

CHAPTER 6: FINDINGS ABOUT EVEN START'S EFFECTIVENESS

This chapter presents findings about the impacts of Even Start on children, parents and families. It begins with a discussion of the methods used to understand the effectiveness of Even Start, then describes the instructional services received by Even Start and control group children and parents, and finally describes Even Start's effects in several different domains. Most of the data for this chapter were collected from Even Start and control group families in the 18 projects that participated in the Experimental Design Study (EDS). Key findings from this chapter are:

- ❑ Based on data collected in the EDS, Even Start children and their parents performed as well as, but not better than, control group children and their parents. The data show that children and parents in the control group made the same kinds of gains on literacy assessments, on parent reports of child literacy, on parent-child reading, on literacy resources at home, and so on, as are seen for Even Start children and parents.
- ❑ Even Start and control group children in the EDS both made gains on the PPVT, comparable to those of children in the Head Start FACES study.
- ❑ Although they improved their literacy levels, Even Start and control group children and parents who took part in the EDS scored very low when compared with national norms.
- ❑ Parents in the EDS reported that a higher percentage of Even Start children than control children participated in early childhood education, and a higher percentage of Even Start parents than control parents participated in adult education and parenting education. In spite of this, many parents in the EDS control group reported that they and their children participated in early childhood education, adult education and parenting education available in their communities.
- ❑ On the whole, teachers in center-based classrooms attended by Even Start and control children in the EDS reported that they conduct similar literacy-related activities. However, there were some differences. On a daily or almost daily basis, control children were more likely to be read to and to use computers, while Even Start children were more likely to engage in performing arts, indoor physical activities, and health/hygiene. Data from the Head Start FACES study show that Head Start children are exposed to the same literacy activities, with one exception -- Even Start children are more likely than Head Start children to work on letters of the alphabet and words (94 vs. 69 percent).
- ❑ Even Start classrooms in the EDS were of generally good quality when assessed using the ECERS. They were comparable in overall quality to Head Start classrooms and were rated somewhat higher than other types of early childhood classrooms. However, half of the Even Start classrooms did not have a wide variety of books and other language materials available to children, and reasoning and communication skills were not frequently encouraged by the staff. Compared with Head Start, Even Start classrooms had fewer books available to children and were less likely to have writing areas and tools for writing or displays of children's written work.

- Consistent with the findings of prior research (e.g., Barnett, 1995; Ramey & Ramey, 1992; Ramey, Bryant, Wasik, Sparling, Fendt & LaVange, 1992), data from this study show that children who participated more intensively in early childhood education scored higher on standardized literacy measures. Further, parents who participated more intensively in parenting education had children who scored higher on standardized literacy measures. On the other hand, there is no relationship between the amount of time that parents participated in adult education or parenting education and their own scores on literacy outcomes. Parents from families that participated more intensively in Even Start (both in terms of total hours and months of participation) reported that their children did better on literacy-related tasks (e.g., knowledge of the alphabet, numbers and colors), that they read a greater variety of materials to their children more frequently, that they had more books and other print resources at home, and that they themselves read and write more than parents from families that participated less intensively. Because amount of participation is a function of family characteristics (as well as program characteristics such as amount of service offered and the extent to which families are encouraged to participate) these relationships may also be explained by factors such as differences in the motivation of families or in their opportunity to participate in Even Start.

HYPOTHESES ABOUT THE EFFECTIVENESS OF EVEN START

A simple model summarizing the hypothesized effects of participating in Even Start is presented in Exhibit 6.1. A key principle underlying Even Start is that a child should benefit more from being in a family that participates in all of the family literacy services offered by Even Start (early childhood education, adult education, parenting education and parent-child activities), than from simply participating in an early childhood program.

Program staff anticipate that there will be direct effects on children and parents who participate intensively in Even Start's core instructional activities. Further, it is hypothesized that early direct effects on parents will lead to later, indirect, effects on children. This evaluation assessed only the direct effects of Even Start on children and parents assuming that if direct effects were found, then it might be worthwhile to measure families in later years to determine whether direct effects persist and whether indirect effects could be detected. The following list of hypotheses and the time line for when program effects should occur were generated through discussions with staff from the Department of Education and members of this evaluation's Technical Work Group.

Direct Effects on Participating Parents. These include short-term positive effects on the literacy skills of parents as a result of participating in an intensive adult education program. Direct effects on parents also include short-term positive effects on parenting skills and the home literacy environment due both to participation in parent education and parent-child activities. These effects should be apparent in one year.

Direct Effects on Participating Children. These are short-term positive effects on the literacy skills of children, including effects on school readiness due to participation in an intensive program of early childhood education. These effects should be apparent in one year.

