homes 30

Exhibit II-12 Program Design Adaptations Made by Family Child Care Homes 31

Exhibit II-13 Cost for Family Child Care Services per Child by Agency 33

Exhibit III-1 Overview of Domains and Instruments 36

Exhibit III-2 Summary of Data Collection Instruments and Participants 37

Exhibit III-3 Parent Interview Components 38

Exhibit III-4 Elements of the Family Data Interview 39

Exhibit III-5 Data Collection Plan for Assessing Program Comprehensiveness and Quality 42

Exhibit III-6 Number of OSPRI Items by Data Collection Method 44

Exhibit III-7 Data Collection Plan for Child Outcome Measures 49

Exhibit IV-1 Mean Number and Percentage of OSPRI Items Met by FCC Homes and Center Classrooms 56

Exhibit IV-2 Personal Characteristics of Caregivers (Percentages) 59

Exhibit IV-3 Professional Characteristics of Caregivers (Percentages) 61

Exhibit IV-4 Group Size and Child/Staff Ratio 65

Exhibit IV-5 Numbers of Children in Family Child Care Homes 66

Exhibit IV-6 Activities and Groupings in Observed Daily Schedule 68

Exhibit IV-7 Materials Available to Children 71

Exhibit IV-8 Percent of FCC Homes and Center Classrooms with Emergency Plans 72

Exhibit IV-9 Percent of FCC Homes and Center Classrooms Meeting OSPRI Storage, Hazards, and Outdoor Safety Items 73

Exhibit IV-10 Percent of FCC Homes and Center Classrooms Passing Selected OSPRI Items 74

Exhibit IV-11 Percent of FCC Homes and Center Classrooms Using Selected Learning Approaches 76

Exhibit IV-12 Percent of FCC Homes and Center Classrooms Passing of Atmosphere-Related OSPRI Indicators 76

Exhibit IV-13 Mean Scores for Family Child Care Homes and Center Classrooms on the DPI 78

Exhibit IV-14 Developmental Practices Inventory Total Score Posttest Means by Agency and Setting 79

Exhibit IV-15 Adult-Child Interactions Measured by the OSPRI 80

Exhibit IV-16 Arnett Scale Mean Scores for Family Child Care Homes and Center Classrooms 81

Exhibit IV-17 Arnett Scale Posttest Means by Agency and Setting 82

Exhibit IV-18 Correlations Between Spring Measures of Program Quality 83

Exhibit IV-19 Percent of FCC Homes and Center Classrooms Passing OSPRI Meal Time Guidelines 84

Exhibit IV-20 Race and Language Diversity in Family Child Care Homes 85

Exhibit V-1 Race of the Children by Setting 88

Exhibit V-2 Percentage of Children With Diagnosed or Suspected Special Needs by Setting 89

Exhibit V-3 Participation in Child Care Prior to Head Start 90

Exhibit V-4 Predictor Variables in Child Outcomes Multiple Linear Regression Analyses 92

Exhibit V-5 Descriptive Statistics and Significance Tests on Cognitive Outcomes Family Child Care Homes and Center Classrooms 94

Exhibit V-6 Results of Stepwise MLRs on Cognitive Outcomes 96

Exhibit V-7 Final Regression Model for PPVT (Multiple R = .7272) 97

Exhibit V-8 Final Regression Model for Daberon 2 (Multiple R = .8472) 98

Exhibit V-9 Final Regression Model for CAP (Multiple R = .5629) 99

Exhibit V-10 Final Regression Model for COR Cognitive (Multiple R = .5924) 100

Exhibit V-11 Group Means and Significance Tests on Social-Emotional Outcomes Family Child Care Homes and Center Classrooms 101

Exhibit V-12 Results of Stepwise MLRs on Social-Emotional Outcomes 102

Exhibit V-13 Final Regression Model for COR Social-Emotional (Multiple R = .5406) 102

Exhibit V-14 Final Regression Model for CABI (Multiple R = .4948) 103

Exhibit V-15 Descriptive Statistics and Significance Tests on Physical Outcomes Family Child Care Homes and Center Classrooms 104

Exhibit V-16 Results of Stepwise MLRs on Physical Outcomes 104

Exhibit V-17 Final Regression Model for Daberon 2 Physical Outcome (Multiple R = .6049) 105

Exhibit V-18 Final Regression Model for COR Physical Outcome (Multiple R = .4684) 105

Exhibit V-19 Summary of Significant Components of Predictive Models of Child Outcomes 107

Exhibit V-20 Percentage of Children Who Participated in Special Programs in Kindergarten 108

Exhibit V-21 Parent Perceptions of Kindergarten Preparation and Progress 109

Exhibit V-22 Predictor Variables in Kindergarten Child Outcomes MLR Analysis 110

Exhibit V-23 Kindergarten Regressions on Cognitive Outcomes Using Fall Head Start Scores as Covariates 111

Exhibit V-24 Final Regression Model for PPVT R in Kindergarten (Multiple *R* = .7264) 112

Exhibit V-25 Final Regression Model for Daberon 2 Cognitive Outcome in Kindergarten (Multiple *R* = .7343) 112

Exhibit V-26 Final Regression Model for CAP in Kindergarten (Multiple *R* = .4832) 113

Exhibit V-27 Results of Stepwise MLRs on Social-Emotional Outcomes in Kindergarten 114

Exhibit V-28 Final Regression Model for CABI in Kindergarten (Multiple *R* = .2425) 114

Exhibit V-29 Results of Stepwise MLRs on Physical Outcomes in Kindergarten 114

Exhibit V-30 Final Regression Model for Daberon 2 Physical Outcome (Multiple *R* = .5080) 115

Exhibit V-31 Summary of Significant Components of Predictive Models of Child Outcomes in Kindergarten Follow-Up 116

Exhibit V-32 Repeated Measures ANOVA and Trend Analyses for Cognitive Outcomes 117

Exhibit V-33 PPVT R Trends 117

Exhibit V-34 Daberon 2 Cognitive Trends 118

Exhibit V-35 Concepts About Print Trends 118

Exhibit V-36 Means and Standard Deviations for Child Outcome Measures at Three Time Points 119

Exhibit V-37 Repeated Measures ANOVA and Trend Analyses for Physical and Social-Emotional Outcomes 119

Exhibit V-38 Daberon 2 Physical Trends 120

Exhibit V-39 CABI Social-Emotional Trends 121

Exhibit VI-1 Family Structure by Setting 124

Exhibit VI-2 Educational Attainment of Primary Caregiver 126

Exhibit VI-3 Significant Life Events 127

Exhibit VI-4 Parent Setting Preference by Actual Assignment 129

Exhibit VI-5 Advantages of FCC Home and Center Classroom Settings as Reported by Parents in Fall 129

Exhibit-VI-6 Mean Parent Ratings of Child Care Attributes 130

Exhibit VI-7 Most Frequently Discussed Topics During Parent-Teacher Conferences 132

Exhibit VI-8 Frequency of Informal Conversations Between Parents and Teachers (n = 697) 133

Exhibit VI-9 Job or Training Status of Family Child Care Home and Center Classroom Parents 135

Exhibit VI-10 Changes in School or Job Status Since Pretest 136

Exhibit VI-11 Parent Perceptions of the Effect of Head Start on School or Job Status 137

Exhibit VI-12 Predictor Variables in Parent Outcomes MLR Analysis 137

Exhibit VI-13 Results of Stepwise MLRs on Parent Outcomes 138

Exhibit VI-14 Final Regression Model for Family Resource Scale (Multiple R = .6347) 139

Exhibit VI-15 Final Regression Model for Family Routines Inventory (Multiple R = .5750) 139

Exhibit VI-16 Final Regression Model for Parenting Dimensions Inventory (Multiple R = .5222) 139

Exhibit VI-17 Group Means and Significance Tests on Parent Outcomes Family Child Care Homes and Center Classrooms 140

Executive Summary

In the fall of 1992 the Administration on Children, Youth, and Families (ACYF) funded 18 Head Start family child care demonstration projects for a 3-year period. The primary purposes of this evaluation were to determine whether services provided in the family child care homes met Head Start Program Performance Standards and to compare the outcomes for children and families participating in family child care homes with outcomes for those participating in center classroom-based programs. Each local site served two groups of 40 children who were randomly assigned to either family child care homes or center-based settings. After an initial planning and start-up year, staff at each project agreed to serve two cohorts of 40 four-year-olds in Head Start family child care. Eligibility was limited to parents who were either working, attending school, or in a job training program. This report focuses on the findings from the second cohort of children because the evaluation instruments were not approved in time for use at the beginning of the first cohort, considered a pilot.

The evaluation design called for data collection in the fall of the Head Start year, in the spring of the Head Start year, and in kindergarten. Data collection staff:

- Interviewed parents to obtain information on child and family background characteristics and perceptions about the services received;
- Observed family child care homes and center classrooms that served comparison group children to evaluate the comprehensiveness and quality of services in both settings;
- Interviewed agency staff and individual caregivers in both settings to learn more about the process of implementing Head Start in family child care homes, to gather information about caregiver background, and to determine compliance with Head Start Program Performance Standards;

- Reviewed agency records to evaluate compliance with Head Start Program Performance Standards;
- Conducted individual assessments with participating children to measure cognitive, social-emotional, and physical growth; and
- Collected caregiver ratings of each child s social development.

Program Implementation Characteristics

During the first year of implementation the evaluation team collected detailed information about the history of each participating agency, the agencies motivations for participating in the demonstration project, and the characteristics of the family child care home program.

- All agencies in the evaluation had been providing Head Start services for at least 10 years; 14 of the agencies had been providing Head Start services for over 20 years. Only 3 agencies had prior experience with delivering family child care home services.
- Many agencies viewed the family child care home option as an opportunity to better serve families needing full-time care, children in outlying rural areas, or children with special needs.
- Agencies that hired a family child care coordinator early in the planning year and maintained the family child care coordinator role full-time during both implementation years experienced more success providing Head Start services in family child care homes.
- Thirteen of the 18 grantees contracted directly with family child care providers, 4 agencies hired the family child care providers as employees, and 1 agency subcontracted to another agency that employed the providers. Agencies reported that employing the family child care providers was more expensive and created overtime issues related to providers' working more than 40 hours a week but allowed for more control over provider services and practices, more opportunities for training, and better organizational cohesiveness. A relationship between

employee/contractor status and overall costs or quality of the family child care homes was not apparent.

- Nine agencies offered family child care services on a 9-month (school-year) schedule, 7 operated family child care homes on a 12-month schedule, and the remaining 2 agencies had some homes operating for 9 months and some homes operating for 12 months.
- Thirty percent of the family child care homes were open more than 8 hours a day, 52% were open for 7 to 8 hours a day, and the remaining 18% were open for fewer than 7 hours a day.
- Many agencies felt they needed to increase the amount of inservice and preservice training offered to family child care providers and provide more direct support in the family child care homes. Preservice training averaged 96 hours and inservice training averaged 63 hours across agencies.
- Although family child care providers reported more contact with their immediate supervisors (the family child care coordinators) than did center classroom teachers, they were less likely to have contact with Head Start component area staff (education, health, social service, and parent involvement coordinators). In many cases, this was part of the program design: family child care coordinators were expected to assist family child care providers in all program components.
- The average cost per child of providing family child care ($9,046) was about twice the national average cost per child for Head Start ($4,534). Family child care was more expensive for several reasons: (1) family child care was primarily full day, and most classroom programs are half-day; (2) several family child care homes provided year-round services, whereas most center classrooms operate on a school year schedule; and (3) many family child care homes had unfilled vacancies that contributed to a higher cost per child served.
- Agencies experienced unanticipated difficulties recruiting families for the demonstration project. In the second cohort, agencies recruited an average of 90

children for the demonstration project, and an average of 54 children actually enrolled. Some of the difficulties were related to the random assignment requirements of the evaluation, but agencies also had difficulty convincing some families that Head Start in the family child care home setting was more than just babysitting. Transportation problems, a lack of child care for siblings, and competing preschool programs were also barriers to recruitment. Families assigned to family child care homes were more likely to decline their assignment than were families assigned to center classrooms.

Child and Family Background Characteristics

The second cohort, the focus of this report, included 972 children who enrolled in a family child care home or center classroom. Background information was collected through interviews with the children's parents.

- About 30% of the children were African American, one quarter were Hispanic, about 38% were White, and the remainder were Asian, Native American, or other races.
- About 84% of children spoke English as their primary language, about 13% spoke Spanish as their primary language, and the remaining 3% spoke a primary language other than English or Spanish.
- About 37% of the families participating in the project were two-parent families, 53% were single-parent families, and the remaining children lived with another relative or a foster family.
- Families participating in the family child care home and center classroom groups reported a mean family income of approximately $12,000; over 70% of families received some type of public assistance.
- About 35% of project participants had moved within the last year, and 13% had moved two or more times in the last year.

- There were no differences between center classrooms and family child care homes in the mother s educational level, general health, or most stress factors. However, the family child care parents were more likely than the center classroom parents to be working or attending school.

Characteristics of Family Child Care Providers and Center Classroom Teachers

The family child care providers and center classroom teachers were interviewed by the data collection team in the fall and spring of the Head Start year. Most of the family child care providers:

- Were women;
- Had children of their own and were between 30 and 45 years of age;
- Were the same race/ethnicity as the predominant race/ethnicity in the community;
- Were the same race/ethnicity as the majority of the children in their care;
- Spoke the same language as the predominant language in the community;
- Spoke the predominant language(s) of the children in their care;
- Had earned a high school diploma and had attended some college;
- Had received training in early childhood education;
- Had an average of nine years of early childhood experience; and
- Had an average of one year of Head Start experience.

The center classroom teachers differed from the family child care providers in the following ways:

- Center classroom teachers had attained higher levels of education almost 60% had college degrees compared to 27% of the family child care providers. Center classroom teachers were far more likely (48%) to have a degree in early childhood education than the family child care providers (9%).

- Center classroom teachers on average had 5 more years of child care experience than the family child care providers.
- Center classroom teachers on average had 6 more years of Head Start experience than the family child care providers.
- Center classroom teachers earned an average of $1 less per hour than the family child care providers. However, the center classroom teachers were much more likely to receive medical benefits, paid vacation, and retirement benefits.

Implementation of Head Start Program Performance Standards

In the spring of the second program year, the evaluation team collected observation, interview, and record review data to evaluate the compliance of each family child care home and center classroom with the Head Start On-Site Program Review Instrument (OSPRI) education, health, social services, and parent involvement items.

- There were no significant differences overall between the family child care homes and the center classrooms on total number of OSPRI items implemented successfully. However, center classrooms successfully implemented significantly more parent involvement items than did the family child care homes, although the mean difference was only one item.
- Some of the largest differences between settings occurred on items that required the center classroom teachers and family child care providers to maintain records on individual children and families. For example, center classroom teachers were more likely to document parent conferences, home visits, and parent participation. However, the family child care providers were more likely to identify and document family social service needs.
- In comparison to family child care homes, the center classrooms were more likely to implement the following indicators: keeping the premises clean and free of hazardous materials, having equipment and materials accessible and inviting to children, providing a quantity of food that meets nutritional needs, having child-

sized furniture and utensils, encouraging parents to participate, and maintaining regular systems of communication between staff and parents.

Characteristics of Program Structure

Program structure refers to aspects of the child care environment such as child/staff ratio, group size, group composition, and materials and equipment. In this evaluation:

- Child/staff ratio varied considerably among the family child care homes and center classrooms, but on the average, the family child care homes maintained a child/staff ratio (4.8:1) approximately half that of the center classrooms (8.3:1).
- Group size was significantly lower in the family child care homes (5.1) than in center classrooms (17.8).
- Almost 70% of the family child care providers had children of their own at home, but only 30% had preschool children. About 40% of the family child care providers cared for other children in addition to their own and the Head Start demonstration project children.

Roughly equal percentages of family child care homes and center classrooms contained key curricular materials and equipment such as art supplies, blocks, manipulatives, and active play equipment. However, the family child care homes were less likely to have dramatic play props, science materials, books, or health and nutrition materials. The family child care homes were also less likely to use learning centers, have individual "cubbies" for children, and contain materials that reflect ethnic and cultural diversity.

Characteristics of Program Dynamics

The family child care homes and center classrooms were similar in terms of program dynamics with the following exceptions: The family child care homes were *more* likely than the center classrooms to regularly schedule field trips, and maintain a balance of staff-directed and child-initiated activities. The family child care homes were *less* likely than the center classrooms to promote multicultural awareness, invite parents to share culture,

display children's art work, use child-sized furniture, have providers eat with the children, and have providers eat the same foods as the children.

The family child care homes and center classrooms were also compared on developmental appropriateness, caregiver and child interaction patterns, and caregiver behaviors.

- Fall ratings indicated that the family child care homes were less developmentally appropriate than the center classrooms. By spring, however, the two settings did not differ in terms of their developmental appropriateness.
- Caregiver and child interactions followed similar patterns in the family child care homes and center classrooms. Over 90% of the family child care providers and center classroom teachers engaged in such positive behaviors as interacting with smiles and hugs, using children's names, and listening and responding to children. However, only 65% of the caregivers in each setting used open-ended questions.
- Overall, the family child care providers were rated significantly higher than the center classroom teachers on attentive and encouraging behaviors. Negative caregiver behaviors such as harsh, detached, and controlling behaviors did not differ significantly between the family child care homes and center classroom settings.

Child Cognitive Outcomes

By the end of the program year children assigned to family child care homes performed as well as those in center classrooms (after adjustments for any pretest differences were made) on the Peabody Picture Vocabulary Test (PPVT R), the Daberon-2, and Concepts About Print (CAP). Children assigned to family child care homes were rated *more highly* than those in center classrooms on the Child Observation Record (COR) total. Children s primary language, the primary caregivers educational level, and the program quality also influenced child cognitive outcomes.

- Non-English speaking children did not perform as well on the Daberon 2 cognitive scales as their English-speaking peers.

- Children whose mothers had higher education levels performed better on Concepts About Print.
- The higher the quality of the educational program (as measured by the number of OSPRI education items passed), the higher the children s scores on cognitive development as measured by the PPVT R, the Daberon-2 and Concepts About Print.

Child Social-Emotional Outcomes

Setting was not a significant influence on the Child Adaptive Behavior Inventory (CABI) or Child Observation Record social-emotional scales. Higher quality programs, as measured by the Developmental Practices Inventory (DPI), were associated with more positive social-emotional outcomes on the Child Observation Record.

Child Physical Outcomes

The children in family child care homes were rated higher on music and movement skills than the children in the center classrooms. There were no differences between the children in family child care homes and the children in center classrooms on the physical development scales of the Daberon-2. Higher quality programs (as measured by the number of OSPRI education items passed) were associated with more positive physical development on the Child Observation Record.

Parent Outcomes

There were no significant differences on any of the parent outcomes between parents whose children were in family child care homes and those whose children were in the center classrooms. (Outcomes were adjusted for any pretest differences.)

- Program quality was not a significant influence on the parent outcome measures.
- In the fall parent interview, parents tended to prefer the center classroom setting over the family child care home setting. However, parents with a strong setting

preference usually preferred their child's assigned setting, and over 90% of parents reported they were very happy with their child's setting.

- Parents in both settings were most happy with the hours, the opportunity for their children to learn skills, the cost (none), the preparation of their children for kindergarten, and the setting location.
- Parents in both settings reported the same average number of formal parent-teacher conferences, but parents in family child care homes had significantly more informal contact with the child care providers than did parents in center classrooms.
- Parents in center classrooms were more likely to be involved in the Head Start program than parents in family child care homes. Center classroom parents were also more likely to report that they felt their help was wanted and were more likely to receive training.
- There were no overall differences in the percentage of parents who were employed, in school, or in training from the beginning to the end of the Head Start year. However, parents with children in the family child care homes were more likely to be employed or in school, and more likely to report that Head Start had helped them maintain their employment or school status.
- Parents primary language was significantly correlated with two of the parent outcomes: the Family Resource Scale and the Family Routines Inventory. Parents whose primary language was not English were less able to acquire the necessary resources to meet family needs, but more likely to establish the kinds of learning routines measured by the Family Routines Inventory.

Kindergarten Follow Up

According to kindergarten teachers, children from the two Head Start settings were equally likely to participate in programs such as Chapter 1 or ESL, to be recommended for promotion to first grade, and to have parents who participated in parent-teacher conferences or kindergarten activities.

- Both groups of parents reported that Head Start had prepared their children for kindergarten and that their children were doing well in kindergarten.
- Children in the two Head Start settings performed equally well in kindergarten on measures of cognitive, social-emotional, and physical outcomes. The most consistent predictor of student success in kindergarten was a child's performance at the beginning of the Head Start year. After controlling for these pretest differences, Head Start program quality was a significant predictor of kindergarten PPVT R and Concepts About Print scores.
- Trend analyses across the three data collection points indicated that scores on the PPVT R, Daberon 2, and Concepts About Print improved over time. There was greater growth during the Head Start year than during the kindergarten year for the Daberon 2, but greater growth during the kindergarten year for Concepts About Print. Growth trends were similar for the two settings.
- For physical development, scores improved over the three time points.
- For social-emotional development, family child care providers tended to rate children in a more positive light than either the Head Start classroom or the kindergarten classroom teachers.

Policy Implications

Based on the data collected during the planning year and the 2 years of implementation, family child care homes appear to provide a viable option for delivery of Head Start services. Agency staff felt it was a particularly good option for outlying rural areas, areas with a shortage of classroom facilities, children whose needs are better met in a small-group setting, and families who need full-day care for their children. For an agency to operate a successful Head Start family child care program, a number of recommendations should be considered:

- Quality matters regardless of the preschool setting. Child outcomes in the cognitive, social-emotional, and physical development domains were all linked to observed

program quality. These effects carried over into kindergarten, with higher Head Start quality predicting higher vocabulary and pre-literacy scores, whether the child was in the family child care home or center classroom setting.

- Agencies interested in the family child care home option should carefully assess the need for family child care in their communities, giving consideration to other child care options for low-income families. Several agencies in the family child care demonstration project overestimated the demand for family child care and were unable to fill the vacancies in family child care homes. Agency staff should also be prepared to address the challenge of convincing parents that Head Start in the family child care home setting is comparable to Head Start in a center classroom setting.
- Agencies should plan to employ a *full-time* family child care coordinator who is knowledgeable in all of the Head Start content areas. The family child care coordinator should make weekly visits to each family child care home to model appropriate caregiver behaviors and provide other technical assistance to family child care providers, especially regarding Head Start Program Performance Standards.
- Like Head Start center classroom teachers, family child care providers should have regular release time for receiving in-service training, completing paperwork, and conducting home visits. Family child care providers should also be encouraged to complete Child Development Associate credentials or early childhood education degrees.
- Head Start agencies need to allocate adequate funds for materials and equipment in family child care homes. Some of the materials and equipment could be circulated through a lending library so that children in family child care homes would have access to the same variety of materials as children in center classrooms.
- Family child care providers should be encouraged to coordinate activities with center classroom teachers to expose children to the classroom experience and to

enable family child care providers to learn more about developmentally appropriate activities from classroom teachers.

- To have more control over providers' training and curriculum, agencies should be encouraged to employ family child care providers. Family child care providers strongly expressed the need for support from Head Start agency staff, and many contracted providers felt isolated from their Head Start agency.
- Head Start agencies should offer family child care homes as a year-round option. Employed parents typically need year-round care for their children, and family child care providers expressed a need for year-round employment. Agencies should also consider ways to offer evening and weekend care for parents who work or attend school at those times.
- Agency staff must develop ways to involve working parents in meaningful ways in the family child care home option.

Much has been written about the changing needs of Head Start families and the importance of providing high-quality child care program options to serve them. The most frequently reported issues facing Head Start families include accessing language assistance for families whose first language is not English; securing adequate housing or employment; dealing with problems related to domestic or community violence; finding transportation to and from social services; and finding high quality, affordable, child care (Finlay, 1995).

Head Start has sought to address many of these fundamental challenges encountered by families in Head Start communities. The Head Start family child care demonstration project tested whether comprehensive, full-day, family child care services would be as effective as Head Start center classroom services in delivering to families the assistance they need. The findings presented in this evaluation indicate that family child care homes can meet Head Start standards of quality and can produce similar outcomes in children and families.

I. Introduction

Background and Rationale for Family Child Care Services in Head Start

Head Start is mandated to provide comprehensive child development, health, and early education services to children in poverty with the goal of serving 1 million young children and their families by the year 2002 (Budget of the United States Government, 1998). Since its inception as a 6-week summer intervention program more than 33 years ago, Head Start has explored and incorporated different approaches to the structure and delivery of services through such innovative programs as Planned Variation, Follow Through, Head Start Transition, migrant and Native American programs, and more recently, Early Head Start and the Head Start/Child Care Partnerships (Zigler & Styfco, 1996). In addition, service variations are encouraged through local options that address the particular concerns and requirements of diverse community contexts (Phillips & Cabrera,1996). If standards of quality and integrity are maintained through the use of Head Start Program Performance Standards applied to all variations (U.S. Department of Health and Human Services, 1996), then developing and maintaining alternatives to the traditional preschool classroom model enables Head Start to meet the needs of children and families across a wide range of circumstances.

The innovations in Head Start service delivery will need to be widely implemented in the twenty-first century. Head Start will be challenged to meet the needs of young children in a society that has undergone tremendous change since the time of those initial summer programs. The increase in the number of single-parent families in poverty, the increase in the incidence of violence, the rise in the number of children with disabilities, and the increase in the number of requests for programs sensitive to speakers of languages other than English all indicate a population at risk and in need of a wide array of support services and Head Start enrollment options. Today s preschoolers will be entering a sophisticated labor force with occupations that require not only advanced technical skills but also facility with problem solving strategies and the ability to deal with multiple expectations. Yet, in

1994 the school dropout rate among children from low-income families was five times as high as that for children from more affluent families (Annie E. Casey Foundation, 1997). One in four of America s children under the age of 6 lived in poverty in 1995 (defined as annual income under $15,141 for a family of four), and 12% of young children lived in extreme poverty (annual income under $7,571 for a family of four; National Center For Children in Poverty, 1996). Almost 70% of these children in poverty lived with parents who dropped out of high school (National Center for Children in Poverty, 1996).

The enactment of HR 3734, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (popularly known as *welfare reform*), will have an enormous impact on the lives of poor children and will change Head Start services in significant ways. It is estimated that 46% of the mothers with children enrolled in Head Start in 1996 received assistance through Aid to Families with Dependent Children (AFDC). Although individual states are developing their own systems and variations in the implementation of the act, it is clear that welfare reform necessitates a sustained and intense examination of existing early care and education programs including Head Start, a process that is well under way.

Many families will move from unemployment to training, education, or work responsibilities that will require new child care arrangements. Their access to Head Start programs will be limited by time and transportation constraints. Currently, only about 20% of children served by Head Start are in programs with full-day services of 6 hours or more. Full-day services are available only to children with special needs or with parents who are employed or in job training. Work, school, or job training sites may be far from Head Start programs that are center based. Furthermore, many low-income children and families are not currently being served by Head Start for a variety of reasons. Children may be in patched-together child care arrangements with few opportunities for intellectual and social stimulation, in the care of older siblings, or even left alone. Welfare reform efforts, early intervention programs, and child care services must form partnerships to coordinate services to provide the best possible options for poor families.

The Evaluation of the Head Start Family Child Care Homes Demonstration

In 1992 the Administration on Children, Youth, and Families (ACYF) funded a 3-year project designed to evaluate the delivery of Head Start services in family child care home settings and to compare those services with the services provided in traditional center classroom settings. The family child care home services were intended for 4-year-old children in the year prior to kindergarten. Eligibility was limited to parents who were either working, in school, or in a job training program. The primary purposes of the evaluation were to:

- Determine whether the full range of Head Start services (child development, education, and health) could be successfully provided in family child care homes;
- Assess the program implementation characteristics necessary to meet the Head Start Performance Standards in family child care homes;
- Compare the overall quality of family child care homes with that of center classrooms; and
- Determine whether the outcomes for children and parents in family child care homes were comparable to the outcomes for children and parents in center classrooms.

ACYF awarded family child care demonstration grants to 18 Head Start agencies to establish and implement family child care home programs for providing Head Start services. After an initial planning and start-up year, two cohorts of children (1993 and 1994) were randomly assigned to either family child care homes or center classrooms. The evaluation team measured program quality and adherence to Head Start Performance Standards in the two settings and conducted assessments of the children s cognitive, social-emotional, and physical development at the beginning and end of the Head Start year and in the middle of the kindergarten year. In addition, parent perspectives on the program and overall program satisfaction were probed.

Overview of Evaluation Findings

The main objective of the Head Start family child care demonstration project evaluation was to examine the efficacy of providing Head Start services through an alternative delivery system family child care homes. The intent was to determine whether the quality of Head Start programs could be achieved and maintained in the family child care home setting and whether outcomes for children and parents in home and center settings were comparable. In brief, findings included the following:

- Measures comparing program quality in family child care homes and center classrooms revealed no significant differences. Although fall assessments of developmentally appropriate curricular practices were slightly lower for family child care homes compared with center classrooms, these differences were nonexistent by the spring. Family child care homes reduced their overall use of inappropriate practices, whereas center classrooms remained the same.
- No significant differences in caregiver and child interactions were observed in on-site assessments of the two settings. However, caregiver behaviors were more attentive and encouraging in family child care homes than in center classrooms on one scale of caregiver behavior.
- Children in the family child care homes performed as well as children in center classrooms on assessments of cognitive performance. Child outcome measures revealed few significant differences between the two settings. Program quality, regardless of setting, had a positive influence on all cognitive outcomes.
- Higher quality programs were associated with more positive child social-emotional and physical outcomes. Few differences between family child care homes and center classrooms were evident on most measures of social-emotional and physical outcomes.
- Parents were generally pleased with the family child care homes. Although some parents had been concerned initially that the family child care home setting would

not provide the same quality of educational program, by the spring more than 90% of the parents reported being very happy with the family child care home setting.

- Children in both family child care homes and center classrooms performed equally well in kindergarten on measures of cognitive, social-emotional, and physical outcomes.

An important implication for the development of alternative delivery systems for Head Start emerged from these findings: *Family child care homes are viable settings for the delivery of comprehensive Head Start services*. Established measures of program performance, with a few minor variations, may be used to evaluate family child care homes with confidence and accuracy. Overall, the integrity of the Head Start program is well maintained in both the family child care home and the center classroom settings, as evidenced by the lack of setting differences for child outcome measures both at the posttest evaluation and at the kindergarten follow-up.

Framing the Issues in Alternative Delivery of Head Start Services

The development of exemplary early intervention programs is drawn in part from Head Start s history and research findings as well as issues of child care quality. These issues are grounded within a developmental framework which assumes that any discussion of early intervention has the children s optimal development as the primary goal.

Head Start

The history of Head Start spans more than 30 years. Drawing heavily upon assumptions about the malleability of development through environmental intervention (e.g., Bloom, 1964; Hunt, 1961), the original Head Start summer program was expected to produce permanent gains in intellectual functioning and other changes in the developmental trajectories of poor children by providing intensive intervention at critical stages of development. Although Head Start s commitment to comprehensive services including a focus on improving social competence and involving parents created a distinct form of

intervention, the brief inoculation approach was not adequate to bring about the types of gains initially promoted. The beginning of the Head Start program was a disappointment for many, but the experience provided the opportunity to seriously examine the scope of early intervention and to begin to understand the limitations and potential benefits of various interventions (Zigler & Styfco, 1996). The introduction of Head Start paved the way for other early intervention efforts and initiated an extensive examination of the influence of a variety of strategies for improving the long-term developmental outcomes for low-income children (Barnett, 1995).

Head Start is now a very different program. The original commitment to increasing children s social competence and school readiness, the inclusion of parents in meaningful ways, and the provision of comprehensive services remain the core of the program. Services are now provided in the context of 9-month or full-year programs, and options in program design include home-based and center-based settings and local options designed to meet the needs of a particular community. With these variations, Head Start has substantially increased its clientele base.

The expansion of Head Start, achieved through a series of legislative initiatives, has not occurred without controversy. Questions about the effectiveness of Head Start programs have persisted since the initial evaluations, particularly with respect to long-term cognitive benefits (Bronfenbrenner, 1974). Despite persuasive findings about the influence of early intervention on other, noncognitive outcomes (Consortium for Longitudinal Studies, 1983; Barnett, 1995), the long-term benefits of early intervention for cognitive outcomes remain equivocal (Barnett, 1995). Much of the recent Head Start research (National Research Council, 1996; U.S. Department of Health and Human Services, 1990, 1993, 1994) has focused on factors that contribute to quality programs.

Several interrelated issues will have a major influence on the future of the delivery of Head Start services. Welfare reform has profound consequences for the Head Start program. As parents are required to seek training or employment, the primarily half-day, 9-month structure of many Head Start programs must be modified to meet the changing needs of the

population served. This challenge is coupled with a lack of quality child care options in the communities where many low-income families live. Already scarce, quality child care will become an ever more pressing need (Children s Defense Fund, 1996; Love, Schochet, & Meckstroth, 1996; Phillips, 1995). Head Start has the potential to meet some of this need by expanding its child care partnership options to more programs. Further, the national educational goal that every child will come to school ready to learn (National Educational Goals Panel, 1991) places even higher expectations on the quality and outcomes expected of Head Start programs.