Indirect Effects on Participating and Nonparticipating Children. Early effects on parenting skills and household literacy resources, enhanced parent literacy skills, and enhanced economic outcomes for the family all are hypothesized to lead to longer-term positive effects on the literacy skills of children in the family, whether or not they participated in Even Start. These effects should occur within two or more years.

Indirect Effects on Nonparticipating Parents. Participation in adult education and subsequent enhanced literacy skills are hypothesized to result in longer-term positive effects on the economic self-sufficiency of parents including improved education status, better employment prospects, and increased household income. These effects on participating parents are expected to result in positive impacts on the parenting and literacy skills of nonparticipating adults. The time frame for these effects is probably two or more years.

Indirect Effects on the Family. Finally, the model posits long-term positive effects on the family in areas such as family stability and continued enhancement of economic outcomes.

IMPLEMENTATION OF THE EVALUATION

Two sets of data were used to assess Even Start's effectiveness. Primary data come from the Experimental Design Study (EDS) where 18 projects voluntarily agreed to randomly assign incoming families to be in Even Start or a control group, providing an experimental assessment of Even Start's impacts. Supporting data come from the Even Start Performance Information Reporting System (ESPIRS).

EDS Sample and Evaluation Design. The EDS called for pretest, posttest, and follow-up data to be collected from families in 18 projects (one home-based project and 17 center-based or home/center-based projects). These projects were chosen because they minimally met Even Start's legislative requirements, had been in operation for at least two years, planned to operate through the length of the study, could serve at least 20 new families at the start of data collection, offered instructional services of moderate or high intensity relative to all Even Start projects, and were willing to participate in a random assignment study. Projects were recruited from urban and rural areas, as well as projects that served varying proportions of ESL participants. Over the two recruitment years, 115 out of a universe of about 750 programs met the selection criteria, and 18 of these projects (about 15 percent of the eligible projects) were willing to participate in the study. The background characteristics of families in the two cohorts of projects were similar, so data were combined across all 18 projects for analytic purposes.

Each of the 18 EDS projects was asked to recruit families as they normally do and to provide listings of eligible families to Abt Associates staff who randomly assigned families either to participate in Even Start (two-thirds of the families) or to be in a control group (one-third of the families). Assignment to the control group meant that the family could not participate in Even Start for one year. A total of 463 families were randomly assigned in the EDS -- 309 to Even Start and 154 to the control group (Exhibit 6.2), maintaining the planned 2:1 ratio. This is an average of about 26 families per project.

Instead of restricting children in the EDS to, say, preschoolers, children throughout Even Start's full age range were included. While the EDS provides some data on all children in the study, the sample for analysis of literacy gains is limited to children who were at least 2.5 years old at the time of pretesting since most standardized literacy measures are not appropriate for children until they reach this age. About one-third of the children in the EDS were under 2.5 years of age at the time of pretest (Exhibit 6.3).

Comparability of Even Start and Control Groups. Even Start and control families were statistically equivalent at the time of randomization and at the pretest (Exhibit 6.4). Group equivalence at the time of randomization is guaranteed, within known statistical bounds, by proper implementation of random assignment and a sufficiently large sample size. However, 10 percent of the families were lost between the time of randomization and time of pretest. This attrition occurred equally in the Even Start and control groups. An analysis of pretest data showed that Even Start and control groups did not differ significantly on the percent of families where Spanish was spoken at home, families where English was spoken at home, Hispanic families, parents with a high school diploma or a GED, single parent households, employed parents, and households with annual income less than \$9,000.

Generalizability of EDS Findings. The EDS used a random assignment design, the strongest approach for estimating the impacts of a program. However, projects volunteered for this study instead of being randomly selected, so we cannot generalize to the Even Start population on a strict statistical basis. The plan was to select EDS projects to include urban and rural projects, projects that offer varying amounts of instruction, and projects that serve high and low percentages of ESL families. Due to the voluntary nature of the study, this plan could not be implemented perfectly, and while the EDS projects do represent major kinds of projects funded in Even Start, the data presented in Exhibit 6.4 show that EDS families are more likely than the population of Even Start families to be Hispanic (75 percent vs. 46 percent). Further, 83 percent of EDS projects are in urban areas compared with 55 percent of all Even Start projects. These data suggest that findings from the EDS are most relevant to urban projects that serve large numbers of Hispanic/ESL families.