Child Care

Attention to issues of quality child care, initiated through the dissemination of research findings in both the research and popular press, has increased in intensity over the last 5 years. Although a clear consensus has not emerged on how quality is to be defined and what variables need to be incorporated into the scope of the definition, there is general agreement that the focus of research on child care has moved away from the issue of whether child care in general is harmful or beneficial to young children to an examination of how child care quality interacts with child and family variables and ultimately influences child outcomes. In a review of research on child care quality and children s well-being, Love et al. (1996) concluded that clear evidence exists for strong positive relationships between a variety of quality measures and various dimensions of children s development and well-being . . . [including] enhanced social skills, reduced behavior problems, increased cooperation and improved language. (p. iii)

Although some children from low-income families have access to high-quality child care through Head Start, other local, state, or federally supported programs, or through the use of subsidies in other settings, many poor children have little or no opportunity to experience superior child care. This problem concerns not only overall availability (Is child care available in the home community or near the parent s work location?), but overall quality (If child care is available, what is its quality?). Current estimates of the ratio of available child care to needs even without taking quality into account indicate that a

severe shortage of child care will ensue as increasing numbers of parents move from welfare to work.

Family Child Care

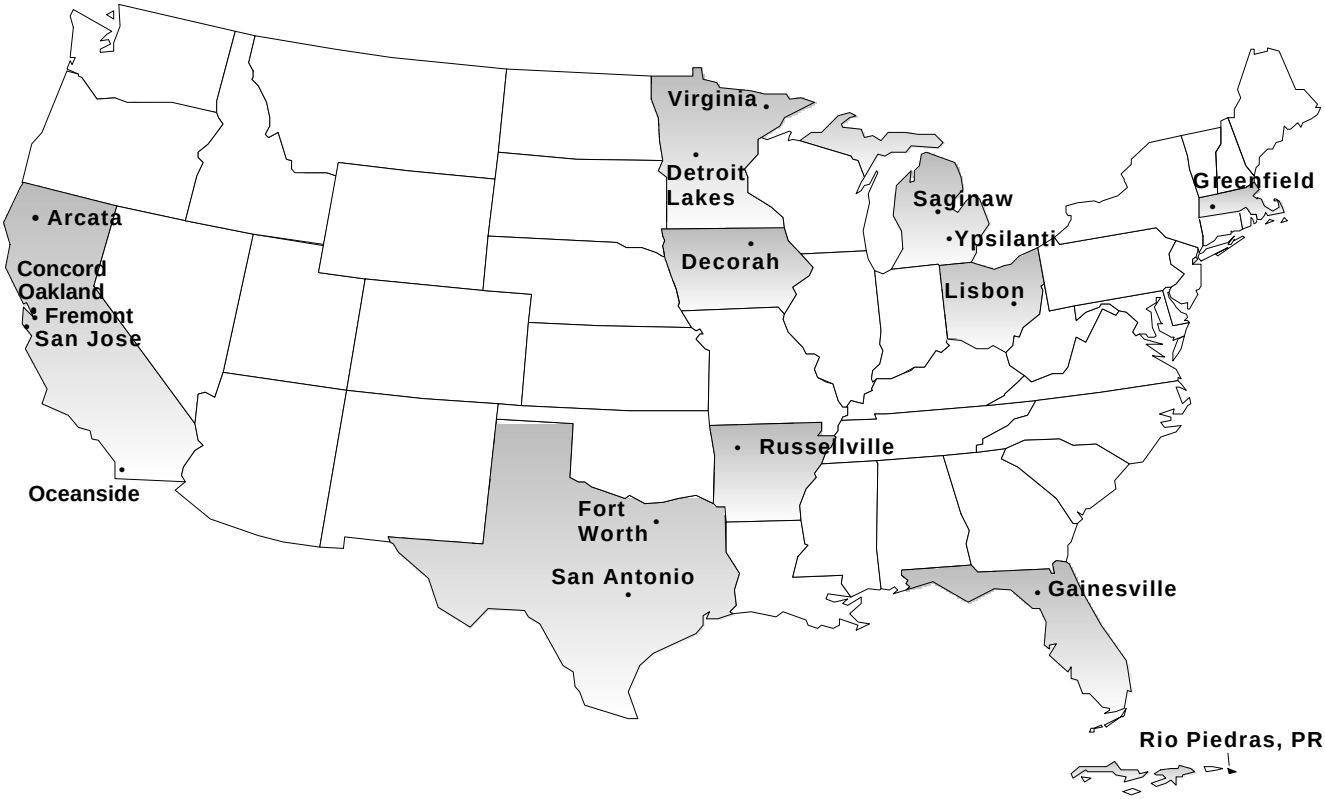
Family child care is used by many families who seek child care services. Although most states have regulatory statutes of some type, many children are in unlicensed child care settings where little or no oversight of overall quality occurs. In addition, even in licensed family child care the regulation of settings and services is often inadequate (Kontos, Howes, Shinn, & Galinsky, 1995), though regulated care is still of higher quality and associated with more positive outcomes than unregulated care (Galinsky, Howes, & Kontos, 1995; Howes & Rubenstein, 1981; Kontos, 1994; Kontos et al., 1995). As with center classroom settings, family child care homes of higher quality are associated with positive outcomes (Love et al., 1996).

The delivery of Head Start programs in family child care homes was implemented previously through the Locally Designed Options in the Head Start Expansion in 1984 and as part of the Innovative Projects program in 1985 (Phillips & Cabrera, 1996; Zigler & Styfco, 1996). Neither a systematic examination of the delivery of Head Start services through family child care homes nor a comparison of center classroom-based programs with family child care homes has been conducted until now. As Head Start confronts the enormous challenges of providing quality, comprehensive services to low-income children and their families in an era of evolving community and family needs while striving to meet its goal to increase the number of families served, alternative delivery systems must be examined more closely.

II. Evaluation Design and Demonstration Site Characteristics

After a competitive grant process in the fall of 1992, ACYF funded 18 Head Start family child care demonstration projects for a 3-year period. The demonstration project grantees included community-based organizations, local government agencies, and school districts. Exhibit II-1 shows the locations of the 18 grantees.

Exhibit II-1
Locations of Head Start Family Child Care Demonstration Sites



Families who agreed to participate in the family child care demonstration project had to meet several criteria in addition to Head Start income requirements:

- The child is 4 years old and in the year prior to entering kindergarten.
- The parents are working, in job training, or in school and need child care.
- The parents are willing to accept random assignment to either the family child care home setting or the center classroom-based comparison group.
- The parents are willing to provide family background information to the project evaluation team and are willing to have their child's cognitive, social, and physical growth measured during the Head Start year and in kindergarten.

Each agency participating in the evaluation was expected to provide between 7 and 10 Head Start family child care homes and serve from 4 to 6 children in each home. Each agency also had to have a sufficient population base to be able to recruit and enroll a pool of 80 children each year.

Purpose of the Evaluation

The evaluation of the Head Start family child care homes sought to answer four major evaluation questions:

- Do Head Start services provided through family child care homes meet accepted standards of quality established for programs serving Head Start children?
- Do Head Start services provided through family child care homes compare favorably to services provided through center classrooms?
- What program implementation characteristics of family child care homes are necessary to meet Head Start Program Performance Standards?
- Do Head Start services provided through family child care homes compare favorably to services provided through center classrooms in terms of their effectiveness in promoting positive outcomes for children and families?

The evaluation framework for answering these questions is depicted in Exhibit II-2, which displays the four domains of variables that were examined in evaluating the services provided and the outcomes of those services in Head Start family child care homes and center classroom-based programs: family and child background characteristics, program implementation characteristics, comprehensiveness and quality of program services, and child and family outcomes.

The evaluation team collected data using a variety of methods at three points in time: fall of the Head Start year, spring of the Head Start year, and spring of the kindergarten year. Exhibit II-3 summarizes the planned evaluation design and the actual number of children assessed at each data collection point. The evaluation design called for 1,440 children and their families to be assessed each year (40 family child care and 40 center classroom children at each of the 18 grantees). The actual number of children enrolled in the evaluation fell short of these goals for both cohorts, primarily because of unanticipated difficulties in recruiting families who met all of the criteria for participation.

Exhibit II-2
Key Indicators in the Evaluation Framework

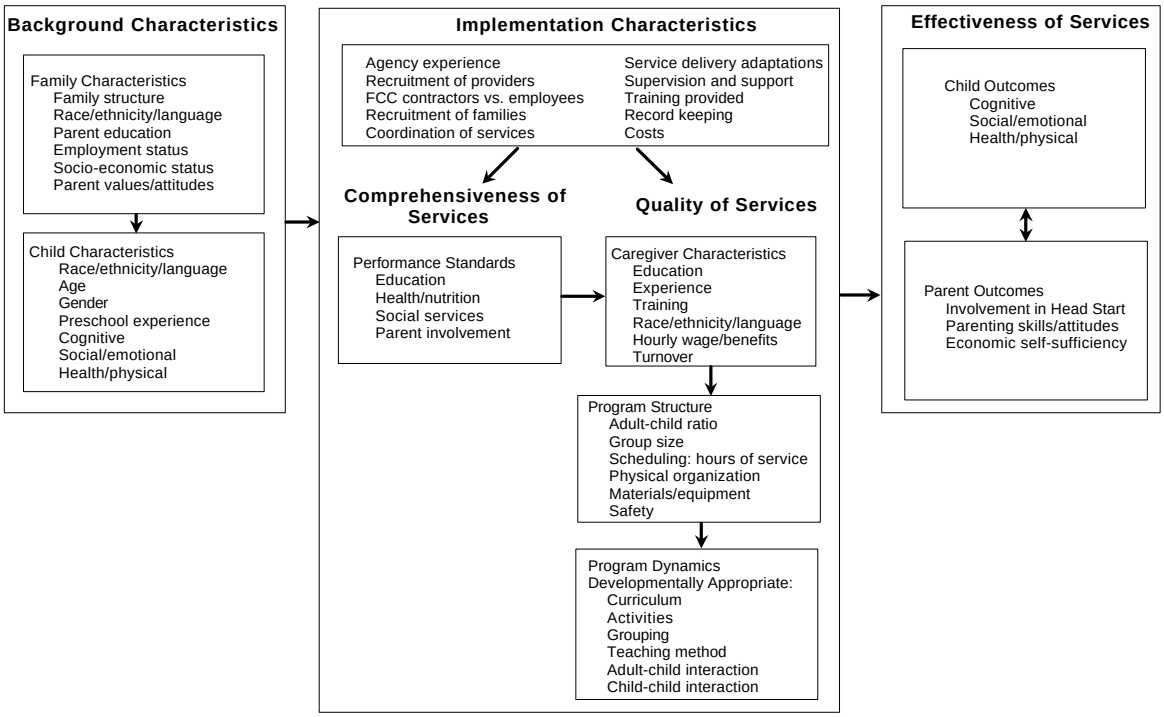


Exhibit II-3
Evaluation Design

Program Setting	Number of Children Assessed Cohort 1 (Pilot)			Number of Children Assessed Cohort 2		
	Winter 1990	Spring 1994	Spring 1995	Fall 1994	Spring 1995	Spring 1996
FCC homes	414	347	266	435	346	262
Center classrooms	470	409	300	478	399	284

Recruitment and Random Assignment

Recruitment for the family child care home demonstration projects differed from the recruitment practices typically used in Head Start agencies because of the additional requirements for family eligibility and the random assignment of eligible children to either the family child care home or a center classroom setting. Random assignment was employed to ensure equivalent background characteristics across the children in the two

settings. This section describes the recruitment methods, the random assignment process, number of children recruited and enrolled, the number of children withdrawn from the project, and the barriers to recruitment and enrollment reported by the agencies.

Recruitment Methods

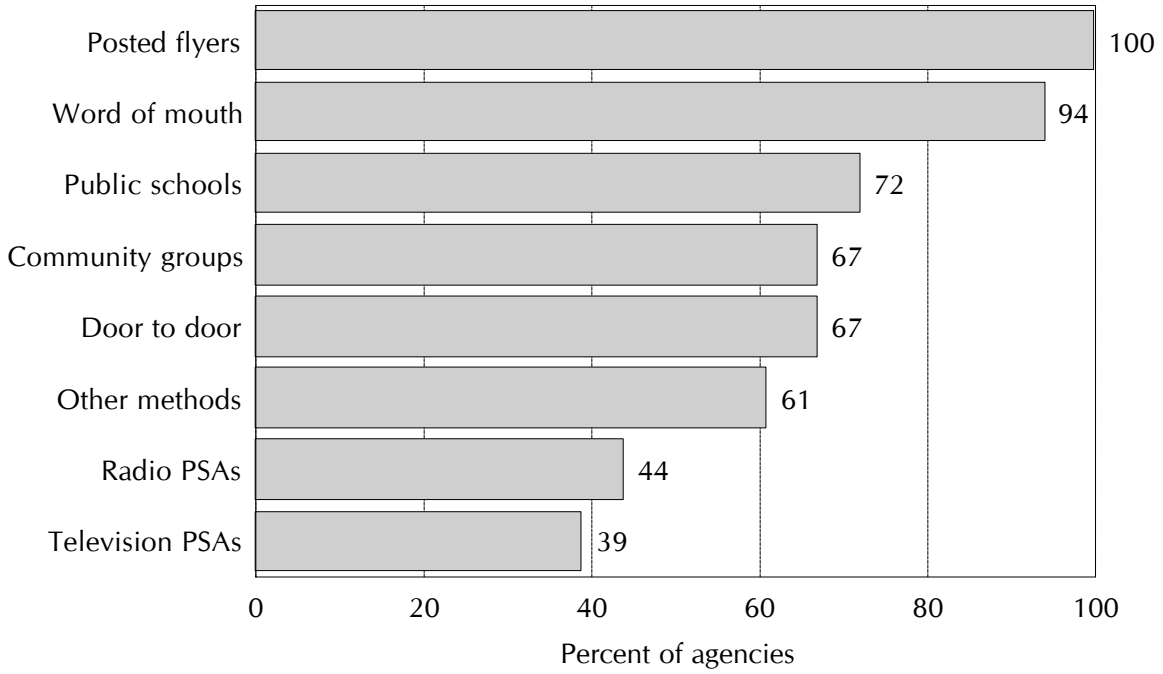
The Request for Applications specified that each grantee was to enroll 80 children who would be randomly assigned to either a family child care home or center classroom setting so that 40 children would be served in family child care homes and 40 children would be served in comparison group classrooms at each agency. Grantees were encouraged to recruit more than 80 children so they could replace children who dropped out of the project.

Several grantees underscored the importance of highlighting three key features of family child care when recruiting:

- family child care homes provide full-day child care;
- family child care providers are screened and receive extensive training, services are monitored, and providers receive the same support furnished to center classroom-based programs; and
- family child care homes are high-quality early childhood environments equipped with appropriate materials and licensed by the state.

Most grantees relied upon several strategies to recruit and enroll families for the family child care project, including posted flyers; door-to-door solicitation; information booths; presentations; home visits with providers; newspaper notices; television and radio public service announcements; direct mailings to social service agencies, churches, and public schools; and word of mouth. Exhibit II-4 shows the percentage of agencies that used various recruitment strategies. Posting flyers and word of mouth were by far the most common strategies.

Exhibit II-4
Recruitment Strategies



According to agency staff, many factors influenced the success of recruitment efforts. Most of these factors were distinct to specific projects. For example, staff at one agency attributed the agency s recruiting success to an extremely well-developed community network for identifying children and families with child care needs.

Random Assignment

In February 1993, prior to the onset of recruitment activities, the evaluation team presented an overview of the purpose of random assignment and the procedures to be used in the Head Start family child care evaluation at the initial grantee meeting in Washington, DC. The evaluation team also distributed Child and Family Background Data forms to grantees. These data collection forms included space for recording each child's name, race, and gender, as well as the mother's educational level and the work or school enrollment status of the primary caregiver. In addition, many grantees also needed to cluster children by geographic area to ensure that an equivalent number of children were assigned to each setting in each community. Within these geographic clusters, children were stratified by

race and gender. Grantees submitted their completed Child and Family Background Data forms to the evaluation contractor who assigned each child an identification number and entered the names and background information into a computer database. A computer program then grouped the children by geographic cluster, gender, and race before assigning each child to either a family child care home or center-based setting. Evaluation staff faxed or mailed the results of the random assignment to the grantees within 2 working days of receiving the forms.

Several difficulties arose in implementing the random assignment procedures. First, some grantees voiced objections to the process. Although the Request for Applications for the demonstration project had clearly stated the random assignment requirement and the evaluation team reiterated the importance of random assignment at the grantee meeting and during the initial site visits, some grantees persisted in wanting to place children directly into the setting they felt was most appropriate or preferred by the parents. Some grantees requested that children be assigned to a particular setting or asked to resubmit a name if the child did not receive the preferred assignment. These requests were denied.

A second obstacle was unanticipated. Several of the sites had great difficulty recruiting an adequate number of children who met all of the participation criteria, including a need for full-day care and a willingness to accept either assigned setting. Agency staff reported that some qualified families were unwilling to participate in the family child care home setting because they wanted their children in what they perceived to be a more school-like setting. As a result, some of the children assigned to the family child care home setting did not enroll.

The Number Recruited and Enrolled

Exhibit II-5 shows recruitment and enrollment figures by agency for Cohort 2 at four points: (1) the number of children submitted to the evaluation contractor for random assignment, (2) the number actually enrolled, (3) the number pretested, and (4) the number with matching pre- and posttest scores. The recruited sample represents the number of children who were assigned to family child care homes or center classrooms through the random

assignment process. The number of children recruited by each grantee ranged from 43 to 136, with an average of 90.5. At most agencies, between 25% and 50% of the recruited population did not enroll. Four sites enrolled 40 or fewer children, 12 sites enrolled between 41 and 70 children, and only 2 sites enrolled more than 70 children. The mean number of children enrolled across all agencies was 54.

Exhibit II-5 Number of Head Start Family Child Care Children Recruited, Enrolled, and Retained in Cohort 2

Agency	Recruited[a] Sample	Enrolled[b]			Pretest[c]			Pre-Post Match[4]			% Enrolled Recruited	% Pretest Enrolled	% Pre-Post Match Enrolled
		Total	FCC	Center	Total	FCC	Center	Total	FCC	Center			
A	100	58	30	28	58	30	28	47	25	22	58	100	81
B	67	39	21	18	35	19	16	26	15	11	58	90	67
C	76	44	28	16	40	25	15	36	23	13	58	91	82
D	93	68	32	36	57	30	27	44	20	24	73	84	65
E	108	54	27	27	55	30	25	44	24	20	50	102	81
F	101	53	28	25	55	26	29	45	22	23	52	104	85
G	135	55	25	30	57	27	30	45	23	22	41	104	82
H	100	63	26	37	59	25	34	54	22	32	63	94	86
I	43	37	19	18	35	19	16	32	16	16	86	95	86
J	77	59	29	30	55	27	28	42	22	20	77	93	71
K	114	47	14	33	45	14	31	35	6	29	41	96	74
L	80	42	12	30	39	12	27	30	8	22	52	93	71
M	95	60	32	28	59	33	26	55	30	25	63	98	92
N	136	79	30	49	66	26	40	54	19	35	58	83	68
O	47	28	13	15	25	12	13	21	10	11	60	89	75
P	83	69	31	38	66	30	36	60	29	31	83	96	87
Q	81	31	16	15	33	16	17	21	9	12	38	106	68
R	93	86	42	44	74	34	40	54	23	31	92	86	63
Total	1,629	972	455	517	913	435	478	745	346	399	60	94	77

[a]Recruited number taken from names submitted to RMC Research for random assignment by agencies.

[b]Number of children enrolled in demonstration project as of December 9, 1994, as reported by agencies.

[c]Number of children pretested with the PPVT R.

[d]Number of children with pretest and posttest matched scores for PPVT R.

Exhibit II-6 presents the numbers of family child care homes and comparison group center classrooms by agency for each of the two cohorts. Total enrollment in the demonstration project increased from Cohort 1 (pilot) to Cohort 2. In both cohorts agencies enrolled more of the children assigned to comparison group center classrooms than children assigned to family child care homes. The number of family child care homes was fairly constant for the two cohorts, but the number of center classrooms with comparison group children increased from 145 to 185.

Exhibit II-6
Numbers of FCC Homes and Center Classrooms by Agency for Cohorts 1 and 2

Agency	Number of Children Recruited		Number of Children Enrolled				Number of FCC Homes		Number of Center Classrooms with Comparison Children	
			FCC Homes		Center Classrooms					
	C1	C2	C1	C2	C1	C2	C1	C2	C1	C2
A	131	100	33	30	24	28	6	6	3	2
B	87	67	19	21	21	18	8	6	8	9
C	119	76	26	28	28	16	9	9	7	7
D	115	93	25	32	34	36	8	8	11	20
E	80	108	20	27	23	27	7	7	10	13
F	95	101	30	28	25	25	8	6	17	15
G	112	135	17	25	28	30	6	7	6	9
H	100	100	30	26	30	37	8	6	12	20
I	50	43	17	19	19	18	6	8	7	10
J	99	77	30	29	38	30	9	8	5	5
K	63	114	9	19	14	33	5	4	9	18
L	69	80	12	12	15	30	5	5	7	15
M	123	95	27	32	33	28	9	10	9	8
N	111	136	17	30	29	49	7	8	8	10
O	78	47	9	13	28	15	4	5	9	5
P	100	83	34	31	32	38	7	6	2	2
Q	98	81	17	16	16	15	5	6	8	10
R	161	93	11	42	20	44	4	7	7	7
Total	1,791	1,629	383	455	457	517	121	122	145	185

Attrition

The pattern of attrition was similar for both cohorts. Approximately 6 8% of project children withdrew between the time of enrollment and the time of pretest or were unable to participate in the pretest for reasons such as illness. The number of pretest/posttest matched scores show that another 14 18% of children withdrew or were not tested for other reasons between the pretest and posttest. Overall, 60% of the children in the Cohort 2 recruited sample had matched pre-post scores. Of those enrolled, 78% had matched pre-post scores.

Evaluation staff conducted several analyses to determine whether attrition rates differed depending on the assigned setting, children's racial/ethnic background, the parents satisfaction with the assigned setting, and the primary caregivers educational level. Chi-square analyses comparing assigned setting by dropout status were significant ($X^2 = 10.5$, $p < .01$). Children assigned to family child care homes were less likely (37% versus 43%) to enroll in Head Start, and less likely to stay in Head Start if they did enroll (46% versus 54%). Chi-square analyses examining the child's race/ethnicity by enrollment status (i.e., never enrolled, left during the year, or stayed all year) were also significant ($X^2 = 28.8$, $p < .01$). Hispanic children (59%) were more likely to enroll and stay all year than children from other racial/ethnic backgrounds (46%).

Parent satisfaction with the assigned setting was assessed during the fall parent interviews. Chi-square analyses comparing parent satisfaction with assigned setting by enrollment status were significant ($X^2 = 17.5$, $p < .01$). Not surprisingly, parents who were *extremely happy* or *very happy* with their child s assignment were more likely to keep their children in Head Start than parents who were *somewhat happy* or *not at all happy*. The analysis of variance comparing primary caregivers educational level by enrollment status was not significant.

Because the design of this evaluation depended on random assignment of children to two conditions, it is especially important to understand the causes and characteristics of attrition in the evaluation population. If children drop out of one setting more than the

other, the two groups may no longer be equivalent on important characteristics and may no longer be representative of the children who were served. Exhibit II-7 displays the number of children who withdrew by agency and setting and the reasons for withdrawal.

As Exhibit II-7 shows, family child care homes and center classrooms experienced different rates of withdrawal. In Cohort 2, 434 children assigned to family child care homes withdrew after random assignment, whereas only 351 participants assigned to the center classrooms withdrew after random assignment. Of the children assigned to the family child care homes who withdrew, 106 parents refused their assignment, 43 had already enrolled in child care elsewhere, 62 had moved out of the service area, 18 parents did not meet the eligibility requirements, and 205 did not enroll for other reasons (e.g., the parents lost interest, the child was not age-eligible, the family lacked transportation, the family was placed on a waiting list, or the project lost contact with the family). Of the children assigned to the center classrooms who withdrew from the evaluation, 52 parents declined their assignment, 42 enrolled elsewhere, 50 moved out of the service area, 3 parents were ineligible, and 204 did not enroll for other reasons.

Withdrawal rates were more or less equivalent for family child care homes and center classrooms for each reason cited except *refused assignment* and *wait list*. Twice as many recruited families declined their family child care home assignments in Cohort 2 as did those assigned to the center classrooms. Agency staff offered two primary explanations for this finding. Several coordinators reported that parents preferred the Head Start centers because they were familiar with them or wanted their children in a more school-like setting. Family child care coordinators also cited some parents lack of understanding of the family child care option as an obstacle to enrolling families assigned to a family child care home. Children assigned to center classrooms were more likely to be placed on a waiting list than children assigned to family child care homes. This usually occurred because recruitment for the family child care home demonstration projects continued after the center classrooms were filled.

Exhibit II-7 Cohort 2: Number of Children Withdrawn by Reason as Reported by Agency

Agency	Refused		Enrolled Elsewhere		Moved		Parent not Eligible		Lost Contact		Lost Interest		Wait List		Other Reason or Unknown[a]		Total Withdrawn	
	FCC	Ctr	FCC	Ctr	FCC	Ctr	FCC	Ctr	FCC	Ctr	FCC	Ctr	FCC	Ctr	FCC	Ctr	FCC	Ctr
A	3	2	4	4	7	7	1	0	3	3	0	0	0	0	6	11	24	27
B	3	3	0	0	1	2	0	0	2	2	4	1	0	7	4	1	14	16
C	1	14	1	0	2	0	0	0	3	3	0	0	3	0	5	6	15	23
D	5	0	6	1	9	2	0	0	1	1	0	2	0	2	5	4	26	12
E	9	8	1	2	2	3	2	0	1	3	1	1	3	6	7	7	26	30
F	5	6	2	5	1	7	0	0	3	2	0	0	8	1	8	7	27	28
G	14	0	1	10	1	0	7	3	11	13	5	3	2	6	3	5	44	40
H	9	5	3	1	1	0	0	0	3	3	2	1	0	2	5	4	23	16
I	4	1	1	0	1	1	0	0	0	0	0	2	0	0	0	0	6	4
J	4	0	0	2	9	5	0	0	0	2	0	0	1	0	4	3	18	12
K	10	2	7	0	1	0	4	0	8	3	3	1	0	2	16	17	49	25
L	13	2	0	0	1	1	0	0	8	3	0	0	0	2	6	8	28	16
M	2	1	3	6	6	4	1	0	0	0	0	1	0	0	6	8	18	20
N	14	3	1	3	10	8	2	0	2	1	0	0	1	4	14	11	44	30
O	3	0	0	0	4	3	1	0	0	0	0	0	0	5	3	0	11	8
P	3	0	2	0	0	3	0	0	1	3	0	0	0	0	4	0	10	6
Q	1	1	8	7	0	1	0	0	0	1	0	0	0	0	20	16	29	26
R	3	4	3	1	6	3	0	0	3	2	1	0	0	0	6	2	22	12
Total Withdrawn	106	52	43	42	62	50	18	3	49	45	16	12	18	37	122	110	434	351
Total % Withdrawn	24%	15%	10%	12%	14%	14%	4%	1%	11%	13%	4%	3%	4%	11%	28%	31%	53%	43%

[a]Other reasons include children of the wrong age or transportation problems.

Barriers to Recruitment and Enrollment

Grantees reported a range of obstacles to recruiting and enrolling families for the Head Start family child care home evaluation. Evaluation staff compiled a list of barriers from the initial site visit report, informal discussions with project staff at each agency, and the fall and spring agency interviews. Virtually all agencies reported that random assignment was an obstacle to recruiting families for the family child care home option. The data suggest, however, that although random assignment was a factor, it was not the only reason for dropping out of the program. Many families viewed the family child care home option as babysitting rather than provision of a comprehensive set of Head Start services in a home setting. Some agency staff reported that parents were reluctant to place their children in the family child care homes because they were not as established as the center classroom-based program. Exhibit II-8 presents the percentages of agencies that reported various problems involving barriers to enrollment.

Exhibit II-8
Barriers to Enrolling Families as Reported by Agencies

Barrier	Percent of Agencies
Random assignment process	100
Transportation problems	81
One-stop child care needs	75
Community attitudes	69
Competing preschools	63
Difficulty recruiting families	56
Finding families who met participation criteria	50
Finding qualified providers	31
Licensing providers	6

Recruiting practices may have significantly contributed to the difficulties some agencies faced in enrolling families in the family child care home option. For example, some family child care coordinators reported that their recruiters did not effectively present family child care as an option. Some coordinators felt that recruiters were biased toward filling up the center programs because of allegiance to center staff. In some agencies, competition

developed in recruiting families for the two options. Other factors that may have negatively impacted enrollment in the family child care home option included a late start or early end to recruitment and underestimation of the challenge of recruiting families who fit all of the requirements for the demonstration project. Several sites reported that public preschool programs had already enrolled most of the eligible children within the service area, which suggests that regions with state-funded public preschool programs or other widely available child care options may not have the same need for Head Start family child care as regions with fewer child care and preschool programs.

In addition, participation in the family child care homes might have been impractical for some families due to family circumstances. For example, families with more than one child needed care for their other children. The family child care home providers could not provide this service, whereas other family day care providers could provide care for children of different ages. Also, families participating in the family child care home option might have experienced more transportation problems. Many centers provided bus transportation for children, but in most cases parents were responsible for transporting children to and from the family child care homes.

Agency Characteristics

Agency characteristics, such as the number of children an agency serves, geographic features, and the demographics of the population served, may influence the ability of an agency to successfully implement family child care homes. To understand the degree to which agency characteristics influence the implementation of the family child care homes and to better understand how agencies participating in this demonstration project compare to the full population of agencies that offer Head Start programs it is important to examine the agencies in the demonstration project and the context within which they operate. Exhibit II-9 identifies selected characteristics of each of the 18 agencies.

Years in Operation

Of the 18 agencies selected to participate in the evaluation, 14 had been providing Head Start services for over 20 years. Among these 14 agencies, 3 had been involved in Head Start since its inception in 1965. All of the grantees in the evaluation had been providing Head Start services for at least 10 years when the evaluation began. In short, the agencies as a group entered the demonstration project with a long history of providing Head Start services and an understanding of its philosophy and policies. However, only 3 of the 18 agencies had previously delivered family child care services.

Agency Size and Type

The agencies varied widely in the total number of children served in their Head Start programs. Four agencies served over 1,000 children, five agencies served 500 to 999 children, and the remaining nine agencies served fewer than 500 children. According to the Head Start Program Information Report (PIR) data for 1995-96, the average number of children served per grantee nationally was 410; in the demonstration sample, 61% of the agencies exceeded that average.

As with overall agency size, the ratio of family child care home demonstration project children to all children served varied from agency to agency. For example, Agency J served 170 children in addition to the 27 children participating in the family child care homes. Thus, about 15% of the children served by Agency J were in the family child care home demonstration project. In contrast, Agency R served 4,250 children and the 34 family child care home demonstration project children equaled less than 1% of the children served.

In terms of agency type, the demonstration grantees included more community action agencies (50% versus 41%), more non-profits (33% versus 28%), and more government agencies (11% versus 6%) than the national average, but fewer school systems (6% versus 17%) and Indian tribes 0% versus 8%).

Community Description

Each agency designated its community as rural, suburban, urban, or mixed (any combination of the three categories). Eight agencies were located in mixed communities, four were in urban settings, and six were in rural settings. Although there were exceptions, the agencies that served the most children tended to be in urban areas, the agencies that served the fewest children tended to be in rural areas, and the agencies that served moderate numbers of children tended to be in mixed settings.

Exhibit II-9
Summary of Agency Characteristics During Demonstration Project Implementation

Agency	Agency type[a]	Number of Children	Community Description	Years in Operation	Prior FCC Experience	FCC Provider s Relationship to Agency
A	Nonprofit	1,032	Rural	29	Yes	Employees
B	Nonprofit	460	Rural	27	No	Contractors
C	CAA	358	Urban	29	No	Subcontractors
D	Nonprofit	537	Mixed	20	No	Employees
E	Government	912	Urban	23	No	Contractors
F	CAA	691	Mixed	12	No	Contractors
G	Nonprofit	1,718	Urban	27	No	Subcontractors
H	School district	540	Mixed	29	No	Subcontractors
I	CAA	269	Rural	28	No	Contractors
J	CAA	170	Rural	29	No	Contractors
K	CAA	925	Mixed	28	Yes	Employees
L	Government	275	Mixed	26	No	Contractors
M	CAA	268	Rural	29	No	Contractors
N	CAA	386	Mixed	27	No	Contractors
O	CAA	486	Mixed	29	No	Employees
P	CAA	330	Rural	10	No	Contractors
Q	Nonprofit	1,779	Urban	24	No	Contractors
R	Nonprofit	4,250	Mixed	16	Yes	Contractors/Employees

[a]Agency type is reported by each grantee in an annual Program Information Report (PIR). Community Action Agencies (CAAs) are nonprofit agencies that have been designated as such by the federal Community Services Administration. Government agencies included one city and one county.

Race/Ethnicity

Exhibit II-10 identifies race for children in the Head Start family child care evaluation in comparison to the children served by the 18 participating agencies and the children who

compose the national Head Start program. Although the racial make up of the children in the demonstration projects was roughly equivalent to that of the children in each agency, the children in the demonstration differed somewhat from the national Head Start population. White children were overrepresented by 4% and African American children were underrepresented by 6%. The Native American population was also slightly underrepresented. Due to the competitive nature of the grants, it was desirable but not necessarily expected that the evaluation population would be similar to that of the overall Head Start population. Three primary profiles of racial and ethnic diversity emerged. Eight sites had an almost exclusively White population. Seven sites had a large concentration of a non-White ethnic group in two cases African American and in five cases Hispanic. At the remaining three sites no single ethnic group dominated the population.