Data comparing the mean pretest scores of EDS parents and children with ESPIRS parents and children on 18 parent-reported outcomes are shown in the appendix to this report (Exhibit 6.1.41). These data show that the two groups are largely comparable on the parent-reported pretest data. For most variables there is no difference between the two groups. On some variables, EDS parents/children score higher, while the full group of ESPIRS parents/children score higher on others. In general, the data support the contention that there are no important differences between EDS families and ESPIRS families.

Response Rates. Response rates for the EDS data collection are high compared with those achieved by many educational studies: 90 percent at the pretest and 81 percent at the first posttest (Exhibit 6.2). Response rates are based on completed parent interviews, which generally correspond to the number of adults who took the Woodcock-Johnson tests. The number of children who took the PPVT and Woodcock-Johnson is less than the number of parents who took the WJ-R, since the child tests could only be administered to children over 2.5 years of age.

Data Collection. EDS data were collected at three time points. For the first group of 11 projects, pretest data were collected in fall 1999, posttest data in spring 2000, and follow-up data in spring 2001. For the second group of seven projects, data were collected a year later (pretest in fall 2000, posttest in spring 2001, follow-up in spring 2002). In many projects, families enter Even Start on a rolling basis, so the pretest data collection was spread across several months (October through January) as new families entered the program. There was an average of 8.8 months between pretest and posttest, with a minimum of 5 months and maximum of 12 months. Due to the high percentage of ESL families, measures were available in both English and Spanish. Data collection staff were instructed to administer all measures in English. However, if this was distressing to a parent or child, the Spanish version of the measure was administered.

Statistical Power. A total of 463 families were randomly assigned in the EDS – 309 to Even Start and 154 to the control group. For several reasons, the number of parents and children that enter into any given analysis of Even Start's effectiveness is smaller than these totals. For example, some families could not be found at the time of pretesting and posttesting, some children accepted into the study were too young (under 2.5 years of age) to be pretested, and some parents/children were assessed but had missing data on selected items. The statistical power to detect effects in the EDS therefore varies on a measure by measure basis. Exhibit 6.5 shows statistical power for some of the key outcome measures. It can be seen that the EDS had very high statistical power to detect large and medium-sized effects, but poor power to detect small effects. Statistical power is greater than .90 for effects of .50 standard deviations or larger, greater than .80 for effects of .40 standard deviations, and greater than .75 for effects of .30 standard deviations for parents. But statistical power is less than .75 for effects of .30 standard deviations for children, and less than .60 for effects of .20 standard deviations or smaller.

We argue that while small effects may be interesting to researchers they are not always relevant for policy making purposes, and hence that the statistical power offered by this evaluation is appropriate for determining the effectiveness of and improving Even Start. Even so, some may raise the question of whether the findings from the present evaluation would be seen in a different light if the EDS sample were substantially larger. If we assume that effects as small as 0.10 standard deviations were statistically significant for the EDS, then 17 of the 41 comparisons in Exhibit 6.12 between Even Start and the control group would be termed "significant". As many of these significant effects favor the control group as Even Start, so while a larger EDS sample might let us find additional significant differences between Even Start and the control group, we would have the same concerns about Even Start's effectiveness.

MEASURES USED IN THE EDS

Even Start projects serve multiple family members. Due to resource constraints, one child and one parent were assessed in each EDS family. Exhibits 6.6 and 6.7 list the outcome measures administered to children and parents/families. Compared with the child measures used in previous Even Start evaluations, we continued to administer a fairly broad battery to capture literacy skills and other indicators of school readiness such as math and social skills. For parents, we focused on language skills as opposed to the functional literacy or general skills that were measured in previous studies. Thus, the measurement battery is aligned with Even Start's

objectives. We also recognize the importance of the ESL population, and all direct assessments of children and parents as well as parent interviews were available in both English and Spanish.

CHILD OUTCOME MEASURES

Child outcomes were measured by direct assessment of the child, parent report on the child's skills, teacher report on the child's behaviors in school, and a review of school records. The child measurement battery partially overlaps both with the ESPIRS that is administered to all Even Start families, and with measures for the Head Start FACES study.

Peabody Picture Vocabulary Test. The PPVT-III (Dunn & Dunn, 1997) measures listening comprehension for spoken words and is a good short test of general verbal ability. The word knowledge assessed by the PPVT is called "receptive vocabulary," to differentiate it from the more active vocabulary skills required to formally define a word or use it appropriately in a sentence. The PPVT was administered to all children in the EDS who were 2,6 to 7,11 years of age, unless the child's parent objected and insisted that the TVIP (Spanish version of the PPVT) be administered. The PPVT assesses children's knowledge of the meaning of words by asking them to say or indicate by pointing which of four pictures best shows the meaning of a word that is said aloud by the examiner. A series of words is presented, ranging from easy to difficult for children of a given age, each accompanied by a plate consisting of four line drawings. The test is suitable for ages from 2,6 through adulthood and has recently established age norms based on a national sample of 2,725 children and adults tested at 240 sites across the nation.

The PPVT-III was extensively revised from earlier versions. Administration procedures were modified to permit easier testing and more accurate scoring. New drawings were added and dated illustrations dropped to achieve better gender and ethnic balance. Test items that showed statistical bias by race or ethnicity, gender, or region were deleted from the item pool prior to standardization. Research by critics of earlier versions of the PPVT shows no racial or economic bias (Washington & Craig, 1999).

Woodcock-Johnson Psycho-Educational Battery (Revised). The most recent edition of the WJ-R (Woodcock & Mather, 1989, 1990) at the time of the EDS data collection is a carefully constructed, newly-normed, individually-administered test battery that is designed to assess the intellectual and academic development of individuals from preschool through adulthood. Each of the 41 WJ-R subtests requires about 5 minutes to complete, is designed to be administered separately or in combination with other subtests, and has an internal consistency reliability of .90 or higher. In the EDS, four subtests of the WJ-R were administered to children who were 2,6 to 3,11 years of age. These include three subtests being used in the Head Start FACES study: the Letter-Word Identification, Dictation and Applied Problems subtests which constitute the "Early Development – Skills" cluster, according to the test developers, and thus provide a quick screening of broad achievement. In addition, the Incomplete Words subtest was administered to provide information on phonemic awareness. Eight subtests were administered to children who were 4,0 to 7,11 years of age. These include the four subtests used for younger children, as well as four subtests which focus on reading skills (Sound Blending, Word Attack, Passage Comprehension, and Reading Vocabulary).

- ❑ *Letter-Word Identification:* The first five Letter-Word Identification items involve symbolic learning, or the ability to match a rebus (pictographic representation of a word) with an actual picture of the object. The remaining items measure reading identification skills in identifying isolated letters and words that appear in large type.
- ❑ *Dictation:* The first six items in this subtest measure prewriting skills such as drawing lines and copying letters. The remaining items measure the child's skill in providing written responses when asked to write specific capital or lower-case letters of the alphabet. Later parts of the subtest ask for writing of specific words and phrases, punctuation, and capitalization.
- ❑ *Applied Problems:* This subtest measures skill in analyzing and solving practical problems in mathematics. In order to solve the problems, the child must recognize the procedure to be followed and then perform relatively simple counting or addition or subtraction operations. Because many of the problems include extraneous stimuli or information, the child must also decide which data to include in the count or calculation.
- ❑ *Incomplete Words:* This is a tape-recorded test that measures auditory closure. After hearing a recorded word that has one or more phonemes missing, the subject identifies the complete word. This test primarily measures auditory processing.
- ❑ *Sound Blending:* This test measures the ability to integrate and then say whole words after hearing parts (syllables and/or phonemes) of the words. An audio tape is used to present word parts in their proper order. The test measures auditory processing.
- ❑ *Word Attack:* This measures the subject's skill in applying phonic and structural analysis skills to the pronunciation of unfamiliar printed words. The subject reads aloud letter combinations that are linguistically logical but that form nonsense words or low-frequency words in English (or Spanish).
- ❑ *Passage Comprehension:* The first four items in this subtest are presented in a multiple-choice format requiring the subject to point to the picture represented by a phrase. The remaining items measure skill in reading a short passage and identifying a missing key word. The task requires the child to state a word that would be appropriate in the context of the passage. The child exercises a variety of comprehension and vocabulary skills.
- ❑ *Reading Vocabulary:* This subtest measures skill in reading words that supply appropriate meanings. In Part A: Synonyms, the subject must state a word similar in meaning to the word presented. In Part B: Antonyms, the subject must state a word that is opposite in meaning to the word presented. Only one-word responses are acceptable.

Story & Print Concepts. The Story & Print Concepts task is an adaptation of earlier prereading assessment procedures developed by Clay (1979), William Teale (1988, 1990) and Mason & Stewart (1989). Administered to children in the EDS who were 2,6 and older, the child is handed a children's storybook upside down and backwards. The assessor notes whether the child turns it around to put the book upright with the front cover on top. Then the child is asked to identify where the name of the book is written and where the material to be read begins, and in what direction the reading proceeds. The assessor reads the story to the child and asks basic questions about both the content of the story and the mechanics of reading. Research has found

that children who experience frequent story reading by their parents or teachers are more likely to be able to answer such questions.