Exhibit II-10
Percentage of Children by Race in Demonstration Project Compared to Agency and National Data

Race	Percent of Children in FCC Evaluation	Percent of Children in Participating Agencies	Percent of Children in Head Start Nationally[a]
Asian	3.5	3.6	3
African American	30.0	26.9	36
Hispanic	25.0	22.6	24
Native American	2.1	2.7	4
White	37.3	44.3	33
Other[b]	2.2	not available	not available

[a]National Head Start data source: Head Start Statistical Fact Sheet, 1996.
[b]Other category was not designated in agency and national data.

Family Child Care Program Characteristics

The characteristics of Head Start family child care home services such as recruitment methods, staffing, employment terms and benefits, and hours of service were remarkably consistent across agencies even though each agency had the flexibility to tailor the program to the specific needs of the community.

Geographic Distribution of Family Child Care Homes

Child care research has shown that location is an important factor for parents in choosing child care (Divine-Hawkins, 1981; Majeed, 1983; Kisker, Maynard, Gordon, & Strain, 1989). Furthermore, when Head Start is the service provider, children are almost always served by the Head Start facility closest to their home. These findings indicate that choosing appropriate locations for the family child care homes was an important decision for most projects. In determining the locations of the homes, project staff typically considered two criteria: accessibility for Head Start families and local need and desire for full-day child care.

During the planning year, the evaluation team expressed concerns that the distances between proposed family child care homes and existing centers at some demonstration project sites would interfere with the random assignment of families. Some agencies that served rural areas wanted to place family child care homes in outlying communities that had no Head Start center program. However, if children recruited from these communities were assigned to a center classroom 20 miles away, the families could encounter a transportation problem. Federal Head Start staff also felt that family child care homes should be in relatively close proximity to centers to ensure that services would be accessible and to facilitate supervision. These concerns led to some changes in the planned locations of some family child care homes. Unfortunately, agencies had to recruit, hire, and license family child care providers prior to recruiting and enrolling families. This practice made it difficult to ensure that the family child care homes would be located in neighborhoods where families would take advantage of the full-day family child care home option.

Family Child Care Provider Employment Terms

Family child care providers were either contractors or employees of the Head Start agency. Regardless of their status, however, all family child care homes met state family child care licensing requirements. Head Start staff identified an important tradeoff to consider: Employing family child care providers might be more expensive but allowed for direct

oversight and increased organizational cohesiveness. As shown in Exhibit II-9, 10 agencies elected to contract for family child care home services directly with individual providers. In these cases, the agency and each provider agreed to terms under a 1-year contract. Three agencies subcontracted the family child care homes project to another agency. One agency used a combination of contracted providers and Head Start employees. The remaining four agencies hired the family child care providers as Head Start employees. At these agencies, family child care providers usually had the same status as Head Start center teachers.

Agencies reported very different experiences with family child care providers depending upon their status as employees or contractors. The four agencies that employed providers as Head Start staff described several advantages to this method, including increased control over the providers and more opportunities to familiarize providers with Head Start policies and procedures. To illustrate these advantages, one family child care coordinator stated, If they work for us, not only can we dictate terms of employment, we can provide greater benefits and bring the home providers into the Head Start family. Instead of being outsiders, they are part of all we do. When family child care providers were employees, the agency could address training needs more frequently and with fewer complications. These four projects identified no significant disadvantages to employing providers.

The majority of agencies that contracted with the family child care providers did so for practical reasons. Several coordinators cited lower costs as the major advantage of contracting. Furthermore, two coordinators said that the uncertainty of future funding led them to contract with, rather than hire, family child care providers. One grantee reported that she felt the contracted agency would be better able to administer the program and provide high-quality services because that agency had previous experience managing family child care homes. Finally, several coordinators noted that contracted providers could more readily provide flexible services to families, such as longer hours. However, agencies identified several important disadvantages to contracting for family child care services. Two coordinators reported that contracting services cost more than employing providers. Other coordinators perceived limited control over the providers as a problem

and associated a lack of staff unity with contracted providers. In addition, three coordinators mentioned training difficulties with contracted providers.

Service Provision Schedules and Adaptations

Nine of the agencies operated family child care homes on a school year (9-month) schedule, seven operated family child care homes on a year-round schedule, and the remaining two agencies had some homes that operated on a school year schedule and other homes that operate year-round. Staff based these decisions on available funding and perceived need. Most of the agencies that provided year-round services cited the parents need for year-round child care as the primary reason for their scheduling decisions.

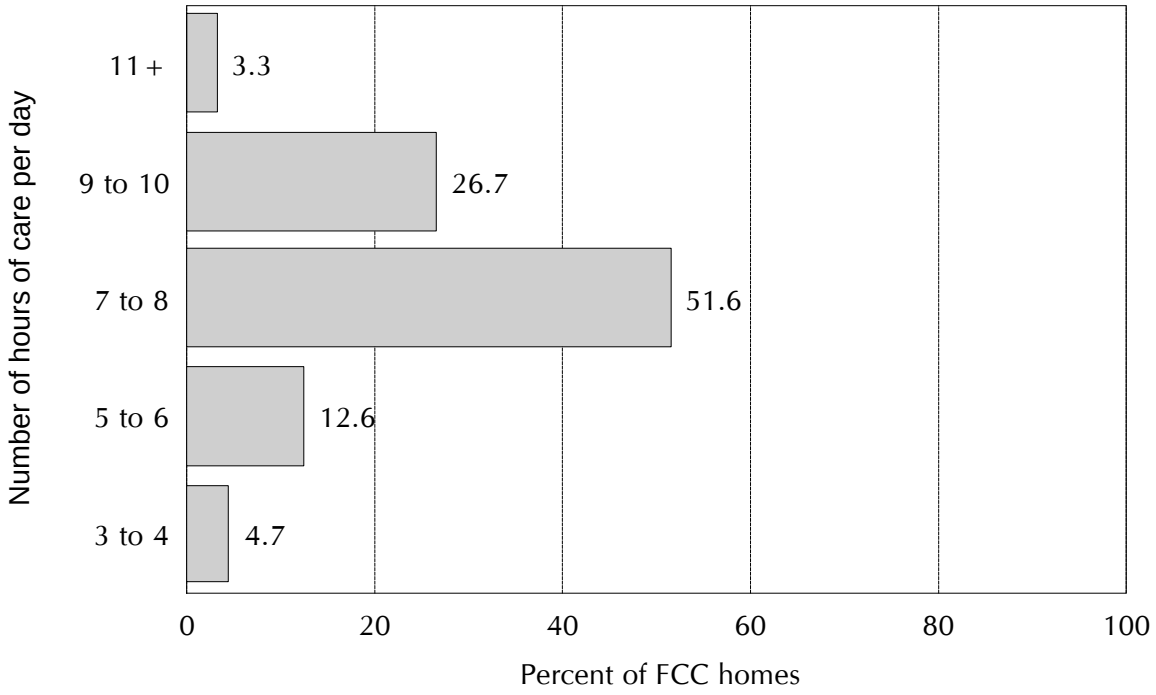
The center programs at the 18 agencies typically adhered to the conventional school-year and half-day schedules. Of the 18 agencies, 16 operated on the school-year schedule. Within the other 2 agencies a few centers operated on a year-round schedule, but most operated on a school-year schedule. Most agencies administered part-day (usually half-day) center programs, but 3 agencies included a combination of half-day and full-day center programs and 2 agencies ran full-day center programs exclusively.

As shown in Exhibit II-11, 30% of family child care homes operated more than 8 hours a day to accommodate the child care needs of parents. Fifty-two percent of family child care homes operated for 7 or 8 hours. Although full-day care was available, the remaining 17% of family child care homes provided less than full-day services due to parent schedules.

Although it was assumed that family child care homes would operate 5 days a week to ensure adequate availability of child care for working parents, anecdotal evidence gathered by the evaluation team during the first year the family child care homes operated suggested that some families did not use the available care 5 days a week. Consequently, for Cohort 2 evaluation team collected data from family child care providers about the number of days each family used the care available to them. About 86% of families utilized the available child care services 5 days a week, whereas another 7% of families used child care 4 days a week. Only 2% of the families used the family child care homes less than 4 times a week.

Family child care providers also indicated the earliest hour that families brought their children to the family child care homes. By 7 a.m. 11% of the children had arrived. By 8 a.m. 56% of the families had dropped off their children. By 9 a.m. 92% of families had dropped off their children and by 10 a.m. virtually all children were present in the family child care homes.

Exhibit II-11
Hours of Care Used in Family Child Care Homes



In addition to operating full-day and year-round programs, agencies implemented additional strategies to tailor the family child care home services to the needs of families. For example, after children were enrolled, 72% of agencies reported extending hours of operation in some homes to accommodate parents' work and school schedules. These extensions included both early morning and evening care. One third of the agencies reported locating homes in areas that had demonstrated needs for child care services, such as neighborhoods near employment centers. Three agencies coordinated the child care arrangements for siblings of the Head Start children, and five agencies reported making

adaptations as necessary for the special needs children and families. These program design adaptations are summarized in Exhibit II-12.

Exhibit II-12
Program Design Adaptations Made by Family Child Care Homes

Type of Adaptation	Percent That Reported
Extended hours	72
Evening care	17
Modifications of family involvement	39
Geographic location of homes	33
Coordination of child care for siblings	17
Special needs adaptations	28

Cost of Providing Family Child Care Services

An important and complex aspect of the effectiveness of early childhood programs is the relationship of cost to quality. This evaluation limited analysis to a comparison between the cost of providing services in the family child care homes to the cost of providing services in center classrooms. Research has consistently shown family child care is comparable in cost to center-based child care (Helburn et al., 1995; Kivikink & Schell, 1987; Kisker et al., 1989; Hayes, Palmer, & Zaslow, 1990). However, these studies have not included Head Start family child care homes, which provide a more comprehensive set of services than most family child care homes.

Exhibit II-13 depicts the federal costs for the 1993 94 and 1994-95 program years, the number of children served by each agency in the family child care home setting during those years, and the calculated cost per child based on these two numbers. During 1993 94 the cost per child for family child care services varied considerably among agencies, from a low of $4,211 to a high of $15,645. The average annual cost per child for the family child care home demonstration project was $9,043, compared to the average national cost per child in Head Start centers of $4,343 for the 1993 94 program year. Based on these averages, family child care home services cost more than twice as much as center classroom services. During 1994 95 the cost per child ranged from $4,146 to $13,653

across agencies, with a nearly identical average annual cost of $9,046. (For both years, these figures do not include state and local funding or in-kind contributions).

Several issues must be considered in interpreting these data. First, the number of children served by the family child care homes dramatically affects the per child cost figures. For example, Agency K served only 11 children during 1993 94, which resulted in a per child cost figure of $15,645. However, had the project served the required 40 children, the average cost per child would have been $4,302, which is close to the national average cost for each Head Start child. Similarly, if all 18 projects had been fully enrolled with a total of 720 children in family child care homes each year, the average cost per child would have been $5,627 in 1993 94 and $5,717 in 1994 95. Second, national costs may be lower than the per child cost of the agencies involved in the demonstration project. The classroom cost data for the 18 agencies in the demonstration project were unavailable for this report.

Exhibit II-13
Cost for Family Child Care Services per Child by Agency

Agency	Cohort 1			Cohort 2		
	Number of FCC Children Enrolled 2/11/94	1993 94 Federal Funds Spent for FCC[1]	Mean Cost per FCC Child	Number of FCC Children Enrolled 12/9/94	1994 95 Federal Funds Spent for FCC	Mean Cost per FCC Child
A	38	$160,000	$4,211	30	$169,200	$5,640
B	22	167,164[2]	7,598	21	195,286	9,299
C	35	355,657	10,162	28	363,547	12,984
D	31	265,382[3]	8,561	32	283,959	8,874
E	29	345,559	11,916	27	276,714	10,249
F	30	209,590	6,986	28	211,030	7,537
G	20	270,754[2]	13,537	25	341,336	13,653
H	32	197,291	6,165	26	197,291	7,588
I	21	287,261	13,679	19	194,807	10,253
J	31	332,776[2]	10,735	29	290,038	10,001
K	11	172,098	15,645	14	118,762	8,483
L	16	148,330[2]	9,271	12	156,054[2]	13,005
M	27	153,000	5,667	32	181,000	5,656
N	15	209,851	13,990	30	248,550	8,285
O	12	112,032	9,336	13	155,429	11,956
P	37	256,715[2]	6,938	31	241,263	7,783
Q	21	257,011	12,239	16	317,717	19,857
R	20	150,733	7,537	42	174,151	4,146
Total	448	4,051,204	9,043	455	4,116,134	9,046
Average cost per Head Start child nationally[4]			$4,343			$4,534

Note. Data presented in Exhibit II-13 are the best available data for estimating family child care expenditures. These data, however, may differ from actual costs depending upon the amount of nonfederal funds spent by each project.

[1]Line N from SF 269 (Federal Expense Report).

[2]Agency Questionnaire.

[3]Amount of approved funds.

[4]Head Start Statistical Fact Sheet, 1995 and 1996.

The costs of operating family child care homes may be reasonable in consideration of these facts: family child care homes usually operated 5 days a week, whereas center classrooms operated 4 days a week; family child care homes provided full-day care in most cases year-round; family child care homes had significantly lower child/staff ratios; and family child care providers were paid for the minimum of four Head Start children even when not all of the slots were filled.

III. Data Collection Instruments

To capture the breadth of the Head Start program, the evaluation used a variety of outcome measures for children and parents and documented important child, family, and program characteristics. These measures were selected to collect information about child and family background characteristics, the family child care home implementation issues, the comprehensiveness and quality of Head Start services in the two settings, and child and family outcomes.

Criteria for Selecting Measures

The evaluation team used these criteria as the basis for selecting measures:

- The content of the measure is appropriately descriptive or evaluative;
- The measure can be administered reliably by trained interviewers rather than a trained clinician;
- The time required for training and administration is reasonable;
- The measure has adequate psychometric properties in terms of reliability and validity;
- The measure takes into account respondents literacy levels and linguistic backgrounds;
- The measure has been used with a wide variety of ethnic groups and populations similar to the target group and shown to be reliable and valid for those populations;
- The measure has been translated and administered in Spanish or is translatable;
- The measure has been used in other large-scale research studies; and
- The measure has been shown to be sufficiently sensitive to program effects.

Exhibit III-1 summarizes the outcomes of interest, the domains measured, and the instruments selected to measure each domain.

Exhibit III-1 Overview of Domains and Instruments

Domains Measured	Instrument(s)
Child Development	
Child characteristics	Family Data Interview (RMC Research, 1993c)
Physical functioning	Daberon 2 (Danzer, Lyons, Gerber, & Voress, 1991) Child Observation Record (High/Scope Ed. Research Foundation, 1992) Kindergarten Teacher Interview (RMC Research, 1993d)
Cognitive functioning	Daberon 2 (Danzer et al., 1991) Peabody Picture Vocabulary Test Revised (Dunn & Dunn, 1981) Concepts About Print (RMC Research, 1993e) Child Observation Record (High/Scope Ed. Research Foundation, 1992) Kindergarten Teacher Interview (RMC Research, 1993d)
Social-emotional functioning	Child Adaptive Behavior Inventory Revised (Schaefer, Hunter, & Edgerton, 1984) Child Observation Record (High/Scope Ed. Research Foundation, 1992) Kindergarten Teacher Interview (RMC Research, 1993d)
Parent Functioning	
Family characteristics	Family Data Interview (RMC Research, 1993c)
Involvement in Head Start Satisfaction with Head Start Parent-child literacy activities	Parent Perceptions of Head Start Services (RMC Research, 1993f)
Parenting skills and attitudes	Family Routines Inventory (Boyce, Jensen, James, & Peacock, 1983) Parent Questionnaire Revised (Stipek, Milburn, Clements, & Daniels, 1992)
Parent attitudes toward discipline	Parenting Dimensions Inventory (Slater & Power, 1987)
Adequacy of family resources	Family Resource Scale Revised (Leet & Dunst, 1985)
Family stressors	Significant Life Events Checklist (Holmes & Rohe 1967)
Implementation Characteristics	
Recruitment of providers and families Coordination of services Supervision and support training Agency experience Record keeping Costs FCC contractors or employees	Agency Staff Questionnaire (RMC Research, 1993a) Caregiver Characteristics Form (RMC Research, 1993b)
Comprehensiveness and Quality of Services	
Achievement of Head Start Performance Standards	Head-Start On-Site Program Review Instrument (Head Start Bureau, 1993)
Caregiver characteristics	Arnett Scale of Caregiver Behavior (Arnett, 1989) Caregiver Characteristics Form (RMC Research, 1993b) Agency Staff Questionnaire (RMC Research, 1993a)
Program structure and dynamics	Head Start On-Site Program Review Instrument (Head Start Bureau, 1993) Developmental Practices Inventory (Goodson, 1990) Caregiver Characteristics Form (RMC Research, 1993b) Agency Staff Questionnaire (RMC Research, 1993a)

Exhibit III-2 summarizes the data collection instruments, instrument administrators, and instrument respondents. In general, the local data collectors on the evaluation team were responsible for collecting child and family background and outcome information, and the data supervisors collected program quality data.

Exhibit III-2
Summary of Data Collection Instruments and Participants

	Administrators		Respondents		
Instrument	**Local Data Collectors**	**Data Supervisors**	**Parents or Children**	**Center Teachers and FCC Providers**	**Kindergarten Teachers**
Child and Family Background					
Family Data Interview	☐		☐		
Parent Perceptions of Head Start Services	☐		☐		
Family Routines Inventory	☐		☐		
Family Resource Scale	☐		☐		
Parenting Dimensions Inventory	☐		☐		
Significant Life Events Checklist	☐		☐		
Program Quality and Comprehensiveness					
Head Start OSPRI					
Observation items		☐		☐	
Record review items	☐				
Interview items		☐	☐	☐	
Agency Staff Questionnaire[a]		☐			
Caregiver Characteristics Form		☐		☐	
Developmental Practices Inventory		☐		☐	
Arnett Scale of Caregiver Behavior		☐		☐	
Child Outcomes					
Peabody Picture Vocabulary Test	☐		☐		
Daberon 2	☐		☐		
Concepts About Print	☐		☐		
Child Observation Record				☐	
Child Adaptive Behavior Inventory				☐	☐
Kindergarten Teacher Interview					☐

[a]The family child care coordinator was the primary respondent, although other component coordinators or the Head Start director often participated in parts of the agency interview.

Child and Family Background Information

The evaluation team conducted interviews with parents to collect background information on participating children and families. Exhibit III-3 summarizes the parent interview components and timelines.

Exhibit III-3
Parent Interview Components

Fall of Head Start	Spring of Head Start	Spring of Kindergarten
Family Data Interview	Family Data Interview	
Parent Perceptions of Head Start Services	Parent Perceptions of Head Start Services	Parent Perceptions of Head Start Services
Family Routines Inventory	Family Routines Inventory	
Family Resource Scale	Family Resource Scale	
Parenting Dimensions Inventory	Parenting Dimensions Inventory	
Significant Life Events Checklist		

Family Data Interview

The Family Data Interview (RMC Research, 1993c) served as a measure of family background characteristics. RMC Research staff designed this form specifically for use in this evaluation utilizing the Head Start Family Information System (HSFIS) response categories as much as possible to facilitate comparability between Head Start Family Information System data and the data from this evaluation. Exhibit III-4 presents the data elements included in the Family Data Interview.

Exhibit III-4
Elements of the Family Data Interview

Child Background Characteristics	Family Background Characteristics	
Age	**Family structure:**	**Parent ethnicity/language:**
Gender	Number of adults in home	Ethnicity
Ethnicity/language:	Number of children in home	Language spoken in the home
Ethnicity	Age of youngest child in home	English speaking ability
English speaking ability	Older siblings in Head Start	**Parent education:**
Primary language spoken	Family type	Parent schooling completed
Previous child care experience:	**Socioeconomic status:**	School or training type
Type of previous care	Family income	**Employment status:**
Age of entry into day care	Public assistance received	Employment status
Length of time in day care	Length of time at present address	Hours per week of employment
Disabilities	Number of moves in past year	Past employment experience and stability
	Transportation availability	
	Parent health	

Parent Perceptions of Head Start Services

The Parent Perceptions of Head Start Services (RMC Research, 1993f) interview served two purposes: to examine parent preferences and satisfaction with Head Start services and to assess parenting skills and involvement as a parent outcome. Past child care research has shown that families choose child care arrangements for a number of reasons, including the flexibility of the provider, the location, and the atmosphere (Kisker et al., 1989). The Parent Perceptions of Head Start Services interview was conducted three times. The fall interview gathered information about parents program setting preferences, parents satisfaction with the assigned setting, the features of child care important to the parents, and the frequency of parent-child literacy activities.

The spring interview assessed the social services support provided to families during the Head Start year, parents satisfaction with the Head Start setting, parent involvement with Head Start, and parent-child literacy activities. The spring of kindergarten year interview assessed the extent to which the parents felt the Head Start program had prepared their children for kindergarten and current parent involvement in their children s education.

Family Routines Inventory Modified

Head Start seeks to involve parents in the education and welfare of their children and to improve the quality of life for low-income families. Head Start also promotes good parenting through home visits and training programs for parents. The Family Routines Inventory (Boyce et al., 1983) was selected to measure family interactions as a component of parenting skills. Parents discipline style and family interactions are areas of parental influence that research has shown to be most significant for young children's school success (Powell, 1991).

The 27-item Family Routines Inventory measures individual families enactment of positive routines that are thought to be productive. Evaluation staff selected 13 items from the inventory that focus on the routines most likely to be influenced by Head Start and a 10-item Parent Questionnaire (Stipek et al., 1992) that examined learning activities in the home. Respondents rated items such as I read or tell stories to my child and My child does household chores in terms of the frequency with which the activities and practices were carried out in their families. The 3-point rating scale ranged from *every day* to *twice a month or less*. Prior to this evaluation the Family Routines Inventory had been widely used in family research on a diverse range of families, including Head Start families who participated in a study of the relationship between family routines and child outcomes (Keltner, 1990). This and other studies indicate that family routines appear to be both a rich source of descriptive information about individual families and a sensitive indicator of similarities and differences among families. The original Family Routines Inventory demonstrated 30-day test-retest reliability of .79 (Boyce et al., 1983).

Family Resource Scale

In this evaluation self-sufficiency refers to the adequacy of resources such as money, time, social networks, and transportation to meet the needs of the family as a whole. This multifaceted definition of self-sufficiency (one that goes beyond a strictly financial definition) is necessary to capture the complex array of factors that contribute to a family's self-sufficiency. The Family Resource Scale (Leet & Dunst, 1985) assesses family self-

sufficiency broadly and descriptively by determining the adequacy of different types of resources in the households of young children. The 25-item scale is composed of 3 subscales: (1) time (e.g., to be by yourself, to be with your spouse, to be with your children, to be with your friends, to sleep), (2) money (to pay bills, to save, for child care), and (3) basic needs (e.g., food, clothing, housing, medical care, transportation). Parents responded to the question Do you have enough of the following things? using a 3-point scale composed of the responses *usually, sometimes,* and *rarely*. The coefficient alpha computed from the average correlation is .92. The split half reliability is .95 (Leet & Dunst, 1985).

Parenting Dimensions Inventory

The Parenting Dimensions Inventory (Slater & Power, 1987) measures nurturance, responsiveness, and discipline style. The evaluation team selected only the seven items related to discipline because parental discipline techniques are a set of skills that Head Start parent education activities are likely to address. Respondents were asked to tell whether they *usually, sometimes*, or *rarely* adhered to certain discipline procedures such as, I follow through on discipline for my child, no matter how long it takes, and There are times when I just don't have the energy to make my child behave as he/she should. The internal consistency for the discipline subscale ranged from .56 to .77, and scores were also predictive of children s psychosocial adjustment to school (Slater & Power, 1987).

Significant Life Events Checklist

The Significant Life Events Checklist (Holmes & Rohe, 1972) served as a measure of family stressors. Rather than attempting to measure mental states, this approach examines life events that are highly correlated with stress, such as changes in family structure (birth, marriage, divorce), financial or employment situation changes (new job, loss of job), education changes (finishing school, entering a new school), and other events (moving, family crises, alcohol or other drug problems). The 24-item checklist used in this evaluation prompted respondents to indicate whether any of these events had happened to their families in the past 6 months. The score equaled the total number of items checked.

Program Comprehensiveness and Quality

Evaluation staff expected the quality and comprehensiveness of Head Start services provided in family child care homes to vary over time and across the 18 demonstration project sites. The evaluation team used five instruments to assess program quality. The Head Start On-Site Program Review Instrument (OSPRI; Head Start Bureau, 1993) was administered in both settings during the spring 1995 data collection. Evaluation staff completed the Caregiver Characteristics Form (RMC Research, 1993b), the Developmental Practices Inventory (DPI; Goodson, 1990), and the Arnett Scale of Caregiver Behavior (Arnett, 1989) for each family child care home and comparison center classroom teacher in the fall and spring. The evaluation team also interviewed appropriate agency staff at each data collection point using the Agency Staff Questionnaire (RMC Research, 1993a). Exhibit III-5 summarizes the data collection plan and shows the instruments administered in each setting at each data collection point.

Exhibit III-5
Data Collection Plan for Assessing Program Comprehensiveness and Quality

Setting	Cohort 2	
	Fall 1994	**Spring 1995**
FCC homes	Caregiver Characteristics Form Agency Staff Questionnaire Developmental Practices Inventory Arnett Scale of Caregiver Behavior	Caregiver Characteristics Form Agency Staff Questionnaire Developmental Practices Inventory Arnett Scale of Caregiver Behavior OSPRI
Center classrooms	Caregiver Characteristics Form Developmental Practices Inventory Arnett Scale of Caregiver Behavior	Caregiver Characteristics Form Developmental Practices Inventory Arnett Scale of Caregiver Behavior OSPRI

Head Start On-Site Program Review Instrument (OSPRI)

The OSPRI comprises the Head Start Program Performance Standards, Performance Standards on Services to Children With Disabilities, eligibility and recruitment regulations,

administrative regulations, staffing and option regulations, and fiscal regulations. Regional monitoring teams use the OSPRI during site visits to examine grantees compliance with federal regulations. The complete OSPRI instrument consists of 256 items. In this evaluation, the evaluation team collected data using the 166 items in the components of education, health, mental health, nutrition, social services, parent involvement, and disabilities services. The remaining items concerning enrollment, administration, and staffing requirements were not included because they pertain to the entire agency and would not differ for family child care homes and center classrooms.

OSPRI items vary in their complexity and degree of importance for assessing and determining compliance with the overall philosophy and goals of Head Start. Programs are evaluated for compliance using one or more methods of assessment, including observation, interview, and record review. When regional monitoring teams conduct OSPRI site visits, team members gather data from a sample of records and observations across all of a grantee's Head Start programs and make decisions about compliance in each component area at the grantee level. In this evaluation the OSPRI instrument was administered in each participating center classroom and family child care home in the spring of the Head Start year.

The full OSPRI takes monitoring teams several days to complete and has been used primarily to identify program areas out of compliance with federal regulations. To simplify the data collection procedures in this evaluation, the OSPRI was divided into observation, record review, and interview items. The data supervisor completed the observation items at the same time as the Developmental Practices Inventory (Goodson, 1990) and the Arnett Scale of Caregiver Behavior (Arnett, 1989). The record review items were completed by the local data collectors. The interview items were included in either the agency, caregiver, or parent interview protocols, as appropriate. Exhibit III-6 shows the distribution of items in each component area.

Exhibit III-6
Number of OSPRI Items by Data Collection Method

Component	Observation	Record Review	Interview
Education	26	9	5
Health	4	23	6
Mental health	0	2	14
Nutrition	11	8	9
Social services	0	12	6
Parent involvement	2	14	5
Disabilities services	1	6	0
Total	44	74	45

Developmental Practices Inventory

The DPI (Goodson, 1990) is a 30-item scale designed to assess the developmental appropriateness of the preschool environment. Twenty of the items were taken from the Classroom Practices Inventory (Hyson, Hirsh-Pasek, & Rescorla, 1989). The inventory is based on the National Association for the Education of Young Children s (NAEYC) guidelines for developmentally appropriate practices for 4- and 5-year-olds. The DPI comprises two scales: developmental appropriateness and developmental inappropriateness, with 15 items devoted to each scale. The inventory requires 15 minutes to complete after a half-day of observation. The DPI items use a 5-point scale ranging from *1 (not at all like this classroom)* to *5 (very much like this classroom)*.

The DPI has demonstrated adequate levels of reliability and validity in more than 200 observations in 58 programs in a range of settings. Internal consistency (Cronbach alpha) for the total scale is .96. Intercorrelations among the appropriate and inappropriate items were highly significant at $r = .82$. Interobserver reliability within 1 scale point was 98% and exact agreement was 64% based on observations in 10 programs. Concurrent validity was established through the relationship between self-reported educational attitudes of the program teachers and DPI scores, as well as the programs community reputations as academic, play-oriented, or unstructured. In addition, a study by Love, Ryer, & Faddis (1992) reported that DPI scores were highly correlated with scores of caregiver behavior as

measured by the Arnett scale (Arnett, 1989) and program quality as measured by the Assessment Profile (Abbott-Shim & Sibley, 1987).

Arnett Scale of Caregiver Behavior

Caregiver behaviors have been shown to be related to child outcomes in a number of research studies. For example, children tend to score higher on scales of social development when they have caregivers who ask questions, interact frequently, and facilitate social problem solving (Clarke-Stewart, 1987). Based on this and other similar findings, the evaluation team felt that an assessment focused on caregiver behavior could yield valuable information about differences between caregivers in family child care homes and center-based programs. The Arnett Scale of Caregiver Behavior (Arnett, 1989) served as a measure of caregiver behavior.

The original rating scale designed by Arnett consists of 26 items organized into five areas: positive relationships, punitiveness, detachment, permissiveness, and prosocial interaction. Each item is rated on a 4-point scale indicating the extent to which the statement is characteristic of the caregiver. The evaluation team added to the scale 4 items that assess caregivers' promotion of self-help skills among children.

Factor analyses of the scale have shown either three or four factors. Sensitivity, detachment, and harshness factors were identified in the National Child Care Staffing Study (Whitebook, Howes, & Phillips, 1989), and attentive and encouraging, harsh and critical, detached, and controlling factors were found in the California Staff/Child Ratio Study (Love, Ryer, & Faddis, 1992). In this evaluation the Arnett Scale scores were highly correlated with many program quality measures, including the developmental appropriateness scale of the DPI and the learning, curriculum, and interacting scales of the Assessment Profile.

Agency Staff Questionnaire

Data supervisors administered the Agency Staff Questionnaire (RMC Research, 1993a) to family child care coordinators in the fall and spring to gather information about such implementation characteristics as recruitment and training of family child care providers,

recruitment of children, contracting with family child care providers or hiring them as Head Start employees, methods for coordinating the component services to family child care homes, service delivery adaptations for the family child care home setting, supervision and support for family child care providers, and record keeping issues in family child care homes.

Caregiver Characteristics Form

The data supervisors used the Caregiver Characteristics Form (RMC Research, 1993b) to obtain data from caregivers in the family child care homes and comparison group center classrooms on their background characteristics, training and education, child care experience, wages and benefits, supervision and support received, coordination with component coordinators, record keeping requirements, and program issues. In some instances, the form was completed by the caregivers and returned to the data supervisor, but in most cases the form was completed in an interview format.

Child Outcome Measures

Two key issues emerged in reviewing and selecting instruments for measuring child outcomes related to cognitive, social-emotional, and physical growth. First, it is challenging to neatly divide children s behavior into cognitive, social-emotional, and physical compartments because of the natural integration of these domains (Aber, Molnar, & Phillips, 1986). For this reason, an instrument purporting to measure cognitive or social-emotional development may include tasks and questions that require responses involving several domains. In addressing this obstacle, the evaluation team placed a high priority on clearly defining cognitive, social-emotional, and physical development and drawing data for each of these dimensions from multiple measures. A related challenge involved ensuring that the instruments possessed adequate psychometric properties and addressed the broad range of development that is stressed in early childhood settings.

Cognitive Functioning

For this evaluation cognitive functioning was defined as:

- General knowledge that contributes to school success (e.g., names and uses of common objects, colors, knowledge of body parts);
- Language competence (e.g., ability to follow directions, use of prepositions);
- Literacy skills (e.g., basic concepts about books, how print conveys meaning); and
- Mathematical knowledge (e.g., counting, use of words to solve math problems, ordinal positions, basic geometric shapes).

Social Functioning

The social development literature uses a three-part definition to describe social functioning. This definition includes social knowledge and social reasoning, that is, the ability to talk and think about social situations (Shure & Spivack, 1976, 1979). It also consists of social competence, which includes confidence, felt security, and impulse control (Pellegrim, 1988; Pellegrim & Glickman, 1990). Finally, it consists of adaptive social behavior, which involves the integration of social knowledge, attitudes and competence as applied in social settings (Schaefer & Edgerton, 1978). Based on this literature and a review of the social aspects of the Work Sampling System (Meisels, Marsden, & Jablon, 1992), social functioning was defined as:

- Sociability factors that assist in making and maintaining friends;
- Adaptability to a variety of social situations, such as the willingness to try new things and making transitions between activities;
- Social adjustment factors that promote security, impulse control, self-direction, and focus; and
- Social problem-solving skills that integrate social interaction with cognitive skills.