Vineland Adaptive Behavior Scales -- Communication Domain. The Vineland is a comprehensive set of rating scales designed for use by teachers and parents. The Vineland has national norms. The Communication Domain from the Classroom Edition of the Vineland was used in the EDS. It takes about 10 minutes to administer and consists of 63 items that provide an assessment of literacy functioning in three areas -- expressive, receptive, and written skills. Because teachers need time to become familiar with the children in their classroom, the Vineland was completed only as a posttest measure at the end of the school year. Teachers completed the Vineland for all Even Start and control group children who were at least three years old and in a formal preschool or school-based setting.

The Communication Domain from the Survey Edition, appropriate for parents, contains 30 of the same items as the Classroom Edition. To determine the correspondence between the ratings of teachers and low-income parents, parents completed the Survey Edition as a posttest. This data collection was restricted to English-speaking parents. A comparison of data from teachers and parents on the same Communication Domain items shows a reasonable degree of correspondence. The mean raw score reported by parents was 36.6, compared with a mean raw score of 34.1 reported by teachers. Parents rate their children somewhat higher than teachers, an understandable difference. While the 2.5 point difference is statistically significant ($p < .02$), it is equal to .22 standard deviations, not large by absolute standards. The correlation between the two sets of raw scores is .71. Finally, teacher and parent ratings are in agreement on an average of 70 percent of the items when rating children. Overall, this is a reasonably good level of agreement between parent and teacher ratings, and it gives us confidence that the parent responses supplied in other parts of the evaluation can be viewed as fairly reliable.

Parent Report of Child Literacy. The ESPIRS and the EDS parent interview contain items designed to obtain parent ratings of their child's literacy performance. Available in English and Spanish, these items are based on literacy competencies identified in recent research on reading by the National Research Council (Snow, Burns & Griffin, 1998), the NAEYC (1998), and the NICHD (Lyon, undated). The items were used to construct the following variables for Even Start and control children:

- ❑ *Child knows alphabet (age 2,7 – 7,11):* Has value of 1 if parent reports that child knows all alphabet letters or can say/sing the entire alphabet; has value of 0 otherwise.
- ❑ *Child counts to 100 or more (age 2,7 – 7,11):* Has value of 1 if parent reports that child can count to 100 or more; has value of 0 otherwise.
- ❑ *Child knows colors (age 2,7 – 7,11):* Has value of 1 if parent reports that child knows colors red, yellow, blue, green by name; has value of 0 otherwise.
- ❑ *Extent to which child reads (age 0,0 – 2,6):* Has values from 0-4. Value increases by 1 if child pretends to read, has memorized book, pretends to read to someone else, has favorite book.
- ❑ *Extent to which child reads (age 2,7 – 7,11):* Has values from 0-9. Value increases by 1 if child pretends to read, reads for enjoyment, has memorized book, has favorite book,

can follow written directions, can describe something learned through reading, rereads sentences, reads/pretends to read to someone else, recognizes own first name in writing/print.

- ❑ *Age-appropriate writing skills (age 0,0 – 7,11)*: Has values from 0-2. Value increases by 1 if child pretends to write, writes some letters of the alphabet.
- ❑ *Child knowledge of print concepts (2,7 – 4,11)*: Has values from 0-9. Value increases by 1 if child shows front of book, page where you start, where to start on page, a picture, a word, last letter in a word, a number, a period, a question mark.

Social Skills Rating System (SSRS). The SSRS (Gresham & Elliot, 1990), available in English, is designed for teachers to use in rating child competencies and behaviors. Because teachers should not complete these scales until they have spent a substantial amount of time with a child, we used the SSRS scales only as a posttest. As with the Vineland scales, we collected the SSRS for all Even Start and control group children who were at least three years old and in a formal preschool or school-based setting. The SSRS has been widely used and nationally normed. Standard scores and percentile ranks are available for each scale.

- ❑ *Problem behaviors*: This scale consists of 18 items (10 for the preschool version) that ask the teacher to rate the child on a three-point scale (never, sometimes, very often). The items measure internalizing behaviors (acting sad or lonely), externalizing behaviors (acting out) and hyperactivity (not in the preschool version).
- ❑ *Social skills*: This scale consists of 30 items that ask the teacher to rate the child on a three-point scale (never, sometimes, very often). The items measure cooperation, assertion and self-control.

School Records. For Even Start and control group children, we asked schools for access to student records in order to obtain information on attendance, absences, tardiness, and placement in special education. This information was collected at posttest.

PARENT AND FAMILY OUTCOME MEASURES

The EDS measured parent outcomes through direct assessment of literacy skills and parent self-report. Compared with the measurement battery used in previous Even Start studies, the EDS focuses more directly on language skills as opposed to functional literacy or general skills. The first national Even Start evaluation used the CASAS to assess adult literacy. While some Even Start projects liked the CASAS, others complained that the functional skills it measured (e.g., reading maps or nutrition labels) had little to do with what they were teaching. Further, the CASAS is not available in Spanish. The second national evaluation took a step towards a broader assessment of language skills by giving projects the choice of using the CASAS or the TABE. Unfortunately, neither of these is available in Spanish. The WJ-R focuses directly on language skills, it is well-normed, and it is available in Spanish.

Woodcock-Johnson Psycho-Educational Battery -- Revised. The WJ-R (Woodcock & Mather, 1989,1990) was described earlier under measures for children. The most recent edition

of the WJ-R is appropriate for assessing the academic development of individuals into adulthood. In the EDS parent assessment, we used four subtests that measure reading achievement: Letter-Word Identification, Word Attack, Passage Comprehension, and Reading Vocabulary. Each of these subtests was described earlier.

Parent Report of Literacy at Home. The ESPIRS records parent report of literacy skills including reading and writing done at home. We included these items in the parent interview that was administered to parents of all children in the EDS (both in Even Start and in the control group). The following variables were constructed:

- ❑ *Variety of parent reading at home:* Has values from 0-12. Value increases by 1 if parent reads letters/bills, advertisements, street signs, books, newspapers, food labels, coupons, notes from teacher/school, magazines, TV Guide, instructions, religious materials.
- ❑ *Variety of parent writing at home:* Has values from 0-11. Value increases by 1 if parent writes appointments on calendar, grocery lists, notes/memos, forms/applications, letters, checks/money orders, greeting cards, crosswords, journal/diary, recipes, stories/poems.

Parent Report of Parent-Child Reading. Four variables were constructed to assess various aspects of parent-child reading including whether the parent reads to the child daily, the amount of reading that the parent does with the child, the variety of reading that is done with the child, and the quality of the reading that is done with the child:

- ❑ *Reads to child daily (age 0,0 – 7,11):* Has value 1 if parent reads to the child each day; has value of 0 otherwise.
- ❑ *Amount of reading to/with child (age 0,0 – 7,11):* Has values from 0-3. Value increases by 1 if parent reads to child every day, someone else reads to child every day, parent tells story to child every day.
- ❑ *Variety of reading to/with child (age 0,0 – 7,11):* Has values from 0-5. Value increases by 1 if parent reads the following to/with child: newspapers, magazines, store catalogs, funnies or comic books, TV listings.
- ❑ *Quality of reading to/with child (age 0,0 – 7,11):* Has values from 0-5. Value increases by 1 if, when reading to child, parent stops/asks what is in a picture, stops/points out letters, stops/asks what happens next, reads same story over and over, asks child to read.

Parent Report of Literacy Resources at Home. Three variables were constructed to assess the literacy resources available at home: the number of books that the child has, the variety of non-print resources in the home, and the variety of print resources in the home.

- ❑ *Number of books that child has (age 0,0 – 7,11):* Has values from 0-5. 0 = no books, 1 = 1 or 2 books, 2 = 3 to 10 books, 3 = 11 to 25 books, 4 = 26 to 50 books, 5 = 51+ books.
- ❑ *Variety of non-print resources at home (age 0,0 – 7,11):* Has values from 0-16. Value increases by 1 if the following are available at home: rattle/squeak toys, pull toys, crayons and paper, scissors, blocks, scotch tape, tinkertoys, puzzles/paint/magic markers,

picture catalogs, yarn/thread/cloth, clay/playdough, make-believe toys, plants in pot or garden, pens/pencils, typewriter/computer.

- *Variety of print resources at home (age 0,0 – 7,11)*: Has values from 0-5. Value increases by 1 if the following are available at home: books, magazines, newspapers, TV Guide, comic books.

Parent Report of Support of Child's School. Two variables were constructed to assess the parent's support of school: the extent to which parents participate in school activities and parent opinion about school.

- *Parent participation in school activities (age 2,7 – 7,11)*: Has values from 0-12. Value increases by 1 if parent has conference with a teacher, observes classroom activities, attends school event, attends after-school program, meets with PTA, attends parent advisory committee meeting, helps with fundraising activities, volunteers in school office or library, volunteers in child's classroom, volunteers for school trips, works as paid employee, serves on preschool committee.
- *Parent opinion about school (age 5,0 – 7,11)*: Has values from 0-14. Value increases by 1 if parent agrees with the following: school places priority on learning, school assigns worthwhile homework, child is challenged at school, child is treated fairly at school, school standards are realistic, child is respected by teacher, parent is respected by teacher, parent would select this school, child gets needed help at school, school is a safe place, it is important for parents to participate in school, parents have a say in school policy, parents support school policy, school maintains discipline.