Physical Functioning

Physical functioning, as defined for this evaluation, had two aspects: fine motor development and gross motor development. The Work Sampling System (Meisels et al., 1992) describes the typical kindergarten child s fine motor development as:

- Using a pencil with a comfortable grasp;
- Handling concrete materials, such as puzzles and blocks, to complete tasks;
- Copying shapes such as squares and triangles; and
- Turning pages in a book.

The typical kindergarten child s gross motor development is described as:

- Hopping with balance and control;
- Performing gross motor locomotion tasks such as skipping and galloping; and
- Demonstrating ball-handling skills, such as catching and throwing with direction.

Instrument Selection

Typically, national studies have settled for tools with well-established psychometric properties that focus on a narrow skill range, such as the Peabody Picture Vocabulary Test Revised (Dunn & Dunn, 1981). However, Head Start has a broad range of developmental goals for children. Thus, the evaluation team s approach to assessing child outcomes utilized psychometrically adequate instruments that reflected program goals and addressed a broad range of developmental outcomes. Exhibit III 7 provides an overview of the data collection plan.

Exhibit III-7
Data Collection Plan for Child Outcome Measures

Instrument	Head Start Year		Kindergarten
	Fall	Spring	Spring
Peabody Picture Vocabulary Test Revised	☐	☐	☐
Daberon 2	☐	☐	☐
Concepts About Print	☐	☐	☐
Child Adaptive Behavior Inventory	☐	☐	☐
Child Observation Record	☐	☐	
Kindergarten Teacher Interview	☐		☐

The Peabody Picture Vocabulary Test Revised

The Peabody Picture Vocabulary Test Revised (PPVT R; Dunn & Dunn, 1981) was used to measure children's receptive language or vocabulary. Receptive vocabulary is frequently used as a quick estimate of verbal and mental abilities. One advantage of the test is its simple format and brief administration time (10 to 15 minutes). The PPVT R has been used in a number of large research studies and surveys, including the national evaluations of the Comprehensive Child Development Program, the Even Start program, and the Head Start Transition Study.

The PPVT R consists of 175 vocabulary items of increasing difficulty. The tester reads a word and the child selects one of four pictures that best describes the word s meaning. The PPVT R was standardized in 1979 on a nationally representative sample that included 5,000 individuals from a variety of demographic backgrounds who were between 30 months and 41 years of age. Split-half correlations for children and youth ranged from .67 to .88 on Form L and from .61 to .86 on Form M. The PPVT R is also available and normed for Spanish-speaking children; the Spanish version, called the Test de Vocabulario en Imagenes Peabody (TVIP), was standardized in 1981 82 on more than 2,000 children in Mexico and Puerto Rico.

Daberon 2

The Daberon 2 (Danzer et al., 1991) is a screening tool designed to assess 10 skill and knowledge areas considered to be related to school readiness: body parts, color concepts, number concepts, prepositions, following directions, plurals, general knowledge, visual perception, gross motor skills, and categories. Designed for use with children between the ages of 3 and 7, the Daberon 2 is individually administered using a kit of game-like materials. The Daberon 2 was standardized on 1,647 children in 16 states. The norming sample had broad representation by race, geographic area of the United States, ethnicity, and family income. Reliability using Cronbach's coefficient alpha was computed by age with values for 4- to 6-year-olds ranging from .92 to .95 (Danzer et al., 1991).

The test developers established concurrent, predictive, and construct validity when the instrument was constructed. Concurrent validity of .83 was established for the Daberon 2 by correlating it with the Total Battery score from the Metropolitan Readiness Tests. Kindergarten-age children's scores correlated .84 with follow-up checklist ratings when the children entered first grade, establishing predictive validity. Construct validity was examined by considering several criteria: the scores should and do increase by age, with a correlation coefficient of .55; correlations with aptitude, as measured by the Detroit Test of Learning Aptitude Primary, exceeded .50; the Daberon 2 cluster scores were intercorrelated and exceeded .30; and finally, the median item discrimination power of the items by age exceeded .30 except for at age 7, suggesting that the discriminative powers of the test are strongest at ages 3 to 6 (Danzer et al., 1991).

Concepts About Print

Concepts About Print (RMC Research, 1993e) consists of four scales: book handling, concept of word, story comprehension, and publishing knowledge. It is based on Clay s Concepts of Print Test (1979), the Book Handling Knowledge Task (Goodman & Altwerger, 1981), and Concepts About Print (Teale, 1986). The modified Concepts About Print (RMC Research, 1993e) instrument is a sensitive measure of language competence and literacy skills that reflects the current body of early language development research. The instrument

focuses on children s book- and print-related knowledge. During the individual administration of the instrument, the child is asked to perform literacy-related behaviors, such as show me the front of the book and point to where I should start to read while the examiner reads a story to the child. The popular children s book *Goodnight Moon* was selected for use in this evaluation because of its length and availability in Spanish.

Child Observation Record

The Child Observation Record (COR; High/Scope Educational Research Foundation, 1992) examines child behavior through naturalistic observations by the child's teacher or caregiver. The assessment is divided into six domains: initiative, social relations, creative representation, music and movement, language and literacy, and logic and mathematics. Each of these domains includes four to six intrinsically meaningful items. For example, item one under *initiative* is *expressing choices*. The observer selects one of five descriptions of expressing choices to rate the child. Unlike some child assessments, the COR assesses development across a broad range of contexts rather than performance on specific test items in contrived situations. Thus, the instrument allows for flexible documentation of children s development that can take into account cultural, language, and social variations. The nature of the COR assessment requires high levels of administration time, however, because it is based on observations over time. The COR has high ecological validity and is minimally intrusive because the assessment occurs in the course of everyday activities in the preschool setting.

The COR validation study determined the instrument's appropriateness for multiple early childhood curricula, established the COR as a valid and reliable instrument, and demonstrated its feasibility for use in Head Start programs. The COR has adequate psychometric properties. Alpha coefficients of internal consistency ranged from .80 to .93. Inter-rater reliability ranged from .61 to .72. The concurrent validity of COR ratings was assessed by examining correlations with the McCarthy Scales of Children s Abilities (1972). Scales assessing similar constructs on these two instruments produced correlations of .53 between the COR language and literacy and the McCarthy verbal scales, .52 between the

COR creative representation and the McCarthy perceptual-performance scales, and .42 between the COR logic and mathematics and the McCarthy quantitative scales.

Because the child s caregiver or teacher was to complete the COR for each child in this evaluation, the evaluation team provided training during the fall data collection site visits. Caregivers and teachers then conducted observations during the fall and spring data collection periods.

Child Adaptive Behavior Inventory Modified

Using the definition established for social-emotional functioning, the Child Adaptive Behavior Inventory (CABI; Schaefer et al., 1984) measured three of the clusters described:

- Sociability (e.g., makes friends quickly and easily, is left out by other children);
- School adaptability (e.g., catches on quickly, works carefully); and
- Social adjustment (e.g., cries a lot, is easily distracted).

To enhance the CABI and to ensure that the CABI better match the definition of social functioning, the evaluation team added four items to the CABI that are likely to cluster around social problem solving or conflict resolution skills. The version of the CABI used in this evaluation does not have technical data available (Schaefer et al., 1984). However, a factor analysis of an earlier version of the CABI instrument found that items clustered under two broad categories: academic competence or adaptability, and social adjustment (Schaefer & Edgerton, 1978).

Kindergarten Teacher Interview

The evaluation team developed the Kindergarten Teacher Interview (RMC Research, 1993d) to obtain information from kindergarten teachers concerning perceived readiness for kindergarten and progress in the areas of cognitive, social-emotional, and physical development. The teachers also provided information about the children s attendance, the parents participation in school activities, and the kindergarten program.

IV. Program Quality

One of the key questions in the Head Start family child care evaluation is whether services provided in the family child care home setting meet the Head Start Program Performance Standards. Head Start staff were also interested in how an agency s family child care home services compared to those provided in the same agency s center classroom programs. In addition to assessing compliance with the Head Start Program Performance Standards, the evaluation team collected data using other measures of program quality: caregiver characteristics, developmental appropriateness of the home or center classroom environment, and caregiver behaviors. This chapter presents the findings for each of these measures for Cohort 2.

Head Start Program Performance Standards

The OSPRI was developed for monitoring teams to use in evaluating compliance with Head Start Program Performance Standards at the level of Head Start agencies or grantees. The evaluation team applied the instrument at the level of family child care homes and center classrooms and observed *all* participating homes and comparison center classrooms. In addition, the evaluation team reviewed the records of a randomly selected child in each home and center classroom and interviewed parents and staff to evaluate compliance with OSPRI items. The evaluation team conducted analyses across family child care homes and center classrooms in each agency and across agencies.

Types of Items: Records, Observations, and Interviews

Head Start Program Performance Standards require agencies to use record keeping systems that document the implementation of various program activities. Agencies may use record keeping systems developed by ACYF (e.g., the Child Health Record) or develop their own systems. Descriptions of the specific record keeping systems are included in each of the component plans, which are approved annually by each agency's policy council.

Depending on the agency, records maintained might be comprehensive, well-organized, and centrally located or scant and diffuse.

For the OSPRI records form, local data collectors reviewed specific documents related to agency, center, and family child care home activities. Depending on the nature of the specific Head Start standard, records may be maintained by family child care coordinators, center directors, or by center classroom teachers and family child care providers. Records include documentation of:

- Activities for children and their parents (e.g., scheduled field trips, parent meetings, medical treatments, meals);
- Required responsibilities of staff (e.g., written information about each child's growth and development, social service needs, and home visits; staff training on specific topics);
- Parent involvement (e.g., classroom participation, training, meetings with staff); and
- Advisory board and policy council meetings.

The OSPRI observations form includes items that require data supervisors to record such observations about the educational program as:

- The physical learning environment (e.g., how space and materials are configured, whether children's work is displayed);
- Interactions between providers and children; and
- Materials, supplies, and equipment available to the children (e.g., whether materials reflect cultural, ethnic, and gender diversity; whether toys and equipment are clean and in good repair).

Many OSPRI items were evaluated using responses to parent or staff interview questions. Such items included parents training in home activities, the children s development, the handling of special needs and behavioral problems, health and safety practices, and the

availability of a mental health professional to work with parents and children and to train staff.

The OSPRI record and observation instruments were administered in each family child care home and comparison center classroom in spring 1995. Each item and indicator on the record and observation forms required a rating of *yes, no*, or *not determined*. Data collectors assigned a *yes* rating only if evidence supporting the intent of the standard was clearly observed or indicated. If the intent of the standard was not evident, data collectors assigned the item or indicator a *no* rating. Data collectors assigned *not determined* ratings infrequently.

Evaluating whether a center classroom or family child care home had passed an item with multiple indicators posed a challenge to the evaluation team because each indicator received a separate rating. In consultation with Region 10 Head Start staff, the evaluation team identified the indicators for each item that best provided assurance that the intent of the standard had been met. All of those key indicators had to be rated *yes* for a center classroom or family child care home to pass the item (for most items, this included all of the indicators).

Ability of Family Child Care Homes and Center Classrooms to Meet Head Start Program Performance Standards

Each Head Start agency is required to provide services in the component areas of education, health, mental health, nutrition, social services, parent involvement, and disabilities services. Program coordinators for each of these component areas are expected to assist and train center directors, center classroom teachers, and assistants to meet the standards in each area. In this demonstration project, the family child care coordinators usually worked with the family child care home providers in each of the component areas. However, in some sites the component program coordinators *and* the family child care coordinators provided assistance to family child care homes.

Exhibit IV-1 illustrates the mean number and percentage of OSPRI items passed by family child care homes and center classrooms in each program component area. The differences in means across family child care homes and center classrooms are nonsignificant except in the area of parent involvement, for which center classrooms passed significantly more OSPRI items.

Exhibit IV-1
Mean Number and Percentage of OSPRI Items Met by FCC Homes and Center Classrooms

Component Area	No. Items	FCC Homes (n = 118)			Center Classrooms (n = 135)		
		M	*SD*	Percent	*M*	*SD*	Percent
Education	37	28.1	5.4	75.9	29.4	4.1	79.3
Disabilities services	7	2.8	2.2	40.4	2.4	1.9	33.8
Health	31	23.5	4.8	75.9	23.6	4.6	76.2
Mental health	16	14.2	2.9	88.6	14.0	2.8	87.6
Nutrition	27	21.7	3.5	80.3	22.3	2.8	82.5
Social service	15	13.0	2.0	86.4	12.5	2.0	83.1
Parent involvement[a]	17	11.7	3.4	68.9	12.6	2.4	74.5
Total	143	112.1	17.4	78.4	114.2	13.9	79.9

Note. Total does not include disabilities services items due to a large number of missing cases.
[a]Difference between family child care homes and center classrooms statistically significant $p < .01$.

Some of the largest significant differences between settings occurred on items that required center classroom teachers and family child care providers to maintain records on individual children and families. For example, center classrooms were more likely to document parent conferences, home visits, and parent participation, but family child care homes were more likely to identify and document family social service needs and provide information about community services. Some family child care providers reported that they were not familiar with the records they were required to keep or that they did not have time to keep the records current.

Differences between family child care homes and center classrooms on observation items also generally favored the center classrooms. For example, center classrooms were more likely to be rated as having clean and safe facilities; having appropriate furniture, equipment, and materials; and providing fluoride treatments. However, on interview items

family child care parents were more likely than center classroom parents to report having received health resource information, and family child care providers were more likely than center classroom teachers to report having received nutrition education.

It is interesting that in the Cohort 1 pilot year, for which only 47 OSPRI items were assessed, center classrooms performed significantly better than family child care homes on 40% of the items. By the Cohort 2 year, however, center classrooms performed better than family child care homes on only 9% of the 143 items, and family child care homes outperformed the classrooms on 4% of the items. Clearly, it took time for family child care home providers to learn the Head Start Program Performance Standards and record keeping requirements, but by the second year of operation there was little difference in their ability to meet those standards and requirements.

Caregiver Characteristics

The evaluation examined the differences between the professional and personal characteristics of caregivers in family child care homes and center classrooms to describe the caregiver population and determine how differences between the two groups related to child and program outcomes. In the spring of Cohort 2, 127 caregivers operated 114 family child care homes. Of those homes, 13 relied on assistants in addition to the primary provider and 101 were operated by a single caregiver. The 134 Head Start center classrooms that comprised the comparison group were staffed by 302 caregivers, nearly half of whom were considered assistants. (Because the term *assistant* did not reflect clearly defined criteria, the connotation of the term may have varied across agencies.)

Gender

Nearly all caregivers in this evaluation were female. No male caregivers operated family child care homes and only six male caregivers worked in center classroom settings.

Age

The age of the caregiver has not been shown to have a great influence on the quality of child care, although it is an important descriptive variable for understanding who provides Head Start services. The mean age of caregivers was 38 years in family child care homes and 40 years in the centers classrooms. These ages are consistent with the average age of caregivers reported in other studies (Kontos, 1992). The youngest caregiver was 21 and the oldest was 66.

Race

Exhibit IV-2 illustrates that the racial composition of the caregivers in center classrooms and family child care homes was similar. However, a slightly higher percentage of African American caregivers were in the center classrooms (28.8%) than in the family child care homes (25.8%).

Primary Language

Exhibit IV-2 shows that for the entire population of caregivers the predominant primary language was English (85%), followed by Spanish (11%) and other languages (4%). The percentages were similar for the two settings. Of the 11% of family child care caregivers who did not speak English as their primary language, 85% rated themselves as *fair* or *good* speakers of English. The remaining 15% (3 caregivers) reported that they spoke English *not at all*.

Exhibit IV-2
Personal Characteristics of Caregivers (Percentages)

	FCC	Center	Total
Race			
White	50.8	45.4	47.7
African American	25.8	28.8	27.6
Hispanic	16.7	20.2	18.7
Asian	5.8	4.3	4.9
Native American	0.0	1.2	0.7
Other	0.8	0.0	0.4
Primary Language			
English	85.1	85.5	85.3
Spanish	10.7	11.5	11.2
Other	4.1	3.0	3.5

Education

Previous studies have indicated that a high school diploma is the typical educational level of family child care providers (Abbot-Shim & Kaufman, 1986; Rosenthal, 1988; Fischer, 1989). Several of those studies included a significant proportion of caregivers with 1 to 2 years of postsecondary education. In a summary of other studies, Krause-Eheart and Leavitt (1986) reported that the percentage of family child care providers with a college degree ranged from 12 to 35%. Data from this evaluation suggest that the level of education of the family child care providers was slightly higher than that reported elsewhere for home caregivers. However, family child care home providers' education levels were significantly lower than the center classroom teachers education levels.

Exhibit IV-3 shows that the difference in educational attainment between family child care providers and center classroom teachers was significant. Almost 60% of center classroom teachers held college degrees, whereas less than 27% of family child care providers held college degrees. Furthermore, 1 out of 6 family child care providers had no more than a high school diploma. According to the authors of the *Cost, Quality, and Child Outcomes in Child Care Centers* study, higher quality centers tend to have more highly educated caregivers (Helburn et al., 1995). Clarke-Stewart and Gruber's (1984) finding that

caregivers formal education is associated with social and cognitive competence in children attending family child care homes renders this finding particularly noteworthy. Many of the expected advantages of family child care home care, such as low child-to-staff ratios and small group sizes, might be counteracted by the comparatively low level of educational attainment achieved by family child care providers.

Coursework and Training in Early Childhood Education

Many studies have demonstrated that specific training in early childhood education not general education is related to the quality of care provided (Ruopp, Travers, Glantz, & Coelen, 1979). All family child care providers and center classroom teachers had at least some training in early childhood education, but as Exhibit IV-3 shows, center classroom teachers were more likely than family child care providers to have attained an Associate s, Bachelor s, or Master s degree in early childhood education. Over half of the degrees held by family child care providers were in a field *not related* to early childhood education, whereas most of the degrees held by center classroom providers were in early childhood education or a related field.

Another indicator of the early childhood training of caregivers is the possession of, or progress toward, a Child Development Associate (CDA) credential. There were significant differences in CDA status between family child care providers and center classroom teachers. Exhibit IV-3 shows that 25% of family child care providers already held a CDA credential and 40% were in the process of obtaining the credential; in comparison, 43% of the center classroom teachers held a CDA credential and another 18% were making progress toward obtaining the credential. Some of the caregivers who did not hold a CDA credential and were not working toward one already possessed a degree in early childhood education: 23% of center classroom teachers and 7% of family child care providers held a state license in early childhood education.

Exhibit IV-3
Professional Characteristics of Caregivers (Percentages)

	FCC	Center
Education*		
Less than high school completion	0.8	0.0
High school diploma or GED	16.5	5.4
Some college	56.2	35.2
Associate s degree	13.2	19.4
Bachelor s degree	11.6	35.2
Master s or doctoral degree	1.6	4.8
Early Childhood Education Training		
Some training*	61.2	47.0
Associate s degree*	5.0	19.3
Bachelor s degree*	4.1	25.3
Master s degree*	0.0	3.6
CDA Certificate		
Holds CDA*	24.8	43.4
Holds state ECE license*	6.6	22.9
CDA or state ECE license in progress	39.7	18.1
Years of Child Care Experience		
FCC home setting	5.6	4.3
Center classroom setting*	3.1	9.9

*Differences between family child care providers and center classroom teachers significant at $p < .01$.

Experience in Child Care

The findings from previous studies of the impact of a caregiver s level of experience on child care quality are mixed. For example, Howes (1983) found that more experienced caregivers were more responsive to children's bids for attention, whereas Stallings and Porter (1980) found no effects for experience. Given a choice, however, most parents favor experienced caregivers over inexperienced caregivers.

Center classroom teachers were more experienced as a group than the family child care providers. Exhibit IV-3 shows that center classroom teachers averaged 14.2 years of experience, whereas family child care providers averaged less than 9 years of child care experience (these totals represent experience as child care providers in either home or

center settings). According to Kontos (1992), it is difficult to characterize the experience of family child care providers because of the different ways these data have been reported. Even so, there is some consensus that the average number of years of caregiver experience for family child care providers in the United States ranges from 4½ to 7 years (Mansfield, 1986; Bollin, 1989; Jones, 1991). Compared to these findings, Head Start family child care providers were more experienced than other family child care providers but had on average about 5½ years less experience than center classroom teachers. Breaking down experience by the type of child care experience indicates that family child care providers were slightly more experienced in home-based child care, and center classroom teachers were three times more experienced in center-based child care.

Experience in Head Start Settings

Center classroom teachers had an average of 7.2 years of experience in Head Start, whereas family child care providers averaged only 1.4 years of Head Start experience. Most family child care providers had previous family child care experience, but they were not required to have had previous Head Start experience. The lack of Head Start experience may have made it more difficult for family child care providers to meet certain Head Start Program Performance Standards particularly those that required substantial amounts of record keeping.

Family Child Care Provider Compensation and Benefits

All center classroom teachers were Head Start employees, and the majority of family child care providers were contractors. This distinction appeared to have an impact on both the wages and benefits provided to the caregivers in the two settings. Using information reported by the agencies, the mean hourly wage of center classroom teachers was $8.73 and the mean hourly wage of family child care providers was $9.78. Helburn et al. (1995) found that average teacher wage rates were an important discriminating factor in distinguishing between poor-, mediocre-, and high-quality child care centers.

Although the pay discrepancy between the two settings is noteworthy, a more striking difference was found between the Head Start centers and family child care homes in terms of the benefits provided to the caregivers. Less than 10% of family child care providers received dental benefits, less than 20% received medical or retirement benefits, and less than 50% received paid vacation or sick leave. In contrast, 100% of center classroom teachers received medical benefits, sick leave, and paid holidays; over 80% enjoyed paid vacation and retirement benefits; and over 50% received dental benefits. In all, a higher percentage of center classroom teachers than family child care home providers received every type of benefit.

Absenteeism

Center classroom teachers were absent from work an average of 12.9 days a year, whereas the family child care providers were absent 10.5 days a year. In addition to being more likely to have sick leave benefits, center classroom teachers were more likely than family child care providers to have available substitutes.

Turnover

Turnover refers to the stability of caregivers in a program over time. It is difficult to confirm empirically the significance of caregiver stability because studies have used different measures of turnover including the percentage of caregivers who leave during the year, the number of new caregivers hired during the year, and the number of years a caregiver has been in the setting in measuring caregiver stability. According to Clarke-Stewart (1987), evidence of a positive relationship between caregiver stability and child development is inconsistent at best. In the *Cost, Quality, and Child Outcomes in Child Care Centers* study (Helburn et al., 1995) researchers reported evidence that caregiver tenure increased quality. Interviews with agency staff revealed that approximately 2% of the family child care providers from Cohort 1 were replaced with new providers in Cohort 2. In center classrooms, 7% of the teachers and 9% of the assistants were replaced. The family child care homes, therefore, demonstrated a greater degree of caregiver stability.

Program Structure

Program structure refers to aspects of the child care setting that tend to be stable, such as the child/staff ratio, group size, scheduling and planning, physical organization, materials and equipment, and safety. The evaluation sought to determine whether any of these program characteristics differed significantly between family child care homes and center classrooms and how differences related to child and family outcomes.

Child/Staff Ratio

Ratio is considered an important quality indicator because it is assumed to affect caregivers ability to mediate children's experiences with the social and physical world (Phillips & Howes, 1987). Many studies have found that ratio has a significant effect on the behavior of children and caregivers (Bruner, 1980; Field, 1980; Helburn et al., 1995; Howes, 1983; Howes & Rubenstein, 1985; Smith & Connolly, 1981). Lower child/staff ratios and group sizes are related to higher quality care and more positive caregiver behaviors.

Exhibit IV-4 shows that the center classroom settings had a mean ratio of 8.26 children per adult, whereas the family child care homes maintained a mean ratio of 4.79. The mean ratio by agency ranged from a low of 5.83 children per adult to a high of 11.06 in the center classrooms and from 3.00 to 6.00 in the family child care homes. The wide range of ratios suggests that the family child care homes and center classrooms were far from uniform, but on the average the family child care homes maintained a child/staff ratio roughly half that of the center classrooms. These differences were largely a function of licensing requirements, staffing patterns for center classrooms, and the evaluation requirement that family child care homes include no more than 6 children.

Group Size

Group size refers to the number of children in the setting. Many studies have documented the positive effect of smaller group size on the quality of child care (Howes, 1983; Howes & Rubenstein, 1985; Stith & Davis, 1984). In the family child care homes group size

tended to be equivalent to the child/staff ratio because most family child care homes had only one caregiver. As shown in Exhibit IV-4, the mean group size of the family child care homes by agency was 5.11 children and ranged from a low of 3.00 to a high of 6.00. In the center classrooms mean group size was 17.79 and ranged from a low of 15.60 to a high of 23.20, but the majority (85 of the 134 classrooms) reported a group size between 17 and 20. Thus, the average child/staff ratio and group size in the family child care homes were considerably lower than those in the center classrooms.

Exhibit IV-4
Group Size and Child/Staff Ratio

Agency	No. of Center Classrooms	Center Classrooms		Number of FCC Homes	FCC Homes	
		Average Enrollment	Average Ratioa		Average Enrollment	Average Ratiob
A	2	17.50	8.75	6	5.17	5.17
B	8	16.00	6.65	6	4.50	4.50
C	6	16.00	8.00	9	4.44	4.44
D	15	17.53	8.48	8	4.75	4.75
E	6	15.67	7.83	7	5.86	5.86
F	9	18.67	9.33	5	5.60	5.60
G	5	23.20	7.02	7	4.71	4.71
H	11	18.91	9.86	6	5.00	5.00
I	10	16.30	6.87	8	5.38	5.38
J	5	15.60	6.27	8	5.63	5.63
K	12	17.33	8.67	2	4.50	4.50
L	9	17.00	8.50	5	5.20	5.20
M	8	17.13	7.85	10	4.90	4.90
N	7	17.43	6.67	6	6.00	6.00
O	4	17.50	5.83	4	4.25	4.25
P	2	19.50	9.75	6	5.67	3.83
Q	8	22.13	11.06	5	4.00	4.00
R	7	18.43	9.21	6	6.00	3.00
Total	134	17.79	8.26	114	5.11	4.79

Note. Differences between settings significant at $p < .01$.

[a]Average child/staff ratio for center classrooms = number of enrolled children ÷ (number of teachers + assistants)

[b]Average child/staff ratio for family child care homes = (Head Start children + caregiver's children aged 0 4 + other children aged 0 4) ÷ (number of family child care providers + assistants)

Providing Care for Other Children

The center classrooms enrolled only 3- and 4-year-olds, whereas the family child care homes sometimes included children younger than 3 years and other non-Head Start children. Grantees were expected to operate between 8 and 10 family child care homes, each with 4 to 6 Head Start children. If a family child care provider had 1 or 2 preschool children of her own, she was allowed to have only 4 or 5 Head Start children so that the total number of preschool children in the home did not exceed 6. Because some agencies were not able to recruit enough families to reach the maximum of 6 children in each home, the family child care providers were permitted to care for other non-Head Start children to maintain their incomes. Some agencies guaranteed the family child care providers payment for 4 children, regardless of whether the openings were filled.

Exhibit IV-5 shows the number of children in each category across all family child care homes. Overall, 69% of the providers had children of their own at home, but only 30% had preschool children. Forty-one percent of the family child care providers cared for other children in addition to their own and the demonstration project children. The term *non-demonstration* in Exhibit IV-5 refers to Head Start children who were placed in the family child care homes after the pretest period, and thus were not part of the demonstration evaluation.

Exhibit IV-5
Numbers of Children in Family Child Care Homes

Category	Age		
	0 4	**5 9**	**10 +**
Head Start demonstration children	387		
Head Start non-demonstration children	123		
Provider s children	43	36	25
Other children	30	29	13

Note. Number of family child care homes = 114.

Scheduling, Planning, and Organization

Scheduling, planning, and organization of children's activities have been found to differ across types of child care settings (Divine-Hawkins, 1981; Fosberg, 1982; Goelman & Pence, 1987a; Helburn et al., 1995). In general, unlicensed family child care homes are the least likely settings to rely on a schedule and feature planned learning activities. Regulated and licensed homes like those in this evaluation are more likely to maintain a schedule and include some planned activities. Higher levels of structure and planning are commonly found in center-based settings. However, there is no clear agreement in the research literature and among practitioners regarding the value of scheduling and planning. Some researchers and practitioners contend that it is the very nature of family child care homes to operate with an informal structure in which the highly flexible schedule mirrors the ongoing life of a home (Gramley, 1990; Nelson, 1990). This viewpoint suggests that scheduling and planning are not necessarily essential to high quality in family child care (Washburn & Washburn, 1985). An alternate perspective maintains that scheduling and planning are essential aspects of high-quality care, regardless of the setting. According to Kontos (1992), research is needed to determine whether the presence or absence of structure and planning in family child care affects children's development.

The evaluation examined scheduling and planning in terms of the existence of and adherence to daily schedules. All center classrooms and family child care homes were licensed and required by the Head Start Program Performance Standards to develop a schedule. Exhibit IV-6 shows that family child care homes and center classrooms were equally likely to include the full range of activities and groupings identified in the Head Start Program Performance Standards.

Exhibit IV-6
Activities and Groupings in Observed Daily Schedule

Indicator	Percent of FCC Homes (*n* = 112)	Percent of Center Classrooms (*n* = 133)
Quiet time	99	95
Active, large-muscle activity	97	99
Small-muscle activity	100	100
Outdoor activity	96	93
Child-initiated activity	95	89
Teacher-directed activity	99	99
Small-group activity	96	99
Large-group activity	97	95

Note. Differences between settings were not significant.

Bredekamp and Copple (1997) underscored the critical role child-initiated activities play in fostering children's development in *Developmentally Appropriate Practice in Early Childhood Programs Serving Children From Birth Through Age Eight*. Such activities are regarded as the cornerstone of high-quality programs. Therefore, the high percentage (95%) of family child care homes that included child-initiated activities in their daily schedules is notable. Data supervisors observed, however, that the family child care homes did not follow posted schedules to the extent that the center classrooms did. Anecdotal reports suggested that family child care homes rarely followed schedules as posted and often extended particular activities or changed plans based on unforeseen circumstances. For example, one family child care provider took an impromptu field trip to the park when the weather unexpectedly cleared up. In another family child care home, the provider did not refer to or follow the schedule of activities, but explained that it was posted so parents can see what we usually do. In other family child care homes the schedule might have been viewed more as an administrative requirement than as an important planning and organizational tool.

Curricular Materials and Equipment

Appropriate curricular materials are a necessary component of high-quality child care programs, and they influence the types of program activities conducted (Bredekamp & Copple, 1997). Similarly, an absence of certain materials may indicate potential weaknesses in the child care setting. In family child care homes the arrangement of materials was constrained by the physical characteristics of the setting because in homes less space was available for program purposes than in classroom settings. Also, access to some parts of the house was usually restricted because homes have furniture, adornments, and personal belongings that are not part of the child care environment. As a result, traditional learning centers that one might find in a classroom were less common in the home setting. Some homes displayed only a subset of curricular materials at one time, while others were stored.

Significant differences were found between the family child care homes and center classrooms in the types of materials available, the arrangement of the materials, and the furniture and equipment provided. Exhibit IV-7 shows that center classrooms were consistently more likely to have various curricular materials, to arrange the materials in appropriate ways, and to provide individual space for each child's belongings (cubbies) than family child care homes. Over 90% of the family child care homes contained active play equipment, art supplies, creative movement materials, manipulatives, and blocks. Similarly, over 90% of family child care homes had materials geared to the developmental needs of children and materials that encourage exploration and experimentation. Over 80% of the family child care homes had culturally and ethnically relevant materials and picture books. In almost 90% of the family child care homes the materials were consistent with their educational objectives. Less than 80% of family child care homes contained sufficient dramatic play, science, health or nutrition materials, or materials that reflected cultural, ethnic, and gender diversity. The sizes of the differences between family child care homes and center classrooms provide clues to the relative strengths and weaknesses of the two settings. Differences in curricular materials ranged from less than 2% for the art

and active play materials indicators to over 10% for the picture books, dramatic play, science, and health/nutrition indicators.

Arrangement of Materials

In over 90% of family child care homes the curricular materials were accessible, in good condition, orderly, separated into individual and small group areas, separated into quiet and active areas, and stored safely. In nearly 90% of family child care homes the curricular materials were arranged in an attractive and inviting manner and divided into learning centers.

Furniture and Equipment

Both family child care homes and center classrooms contained appropriate furniture and equipment. However, only 84% of the family child care homes maintained individual spaces for each child s belongings whereas 99% of the centers did so resulting in a statistically significant difference ($p < .01$) between the two settings on the furniture and equipment indicator, as shown in Exhibit IV-7.

Safety

Safety issues in child care environments include the storage of dangerous materials, the existence of hazards, evidence of emergency preparedness, and appropriate outdoor supervision. The OSPRI was used to evaluate the safety features of family child care homes and center classrooms.

Exhibit IV-7
Materials Available to Children

Indicator	Percent of FCC Homes (n = 112)	Percent of Center Classrooms (n = 129)
Curricular Materials*		
Active play equipment	98	100
Art	99	100
Creative movement	96	99
Manipulatives	93	100
Blocks	92	98
Culturally/ethnically relevant	84	91
Picture books	81	93
Dramatic play	79	90
Science	78	89
Health/nutrition	79	92
Reflect culture, ethnic, and gender diversity	70	83
Consistent with educational objectives	89	95
Geared to children's developmental needs	93	98
Encourage exploration and experimentation	92	98
Arrangement of Materials*		
Accessible	94	100
Good condition	97	100
Attractive, inviting	89	99
Orderly	91	100
Individual/small group areas	96	100
Stored safely	92	99
Learning centers	88	99
Quiet/active areas separated	93	98
Furniture/equipment*		
Child-sized furniture	98	100
Soft elements	100	100
Individual space for belongings (cubbies)	84	99

Note. Materials in family child care homes that were rotated and thereby periodically available received *yes* ratings.