Parent Report of Economic Self-Sufficiency. The ESPIRS records parent self-report of years of parent education and annual household income.

- *Parent education*: Number of years of education.
- *Parent GED attainment*: Does parent have a GED or high school diploma? Has value 1 if parent has GED or high school diploma, has value of 0 otherwise.
- *Parent employment*: Was parent employed? Has value 1 if parent was employed, has value of 0 otherwise.
- *Annual household income*: Has values from 1-8. 1 = under \$3,000, 2 = \$3,000 – \$5,999, 3 = \$6,000 - \$8,999, 4 = \$9,000 - \$11,999, 5 = \$12,000 - \$14,999, 6 = \$15,000 - \$19,999, 7 = \$20,000 - \$25,000, 8 = more than \$25,000.

INSTRUCTIONAL SERVICES RECEIVED BY EVEN START AND CONTROL FAMILIES

Families that were assigned to Even Start participated in the program at whatever levels of intensity and for whatever duration they desired. Families assigned to the control group were not allowed to participate in Even Start for one year. However, during that year they took part in any other educational and social programs for which they qualified and sought out.

Parent Report of Instructional Services Received. The EDS parent interview included questions about the kinds of educational and social services in which families participated between pretest and posttest. Families assigned to Even Start reported that they participated in parent education, adult education, and early childhood education services at much higher rates than families assigned to the control group (Exhibit 6.8). In particular, 26 percent of Even Start parents compared with 16 percent of control parents participated in parenting education, 58 percent of Even Start parents compared with 29 percent of control parents participated in some form of adult education, and 72 percent of Even Start children compared with 33 percent of control children participated in some form of early childhood education.

Participation data from the ESPIRS were analyzed to try to confirm parent reports of program participation. Seventeen of the EDS projects provided ESPIRS data.⁴¹ In these projects, 278 families were assigned to Even Start, and ESPIRS data were received on 180 families (65 percent), indicating that there were 98 families (35 percent) that were recruited for the EDS and that were randomly assigned to Even Start, but for which the projects never collected ESPIRS data. These families might have decided they were not interested in Even Start and hence never showed up, they might have moved from the area, they might have gone through some or all of a project's period of preparation and then decided to leave the program, or they might have changed their mind about wanting to be in Even Start. So, for one reason or another, 35 percent of the families that initially wanted to participate in Even Start and that were assigned to Even Start at the beginning of the EDS, never made it through the period of preparation and never participated enough for projects to include them in the ESPIRS.⁴² These families were included in all of the EDS data collection activities and in the analyses presented in this report. A separate set of analyses showed that omitting these families made no difference to the findings.

Analysis of the ESPIRS data also showed that 56 percent of the 278 families that were randomly assigned to Even Start participated in all four core instructional services. Of the 180 Even Start families for which the EDS projects maintained ESPIRS data, 87 percent were recorded in the ESPIRS as having participated in all four core services. This is consistent with participation rates reported for all Even Start projects (see Chapter 5). However, in view of the fact that 35 percent of the families that were randomly assigned to Even Start never participated sufficiently to be included in the ESPIRS, the reports of Even Start parents showing that only 72

⁴¹ In each year of the ESPIRS data collection, about five percent of all projects did not provide ESPIRS data. So it is not surprising to find that one of the 18 EDS projects did not respond to the ESPIRS data collection request.

⁴² In Chapter 3, directors of the EDS projects estimated a dropout rate of about 25 percent between initial screening of families who were interested in Even Start and actual enrollment in the program. This is roughly comparable to the 35 percent seen for families in the EDS study.

percent of children participated in early childhood services, and only 58 percent of parents participated in adult education seem more reasonable.⁴³

While the parent report data show that Even Start families participated in instructional services at higher rates than control families, it remains clear that control families received many of the same types of services that Even Start families received. Thus, the comparison made in the EDS is not between families that participated in Even Start and families that participated in no educational or social services whatsoever. Rather, the comparison is between families that enrolled in Even Start and families that participated in whatever mix of educational and social services that they obtained on their own, in the absence of any assistance from Even Start.

This issue pervades research on early childhood education, since low-income families typically have multiple options when searching for an early childhood program. Head Start, Early Head Start, Title I preschool, Early Reading First, Even Start, state-funded preschools, and other related programs often are available in the same service areas. In many communities, these programs are coordinated, even sharing physical space, with the result that low-income families can easily access any of them. Such collaboration among programs with similar aims is helpful to families looking for services, but it muddies the comparisons in randomized evaluations.