*Differences between settings significant for subcategory at $p < .01$.

Emergency Plans

Exhibit IV-8 shows the percentages of family child care homes and center classrooms that received a *yes* rating on the emergency plans indicators. Over 80% of family child care homes had emergency information in the language of the caregivers, had the telephone location posted, and had emergency procedures for fires and storms available. Less than 80% of family child care homes had emergency procedures and numbers posted, dental emergency and first-aid information, first-aid kits, and accessible emergency files with an emergency contact for each child. For most of these indicators, the family child care homes were somewhat less likely than the center classrooms to demonstrate emergency preparedness.

Exhibit IV-8
Percent of FCC Homes and Center Classrooms with Emergency Plans

Indicator	Percent of FCC Homes (n = 109)	Percent of Center Classrooms (n = 125)
Information in language of caregivers	93	83
Emergency contact for each child	79	71
Accessible medical emergency information	76	80
Emergency phone numbers posted	79	84
First-aid kit	73	77
Telephone location posted	87	70
First-aid information posted	73	70
Emergency procedures for fire and storms	81	89
Dental emergency information	69	77
Written procedures posted	56	60

Note. Overall differences between settings were not significant.

Storage, Hazards, and Outdoor Safety

Exhibit IV-9 shows the percentages of family child care homes and center classrooms that received a *yes* rating on the storage, hazards, and outdoor safety indicators. Over 90% of the family child care homes and center classrooms received *yes* ratings on all of the storage, hazards, and outdoor safety indicators except for two: *trash emptied daily* and *adequate number of covered trash cans*. In comparison, virtually all center classrooms

emptied their trash daily. Aside from this, there were no large practical differences in the percentage of family child care homes and center classrooms that passed individual storage, hazards, and outdoor safety indicators. Differences on the storage and hazard scales, however, were statistically significant ($p < .01$).

Exhibit IV-9
Percent of FCC Homes and Center Classrooms Meeting OSPRI Storage, Hazards, and Outdoor Safety Items

Indicator	Percent of FCC Homes (n = 112)	Percent of Center Classrooms (n = 134)
Storage*		
Toxic products in original containers	96	99
Food items away from poison	99	100
Aerosol can inaccessible to children	96	100
Hazards*		
Heating units covered	100	100
Shelves stable	98	100
No splinters/nails	94	99
Toys clean	95	98
Trash emptied daily	85	99
Electrical sockets covered	91	91
Adequate number of covered trash cans	83	89
Outdoors		
Area enclosed	98	100
Supervision	99	99

*Differences between settings significant at $p < .01$.

Program Dynamics

Program dynamics, or process variables, refer to features that determine children's daily experiences, such as learning activities, grouping, caregiver and child interactions, and caregiver behaviors. Each of these areas contributes critically to the overall quality of the child care environment. The evaluation examined program dynamics within the family child care homes and center classrooms to determine whether program dynamics differences between the two settings were evident.

Curricular and Learning Activities

A complete understanding of the curriculum used in family child care homes and center classrooms can best be achieved by describing both the types of activities conducted and the processes used to carry out the activities. Both aspects of curriculum are crucial to developmentally appropriate, high-quality programs (Bredekamp & Copple, 1997). Exhibit IV-10 shows the percentage of family child care homes and center classrooms that carried out particular learning activities. Overall, no significant differences between the settings were evident. Over 90% of the family child care homes and center classrooms actively engaged children in play, provided activities for sorting and classifying, conducted health and safety activities, and provided physical skill development activities. Fewer family child care homes and center classrooms provided food selection and nutrition activities, promoted multicultural awareness, promoted awareness of children with disabilities, conducted trips to local businesses, and invited parents to share their culture.

Exhibit IV-10
Percent of FCC Homes and Center Classrooms Passing Selected OSPRI Items

Learning Activity	Percent of FCC Homes (n = 108)	Percent of Center Classrooms (n = 128)
Active play	98	99
Health and safety	94	98
Sorting and classifying	97	99
Food selection/nutrition experiences	79	81
Trips to businesses	63	54
Trips to local events	80	76
Reflects language and culture of community	84	91
Parents invited to share culture	62	82
Promotes multicultural awareness	74	85
Promotes awareness of children with disabilities	79	77
Physical skills	94	94
Guidance during physical development	88	94

Note. Differences between settings were not significant.

Learning Approach

As shown in Exhibit IV-11, the family child care homes and center classrooms demonstrated similar approaches to learning. Both settings excelled at promoting language use in an atmosphere that encouraged easy communication, providing many opportunities for success, and using a variety of groupings. Family child care homes were better able to maintain a balance of caregiver-directed and child-initiated activities than the center classrooms but slightly less likely to work toward the recognition of letters and numbers. This finding suggests that the family child care providers might have been less likely to focus on skills traditionally considered to be important for school readiness. Over 80% of family child care homes and center classrooms integrated Head Start components into the program day. Less than 65% of family child care homes and center classrooms, however, provided individualized activities.

The way children are grouped in early childhood programs can have a significant effect on the quality of care they receive. Grouping practices mediate the group size and the child/staff ratio, thus influencing the social dynamics and adult-child interactions in the child care setting. Generally, the excessive use of any single type of grouping individual, small group, or large group is inconsistent with good practice (Bredekamp & Copple, 1997). Ideally, programs integrate different grouping schemes freely throughout the day, selecting a grouping that is best suited to the curricular activity at hand. As shown in Exhibit IV-11, approximately 96% of family child care homes and 97% of center classrooms used a balance of group sizes to promote the children s social and emotional development. (In family child care homes, *large group* was defined as the entire group). These high percentages reflect that grouping practices in the family child care homes and center classrooms were generally consistent with high-quality early childhood procedures.

Exhibit IV-11
Percent of FCC Homes and Center Classrooms Using Selected Learning Approaches

Learning Approach	Percent of FCC Homes (*n* = 110)	Percent of Center Classrooms (*n* = 131)
Use of individual, small, and large groupings	96	97
Provision of many opportunities for success	94	98
Promotion of language understanding	97	94
Promotion of letter and number recognition	83	88
Organization of experiences and understanding of concepts	78	80
Balance of caregiver-directed and child-initiated activities	96	84
Individualized activities	58	63
Integration of Head Start components	84	85

Note. Differences between settings were not significant.

Atmosphere

Atmosphere is defined here as the general tone of the center classrooms and family child care homes. The evaluation of atmosphere included OSPRI indicators that deal with dialogue between adults and children; spontaneity; freedom of movement; waiting time; and the absence of shouting, crying, and fighting. Exhibit IV-12 shows that both settings performed very well on atmosphere indicators nearly 90% of the family child care homes and center classrooms passed each indicator.

Exhibit IV-12
Percent of FCC Homes and Center Classrooms Passing of Atmosphere-Related OSPRI Indicators

Atmosphere	Percent of FCC Homes (*n* = 112)	Percent of Center Classrooms (*n* = 132)
Children and adults in dialogue	96	93
Absence of shouting, crying, and fighting	94	90
Relaxed, cheerful environment	92	91
Spontaneous, buzzing with activity	94	90
Children free to move between activities	92	92
Waiting time short and well managed	88	89

Note. Differences between settings were not significant.

Displays

Over 95% of family child care homes and center classrooms used displays that encouraged ethnic pride. Only 70% of family child care homes, however, displayed the children's artwork, whereas over 80% of center classrooms did so. This statistically significant difference ($p < .05$) suggests that family child care home providers might need to consider ways to display children's artwork that do not otherwise disrupt the other everyday uses of the home. For example, at least one provider purchased a portable bulletin board that could be put away at the end of each day.

Teaching Methods and Developmentally Appropriate Practices

The DPI (Goodson, 1990) provides additional information on curricular practices in the family child care homes and center classrooms. The DPI assesses a broad range of program components at the same time, including instructional style, grouping practices, and adult-child interactions. DPI scores are reported as developmentally appropriate practices (DAP), developmentally inappropriate practices (DIP), and total developmental practices (Total DPI). Each item is rated using a 5-point scale on which 1 represents *not at all like this classroom* and 5 represents *very much like this classroom*. The Total DPI score is constructed by reversing the scale of the developmentally inappropriate items and adding them to the developmentally appropriate items.

Exhibit IV-13 shows that in the fall family child care homes and center classrooms scored an average of 3.45 and 3.64, respectively, on DAP. These scores demonstrate that both settings scored above the level of *somewhat developmentally appropriate*. In terms of DIP at pretest time, family child care homes and center classrooms scored an average of 1.69 and 1.63, respectively, which indicates that both settings avoided developmentally inappropriate practices. The Total DPI scores at pretest were 3.88 for the family child care homes and 4.06 for the center classrooms. This statistically significant difference shows that overall, the center classrooms were slightly more developmentally appropriate than the family child care homes in the fall. The spring DPI assessments resulted in trends similar to the pretest data, although differences between the two settings were not statistically

significant. The pretest and posttest scores suggest a slight improvement in the developmental appropriateness of both the center classrooms and family child care homes during the year. Family child care homes also reduced the degree of developmentally inappropriate practices from pretest to posttest, whereas center classrooms remained unchanged from pretest to posttest in terms of their use of developmentally inappropriate practices.

Exhibit IV-13
Mean Scores for Family Child Care Homes and Center Classrooms on the DPI

Scale	FCC Homes (n = 114)		Centers (n = 133)	
	Pretest	Posttest	Pretest	Posttest
Developmental Appropriateness (DAP)	3.45	3.69	3.64	3.79
Developmental Inappropriateness (DIP)	1.69	1.63	1.53	1.53
Total DPI*	3.88	4.03	4.06	4.13

*Differences between settings on Total DPI significant at pretest at $p < .05$.

Although overall differences between family child care homes and center classrooms on Total DPI posttest scores were not significant, using effect sizes, Exhibit IV-14 explores the differences between settings for each agency. Effect size, which is the difference between family child care homes and center classrooms expressed as standard deviation units, offers a standard way to compare differences across measures and across agencies. Effect sizes for Total DPI posttest scores in Exhibit IV-14 range from -1.70 to 1.15. Positive effect sizes indicate that family child care homes outperformed center classrooms, and negative effect sizes indicate that family child care homes underperformed compared to center classrooms. Three agencies had center classrooms that scored more than one standard deviation above the family child care homes. In two agencies the family child care homes scored more than one standard deviation above the center classrooms. For the remaining 13 agencies, family child care homes and center classrooms were more alike, with effect sizes ranging from -.79 to .86. Differences between agencies on Total DPI posttest scores were statistically significant.

Exhibit IV-14
Developmental Practices Inventory Total Score Posttest Means by Agency and Setting

Agency	FCC Homes			Center Classrooms			Pooled *SD*	Effect Size
	M	***SD***	***n***	***M***	***SD***	***n***		
A	3.97	.29	6	3.98	.07	2	.24	-.04
B	4.15	.25	6	4.12	.34	8	.29	.10
C	3.67	.86	9	2.65	.55	6	.89	1.15
D	3.18	.52	8	4.20	.57	15	.73	-1.40
E	3.56	.91	7	3.30	.97	7	.92	.28
F	3.76	.40	5	4.62	.18	9	.50	-1.70
G	4.06	.32	7	3.69	.16	5	.32	1.15
H	3.69	.63	6	3.91	.69	12	.66	-.33
I	3.87	.45	8	4.17	.24	10	.38	-.79
J	4.83	.13	8	4.91	.10	5	.12	-.67
K	4.28	.17	2	4.03	.38	12	.36	.69
L	3.81	.48	5	4.00	.35	7	.40	-.48
M	4.57	.39	10	4.75	.23	5	.35	-.51
N	4.39	.60	6	4.63	.32	9	.45	-.53
O	4.82	.04	4	4.63	.27	5	.22	.86
P	3.96	.58	6	4.77	N/A	1	.61	-1.33
Q	3.55	.62	5	3.91	.38	8	.50	-.72
R	4.65	.20	6	4.68	.15	7	.17	-.18
Total	4.03	.67	114	4.13	.66	133	.53	-.19

Note. Differences between agencies on posttest means were significant at $p < .01$. Differences between settings on posttest means were not significant.

Adult-Child Interactions

Caregiver behavior strongly influences children s experiences in terms of language development (McCartney, 1984), social development (Clarke-Stewart, 1987), and cognitive development (Phillips, Scarr, & McCartney, 1987). The evaluation team examined adult-child interactions by using the OSPRI to assess the caregivers language use and the Arnett Scale of Caregiver Behavior to assess caregivers supportive behaviors (e.g., behaviors that promote self-management, attentive and encouraging behaviors) and nonsupportive behaviors (e.g., controlling, detached, harsh, and critical behaviors). Exhibit IV-15 shows the percentage of family child care homes and center classrooms with caregivers who exhibited particular behaviors.

Exhibit IV-15
Adult-Child Interactions Measured by the OSPRI

	Percent of FCC Homes (n = 113)	Percent of Center Classrooms (n = 132)
Language Use		
Listens and responds to children	96	96
Uses children's names	96	97
Encourages children to talk about themselves	83	86
Avoids negative verbalizations	94	88
Avoids stereotypes	96	98
Uses open-ended questions	65	65
Adult voice does not dominate	90	89
Language Match		
Aware of language of each child	100	97
Person available who speaks language of each child	90	98
Other Interactions		
Interacts with smiles and hugs	95	95
Uses positive approach to discipline	90	83
Interacts at eye level	94	92
Encourages appropriate behaviors	98	99

Note. Differences between settings on language use, language match, or other interactions were not significant.

Over 90% of caregivers in family child care homes and center classrooms engaged in positive language behaviors, including using children's names, listening and responding to children with attention and respect, avoiding stereotypes, avoiding negative verbalizations, and refraining from dominating classroom talk. In contrast, only 65% of family child care home and center caregivers used open-ended questions. Because using open-ended questions is considered a critical language technique for promoting children's higher order thinking skills and encouraging oral expression, the relatively low percentage of caregivers who engaged in this behavior is noteworthy. More than 90% of the family child care providers interacted with smiles and hugs, encouraged appropriate behaviors, used positive approaches to discipline, and interacted at eye level with children. Over 90% of center classroom teachers also engaged in all of these behaviors except using positive approaches to discipline; only 83% of the center classroom teachers exhibited this behavior.

Exhibit IV-16 shows the Arnett Scale of Caregiver Behavior mean scores for caregivers supportive and nonsupportive behaviors in family child care homes and center classrooms. Scores differed significantly between the settings on the attentive and encouraging and Total Arnett scales, with family child care providers receiving higher ratings. Most caregivers were rated in the *quite a bit* category for positive behaviors and the *not at all* or *somewhat* categories for negative behaviors.

Exhibit IV-16
Arnett Scale Mean Scores for Family Child Care Homes and Center Classrooms

	FCC Homes (n = 114)		Center Classrooms (n = 134)	
Scale	**Pretest**	**Posttest**	**Pretest**	**Posttest**
Attentive and encouraging*	3.23	3.29	3.04	3.03
Promotes self-management	2.67	2.84	2.63	2.71
Harsh and critical	1.15	1.18	1.22	1.25
Controlling	1.30	1.31	1.40	1.40
Detached	1.29	1.27	1.36	1.29
Total Arnett*	3.42	3.45	3.31	3.32

Note. Rating was reversed on negative behavior items in computing total scores.
*Differences between settings at pretest and posttest on the attentive and encouraging and Total Arnett scales were significant at $p < .05$.

Exhibit IV-17 shows that several agencies experienced differences between family child care homes and center classrooms on the posttest Total Arnett caregiver behavior scores. Effect sizes greater than 1 or -1 were found in 6 agencies, and in 5 of those 6 agencies the family child care providers were rated higher than the center classroom teachers. Of the 12 remaining agencies, 6 showed positive effect sizes and 6 showed negative effect sizes. Overall, Total Arnett score differences, both between the family child care homes and center classrooms and between agencies, were statistically significant.

Exhibit IV-17
Arnett Scale Posttest Means by Agency and Setting

Agency	FCC Homes			Center Classrooms			Pooled *SD*	Effect Size
	M	*SD*	*n*	*M*	*SD*	*n*		
A	3.33	.23	6	3.10	.17	2	.23	1.00
B	3.42	.23	6	3.25	.18	8	.21	.81
C	3.45	.59	9	2.45	.47	6	.73	1.34
D	3.03	.22	8	3.34	.37	16	.36	-.86
E	3.25	.60	7	3.17	.46	7	.52	.15
F	3.22	.44	5	3.48	.29	9	.36	-.72
G	3.33	.23	7	3.02	.22	5	.27	1.15
H	3.41	.48	6	3.30	.47	12	.46	.24
I	3.29	.37	8	3.56	.24	10	.33	-.81
J	3.91	.07	8	3.89	.13	5	.09	.22
K	3.50	.18	2	3.04	.35	12	.37	1.24
L	3.32	.30	5	3.11	.44	7	.39	.54
M	3.76	.14	10	3.84	.10	5	.13	-.62
N	3.49	.51	6	3.55	.38	9	.42	-.14
O	3.99	.02	4	3.66	.17	4	.21	1.57
P	3.59	.30	6	3.91	.03	2	.29	-1.10
Q	3.05	.51	5	3.08	.34	2	.39	-.08
R	3.66	.35	6	3.59	.22	7	.28	.25
Total	3.45	.43	114	3.32	.45	134	.38	.34

Note. Differences between agencies were significant at $p < .01$. *Note*. Differences between family child care home and center classroom settings were significant at $p < .05$

Relationships Among Measures of Program Quality

To better understand the relationship between the OSPRI and other measures of program quality, correlations between the OSPRI Education scale, the total OSPRI, the DPI and its two subscales, and the Arnett Scale were calculated. The correlation matrix is presented in Exhibit IV-18. As might be expected, the Education scale of the OSPRI correlates very highly (.83) with the Total OSPRI. The Education scale also correlates highly with the DPI Appropriate scale (.62), the DPI Total (.54) and the Arnett Total (.53). Each of these correlations suggests that the Education scale of the OSPRI seems to be measuring the same general domain as the DPI and Arnett, and their results show the same classrooms scoring high and low on these measures.

Although it is not verifiable from the available data, a content review of the Education scale of the OSPRI suggests it may measure other aspects of quality as well. For example, the Education scale of the OSPRI has several items devoted to linguistic and culturally appropriate activities and materials and involving parents in classroom activities. Neither of these two topics are included in the DPI or Arnett, which may partially explain the .53 to .62 correlations between the OSPRI and these measures.

Exhibit IV-18
Correlations Between Spring Measures of Program Quality

	Education OSPRI	DPI Appropriate	DPI Inappropriate	DPI Total	Arnett Total
Total OSPRI	.83	.48	-.21	.40	.39
Education OSPRI		.62	-.32	.54	.53
DPI Appropriate			-.62	.82	.82
DPI Inappropriate				-.88	-.57
DPI Total					.79

Meal Times

Adult-child interactions and other features of meal times are important in Head Start programs because a significant portion of the day is devoted to meal times, including preparing and eating meals and cleaning up afterward. Exhibit IV-19 shows the percentage of family child care homes and center classrooms that received a *yes* rating for each meal time evaluation indicator. Over 90% of family child care homes held child-centered conversations, did not use food as a punishment or reward, and ensured that children ate in small groups. More than 80% of family child care homes served meals family style and encouraged children to serve themselves. Less than 70% of family child care providers ate the same food with the children and only 75% used child-sized furniture. In contrast, over 90% of center classroom teachers ate the same food with the children and used child-sized furniture. These differences were statistically significant ($p < .01$).

Exhibit IV-19
Percent of FCC Homes and Center Classrooms Passing OSPRI Meal Time Guidelines

Indicator	Percent of FCC Homes (n = 107)	Percent of Center Classrooms (n = 127)
Children eat in small groups	99	96
Staff eat with children	65	94
Staff eat same food as children	69	94
Conversation is child centered	92	89
Meals are served family style	81	86
Furniture is child sized	75	98
Children serve themselves	84	86
Food is not used as punishment or reward	100	99

Note. Overall differences between settings were significant at $p < .01$.

Race and Language Diversity

One of the goals of the Head Start program is to teach children to appreciate cultural diversity. Several OSPRI items are concerned with this issue (e.g., display and use materials that encourage ethnic pride; learning environments that reflect the language and culture of the children enrolled; field trips to events and places that represent the cultures of the children served; persons available who speak the language of each child; programmatic promotion of cultural and ethnic awareness). In a classroom environment, where larger numbers of children gather, there is a greater chance for cultural diversity than in the home environment. A related concern is the degree to which a family child care home, typically with only one caregiver, can provide children with diverse role models. In light of these issues, the evaluation team examined the extent to which children in the family child care homes were matched with caregivers of the same race or language background, and the extent to which family child care homes were able to provide a racially heterogeneous group within each home.

Exhibit IV-20 portrays the race and language diversity found in family child care homes. Across all agencies, 58% of the children were in the same racial category as their caregivers. The match ranged from a low of 13% in Agency G to 100% in Agency P. The racial diversity of children within homes ranged from no diversity in any home in Agency

P, to diversity in all of the homes in agencies G and K. Overall, only 43% of the family child care homes included children from more than one racial group. Exhibit IV-20 also shows that most of the children (92%) were in homes in which the caregivers spoke the same primary language as the children. Although 8% of the children did not speak the same primary language as their caregivers, many children and caregivers were bilingual or were developing skills in a second language.

Exhibit IV-20
Race and Language Diversity in Family Child Care Homes

Agency	Percent of Children Who Matched Race of Caregiver	Percent of Homes With Racial Heterogeneity	Percent of Children Who Matched Language of Caregiver
A	80	17	100
B	53	50	100
C	44	56	100
D	38	33	81
E	46	14	100
F	46	83	69
G	13	100	52
H	80	50	88
I	76	13	100
J	61	75	100
K	67	100	100
L	25	40	92
M	90	30	100
N	80	50	100
O	92	20	100
P	100	0	100
Q	58	50	75
R	15	28	98
Total	58	43	92

Overall, family child care homes and center classrooms were comparable in meeting objective standards of program quality. The next chapter discusses the relative success of the family child care homes and center classrooms in achieving desirable child outcomes such as cognitive growth, and physical and emotional well-being.

V. Child Outcomes

This chapter provides information about the background characteristics of the children who participated in the evaluation, their outcomes for the Head Start year, and their outcomes for the kindergarten year.

Child Background Characteristics

This section describes the children who participated in the demonstration project during its second year of operation. Cohort 2 included 745 children who were both pretested and posttested. The background data were collected though interviews with 712 parents (333 in family child care homes and 379 in center classrooms). Fifty percent of the children were male and 50% were female. The mean age of children in both settings was 4.3 years.

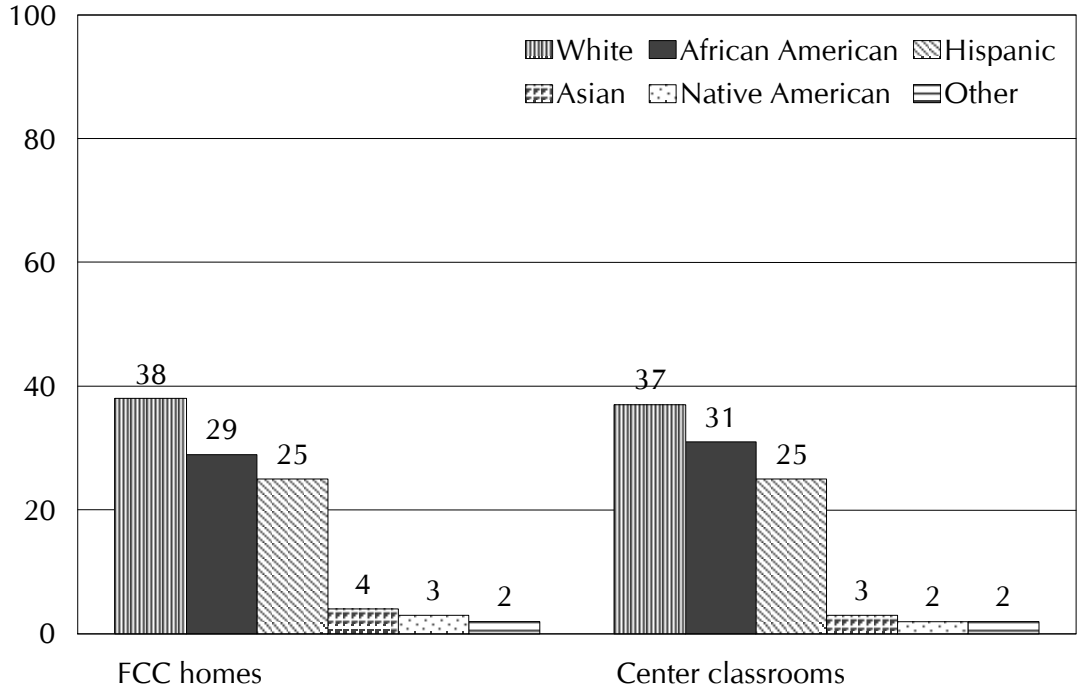
Language

Overall, almost 84% of the children spoke English as their primary language, nearly 13% spoke Spanish, and almost 4% spoke a language other than English or Spanish. The other primary languages included Chinese, Vietnamese, and Farsi. There were no significant differences between family child care homes and center classrooms in terms of the primary language of the children served. Of the children who spoke a primary language other than English, about half spoke no English.

Race/Ethnicity

Exhibit V-1 presents the percentages of children in each racial/ethnic group served by the family child care homes and center classrooms. There were no significant differences between the two settings.

Exhibit V-1
Race of the Children by Setting



Note. Difference between settings was not significant.

Special Needs

Exhibit V-2 displays the percentage of children with diagnosed and suspected special needs by setting. These data were collected from parents in the fall of the Head Start year. Children were counted as *suspected* if they had been referred for testing but a diagnosis had not been made. There were no significant differences between family child care homes and center classrooms in the percentage of special needs children served. Health needs were the most frequently diagnosed special needs in both settings, followed by speech-related special needs.

Exhibit V-2
Percentage of Children With Diagnosed or Suspected Special Needs by Setting

	Percent Diagnosed		Percent Suspected	
	FCC Homes	Center Classrooms	FCC Homes	Center Classrooms
Vision	2.8	3.9	1.3	0.9
Hearing	1.5	3.9	2.3	1.8
Orthopedic	3.1	1.6	1.8	0.9
Speech	8.2	6.9	8.5	7.1
Health	10.6	9.7	1.0	1.4
Mental Retardation	0.0	0.0	0.0	0.5
Emotional	1.5	1.8	4.4	3.2
Learning Disability	0.8	0.7	2.3	1.1
Autism	0.0	0.0	0.0	0.0
Head Injury	0.8	0.2	0.0	0.0
Other	1.0	1.4	0.8	0.5

Note. Numbers include children with multiple special needs. Differences between the settings were not significant.

Child Care Experiences

For some families Head Start was their first experience with child care, but for other families Head Start was one of several different child care arrangements the family had utilized over the years. Overall, almost 20% of the families had participated in child care during the year prior to participating in Head Start. The difference between the family child care families and the center classroom families in this respect was significant ($p < .01$): 12% of the family child care families and 26% of the center classroom families had participated in child care during the previous year.

Exhibit V-3 presents a more detailed breakdown of previous child care experiences, including the types of child care arrangements that were made, the number of hours per week children were placed in each type of arrangement, and the number of weeks children participated in each type of arrangement. An assortment of arrangements had been used by the families, including Head Start, other centers or preschools, family child care, and relatives. There were no significant differences between family child care families and center classroom families in their use of particular types of child care, except for the

number of weeks children spent in the care of an older sibling and the average hours children spent per week in Head Start.

Exhibit V-3
Participation in Child Care Prior to Head Start

Type of Care	Number of Children		Mean Hours per Week		Number of Weeks	
	FCC	Center	FCC	Center	FCC	Center
Adult baby sitter	28	30	25.9	26.4	34.1	31.3
Older sibling[a]	8	6	17.8	11.5	14.0	39.0
Other relative's home	51	50	27.7	23.7	30.8	34.6
Family day care	50	52	30.1	29.2	30.5	31.2
Head Start[b]	103	142	27.4	16.8	21.1	21.7
Public school pre-k	12	13	15.4	18.8	17.6	26.9
Other center/school	84	100	29.0	27.1	30.2	26.9
Drop-in care	16	10	23.3	29.6	30.0	28.4
Other care	21	25	25.8	25.9	33.1	30.1

Note. Multiple responses were possible.
[a]Difference between settings on number of weeks was significant at $p < .05$
[b]Difference between settings on mean hours per week was significant at $p < .01$

Twenty-six percent of the parents with children in the center classroom setting reported that they used child care services in addition to Head Start compared to 12% of parents with children in the family child care home option. This difference ($p < .01$) between center classrooms and family child care homes underscores the success of family child care homes in delivering more complete child care services to families in need. Families using additional child care services also differed significantly in the number of hours of additional care that they needed. The center classroom families required almost 20 additional hours of child care per week, whereas the family child care families required an average of 15 additional hours of child care per week ($p < .05$).

Approximately one third of the families needed additional child care services because they had additional children under age 6. Of those families, about 36% reported having difficulty finding care for their other children under age 6. Of the subset of parents who had problems finding care for their other children, over 60% reported that these problems affected their ability to participate in Head Start activities. Thus, about 7% of the evaluation

population reported that a lack of child care for their other children interfered with the family s ability to participate in Head Start activities.

Family child care homes furnished full-day child care and, in general, were better able to fulfill the families child care needs. However, many families needed child care services beyond full-day care on weekdays. Parents' work and school schedules often required child care during evening or early morning hours or on weekends. The majority of family child care homes were open for eight hours between 8 a.m. and 4 p.m. on weekdays. Most center classroom programs offered half-day services. Although families in both settings sometimes required additional child care services, center classroom families were three times more likely to need additional care and required significantly more hours of additional child care than the family child care home participants.

Child Outcomes During the Head Start Year

This section examines the outcomes of children s participation in Head Start. Child outcomes were measured in three developmental domains: cognitive, social-emotional, and physical.

Data Analytic Approach

The evaluation team used multiple linear regression (MLR) and multivariate analysis of covariance (MANCOVA) to conduct the primary inferential analyses of child outcomes. The MLR analysis is a straightforward attempt to statistically model or predict the outcomes for each child based on a series of predictor variables. In this analysis, the predictor variables were selected on the basis of their expected relationships with the outcome variables, and fell into three categories: child and family background, the level of the child's functioning before the program began (pretest scores), and the program type (family child care home or center classroom) and its assessed quality. These three categories are represented by the seven variables shown in Exhibit V-4.

Exhibit V-4
Predictor Variables in Child Outcomes Multiple Linear Regression Analyses

Predictor Category	Predictor Variable
Child and family background	Primary caregiver's educational level
	Primary language of child (English/non-English)
	Gender of child
Preprogram level of functioning	Pretest score on outcome measure
Program	Program setting (FCC home or center classroom)
	Developmental Appropriateness of Program (DPI Total Score)
	Quality of Educational Program (OSPRI Education items passed)
Interaction	Interactions of Setting with DPI and OSPRI

These predictor variables were employed in the MLR via a hierarchical entry procedure corresponding to their temporal occurrence. This approach, driven by a prespecified model, is beneficial from a methodological perspective because it minimizes the occurrence of uninterpretable combinations of predictor variables that emerge solely through statistical criteria rather than hypothesized relationships. All child and family background variables were entered in the regression first to account for any variance in the outcome measure that could be attributed to preexisting characteristics of the child or family environment. Next, the pretest score on the outcome measure being modeled was entered to capture the common variance with the posttest due to the entering ability level of the child. Although random assignment ensured preprogram equivalence in the background and ability levels of family child care home and center classroom children at each site, the inclusion of pretest scores strengthened the predictive model and sharpened the interpretation of the other effects by partialing out the variance in children s initial abilities in these outcome areas. Including pretest scores facilitated the interpretation of significant effects for children of the same skill level. Finally, the program assignment (setting) and two forms of program quality assessment (the Total DPI score and the number of OSPRI education items met) were entered to assess the relationships of primary interest to this evaluation whether the program setting or program influenced the outcomes for the children who participated in Head Start.

The answer to the principal evaluation question whether there was a difference between family child care homes and center classrooms on the variety of child outcomes under evaluation is embedded in the MLR approach. The answer is determined by whether the setting predictor family child care home or center classroom contributes a significant addition to the regression model predicting the child outcome of interest. If significant differences in child outcomes between family child care homes and center classrooms are found after all differences due to background characteristics and pretest scores have been accounted for, the setting predictor is included as a significant component of the model. Conversely, if these significant differences do not exist, the setting predictor is not included in the regression model. In this case, the conclusion would be that the child s background, pretest score, or the program quality is the key predictor of child outcomes and program setting has no effect on outcomes.

To complement this analysis, a corresponding analysis was conducted using an analysis of variance (ANOVA) framework. To remain congruent with the MLR, each child's pretest score served as a covariate. These analyses of covariance were conducted in a multivariate manner on all outcomes within each developmental domain simultaneously to afford better Type I error protection among the long series of inferential tests.

Cognitive Outcomes

The evaluation team measured cognitive outcomes using four standardized assessment tools: the Peabody Picture Vocabulary Test Revised (PPVT R), the Daberon 2, Concepts About Print (CAP), and the Child Observation Record (COR). With the exception of the PPVT R, all of these instruments include multiple subtests that assess specific cognitive skills. Exhibit V-5 presents descriptive and inferential statistics for all the cognitive tests and subtests. End-of-year group means, adjusted for any differences on the fall pretest using the analysis of covariance procedure, are provided for children in family child care homes and center classrooms, along with the pooled standard deviation used in the test of significance between the two groups. The effect size statistic is the difference between means, expressed as a proportion of the pooled standard deviation. It is a descriptive index of the

group differences that provides an interpretive look at the magnitude of group differences independent of statistical significance testing. With sample sizes this large, it is important to determine the practical significance of statistically significant differences.

Exhibit V-5
Descriptive Statistics and Significance Tests on Cognitive Outcomes
Family Child Care Homes and Center Classrooms

	Adjusted Means		*SD* (Pooled)	Effect Size	*F*	*p*
	FCC	Center				
PPVT R total	91.80	90.57	9.96	.12	2.02	.156
Daberon 2 total	82.37	82.16	6.21	.03	.15	.698
Multivariate composite					.66	.730
Body parts	10.63	10.63	1.30	.00	.00	.957
Color concepts	15.03	14.95	2.17	.04	.20	.652
Number concepts	13.28	13.50	2.22	-.10	1.47	.225
Prepositions	5.02	5.15	1.07	-.12	2.14	.144
Following directions	6.45	6.51	.68	-.09	1.48	.225
Plurals	5.50	5.51	.71	-.01	.01	.930
General knowledge	21.48	21.48	2.70	.00	.00	.994
Categorization	3.85	3.81	1.51	.03	.12	.730
Concepts About Print total	7.08	7.01	2.19	.03	.18	.676
Multivariate composite					.48	.752
Book handling	2.92	2.86	1.06	.06	.56	.455
Words/letters	1.05	1.08	.89	-.03	.28	.598
Publishing knowledge	1.43	1.38	1.05	.05	.30	.581
Story elements	1.63	1.61	.63	.03	.18	.674
Child Observation Record Total	11.65	11.38	1.39	.19	4.97	.026*
Multivariate composite					1.56	.199
Language and literacy	3.52	3.45	.46	.15	3.34	.068
Logic and mathematics	3.81	3.70	.68	.16	4.02	.045*
Creative representation	4.21	4.12	.62	.14	3.19	.074

The results of the significance testing from the MANCOVA analysis are also presented in Exhibit V-5 to determine whether the observed differences are statistically reliable enough to warrant interpretation. At the total score level on each instrument, the *F* statistic in the exhibit is a univariate test of total cognitive score means, obtained by simply summing all

of the items together to arrive at a total score. The multivariate composite in the exhibit reports the result of the multivariate test of group differences conducted on all subtests of each instrument. Its *F* statistic is a test of group differences on the linear composite of all subtest scores that will maximize the difference between the groups more than the simple sum of all items and subtests. In other words, this test may be more sensitive to particular subtest differences that are obscured when simply summed over a large number of subtests to form an arithmetic total.

Subscale differences are interpreted only if the corresponding multivariate composite *F* is statistically significant. Furthermore, these subtest results are screened at a very conservative Type I error rate (significance level) to protect the overall error rate at the conventional level of .05. There were no statistically significant differences between children in family child care homes and center classrooms on any of the total cognitive scores or their subtests except for on the COR. The total score on the COR and one subtest logic and mathematics showed statistically significant differences, indicating that children in family child care homes received somewhat higher ratings than their peers in center classrooms. These differences between family child care homes and center classrooms on the COR may be a function of the administration of each instrument. Data collectors hired by the evaluation team administered the PPVT R and Daberon 2, whereas family child care home providers and center classroom teachers made the COR ratings.

In addition to testing for differences between family child care homes and center classrooms on cognitive outcomes, this evaluation also attempted to determine what other factors, such as family characteristics and program quality, were related to the children s cognitive development. Exhibit V-6 presents the MLR results on total scores for all four cognitive outcome measures. These results are presented in a stepwise manner and the predictor variable that was entered at each step in predicting each outcome is indicated. Seven predictor variables were again available for inclusion in each regression model. The stepwise entry algorithm stops when no significant addition to the multiple correlation occurs by adding any of the remaining predictor variables. At each step, the squared multiple correlation (multiple R^2, the proportion of variance accounted for by all predictors

included in the model) is shown in the exhibit to illustrate the relative increase in predictive power with each added variable. Finally, the test of statistical significance is represented with the *F* statistic and significance level (*p*) of the multiple *R* at each step.

Exhibit V-6
Results of Stepwise MLRs on Cognitive Outcomes

Outcome	Step No.	Predictor	Multiple R^2	Increase in R^2	*F*	*p*
PPVT R	1(5)	Primary caregiver's educational level	.0465		26.81	.001
	2(4)	Child's primary language	.0577	.0112	16.79	.001
	3	PPVT R pretest	.5265	.4688	203.08	.001
	6	Program quality (OSPRI)	.5289	.0024	308.14	.001
Daberon 2	1	Child's primary language	.0498		28.83	.001
	2(4)	Primary caregiver's educational level	.0842	.0344	25.23	.001
	3	Daberon 2 pretest	.7153	.6311	458.99	.001
	5	Program quality (OSPRI)	.7177	.0024	464.41	.001
CAP	1	Gender	.0354		20.16	.001
	2	Primary caregiver's educational level	.0638	.0284	18.69	.001
	3	CAP pretest	.3040	.2402	79.77	.001
	4	Program quality (OSPRI)	.3168	.0128	63.42	.001
COR	1(9)	Primary caregiver's educational level	.0146		8.17	.01
	2(5)	Gender	.0252	.0106	7.09	.001
	3(6)	Child's primary language	.0331	.0079	6.25	.001
	4	COR pretest	.3372	.3041	69.59	.001
	7	DPI by setting interaction	.3445	.0073	96.01	.001
	8	Setting	.3545	.0100	75.11	.001

Note. Numbers in parentheses indicate that the variable was removed from the equation on that step.

Overall, the predictability was excellent for the cognitive outcomes, ranging from a multiple correlation of .85 and 72% of the variance accounted for on the Daberon-2 to a multiple correlation of .56 and 32% of the variance accounted for on the CAP. The pretest score associated with each cognitive outcome was by far the strongest predictor. One of the measures of program quality (the number of OSPRI education items passed) is also included in three of the four regression models, indicating that the measure is a consistent predictor of child outcomes.

Exhibit V-6 presents the details of the final regression models separately for each of the four cognitive outcome measures. In some cases, the final models differ somewhat from the aggregate of MLR steps indicated. The relative influence of each predictor and the overall statistical significance of the multiple *R* change at each step as new predictors are added to the model. One consequence is that a predictor entered on an earlier step may be dropped at a later step due to its loss of predictive utility in the later set of predictors. Step numbers in parentheses indicate that the variable was removed from the equation on that step.

PPVT R

Two of the seven predictors are sufficient to capture all of the predictability of PPVT R outcomes for these children. Exhibit V-7 presents the raw and standardized regression weights for this model, along with the *t* test statistic and significance level (*p* value) for each predictor. With an overall multiple *R* of approximately .73, accounting for 53% of the variance in the spring PPVT R, the fall pretest was by far the most significant predictor ($t = 24.39$, $p < .001$), followed by the OSPRI measure of program quality ($t = 2.31$, $p < .05$).

Exhibit V-7
Final Regression Model for PPVT (Multiple *R* = .7272)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
PPVT R pretest	.6567	.7176	24.39	.001
Program quality (OSPRI)	.2352	.0679	2.31	.05
(Constant)	26.3115		7.20	.001

The direction of these relationships is shown by the signs of the regression coefficients. All were positive, indicating that children with higher PPVT R pretest scores and children who participate in higher quality programs performed significantly better on the PPVT R posttest. The size of the raw regression coefficient indicates more specifically the magnitude of these differences. For example, the influence of program quality on the PPVT R posttest would be characterized this way: Children at about the same pretest level who participated in higher quality programs (as measured by the number of OSPRI

education items passed) scored about two-tenths of a point higher on the PPVT R at the end of the year than children who participated in lower quality programs, regardless of program setting.

Daberon 2

Three predictor variables maximized the predictability of children's performance on the Daberon 2. The multiple *R* was the highest of all the cognitive outcomes ($R = .85$), indicating that nearly 72% of the variance in the posttest was predictable from the information on a child s pretest score, primary language, and the program quality. As Exhibit V-8 illustrates, the fall pretest score was the most significant predictor of end-of-year performance ($t = 34.82$, $p < .001$). The child's primary language was negatively related to the Daberon 2 posttest score ($t = -3.18$, $p < .01$). The direction of the relationship indicates that children whose primary language was not English performed less well on this measure at the end of the year, even after adjusting for pretest score and program quality.

The overall quality of the educational program as measured by the number of education items passed on the OSPRI, an issue more germane to the purpose of this evaluation, was significantly related to the Daberon 2 posttest score ($t = 2.57$, $p < .01$). The influence of program quality on the Daberon 2 posttest would be characterized this way: For children at about the same pretest level whose primary language was the same, those who participated in higher quality programs scored higher on the Daberon 2 at the end of the year, regardless of program setting.

Exhibit V-8
Final Regression Model for Daberon 2 (Multiple *R* = .8472)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t* test Statistic	*p*
Child's primary language	-2.7482	-.0769	-3.18	.01
Daberon 2 pretest	.7049	.8569	34.82	.001
Program quality (OSPRI)	.1700	.0596	2.57	.01
(Constant)	30.4690		14.15	.001

Concepts About Print

As shown in Exhibit V-9, four predictor variables were included in the regression model for the CAP, reaching a multiple correlation of .56. Although this multiple correlation is lower than that achieved by either the PPVT R or the Daberon 2, it still accounts for a large proportion of variance (approximately 32%) and is highly statistically significant. The child's gender (t = -3.48, $p < .01$) was the most significant background factor, followed by the mother's educational level (t = 2.63, $p < .01$). The pretest was the most significant predictor of the posttest CAP score (t = 13.33, $p < .01$). Program quality as measured by the education scale of the OSPRI was significantly related to the CAP posttest score (t = 3.21, $p < .01$). The direction of these relationships indicates that girls, children whose mothers had higher education levels, children with higher CAP pretest scores, and children who participated in higher quality programs all performed significantly better on the CAP posttest, regardless of program setting.

Exhibit V-9
Final Regression Model for CAP (Multiple *R* = .5629)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
Gender	-.7517	-.1245	-3.48	.001
Primary caregiver's educational level	.1363	.0940	2.63	.01
CAP pretest	.6054	.4845	13.33	.001
Program quality (OSPRI)	.0748	.1146	3.21	.001
(Constant)	.6741		.74	NS

Child Observation Record

Like the CAP, the prediction model for the COR has notably less overall predictability (multiple R = .59, accounting for 35% of the variance) than the PPVT R or Daberon 2. Exhibit V-10 shows that none of the background factors were significant. The COR model differed from the other cognitive outcome measures in that setting was a significant predictor, as was the setting by DPI interaction. Adjusting for differences on all other factors, the children in family child care homes scored higher on the COR than their peers

in center classrooms (t = -3.12, p < .01). The significant DPI by setting interaction indicates that children who attended more developmentally appropriate center classrooms had higher COR cognitive scores than those who attended similarly appropriate family child care homes.

Exhibit V-10
Final Regression Model for COR Cognitive (Multiple *R* = .5924)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
COR pretest	.5086	.5740	16.64	.001
Setting	-1.6416	-.4199	-3.12	.01
DPI by setting interaction	.4702	.4978	3.70	.001
(Constant)	6.9294		25.72	.001

Summary of Cognitive Outcomes

In summary, the regression models developed for cognitive outcomes were all highly predictive, although the more typical measures of receptive vocabulary (PPVT R) and school readiness (Daberon 2) were more predictable than the measures of literacy (CAP) and behavior (COR). In all models, children's performance on the pretest score was by far the greatest predictor of their posttest score. Background factors of the child and family were also significant in the predictive models for the Daberon 2 and CAP. The OSPRI education items measure of program quality was a significant predictor for the PPVT R, Daberon 2, and CAP. The two program quality measures, the DPI and the OSPRI, are correlated (r = .58), and additional regression analyses using one or the other measure of quality for all cognitive outcome regression models did not significantly diminish the prediction.

In terms of the value of the innovative program, three of the four cognitive outcomes showed no significant difference between settings. Indeed, much policy-level discussion during the planning and early implementation of the Head Start family child care program suggested that if children in the family child care home setting did as well as their counterparts in the well-established center classrooms, the innovation could be viewed as

successful. As these analyses show, children in the family child care home setting performed at least that well across all child outcome measures and slightly better on one measure.

Social-Emotional Outcomes

Outcomes in the social-emotional domain were measured using two standardized instruments: the Child Adaptive Behavior Inventory (CABI) and the COR. The CABI consists of four subscales assessing various aspects of a child's adaptability to school and social interactions with peers. Subscales of the COR also measure social-emotional dimensions of child development: initiative and social relations. Exhibit V-11 contains descriptive and inferential statistics on the social-emotional scales and subscales.

Exhibit V-11
Group Means and Significance Tests on Social-Emotional Outcomes
Family Child Care Homes and Center Classrooms

	Adjusted Means		*SD* (Pooled)	Effect Size	*F*	*p*
	FCC	Center				
Child Adaptive Behavior Inventory	1.85	1.85	.14	.00	.05	.831
Multivariate composite					.51	.732
Sociability	2.58	2.57	.34	.03	.10	.757
School adaptability	2.33	2.35	.30	-.07	.93	.334
Social deviance	2.38	2.37	.38	.03	.20	.654
Fearfulness	2.67	2.66	.34	.03	.01	.927
Child Observation Record	8.28	8.04	1.14	.21	5.95	.015
Multivariate composite					2.92	.055
Initiative	4.10	3.99	.59	.19	5.78	.016
Social relations	4.14	4.06	.67	.12	1.95	.163

Among the social-emotional outcomes statistically significant differences existed between family child care homes and center classrooms on the initiative subscale and the COR Total. Children in family child care homes received slightly higher ratings than their peers in center classrooms. The effect sizes for the COR Total (.21) and the initiative subscale (.19) are approximately one fifth of a standard deviation.

Results of the MLR analysis on the COR social-emotional outcomes and the CABI outcomes are displayed in Exhibit V-12. The multiple correlation for the COR social-emotional outcomes (R = .54) compares favorably with its predictability in the cognitive domain.

Exhibit V-12
Results of Stepwise MLRs on Social-Emotional Outcomes

Outcome	Step No.	Predictor	Multiple R^2	Increase in R^2	*F*	*p*
COR	1(3)	Gender	.0095		5.25	.05
	2	COR pretest	.2827	.2732	108.19	.001
	4	Developmental Appropriateness (DPI)	.2867	.0040	110.32	.001
	5	DPI by setting interaction	.2922	.0055	75.41	.001
CABI	1	CABI pretest	.2448		177.99	.001

Note. Numbers in parentheses indicate that the variable was removed from the equation on that step.

As Exhibit V-13 shows, the model for COR social-emotional outcomes includes predictors from two domains, with the pretest score being the strongest predictor of the posttest score, followed by the developmental appropriateness of the setting. Children in more developmentally appropriate family child care homes and center classrooms received higher ratings on the COR social-emotional subscales. As in the cognitive domain, the DPI by setting interaction was also significant.

Exhibit V-13
Final Regression Model for COR Social-Emotional (Multiple *R* = .5406)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
COR pretest	.4578	.5345	14.85	.001
Developmental Appropriateness (DPI)	.1535	.0706	1.96	.05
DPI by setting interaction	.0512	.0745	2.07	.05
(Constant)	4.4764		11.47	.001

Exhibit V-14 reveals that the CABI had the lowest predictability of all of the child outcome instruments, although it is still highly statistically significant (Multiple $R = .49$, $p < .01$). The pretest was the only significant predictor and accounted for nearly 25% of the variance in the outcome.

Exhibit V-14
Final Regression Model for CABI (Multiple *R* = .4948)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
CABI Pretest	.4656	.4948	13.34	.001
(Constant)	1.0032		15.79	.001

Summary of Social-Emotional Outcomes

In summary, children assigned to family child care homes were rated more positively on social- emotional outcomes on the COR than their peers in center classrooms. This was somewhat moderated by the developmental appropriateness of the program; children in more developmentally appropriate family child care homes or center classrooms scored higher on the COR. There were no significant differences between settings on the CABI.

Physical Outcomes

Measures of physical development were obtained from the Daberon 2 and the COR. The Daberon 2 includes subscales assessing visual perception (block building and shape drawing) and gross motor skills. The COR assesses music and movement through its observational protocol. Exhibit V-15 contains descriptive and inferential statistics pertaining to these outcomes.

Exhibit V-15
Descriptive Statistics and Significance Tests on Physical Outcomes
Family Child Care Homes and Center Classrooms

	Adjusted Means		*SD* (Pooled)	Effect Size	*F*	*p*
	FCC	Center				
Daberon 2 physical total	15.97	15.70	2.42	.11	1.90	.168
Multivariate composite					2.68	.069
Visual perception	6.30	6.04	1.58	.16	4.24	.040
Gross motor skills	9.51	9.61	1.71	-.06	.52	.470
COR music and movement	4.30	4.18	.59	.20	6.09	.014

The visual perception subscale scores on the Daberon 2 show marginally significant differences between family child care homes and center classrooms. Children in family child care homes performed slightly better on block building and shape drawing tasks than did their center classroom counterparts. The results on the COR music and movement ratings again favored children in the family child care homes. The effect sizes ranged from .16 to .20.

Exhibit V-16 displays results of the multiple linear regression models derived for physical outcomes. As in the other outcome domains, the models for the Daberon 2 and the COR were highly predictive, largely due to the strength of the pretest scores.

Exhibit V-16
Results of Stepwise MLRs on Physical Outcomes

Outcome	Step No.	Predictor	Multiple R^2	Increase in R^2	*F*	*p*
Daberon	1 (3)	Child's Primary Language	.0071		3.93	.05
	2	Daberon Pretest	.3659	.3588	158.43	.001
COR	1	COR Music & Movement Pretest	.2122		148.15	.001
	2	Program Quality (OSPRI)	.2194	.0072	77.16	.001

Daberon 2

Results of the final MLR model for the Daberon 2 are shown in Exhibit V-17. The only predictor for the Daberon 2 physical outcomes was the pretest score.

Exhibit V-17
Final Regression Model for Daberon 2 Physical Outcome (Multiple *R* = .6049)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
Daberon 2 pretest	.6193	.6049	17.81	.001
(Constant)	7.8489		17.59	.001

Child Observation Record

Exhibit V-18 shows that program quality, as measured by the OSPRI, and pretest scores were significant predictors of posttest COR music and movement scores. All other things being equal, children in higher quality programs showed more positive physical development on the COR ($t = 2.25$, $p < .05$).

Exhibit V-18
Final Regression Model for COR Physical Outcome (Multiple *R* = .4684)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
COR music and movement pretest	.3571	.4531	11.97	.001
Program quality (OSPRI)	.0132	.0852	2.25	.05
(Constant)	2.6387		13.71	.001

Summary of Physical Outcomes

In summary, physical development was also highly predictable using multiple linear regression. Background factors were not significant predictors of the Daberon 2 or COR physical development scales, but program quality was a significant predictor of physical development on the COR. As was the case for all other outcome domains, higher quality

programs (whether measured by the DPI or the OSPRI) produced more positive development, regardless of the setting.

Summary Across Outcome Domains

Across all child outcome domains (cognitive, social-emotional, and physical), the regression models reinforce the importance of program quality in predicting child outcomes. The summary of all predictive models in Exhibit V-19 indicates that the DPI or OSPRI score was a significant predictor for most outcome measures except the COR cognitive outcomes, the CABI outcomes, and the physical outcomes of the Daberon 2. Thus, program quality matters more than setting in predicting outcomes for children during the Head Start year.

Exhibit V-19
Summary of Significant Components of Predictive Models of Child Outcomes

	Child/Family Background			Entering Skill Level	Program		
	Gender	Primary Caregiver's Education Level	Child's Primary Language	Pretest	Setting: FCC or Center	Develop-mental Appropriate-ness (DPI)	Program Quality (OSPRI)
Cognitive							
PPVT R				☐			☐
Daberon 2			☐	☐			☐
CAP	☐	☐		☐			☐
COR				☐	☐		
Social-Emotional							
COR				☐		☐	
CABI				☐			
Physical							
Daberon 2				☐			
COR				☐			☐

Kindergarten Follow Up

One of the key evaluation questions concerns whether the children from the family child care homes and the children from the center classrooms would demonstrate differences in cognitive, social-emotional, and physical functioning in kindergarten. To improve the understanding of any differences found between the two groups, the evaluation team collected information about the kindergarten teachers perceptions of the children's functioning and parents perceptions of the kindergarten experience. This section presents those results.

Kindergarten Teacher Questionnaire

Children's participation in special programs during their kindergarten year, teachers referrals of children to special programs in the first grade, and the teacher-recommended

placement of children for first grade are indicators of the relative effectiveness of the family child care home and center classroom settings in preparing children for kindergarten. Exhibit V-20 shows that the percentages of children from family child care homes and center classrooms who participated in special programs such as Title I compensatory education, English as a second language, speech and language, and special education were similar. Children from family child care homes and center classrooms were referred to special programs in first grade at equal rates. Children from both settings were referred to Title I more than any other program. At the end of the kindergarten year, teachers recommended promoting 84% of the children from each setting to first grade.

Exhibit V-20
Percentage of Children Who Participated in Special Programs in Kindergarten

Special Program	FCC Home (*n* = 267) Percent	Center Classroom (*n* = 304) Percent
Talented/gifted	1.5	1.3
Title I	19.7	15.7
English as a second language	4.2	6.0
Speech and language	9.9	7.6
Special education	3.0	2.0
Other services	9.9	8.3

Note. Differences between settings were not statistically significant.

Parent Involvement

According to the kindergarten teachers, over 85% of the parents of family child care home and center classroom children participated in parent-teacher conferences. No significant differences between the two groups were evident. Family child care home parents and center classroom parents participated in kindergarten activities with approximately the same degree of frequency. Exhibit V-21 summarizes parent interview questions concerning how well Head Start prepared their child for kindergarten and how well they felt their child was progressing in kindergarten. There were no significant differences in perceptions between parents of family child care home children and center classroom children.

Exhibit V-21
Parent Perceptions of Kindergarten Preparation and Progress

Response Categories	FCC Home (*n* = 264)		Center Classroom (*n* = 298)	
	How well Head Start prepared child (Percent)	How well child is progressing (Percent)	How well Head Start prepared child (Percent)	How well child is progressing (Percent)
Very well	79.9	66.7	78.2	68.5
Okay	14.0	28.4	18.1	27.5
Not well	3.8	4.2	2.7	3.4
Not sure	2.3	0.8	1.0	0.7

Note. Differences between setting were not statistically significant.

Roughly equal percentages of parents of children from family child care homes and center classrooms talked with their child s kindergarten teacher about their child's progress, had a child who experienced problems in school, and experienced family difficulties at home. There were no significant differences between the two groups.

Child Outcomes During Kindergarten

The evaluation design included a follow-up of family child care and center classroom children in the winter of their kindergarten year. The evaluation team administered the PPVT R, Daberon 2, and CAP instruments to kindergarten students who had participated in the demonstration project in Cohort 2. To assess the longer term progress of students through their kindergarten year, MLR analyses were conducted in the three outcome domains. As described above for the Head Start year analysis, a hierarchical regression model was employed using four categories of predictor variables. The purpose of this analysis was to determine the extent to which the children s background characteristics, their performance on the outcome measure at the beginning of the Head Start year, the quality and setting of the Head Start program, and the characteristics of the kindergarten experience had any predictive relationship with performance on the outcome measure during the kindergarten year. As in the earlier analysis of Head Start year outcomes, results of the MLR are presented by domain: cognitive, social-emotional, and physical. Exhibit V-22 shows the 10 variables available for inclusion in each of these regression models.

Exhibit V-22
Predictor Variables in Kindergarten Child Outcomes MLR Analysis

Predictor Category	Predictor Variable
Child and family background	Primary caregiver's educational level
	Primary language of child (English/non-English)
	Gender of child
Preprogram level of functioning	Pretest score on outcome measure
Prekindergarten program	Program setting (FCC home or center classroom)
	Program quality (OSPRI education items)
Kindergarten program	Percent of time teacher allocates to small group activities each day
	Percent of time teacher allocates to individual child choice activities each day
	Total number areas/materials
	Total number of days present in kindergarten

Cognitive Outcomes

Results of the hierarchical MLR on total scores on the three cognitive outcomes are presented in Exhibit V-23. These results are presented in the order in which predictor variables in the hierarchically ordered categories were entered into the regression equations predicting kindergarten outcomes.

Overall, the predictability of the PPVT R was comparable to the findings observed at the end of the Head Start year: about 53% of the variance was predictable through the variables included in the model. The cognitive outcomes assessed by the Daberon 2, however, were considerably less predictable during the kindergarten year than they were at the end of the Head Start year. About 54% of the variance in the Daberon 2 during kindergarten was predictable, in contrast to 72% at the end of the Head Start year. CAP scores were also less predictable in kindergarten than they were at the end of the Head Start year, dropping from 32% to 23% of the variance accounted for by the predictors. Although some predictors in each category typically entered the regression model for all of these outcome measures, the specific predictors varied by outcome measure. For example, the quality of the Head Start program (as measured by the OSPRI education items) was a significant predictor of kindergarten PPVT R and CAP scores, but only the Daberon 2 pretest score was predictive of kindergarten Daberon 2 scores.

Exhibit V-23
Kindergarten Regressions on Cognitive Outcomes Using Fall Head Start Scores as Covariates

Outcome	Step No.	Predictor	Multiple R^2	Increase in R^2	F	p
PPVT R	1(4)	Primary caregiver's educational level	.0158		5.35	.05
	2	PPVT R pretest	.5146	.4988	176.51	.001
	3	Program quality (OSPRI)	.5288	.0142	124.20	.001
Daberon 2 cognitive	1(3)	Child's primary language	.0986		36.53	.001
	2	Daberon 2 pretest	.5402	.4416	195.59	.001
CAP	1	Gender	.0258		8.85	.01
	2(4)	Primary caregiver's educational level	.0398	.0140	6.91	.01
	3	CAP pretest	.2099	.1701	29.40	.001
	5	Program quality (OSPRI)	.2335	.0236	33.72	.001

Note. Numbers in parentheses indicate that the variable was removed from the equation at that step.

Finally, it is noteworthy that the Head Start setting in which students participated was not a significant predictor for any of these cognitive outcomes after taking into account the other significant predictors in these models. That is, children who participated in family child care homes and center classrooms did equally well on these cognitive outcomes during kindergarten.

PPVT R

The final regression model for the PPVT R, including regression coefficients and significance tests of the contribution of each predictor variable to the multiple correlation, is shown in Exhibit V-24.

Exhibit V-24
Final Regression Model for PPVT R in Kindergarten (Multiple *R* = .7264)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
PPVT R pretest	.5788	.7035	18.57	.001
OSPRI education	.3707	.1198	3.16	.01
(Constant)	32.9421		7.81	.001

As in the analysis of Head Start year outcomes, none of the child or family background factors were significantly predictive of PPVT R performance during the children s kindergarten year. Pretest PPVT R score and the quality of the Head Start program were significant predictors. That is, children who scored higher on the PPVT R at the beginning of their Head Start year scored higher on the PPVT R during their kindergarten year than children with low pretest scores, and children who participated in higher quality Head Start programs scored higher on the PPVT R in kindergarten than children from lower quality programs. Notable omissions from this list of significant predictors are characteristics of the kindergarten program and student attendance during kindergarten.

Daberon 2

Exhibit V-25 shows the results of the final regression model established for kindergarten performance on the Daberon 2. Like the PPVT R, child background factors dropped out of the equation after the pretest score was entered.

Exhibit V-25
Final Regression Model for Daberon 2 Cognitive Outcome in Kindergarten (Multiple *R* = .7343)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
Daberon 2 pretest	.3581	.7343	19.77	.001
(Constant)	66.0985		51.47	.001

Concepts About Print

Exhibit V-26 displays the results of the final CAP regression model. These findings reflect the Head Start year findings gender was again a significant background factor in the prediction model for the CAP in kindergarten. Girls, children who scored higher on the CAP at the beginning of their Head Start year, and children who were in higher quality Head Start programs scored higher on the CAP during their kindergarten year.

Exhibit V-26
Final Regression Model for CAP in Kindergarten (Multiple *R* = .4832)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
Gender	-.5864	-.0994	-2.05	.05
CAP pretest	.4787	.4077	8.34	.001
Program quality (OSPRI)	.1048	.1631	3.36	.001
(Constant)	5.3874		5.64	.001

Social-Emotional Outcomes

To measure social-emotional outcomes, the CABI was administered to students at the end of their kindergarten year. The results of the MLR analysis and specifics of the final regression model are displayed in Exhibits V-27 and V-28, respectively. The predictability of the CABI was considerably lower at the end of the kindergarten year than it had been at the end of the Head Start year (about 6% versus 24% of the variance accounted for, respectively), although this might be expected because the ratings were completed by different teachers. Child background characteristics, Head Start program quality, and kindergarten program characteristics were not predictive of CABI ratings in kindergarten.

Exhibit V-27
Results of Stepwise MLRs on Social-Emotional Outcomes in Kindergarten

Outcome	Step No.	Predictor	Multiple R^2	F	p
CABI	1	CABI pretest	.0588	20.87	.001

Exhibit V-28
Final Regression Model for CABI in Kindergarten (Multiple R = .2425)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	t-Test Statistic	p
CABI pretest	.2298	.2425	4.57	.001
(Constant)	1.3565		14.84	.001

Physical Outcomes

In the kindergarten follow-up, the Daberon 2 subscales of visual perception and gross motor skills were the only measure of physical outcomes. Exhibits V-29 and V-30 show the stepwise MLR results and the final regression model. As with most of the kindergarten follow-up outcomes, this outcome was also somewhat less predictable than it had been at the end of the Head Start year (26% versus 36% of the variance accounted for). Exhibit V-30 shows that children who performed higher on the Daberon 2 at the beginning of the Head Start year and who were in kindergarten programs with more small group time scored higher on the Daberon 2 in kindergarten than other children.

Exhibit V-29
Results of Stepwise MLRs on Physical Outcomes in Kindergarten

Outcome	Step No.	Predictor	Multiple R^2	Increase in R^2	F	p
Daberon 2	1(4)	Child s primary language	.0123		4.16	.05
	2	Daberon 2 pretest	.2493	.2370	55.30	.001
	3	Percent time in small groups	.2604	.0111	38.96	.001

Note. Numbers in parentheses indicate that the variable was removed from the equation on that step.

Exhibit V-30
Final Regression Model for Daberon 2 Physical Outcome (Multiple *R* = .5080)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p*
Daberon 2 pretest	.3817	.5069	10.70	.001
Percent time in small groups	.0197	.1002	2.12	.05
(Constant)	13.5313		23.82	.001

Summary of Child Outcomes During Kindergarten

Exhibit V-31 summarizes the results of the kindergarten follow-up analyses by presenting a matrix of predictors and outcome criteria. Across all outcomes and outcome domains, the most consistently influential predictor was the pretest performance at the beginning of the Head Start year. Only one child and family background characteristic was significant (gender), and that applies only for the CAP. The quality of the Head Start program was related to kindergarten performance on the PPVT R and CAP, and the amount of small-group time in kindergarten was related to physical outcomes measured by the Daberon 2.

These predictors are, in many cases, different from those seen as significant in the regression analysis of Head Start outcomes presented earlier in this chapter. The hierarchical approach employed here suggests that in predicting the same outcomes during the kindergarten year, program quality in Head Start is more likely to predict outcomes in kindergarten than child and family background characteristics, Head Start setting, or kindergarten program characteristics.

Exhibit V-31
Summary of Significant Components of Predictive Models of Child Outcomes in Kindergarten Follow-Up

	Child/Family Background			Entering Skill Level	Head Start Program		Kindergarten Program			
	Gender	Primary Caregiver's Educ. Level	Child's Primary Language	Pretest	Setting	Prog. Quality (OSPRI)	Small Group Time	Individual Choice Time	Activity Areas	Total Days Present
Cognitive										
PPVT R				✓		✓				
Daberon 2				✓						
CAP	✓			✓		✓				
Social-Emotional										
CABI				✓						
Physical										
Daberon 2				✓			✓			

Child Outcome Trend Analysis

To evaluate the differences between the two settings across all three data points (fall of the Head Start year, spring end of the Head Start year, and spring kindergarten), a repeated measures analysis of variance and an orthogonal trend analysis were conducted for each child outcome domain. Exhibit V-32 presents the results of these analyses for the three cognitive outcome measures. The time main effect and linear trend were highly significant for the PPVT R, Daberon 2, and CAP, indicating that scores on all three measures improved significantly over time. Because the raw score was used for the Daberon 2 and CAP analyses, this finding would be expected. However, because the PPVT R analyses use standard scores, one would expect those scores to remain fairly constant over time. The fact that those scores increased significantly suggests that Head Start children developed their receptive vocabularies at a faster rate than children in the national norm group.

Exhibit V-32 shows that the quadratic trends (i.e., the time main effect) for the Daberon 2 and the CAP were also statistically significant. For the Daberon 2, the *t*-value was negative,

indicating that the growth was greater during the Head Start year than during the kindergarten year. The positive *t*-value for the CAP shows that the growth was greater during the kindergarten year, which is not surprising given the customarily greater emphasis on books and print in kindergarten than in Head Start programs. The setting by time interactions were not significant for any of the cognitive outcome measures, suggesting that growth trends were similar for children in both the family child care home and center classroom settings. Exhibits V-33 through V-35 portray these findings visually.

Exhibit V-32
Repeated Measures ANOVA and Trend Analyses for Cognitive Outcomes

Effect	PPVT R		Daberon 2 (Cognitive)		Concepts About Print	
	F/t	*p*	*F/t*	*p*	*F/t*	*p*
Time main effect	62.82	.000	1357.4	.000	1055.8	.000
Linear trend	11.24	.000	42.98	.000	43.53	.000
Quad. trend	.30	.762	-7.47	.000	4.90	.000
Setting x time interaction	.08	.919	.17	.841	.29	.747
Linear trend	-.40	.685	-.49	.626	-.60	.548
Quad. trend	.07	.942	-.02	.977	-.46	.649
Sample size	541		555		542	

Exhibit V-33
PPVT R Trends

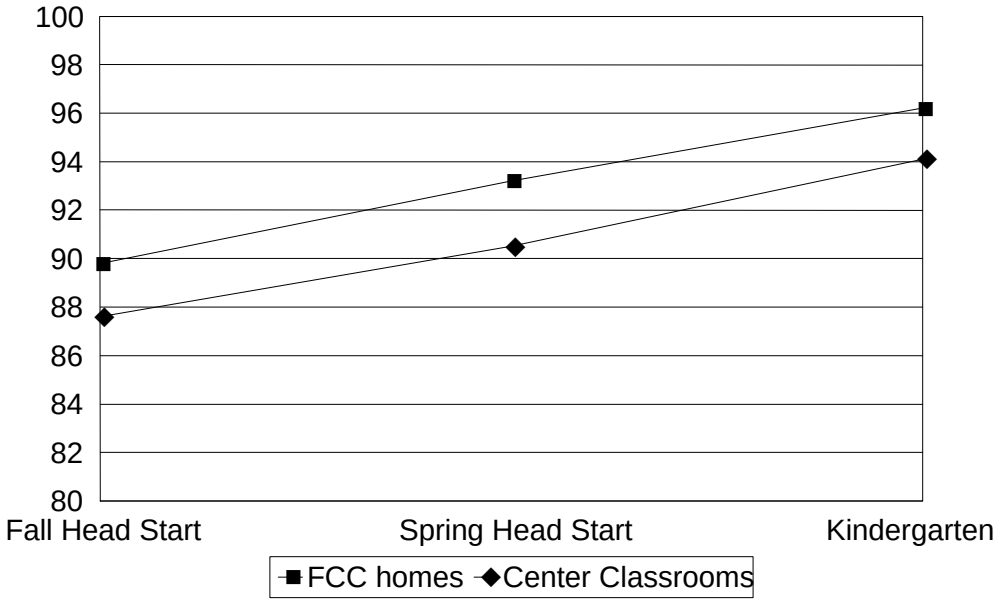


Exhibit V-34
Daberon 2 Cognitive Trends

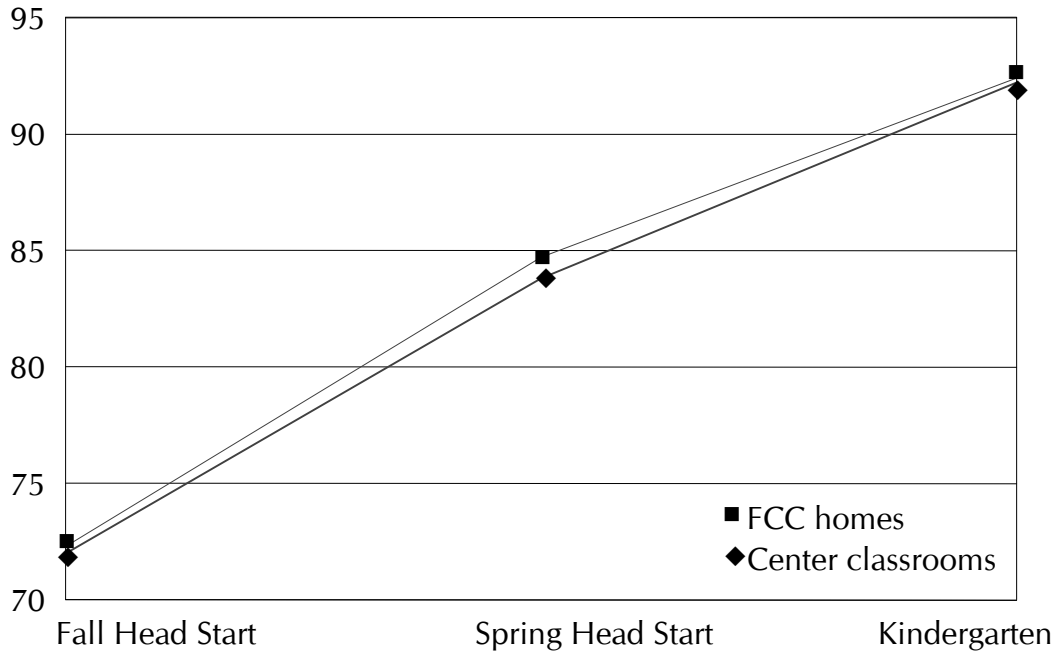


Exhibit V-35
Concepts About Print Trends

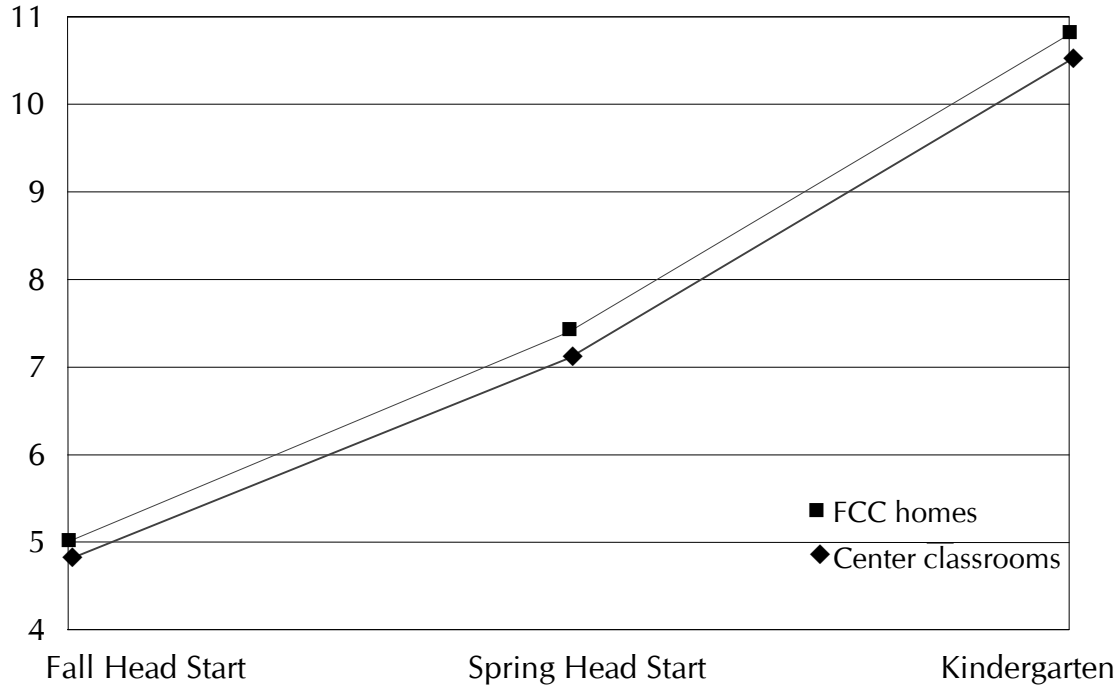


Exhibit V-36 presents the statistics for each child outcome measure across time.

Exhibit V-36
Means and Standard Deviations for Child Outcome Measures at Three Time Points

	n	Fall		Spring		Kindergarten	
		M	*SD*	*M*	*SD*	*M*	*SD*
PPVT R							
FCC homes	257	89.8	17.6	93.2	16.2	96.2	14.9
Center classrooms	284	87.6	16.7	90.5	15.0	94.1	13.4
Daberon 2 (Cognitive)							
FCC homes	239	72.3	14.8	84.7	10.9	92.4	6.1
Center classrooms	268	72.0	13.6	83.8	10.9	92.2	6.1
CAP (Total)							
FCC homes	262	5.0	2.6	7.4	3.0	10.8	3.0
Center classrooms	280	4.8	2.4	7.1	2.9	10.5	2.8
Daberon 2 (Physical)							
FCC homes	239	13.0	3.1	16.2	3.4	19.3	2.4
Center classrooms	268	13.1	3.2	15.9	3.1	19.1	2.2
CABI (Social Development)							
FCC homes	226	1.84	.18	1.84	.16	1.78	.17
Center classrooms	255	1.79	.17	1.84	.16	1.77	.17

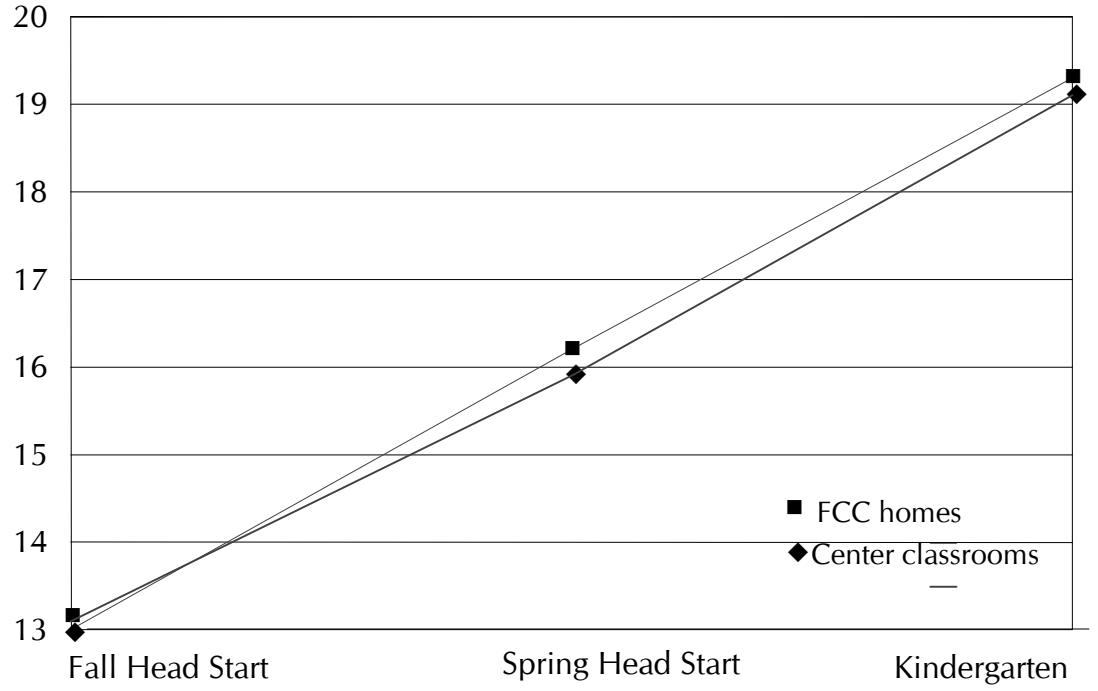
Results of the repeated measures ANOVAs for social-emotional and physical outcomes are shown in Exhibit V-37 and graphed in Exhibits V-38 and V-39.

Exhibit V-37
Repeated Measures ANOVA and Trend Analyses for Physical and Social-Emotional Outcomes

Effect	Daberon 2 (Physical)		CABI	
	F/t	*p*	*F/t*	*p*
Time main effect	1177.02	.000	34.19	.000
Linear trend	46.57	.000	-4.34	.000
Quad. trend	.40	.688	-7.54	.000
Setting x time interaction	.83	.437	4.42	.012
Linear trend	.47	.638	-2.68	.008
Quad. trend	-1.24	.214	.57	.569
Sample size	554		481	

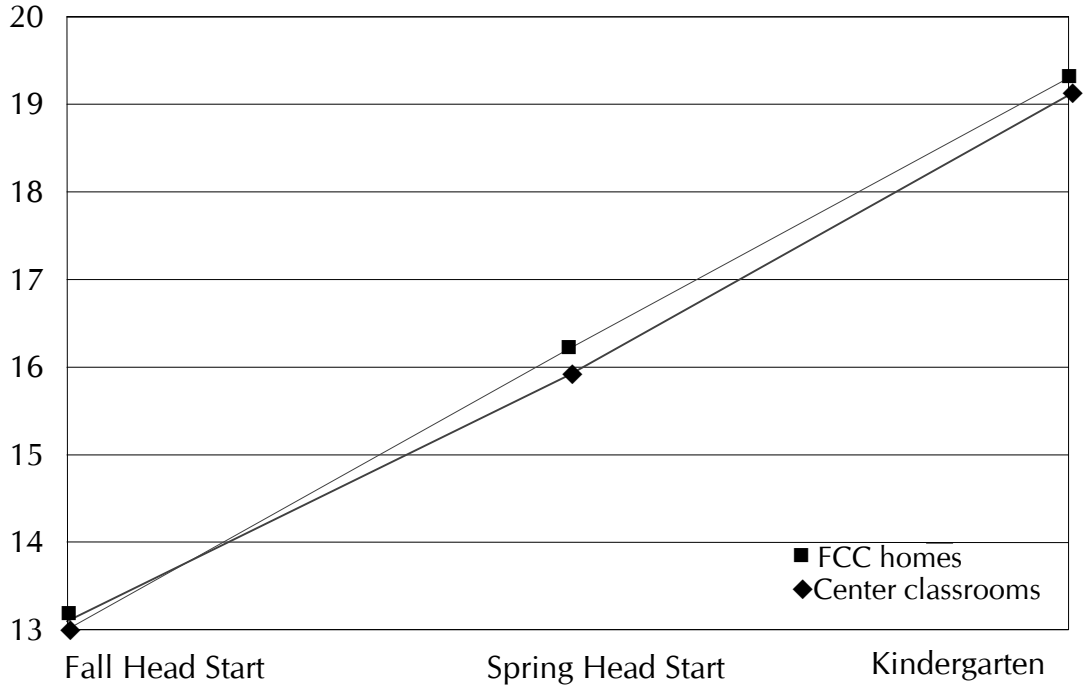
As is true of the cognitive outcome measures, the time main effect and its linear trend were both highly significant for the Daberon 2 physical development measure, indicating that children's scores improved over the three time points. The quadratic trend was not significant. Exhibit V-38 shows that growth continued at the same rate during the kindergarten year as during the Head Start year.

Exhibit V-38
Daberon 2 Physical Trends



The results for the CABI also show a significant main effect over time. However, in this case the linear and quadratic trends were both negative. Exhibit V-39 reveals that kindergarten teachers rated children lower on social-emotional behaviors than did the Head Start classroom teachers and family child care home providers. The setting by time interaction is significant because the ratings for the family child care children dropped more than the ratings for the center classroom children. This finding suggests that family child care home providers tended to see children in a more positive light than either the center classroom or kindergarten teachers.

Exhibit V-39
CABI Social-Emotional Trends



Summary of Trend Analyses

Repeated measures analyses of variance and orthogonal trend analyses were utilized to examine the differences between family child care homes and center classrooms over time. The time main effect and linear trend were statistically significant for the PPVT R, Daberon 2 cognitive, and the CAP, indicating that scores on these measures improved significantly from the beginning of the Head Start year through kindergarten. The quadratic trends for the Daberon 2 and CAP were also significant. Growth was greater on the Daberon 2 during the Head Start year than during kindergarten. Growth was greater on the CAP during the kindergarten year. The setting by time interactions were not significant for any of the cognitive outcome measures, suggesting that growth trends were similar for the children in both settings.

For the Daberon 2 physical scales, the time main effect and linear trend were significant, indicating that the children s scores improved over the three time points. The quadratic

trend was not significant, indicating that the growth rate was similar during the Head Start and kindergarten years.

For the CABI, the time main effect was significant, along with the linear and quadratic trends. These trends were negative, revealing that kindergarten teachers rated children lower on social-emotional behaviors than did the center classroom teachers and the family child care providers. The significant time by setting interaction indicates that family child care providers saw children more positively than either the Head Start center classroom teachers or the kindergarten teachers.

VI. Parent Outcomes

Knowledge of the characteristics of the families who received services through the family child care homes is essential for understanding the family child care home environment and its potential effectiveness. Head Start programs attempt to enhance child development and families' life circumstances by encouraging parent involvement, promoting family activities and learning experiences, and providing training to parents on topics such as child development and discipline. The evaluation team used an interview to collect parent outcome data in three areas: parent involvement in the Head Start program, parent self-sufficiency, and parenting skills. This chapter describes the family characteristics and the parent outcomes for the second year of the demonstration project.

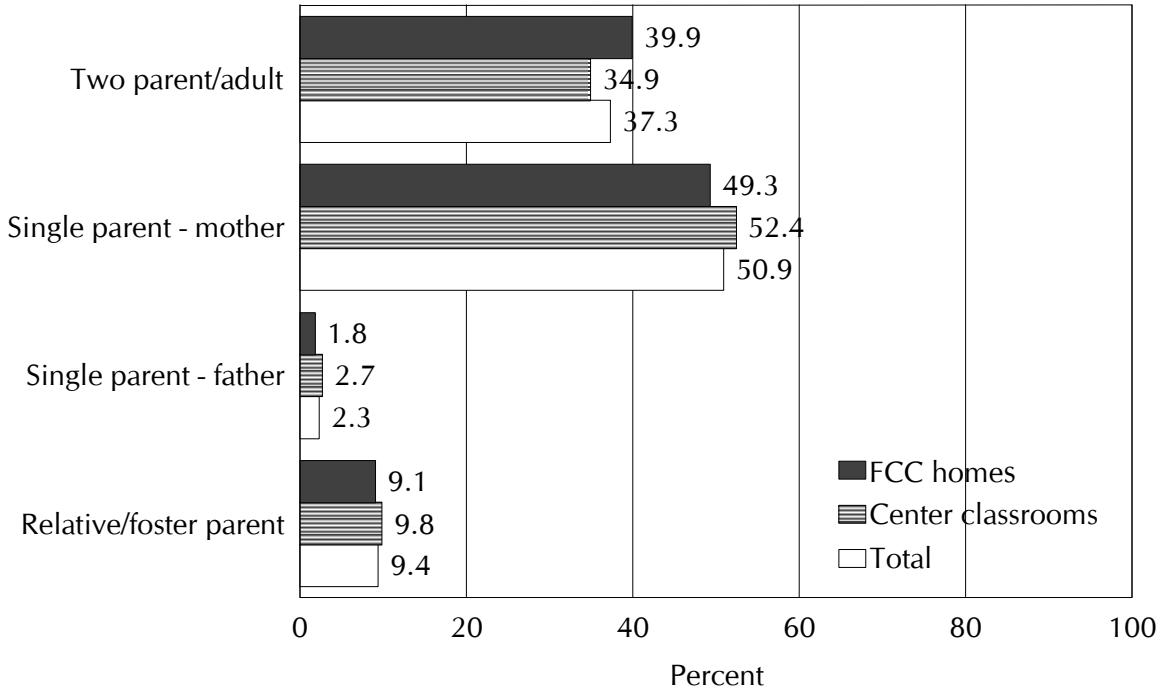
Family Characteristics

This section describes families primarily in terms of their structure, socioeconomic status, race and language, educational attainment, and health. These characteristics were chosen to explore the relationships between key family background characteristics and outcomes. Parent interview data were collected from 712 parents or other primary caregivers (333 in family child care homes and 379 in center classrooms) in the fall and spring of the Head Start year.

Family Structure

As shown in Exhibit VI-1, over one third of the families who participated in the demonstration project were two-parent families. Single-parent families accounted for over half of the families who participated in the demonstration project. Alternative family structures, such as foster families or care by a relative other than a parent, comprised the remaining 9% of families in the project. There were no significant differences between family child care homes and center classrooms in terms of family structure.

Exhibit VI-1
Family Structure by Setting



Family Income

Parents with children in the family child care homes reported a mean annual family income of $12,397, and parents with children in the center classrooms reported a mean annual family income of $11,934. The difference between the two groups was not significant. However, the demonstration project participants had significantly higher annual incomes, on average, than other Head Start families at the participating agencies. According to agency Program Information Reports, the mean family income of Head Start families in the agencies involved in the evaluation was $9,126. The higher incomes of the demonstration project participants may be due to the project requirement that parents either be employed or in school. In 1996, 64% of Head Start families nationally had incomes of less than $9,000 per year and 83% had annual incomes of less than $12,000 (Head Start Statistical Fact Sheet, 1996).

Public Assistance

Over 70% of the demonstration project participants received some type of public assistance, such as food stamps, AFDC, WIC, SSI, public housing, or unemployment benefits. Due to the inherently sensitive nature of personal financial data and the difficulties in obtaining accurate and reliable data, the exact types of assistance were not individually identified. However, 81% of the center classroom parents and 68% of the family child care home parents received some form of public assistance, a difference that is statistically significant ($p < .001$).

Race and Language of Primary Caregivers

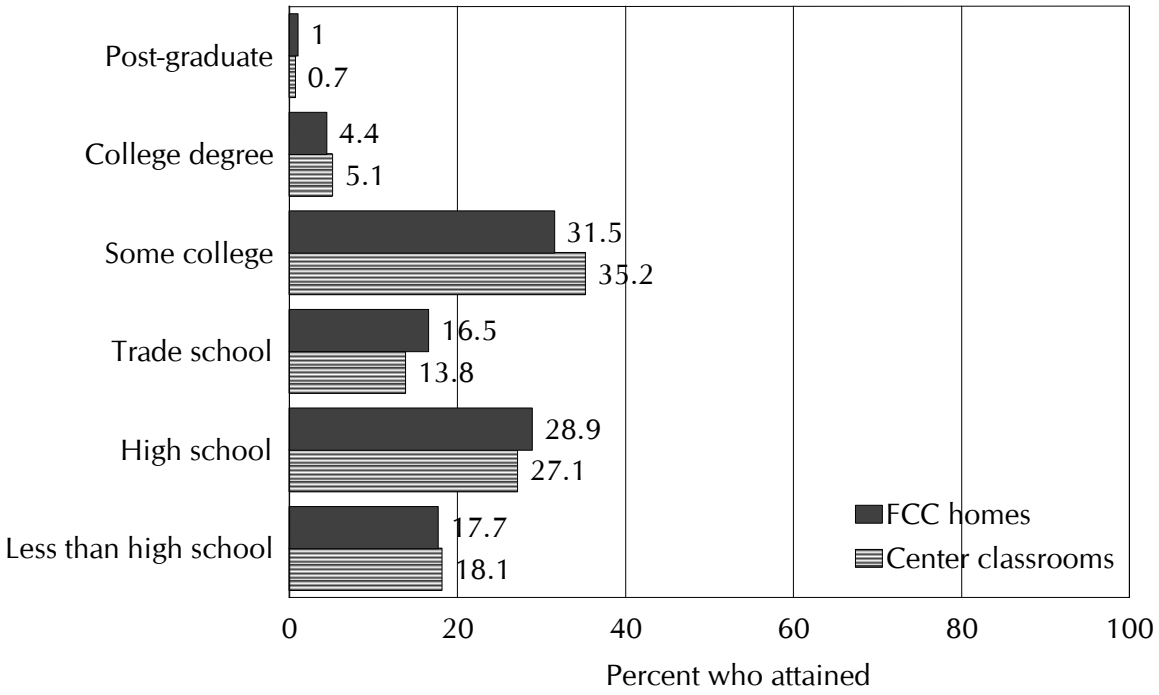
The mother was considered the primary caregiver in 91% of the families, and the father was considered the primary caregiver in 6% of the families. Another adult was the primary caregiver in 3% of families. There were no significant differences in who acted as the primary caregiver between the families in the family child care homes and those in the center classrooms. In 41% of the families the primary caregiver was White, in 28% of the families the primary caregiver was African American, and in 24% of the families the primary caregiver was Hispanic. In the remaining 7% of the families the primary caregiver was Asian, Native American, or of another ethnic or racial background. There were no significant differences between the two settings. Eighty-three percent of the primary caregivers spoke English as their first language, and 14% spoke Spanish. The remaining 3% spoke a language other than English or Spanish. Of the 17% of the parents whose primary language was not English, over half reported their English skills to be fair or good. Differences between the settings were not significant.

Education

Several studies (e.g., Goelman & Pence, 1987b), have documented the correlation between a mother's educational level and her children's school achievement. There were no significant differences found between the parents of the children in the family child care homes and the parents of the children in the center classrooms in terms of their educational

level. The percentage of primary caregivers in the homes and center classrooms at each level of education was very similar, as would be expected with the random assignment of families into the two settings. Of greater interest is the relatively high educational level of the parents who participated in the evaluation. Exhibit VI-2 shows that about 39% of the demonstration project participants had attended college and 82% had at least graduated from high school. Approximately 11% of the parents had received some of their education outside of the United States. There were no significant differences between the two settings.

Exhibit VI-2
Educational Attainment of Primary Caregiver



Note. Difference between settings was not significant.

Health

Ninety-eight percent of the parents reported that they were in fair, good, or excellent physical health. Despite this, 1 out of 4 parents reported that physical problems, illnesses,

or depression had kept them from work or participation in Head Start activities. There were no significant differences between the two settings.

The number of stressors parents reported on the Significant Life Events Checklist may have been related to parent health issues. Parents were asked to indicate if their families had encountered any of the 24 stressors on the checklist within the past 6 months. The checklist included family stressors such as divorce or a new baby, financial stressors such as the loss of a job or a financial crisis, educational stressors such as entering or finishing school, and other stressors such as moving to a new home or substance abuse problems. Exhibit VI-3 shows the mean number of stressors reported by the parents in the two Head Start settings. Families in both settings reported an average of 3 significant life events. Differences between families in the family child care home and center classroom settings on the education subscale were significant family child care parents were more likely to have started or discontinued school.

Exhibit VI-3
Significant Life Events

Scale	Mean No. of Stressors	
	FCC	Center
Family	1.09	1.08
Financial	.91	1.02
Education*	.52	.40
Other	.55	.51
Total	3.08	3.02

*Differences between settings on education life events significant at $p < .05$.

Parent Involvement

Historically, Head Start has been committed to parent involvement as a key feature of successful programs. However, parents may experience many life stressors and other challenges that constrain their ability or willingness to participate in Head Start. This

section of the report discusses the parents satisfaction with their child s Head Start setting and compares the participation patterns of family child care home and center classroom parents. The parents perceptions are described in terms of the parents' initial setting preference (family child care home or center classroom), their level of satisfaction with their assignment, and their ratings of the importance of child care attributes, such as the availability of transportation and the hours of service. Parent participation is described in terms of conferences, home visits, volunteering, training received, communication, and attendance at Head Start functions.

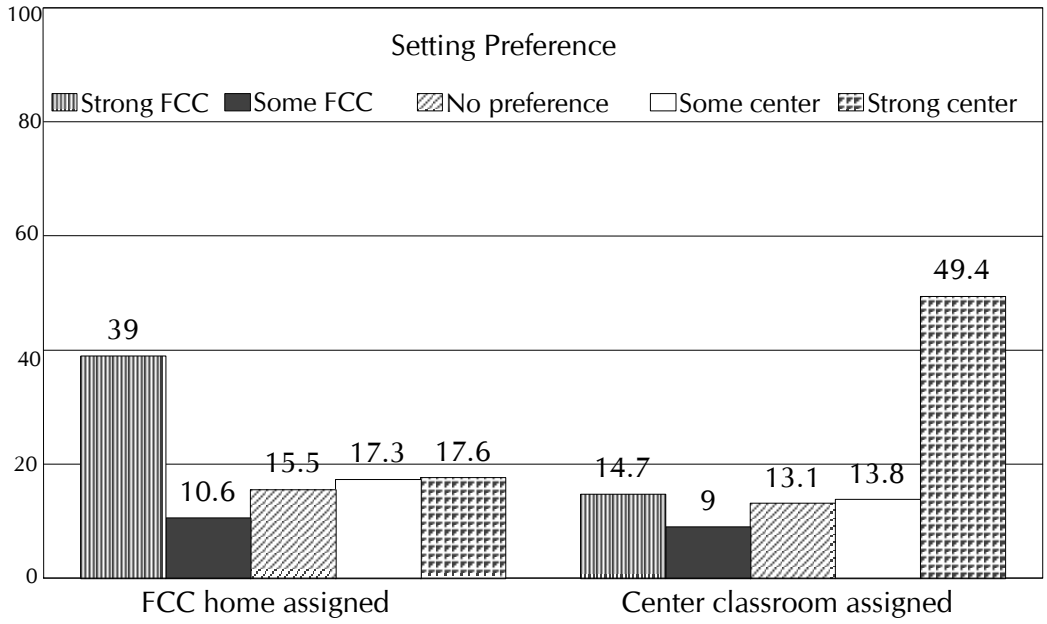
Setting Preference and Satisfaction

Exhibit VI-4 shows that parents tended to prefer the center classrooms more often and with greater intensity than the family child care homes. Regardless of their initial setting preference, over 90% of the family child care parents reported being *very happy* with their assigned setting, and less than 1% were *not happy*. There were no significant differences between settings in terms of happiness with the setting.

Relative Advantages of Family Child Care Homes and Center Classrooms

Parents reported many different advantages to receiving services in family child care homes compared to center classrooms. Exhibit VI-5 shows that family child care home parents reported convenient hours far more frequently than any other advantage. Parents in the family child care homes most often cited opportunities for their children to learn skills, no cost, preparation of their children for kindergarten, good supervision, and location as other advantages of receiving services in family child care homes. Interestingly, center classroom parents also identified convenient hours more than any other advantage. Opportunities for their children to learn skills, preparation of their children for kindergarten, and no cost were the next three advantages most frequently identified by center classroom parents.

Exhibit VI-4
Parent Setting Preference by Actual Assignment



Note. Significant differences between settings at $p < .001$

Exhibit VI-5
Advantages of FCC Home and Center Classroom Settings as Reported by Parents in Fall

Reason	Percent of Parents Who Reported		
	FCC Home (n = 333)	Center classroom (n = 379)	Total (n = 712)
Convenient hours	59	43	51
Opportunities for children to learn skills	23	34	29
Preparation for kindergarten	13	21	17
No cost to parents	14	13	14
Location	11	9	10
Opportunities for interaction with other children	10	10	10
Good supervision	12	8	10
Transportation	5	8	7
Organization of setting	6	6	6
Individual attention to child	10	1	5
Provider to child ratio	10	.5	5

Importance of Child Care Attributes

Parent ratings of the importance of and their happiness with the characteristics of child care provide additional clues about the parents child care preferences. Exhibit VI-6 shows the parents ratings of the importance of many child care characteristics (rated in the fall) and their happiness with each of these characteristics (rated in the spring). The 3-point scale allowed respondents to select from *very happy* or *very important* (3) to *not at all happy* or *not at all important* (1). Parents in both settings rated all features of child care as *very important* or *somewhat important* in the fall. Parents gave consistently high importance ratings to caregiver qualities, the reliability of care, learning activities, and children's social development. In the spring, parents reported happiness with all of the facets of child care regardless of the setting.

Exhibit-VI-6
Mean Parent Ratings of Child Care Attributes

Attribute	Importance (Fall)		Happiness (Spring)		Spring Significant Difference at $p <$
	FCC Home	Center	FCC Home	Center	
Full-day care	2.75	2.51	2.94	2.69	.001
Hours that meet parents' needs	2.87	2.79	2.89	2.71	.001
Individual attention to children	2.92	2.83	2.87	2.77	.01
Children's social development	2.93	2.94	2.87	2.87	NS
Home-like atmosphere	2.69	2.48	2.98	2.71	.001
Learning activities	2.95	2.94	2.84	2.88	NS
Convenience of location	2.67	2.53	2.77	2.79	NS
Reliability of care	2.93	2.89	2.91	2.93	NS
Caregiver qualities	2.98	2.94	2.92	2.88	NS
Cost	2.70	2.60	2.98	2.97	NS
School-like atmosphere	2.66	2.74	2.78	2.88	.01
Many children present	2.01	2.20	2.74	2.84	.01
Transportation to/from	2.59	2.66	2.65	2.75	NS
All children in same location	2.29	2.37	2.69	2.74	NS

Parents of the family child care home and the center classroom children shared many common perceptions about the quality of child care. In general, parents in both settings were happy with the services they had received, although the family child care home and

center classroom parents appreciated different aspects of their respective settings. The satisfaction of the family child care home parents typically related to the hours of service, the provision of full-day care, and other features associated with the small number of children, such as the child-to-adult ratio and individual attention to children. Center classroom parents' satisfaction, on the other hand, tended to be based more on factors that were perceived as academic in nature, such as exhibiting a school-like atmosphere and the presence of many children.

Parent Participation

Traditionally, practitioners and researchers have considered parent involvement to include activities such as helping in the classroom, participating in parent-teacher conferences, and attending open houses and back-to-school nights. These types of parent involvement may exclude parents who work or attend school during the planned activities. In response to this situation, Head Start has generated new strategies for involving parents in their children s education. Many of these strategies do not require parents to be at the program or school site during the day. Despite such efforts, family child care coordinators and other agency staff consistently identified parent involvement as the component area about which they were most concerned. Staff typically reported that they were unsure of how to promote parent participation without interfering with parents' work and school schedules.

Conferences

Parent-staff conferences are one of many Head Start practices intended to encourage communication about the children's progress. Conferences are also a way for staff to learn about family needs and an opportunity for parents to learn about the program. Formal conferences are scheduled in advance, whereas informal or impromptu conferences might occur any time parents and staff happen to be in the same place most often when parents drop off or pick up their children. The average number of formal parent-teacher conferences held by the family child care homes and center classrooms was about 1.7. There was slightly more variability among the family child care homes than the center classrooms in the number of parent-teacher conferences held. Exhibit VI-7 shows the topics

parents and caregivers commonly discussed during formal conferences. The most frequently discussed topics were the child's progress in the program, the child's social development, and program activities.

Exhibit VI-7
Most Frequently Discussed Topics During Parent-Teacher Conferences

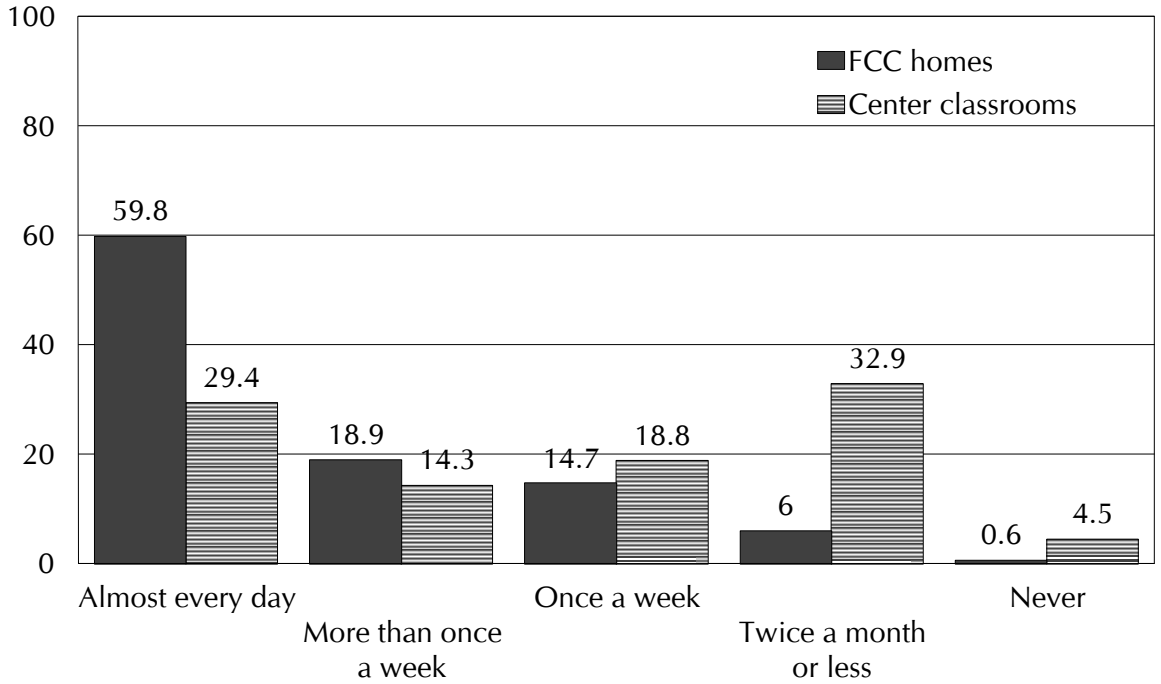
Topic Discussed	Number of Parents Who Reported		
	FCC Home (n = 310)	Center Classroom (n = 369)	Total (n = 679)
Child's progress	155	178	333
Child's social behavior	48	61	109
Program activities	53	41	94
Child and family needs	40	52	92
Skill areas in which child needs assistance	29	36	65
Activities parent can do with the child	22	38	60
Child and family goals	24	30	54

Note. Multiple responses were possible.

Informal conversations

Informal conversations between parents and teachers provide additional opportunities for parents and staff to communicate. Informal conversation occurred on a more regular basis than formal conferences. Exhibit VI-8 shows that family child care providers were much more likely to talk with parents regularly ($p < .01$). These data indicate that the majority of the family child care parents and providers had frequent contact with each other. The center classroom teachers and parents communicated less frequently, probably because the center classroom teachers were responsible for more children and families and because a greater proportion of center classroom children were transported to Head Start by bus instead of by their parents.

Exhibit VI-8
Frequency of Informal Conversations Between Parents and Teachers (*n* = 697)



Note. Significant differences between settings at $p < .01$

The three most frequently discussed topics during informal conversations between parents and program staff were the child's social behavior, program activities, and the child's progress. Other common topics of discussion included the child's participation patterns in program activities and child and family needs.

Home visits

All parents reported receiving at least one home visit from their child's caregiver during the year. Although several family child care providers reported difficulty arranging home visits, each managed to complete this task with all of the families. The topics of discussion during home visits differed somewhat from the topics discussed during formal conferences and informal conversations. Home visits were more likely to be viewed as opportunities to provide information to parents about Head Start, provide referrals to other services, and to address the parents concerns.

Parent Involvement with Head Start Program Activities

Head Start programs seek to involve parents in an array of administrative and program activities, including policy councils, fundraising events, classroom volunteer opportunities, and curriculum development. Center classroom parents were more likely to have been invited to assist with these tasks and also slightly more likely to actually have participated in these activities. Parents perceptions of how much their child's caregiver desired parent help may have affected whether or not they participated in Head Start activities. About half of the parents of center classroom children felt that the teachers wanted them to participate in the program *a great deal,* whereas only one third of the parents of family child care children felt that way. The structure of center classrooms, with more space and more children, might also have provided more opportunities for parent involvement than that of the family child care homes.

Other parent involvement indicators

Parents tend to have greater involvement with early childhood programs when they receive ideas about activities to conduct with their children at home, training on participation in program activities, and information about the program; they also tend to be more involved when those activities fit into their schedules (Epstein, 1991). Overall, parents in the two settings reported that Head Start gave them similar opportunities in these areas. About 80% of the family child care home and center classroom parents received ideas for activities to conduct at home with their children. Approximately 18% of the center classroom parents received training to participate in Head Start activities, whereas only 11% of family child care parents received similar training. Family child care parents reported that Head Start activities fit into their schedules almost 60% of the time, whereas center classroom parents reported that the activities fit into their schedules less than half of the time. This difference may be due to the particular efforts of family child care providers to accommodate parents' work and school schedules. Over 95% of parents in both settings reported being happy with the information shared by Head Start.

Parent Self-Sufficiency

One goal of the Head Start program is to enhance family self-sufficiency by helping parents access needed resources and facilitating training or employment. Some Head Start staff expected the family child care homes to be superior to Head Start classrooms in this regard because the family child care providers were expected to develop closer relationships with the parents and, as a result, would be more likely to identify areas in which outside resources were needed. Family child care homes also provided longer hours of care, which would make it easier for parents to attend school or maintain employment.

Parent participants in the demonstration project were expected to be either working or in school. Exhibit VI-9 shows that parents whose children were in family child care homes were somewhat more likely to be employed or in school than parents whose children were in center classrooms. There were virtually no pre-post differences between the percentage of parents employed, in school, or in training. Thus, setting was not a factor in maintaining current employment or school status. Exhibit VI-9 also shows that the majority of the demonstration project parent participants held a paying job, whereas about 20% were in school and 5% were in training. Approximately 8% of the demonstration project parent participants were not working or in school at the time of the parent interview, presumably due to a change in status after enrolling in the project.

Exhibit VI-9
Job or Training Status of Family Child Care Home and Center Classroom Parents

Status	Fall Percentages		Spring Percentages	
	FCC	Center	FCC	Center
Paying job	62.2	55.8	64.1	56.8
School	23.4	19.1	22.3	19.3
Training	6.3	5.8	5.4	4.6
Unemployed	17.6	20.9	16.4	22.0
Homemaker	31.7	40.1	34.7	45.1
Retired/disabled	1.0	1.8	1.4	2.4

Note. More than one response was allowed. Differences between settings significant at $p < .01$

Among the parents who held a paying job, 64% worked full-time and 36% worked part-time. Twenty-two percent of the working parents were subject to weekly schedule changes. Of the parents in school, 62% were in college, 25% were attending trade or business school, 8% were attending high school, and the remaining 5% were participating in other education programs such as ESL classes.

A primary purpose behind providing a full-day family child care option through Head Start was to improve employment and education options for low-income parents. Exhibit VI-10 shows that the percentage of parents who dropped out of school, changed schools, lost jobs, and changed jobs were similar regardless of whether the parents children were in the family child care homes or center classrooms. However, almost 12% of parents whose children were in the family child care homes completed their school or training program, whereas less than 7% of the center classroom parents did so.

Exhibit VI-10
Changes in School or Job Status Since Pretest

	FCC %	Center %
Completed school or training	11.8	6.8
Dropped school or training	4.3	5.1
Changed school or training	5.4	4.2
Discontinued employment	21.5	24.6
Changed jobs	17.2	16.9
Other change	44.1	45.8

Note. No significant differences between settings

Exhibit VI-11 shows the reported effect of Head Start child care on the parents ability to stay in school or keep a job. Over half of the parents in both settings reported that Head Start had been a definite help, but family child care parents found the Head Start program to be significantly more beneficial ($p < .01$).

Exhibit VI-11
Parent Perceptions of the Effect of Head Start on School or Job Status

Effect of Head Start	FCC %	Center %
Definite help	78.1	58.6
Some help	13.0	20.4
No help	8.9	21.0

Note. Differences between settings significant at $p < .01$

Parenting Skills

The evaluation team conducted the analysis of parent outcomes in the area of parenting skills employing the same techniques used for the child outcomes: multiple linear regression (MLR) and multivariate analysis (MANCOVA). In this MLR analysis, the predictor variables for parenting skills fell into three categories: family background, preprogram level of functioning, and the program setting and quality. The specific variables in each category are shown in Exhibit VI-12.

Exhibit VI-12
Predictor Variables in Parent Outcomes MLR Analysis

Predictor Category	Predictor Variables
Family background	Primary caregiver's educational level Primary language of parent Number of adults in the home
Preprogram level of functioning	Pretest score on parent outcome measure
Program setting and quality	Setting (FCC home or center classroom) Developmental appropriateness (Total DPI score) Overall program quality (total OSPRI items passed)

These predictor variables entered the regression equation in the hierarchical order displayed in the exhibit. The block of background variables (primary caregiver's educational level, primary caregiver s language, and the number of adults in the home) were entered first to account for any variance in parenting skills that could be attributed to preexisting family characteristics. The pretest score was entered next to account for any variance in the posttest due to the entering skill level. Finally, the program setting (family

child care home or center classroom), and program quality measures (Total DPI score and total OSPRI items passed) were entered.

Exhibit VI-13 presents the results of the regression analyses on each of the parent outcomes of interest. For all three outcome measures (the Family Resource Scale, the Family Routines Inventory, and the Parenting Dimensions Inventory), the pretest score was the most significant predictor of posttest scores. The setting variable (family child care home or center classroom) did not enter any of the regression equations, indicating that there were no differences between the family child care homes and the center classrooms on parent outcomes. Although there is evidence from the evaluation which suggests that the family child care providers had less contact with the component coordinators and that the parents of the children in the family child care homes were slightly less involved in Head Start activities, these differences did not seem to affect the family child care parents access to resources, their development of family routines, or their parenting skills.

Exhibit VI-13
Results of Stepwise MLRs on Parent Outcomes

Outcome	Step No.	Predictor	Multiple *R*	Multiple R^2	*F*	*p* <
Family Resource Scale	1	Primary language of parent	.1906	.0363	18.02	.001
	2	Number of adults in home	.2242	.0502	12.62	.001
	3(5)	Primary caregiver s educ. level	.2471	.0610	10.32	.001
	4	Family resources pretest	.6348	.4030	80.17	.001
Family Routines Inventory	1	Family routines pretest	.5586	.3120	216.77	.001
	2	Primary language of parent	.5750	.3306	117.81	.001
Parenting Dimensions Inventory	1(4)	Primary language of parent	.1495	.0224	10.93	.001
	2	Mother's educational level	.1882	.0354	8.76	.001
	3	Parenting dimensions pretest	.5266	.2773	60.89	.001

The primary language of the parents (English or non-English) was a significant predictor for two of the three outcome measures, although the proportion of variance accounted for was quite small. Parents whose primary language was not English were less able to acquire the

resources to meet their family s needs but more likely to establish the kinds of learning and discipline routines measured by the Family Routines Inventory.

Program quality (as measured by the OSPRI and DPI) was not a significant predictor in any of the parent outcome regression equations. This could be because the selected measures of program quality primarily focus on the care giving environment experienced by the child rather than on the quality of parent involvement strategies. Exhibits VI-14 through VI-16 present the final regression models for each parent outcome measure.

Exhibit VI-14
Final Regression Model for Family Resource Scale (Multiple *R* = .6347)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p* value
Number of adults in home	.0229	.0783	2.14	.033
Primary language of parent	.0970	.1236	3.34	.001
Family resource pretest	.6395	.6015	16.77	.000
(Constant)	.7685		8.07	.000

Exhibit VI-15
Final Regression Model for Family Routines Inventory (Multiple *R* = .5750)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p* value
Primary language of parent	-.1201	-.1440	-3.65	.000
Family routines pretest	.6225	.6042	15.30	.000
(Constant)	.9571		10.84	.000

Exhibit VI-16
Final Regression Model for Parenting Dimensions Inventory (Multiple *R* = .5222)

Predictor	Raw Regression Coefficient	Standardized Regression Coefficient	*t*-Test Statistic	*p* value
Primary Caregiver s educ. level	.0186	.1061	2.71	.007
Parenting dimensions pretest	.5207	.5041	12.88	.000
(Constant)	1.01		7.83	.000

In congruence with the child outcomes analysis, the evaluation team also examined the parent outcome measures using MANCOVA procedures. This analysis yielded the adjusted means and effect sizes shown in Exhibit VI-17. As was the case for the MLR results, there were no differences between family child care homes and center classrooms on any of the parent outcome scales, subscales, or multivariate composite.

Exhibit VI-17
Group Means and Significance Tests on Parent Outcomes
Family Child Care Homes and Center Classrooms

Measure	Adjusted Means		Pooled *SD*	Effect Size	*F*	*p*
	FCC Home	Center				
Multivariate composite					.704	.550
Family Resource Scale	2.47	2.45	.22	.18	.86	.355
Basic needs	2.78	2.76	.21	.09	.41	.523
Money	2.01	2.00	.46	.02	.05	.827
Time	2.20	2.15	.37	.14	1.57	.210
Social	2.27	2.24	.44	.07	.44	.505
Family Routines Inventory	2.28	2.27	.25	.04	.06	.799
Parenting Dimensions Inventory	2.19	2.17	.21	.10	1.18	.278

Summary of Parent Findings

Parents with children in family child care homes and center classrooms both reported high levels of satisfaction with the Head Start program. However, parents preferred the center classrooms over the family child care homes by a small margin due to a professed desire for a program with a skill-based, academic focus that provides ample socialization opportunities. Parents may have perceived the family child care homes to be more like a day-care setting and less like a preschool.

Overall, family child care home and center classroom parents were equally involved in the Head Start program based on most indicators, including participation in parent-teacher conferences, informal conversations, home visits, and other activities. However, there were some differences in parent involvement between the two settings. For example, the parents with a child in a family child care home typically had more informal interactions with the

caregivers than did the center classroom parents, whereas the center classroom parents were more likely to be invited to participate in administrative and program activities such as policy councils and fundraising events. There were no significant differences between settings on parent outcomes as measured by the Family Resource Scale, the Family Routines Inventory, or the Parenting Dimensions Inventory.

In both the fall and the spring, parents whose children were in family child care homes were more likely to be employed or in school than parents whose children were in center classrooms. Although there were no significant changes from fall to spring in employment or school status, family child care parents were more likely than center parents to report that the Head Start program had helped them to maintain their employment or school status.

Summary

The findings from the evaluation of the Head Start family child care homes demonstration establish the potential of the family child care home setting for delivering comprehensive Head Start services. Since its inception in the summer of 1965 as a 6-week intervention program, Head Start has explored a variety of ways to improve the lives of children and families in poverty. Head Start has encouraged innovative models for expanding services to populations with unique needs, such as home-based Head Start, migrant Head Start, and Head Start/child care partnerships. In addition, Head Start has addressed other challenges faced by the children of poverty, such as the transition between Head Start and school (Head Start Transition Project) and the three years of life prior to preschool (Early Head Start).

The need for high quality child care has been augmented by social trends as well as political events. The growing number of single parent families and two-parent working families has increased the demand for child care. The 1996 enactment of HR 3734, commonly referred to as the Welfare Reform Act, increased the number of children in need of child care by placing new responsibilities on welfare recipients. In short, as more families are required to either work or participate in training or education, the demand for child care increases.

Based on the data collected during the planning year and the two years of implementation, family child care homes appear to provide a viable option for delivery of Head Start services. Agency staff felt it was a particularly good option for outlying rural areas, areas with a shortage of classroom facilities, children whose needs are better met in a small-group setting, and families who need full-day care for their children. For an agency to operate a successful Head Start family child care program, a number of recommendations should be considered:

- Quality matters regardless of the preschool setting. Child outcomes in the cognitive, social-emotional, and physical development domains were all linked to observed

program quality. These effects carried over into kindergarten, with higher Head Start quality predicting higher vocabulary and preliteracy scores, regardless of whether the child was in the family child care home or center classroom setting.

- Agencies interested in the family child care home option should carefully assess the need for family child care in their communities, giving consideration to other child care options for low-income families. Several agencies in the family child care demonstration project overestimated the demand for family child care and were unable to fill the vacancies in family child care homes. Agency staff should also be prepared to address the challenge of convincing parents that Head Start in the family child care home setting is comparable to Head Start in a center classroom setting.
- Agencies should plan to employ a full-time family child care coordinator who is knowledgeable in all of the Head Start component areas. The family child care coordinator should make weekly visits to each family child care home to model appropriate caregiver behaviors and provide other technical assistance to family child care providers, especially regarding Head Start Program Performance Standards.
- Like Head Start center classroom teachers, family child care providers should have regular release time for receiving in-service training, completing paperwork, and conducting home visits. Family child care providers should be encouraged to complete Child Development Associate credentials or early childhood education degrees.
- Head Start agencies need to allocate adequate funds for materials and equipment in family child care homes. Some of the materials and equipment could be circulated through a lending library so that children in family child care homes would have access to the same variety of materials as children in center classrooms.
- Family child care providers should be encouraged to coordinate activities with center classroom teachers to expose children to the classroom experience and to

enable family child care providers to learn more about developmentally appropriate activities from classroom teachers.

- To have more control over provider training and curriculum, agencies should be encouraged to employ family child care providers. Family child care providers strongly expressed the need for support from Head Start agency staff, and many contracted providers felt isolated from their Head Start agency.
- Head Start agencies should offer family child care homes as a year-round option. Employed parents typically need year-round care for their children, and family child care providers expressed a need for year-round employment. Agencies should also consider ways to offer evening and weekend care for parents who work or attend school at those times.
- Agency staff must develop new strategies for involving working parents in meaningful ways in the family child care home option.

Much has been written about the changing needs of Head Start families and the importance of providing high-quality child care program options to serve them. The most frequently reported issues facing Head Start families include accessing language assistance for families whose first language is not English; securing adequate housing or employment; dealing with problems related to domestic or community violence; finding transportation to and from social services; and finding high quality, affordable, child care (Finlay, 1995).

Head Start has sought to address many of these fundamental challenges encountered by families in Head Start communities. The Head Start family child care demonstration project tested whether comprehensive, full-day, family child care services would be as effective as Head Start center classroom services in delivering to families the assistance they need. The findings presented in this evaluation indicate that family child care homes can meet Head Start standards of quality and can produce similar outcomes in children and families.

References

Abbott-Shim, M.S. & Sibley, A. (1987). *Assessment Profile for Early Childhood Programs.* Atlanta, GA: Quality Assist.

Annie E. Casey Foundation. (1997). *1997 Kids count data book.* http://www.aecf.org/kc1997/summary.htm.

Arnett, J. (1989). Caregivers in day care centers: Does training matter? *Journal of Applied Developmental Psychology, 10*, 541 552.

Barnett, W.S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. In *The future of children, Vol. 5, No. 3. Long-term outcomes of early childhood programs* (pp. 25 50). Los Altos, CA: The David and Lucille Packard Foundation Center for the Future of Children.

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

Bollin, G.G. (1989). *Diversity in attitudes about family day care among sponsored family day care providers.* Paper presented at the annual meeting of the American Educational Research Association.

Boyce, W.T., Jensen, E.W., James, S.A., & Peacock, J.L. (1983). The Family Routines Inventory: Theoretical origins. *Social Science & Medicine, 17*, 193 200.

Bredekamp, S. and Copple, (1997). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, DC: National Association for the Education of Young Children.

Bronfenbrenner, U. (1974). *A report on longitudinal evaluations of preschool programs: Vol 2. Is early intervention effective?* Washington, DC: Department of Health, Education and Welfare. (DHEW Pub. No. OHD 74-25)

Bruner, J. (1980). Factors promoting secure attachment relationships between employed mothers and their sons. *Child Development, 57,* 1224 1231.

Budget of the United States Government: Fiscal Year 1999. (1998). Washington, DC: U.S. Government Printing Office.

Children s Defense Fund. (1996). *The state of America s children*. Washington, DC: Author.

Clarke-Stewart, K.A. (1987). Predicting child development from child care forms and features: The Chicago study. In D. Phillips (Ed.), *Quality in child care: What does research tell us?* Washington, DC: National Association for the Education of Young Children.

Clarke-Stewart, K.A. & Gruber, C. (1984). Day care forms and features. In R.C. Ainslie (Ed.), *Quality variations in day care* (pp. 35 62). New York: Praeger.

Clay, M.M. (1979). *The early detection of reading difficulties*. Auckland, New Zealand: Heinemann.

Consortium for Longitudinal Studies. (Ed.). (1983). *As the twig is bent: Lasting effects of preschool programs*. Hillsdale, NJ: Erlbaum.

Danzer, V., Lyons, T., Gerber, M.F., & Voress, J. (1991). *Daberon 2*. Austin, TX: Pro-Ed.

Divine-Hawkins, P. (1981). *Family day care in the United States: Executive summary*. (Final report of the National Day Care Home Study; Report No. DHHS-OHDS-80-30287). Washington, DC: Administration on Children, Youth, and Families. (ERIC Document Reproduction Service No. ED 211 224)

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

Epstein, J.L. (1991). Effects on student achievement of teachers' practices of parental involvement. *Advances in Reading/Language Research*. Greenwich, CT: JAI Press.

Field, T. (1980). Preschool play: Effects of teacher-child ratio and organization of classroom space. *Child Study Journal, 10,* 191 205.

Finlay, B. (1995). *The state of America s children yearbook*. Washington, DC: Children s Defense Fund.

Fischer, J.L. (1989). *Family day care: Factors influencing the quality of care giving practices.* Unpublished doctoral dissertation, University of Illinois, Champaign.

Fosburg, S. (1982). *Family day care in the United States: National day care home study, Vol. I: Summary of findings* (DHHS Publication No. OHDS 80-30282). Washington, DC: U.S. Department of Health and Human Services, Office of Human Development Services.

Galinsky, E., Howes, C. & Kontos, S. (1995). *The family child care training study: Highlights of findings.* New York: Families and Work Institute.

Goelman, H. & Pence, A.R. (1987a). Effects of child care, family and individual characteristics on children's language development: The Victoria Day Care research project. In D. Phillips (Ed.), *Quality in child care: What does research tell us?* Washington, DC: National Association for the Education of Young Children.

Goelman, H. & Pence, A.R. (1987b). Some aspects of the relationships between family structure and child language development in three types of day care. In D.L. Peters & S. Kontos (Eds.), *Annual advances in applied developmental psychology, Vol. II: Continuity and discontinuity of experience in child care.* Norwood, NJ: Ablex.

Goodman & Altwerger (1981). *Print awareness in preschool children: A study of the development of literacy in preschool children.* Tucson: University of Arizona Language and Literacy Program.

Goodson, B. (1990). *Developmental Practices Inventory* (an adaptation of the Classroom Practices Inventory; Hyson et al., 1989). Cambridge, MA: Abt Associates.

Gramley, M. (1990). *Providers role perceptions and the design and delivery of family day care services*. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.

Hayes, C., Palmer, J., & Zaslow, M. (1990). *Who cares for America's children? Child care policy for the 1990s*. Report of the Panel on Child Care Policy, Committee on Child Development Research and Public Policy, National Research Council. Washington, DC: National Academy Press.

Head Start Bureau (1993). *Head Start On-Site Program Review Instrument*. Washington, DC: U.S. Department of Health and Human Services, Administration on Children, Youth, and Families.

Head Start Statistical Fact Sheet (1996). Washington, DC: Head Start Bureau.

Helburn, S., Culkin, M.L., Howes, C., Bryant, D., Clifford, R., Cryer, D., Peisner-Feinberg, E., Kagan, S.L. (1995). *Cost, quality, and child outcomes in child care centers: Executive Summary*. Denver: University of Colorado.

High/Scope Educational Research Foundation. (1992). *Child Observation Record*. Ypsilanti, MI: Author.

Holmes, T.H. & Rohe, R.H. (1967). The social adjustment rating scale. *Journal of Psychometric Research, 11*, 213.

Howes, C. (1983). Caregiver behavior in center and family day care. *Journal of Applied Developmental Psychology, 4*, 99 107.

Howes, C., & Rubenstein, J. (1981). Toddler peer behavior in two types of day care. *Infant Behavior and Development, 4*, 387 393.

Howes, C. & Rubenstein, J. (1985). Determinants of toddlers' experience in daycare: Age of entry and quality of setting. *Child Care Quarterly, 14*, 140 151.

Hunt, J. McV. (1961). *Intelligence and experience.* New York: Ronald Press.

Hyson, M.C., Hirsh-Pasek, K., & Rescorla, L. (1989). The Classroom Practices Inventory: An observation instrument based on NAEYC's guidelines for developmentally appropriate practices for 4- and 5-year-old children. *Early Childhood Research Quarterly, 5,* 475 494.

Jones, K.F. (1991). *Job satisfaction, commitment to professionalism, and perceived support systems in family day care providers.* Unpublished master s thesis, National-Louis University, Evanston, IL.

Keltner, B. (1990). Family characteristics of preschool social competence among black children in a Head Start program. *Child Psychiatry and Human Development, 21*(II), 95 108.

Kisker, E.E., Maynard, R., Gordon, A., & Strain, M. (1989). *The child care challenge: What parents need and what is available in three metropolitan areas.* Princeton, NJ: Mathematica Policy Research.

Kivikink, R. & Schell, B. (1987). Demographic, satisfaction, and commitment profiles of day care users, nursery school users, and babysitter users in a medium-sized Canadian city. *Child & Youth Care Quarterly, 16*, 116 130.

Kontos, S. (1992). *Family day care: Out of the shadows and into the limelight.* Washington, DC: National Association for the Education of Young Children.

Kontos, S. (1994). The ecology of family child care. *Early Childhood Research Quarterly, 9,* 87 110.

Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1995). *Quality in family child care and relative care.* New York: Teachers College Press.

Krause-Eheart, B.K. & Leavitt, R.L. (1986). Training day care home providers: Implications for policy and research. *Early Childhood Research Quarterly, 1,* 119 132.

Leet, H.E. & Dunst, C.J. (1985). *Family Resource Scale*. Morganton, NC: Western Carolina Center.

Love, J., Ryer, P., & Faddis, B. (1992). *Caring environments: Program quality in California's publicly funded child development programs*. Portsmouth, NH: RMC Research Corporation.

Love, J., Schochet, P., & Meckstroth, A. (1996). *Are they in any real danger? What research does and doesn t tell us about child care quality and children s well-being*. Princeton, NJ: Mathematica Policy Research.

Majeed, A. (1983). *Casper family day care study*. Casper, WY: Nutrition and Child Development. (ERIC Document Reproduction Service No. ED 243 570)

Mansfield, A.M. (1986). *Professionalism in family day care*. Unpublished master s thesis, Pacific Oaks College, Pasadena, CA. (ERIC Document Reproduction Service No. ED 315 180)

McCarthy Scale of Children's Abilities. (1972). San Antonio, TX: The Psychological Corporation.

McCartney, K. (1984). Effect of quality of day care environment on children's language development. *Developmental Psychology, 20*, 244 260.

Meisels, S., Marsden, B., & Jablon, J. (1992). *The Work Sampling System, field test version*. Ann Arbor: University of Michigan.

National Center for Children in Poverty. (1996). *One in four: America s youngest poor*. New York: National Center for Children in Poverty.

National Education Goals Panel. (1991). *The national education goals report: Building a nation of learners*. Washington, DC: U.S. Government Printing Office.

Nelson, M.K. (1990). Mothering others children: The experiences of family day care providers. *Signs: Journal of Women in Culture and Society, 15,* 586 605.

Pellegrim, A.D. (1988). Elementary school children's rough-and-tumble play and social competence. *Developmental Psychology, 24(6)*, 802 806.

Pellegrim, A.D. & Glickman, C.D. (1990, May). Measuring kindergartners social competence. *Young Children*, 40 44.

Phillips, D. (Ed.). (1995). *Child care for low-income families*. Washington, DC: National Academy Press.

Phillips, D. & Cabrera, N. (Eds.). (1996). *Beyond the blueprint: Directions for research on Head Start s families*. Washington, DC: National Academy Press.

Phillips, D. & Howes, C. (1987). Indicators of quality child care: Review of research. In D. Phillips (Ed.), *Quality in child care: What does research tell us?* Washington, DC: National Association for the Education of Young Children.

Phillips, D., Scarr, S., and McCartney, K. (1987). Dimensions and effects of child care quality: The Bermuda study. In D. Phillips, (Ed.), *Quality in child care: What does research tell us?* Washington, DC: National Association for the Education of Young Children.

Powell, D.R. (1991). *Strengthening parental contributions to school readiness and early school learning*. Paper prepared for the U.S. Department of Education Office of Educational Research and Improvement. West Lafayette, IN: Purdue University Department of Child Development and Family Studies.

RMC Research. (1993a). *Agency Staff Questionnaire*. Portland, OR: Author.

RMC Research. (1993b). *Caregiver Characteristics Form*. Portland, OR: Author.

RMC Research. (1993c). *Family Data Interview*. Portland, OR: Author.

RMC Research. (1993d). *Kindergarten Teacher Interview*. Portland, OR: Author.

RMC Research. (1993e). *Modified Concepts About Print*. Portland, OR: Author.

RMC Research. (1993f). *Parent Perceptions of Head Start Services*. Portland, OR: Author.

Rosenthal, M.K. (1988). *Attitudes and behaviors of caregivers in family day care: The effects of personal background, professional support systems, and the immediate caregiving environment*. Jerusalem, Israel: The Hebrew University. (ERIC Document Reproduction Service No. ED 306 040)

Ruopp, R., Travers, J., Glantz, F., & Coelen, C. (1979). *Children at the center: Final Report of the National Day Care Study*. Cambridge, MA: Abt Associates.

Schaefer, E.S. & Edgerton, M. (1978). *A method and model for describing competence and adjustment: A preschool version of the Classroom Behavior Inventory*. (ERIC Document Reproduction Service No. ED 183 262)

Schaefer, E.S., Hunter, W.M., & Edgerton, M. (1984). *Child Adaptive Behavior Inventory*. Chapel Hill: University of North Carolina.

Shure, M.B. & Spivack, G. (1976). *The problem solving approach to adjustment*. San Francisco: Jossey-Bass.

Shure, M.B & Spivack, G. (1979, Summer). Interpersonal cognitive problem solving and primary prevention: Programming for preschool and kindergarten children. *Journal of Clinical Child Psychology,* 89 94.

Slater, M.A. & Power, T.G. (1987). Multidimensional assessment of parenting in single-parent families. In J.P. Vincent (Ed.), *Advances in family intervention, assessment, and theory* (pp. 197 228). Greenwich, CT: JAI Press.

Smith, P. & Connolly, K. (1981). *The behavioral ecology of the preschool*. Cambridge, England: Cambridge University Press.

Stallings, J. & Porter, A. (1980). *National day care home study*. Palo Alto, CA: SRI International.

Stipek, D., Milburn, S., Clements, D., & Daniels, D. (1992). Parents beliefs about appropriate education for young children. *Journal of Applied Developmental Psychology, 13,* 293 310.

Stith, S.M. & Davis, A.J. (1984). Employed mothers and family day care: A comparative analysis of infant care. *Child Development, 55*, 1340 1348.

Teale, W. (1986). Home background and young children s literacy learning. In W.H. Teale and E. Sulzby (Eds.), *Emergent literacy: Writing and teaching.* Norwood, NJ: Ablex.

U.S. Department of Health and Human Services. (1990). *Head Start research and evaluation: A blueprint for the future. Recommendations of the advisory panel for the Head Start evaluation design project*. Washington, DC: Author.

U.S. Department of Health and Human Services. (1993). *Creating a 21st century Head Start: Final report of the Advisory Committee on Head Start Quality and Expansion*. Washington, DC: Author.

U.S. Department of Health and Human Services. (1994). *Head Start Reauthorization Act of 1990*. Washington, DC: Author.

U.S. Department of Health and Human Services. (1996). *Head Start Program Performance Standards*. Washington, DC: Federal Register, November 5.

Washburn, P.V. & Washburn, J.S. (1985). The four roles of the family day care provider. *Child Welfare, 64*(5), 547 553.

Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America* (final report of the National Child Care Staffing Study). Oakland, CA: Child Care Employee Project.

Zigler, E.F. & Styfco, S. (1996). Head Start and early childhood intervention: The changing course of social science and social policy. In E.F. Zigler, S.L. Kagan, and N.W. Hall (Eds.), *Children, families, and government* (pp. 132 155). New York: Cambridge Press.