In addition to the current study, recent evaluations of Early Head Start (U.S. Department of Health and Human Services, 2001a) and the Comprehensive Child Development Program (Goodson, Layzer, St.Pierre, Bernstein & Lopez, 2000), each collected data on the extent to which children in the intervention and in the control group participated in a center-based early childhood education program (Exhibit 6.9). While a higher percentage of children in the intervention group than in the control group received early education services in each study, it is evident that a large percentage of children in each control group did not receive “no early childhood education.” Instead, they enrolled in a variety of early childhood services.

Teacher Reports of Classroom Activities. Teachers of Even Start and control children who were in a center-based preschool or kindergarten setting were asked to report on the kinds of classroom activities that were available to children on a daily or almost daily basis. Exhibit 6.10 shows that almost all Even Start children in center-based classrooms had many different kinds of literacy-related activities available to them on a daily or almost daily basis including number concepts or counting (95 percent), letters of the alphabet or words (94 percent), and reading stories (90 percent). The data also show that roughly the same percentage of control classrooms offered these literacy-related activities. Children in control classrooms were more likely than Even Start children to experience the following activities on a daily or almost daily basis: reading stories and work with computers. Children in Even Start classrooms were more likely

⁴³ There are known problems with parent report data. Parents assigned to Even Start may have under-reported the extent that they and their children participated in Even Start services. This could occur if, for example, Head Start provides early childhood services for Even Start and a parent lists their child as attending Head Start but not Even Start. Some projects integrate parenting education with adult education, with the result that there is no separate parenting education “class.” In these cases, parents may not report that they attend parenting education, even though they do so in the guise of adult education. Finally, some projects do not use the words “Even Start” in their name. It is possible that some parents enrolled in Even Start know it by another name.

than control children to do the following on a daily or almost daily basis: performing arts, indoor physical activities, and health/hygiene.

Exhibit 6.10 also presents data on the activities conducted in Head Start FACES classrooms. Children in Even Start and Head Start classrooms are offered literacy-related activities with much the same frequency. One exception is that Even Start classroom teachers report that they work on letters of the alphabet and words more often than Head Start (94 vs. 69 percent). On the other hand, Head Start classrooms are more likely than Even Start classrooms to do non-literacy activities such as indoor physical activities (90 vs. 75 percent), outdoor physical activities (93 vs. 65 percent), health (93 vs. 65 percent) and science (83 vs. 66 percent).

Observations of Classroom Quality and Resources. In Chapter 3, we reported the results of observations that were done in Even Start classrooms during site visits. One finding from the observations was that Even Start classrooms were rated at the same level as Head Start classrooms, and higher than other types of early childhood education classrooms on the ECERS, a measure of overall classroom quality. Half of the classrooms had total scores of 5.0 or higher, indicating that the overall level of care in these classrooms is “good” or better. The other half had scores below 5.0, indicating minimal to good quality care. The second major finding was that Even Start classrooms were rated somewhat lower than Head Start classrooms on the Literacy Checklist (a measure of reading and writing resources). These findings suggest that while Even Start classrooms are of generally good quality, they are not especially rich in terms of literacy materials.

Length of Participation in Even Start. As noted above, more than one-third of the families that were randomly assigned to Even Start never participated enough to make it through the period of preparation and hence be included in the ESPIRS. For the remaining families, ESPIRS data tell us the number of months of participation in Even Start. Since pretest and posttest data were collected in the same program year, the maximum amount of participation in Even Start for the EDS families is 12 months. Exhibit 6.11 shows that about 50 percent of the Even Start families participated for eight or fewer months, while the other 50 percent participated for more than eight months.

FINDINGS ABOUT EVEN START'S EFFECTIVENESS

This section presents findings about the effectiveness of Even Start at enhancing child and parent literacy skills. The findings are based on an analysis of pretest and posttest data collected from families in the 18 EDS projects. Exhibits 6.12 and 6.13 contain data supporting the findings; details are given in Appendix 6.1. Although most of the measures used in this study were available in both English and Spanish, the great majority of children and parents in the EDS were assessed in English. Hence, most analyses are based only on children and parents who were assessed in English at pretest and posttest. Analyses of data from the parent interview and the Story and Print Concepts assessment combine data from English and Spanish versions.

EVEN START CHILDREN AND PARENTS GAINED THE SAME AMOUNT, BUT NOT MORE, THAN CONTROL CHILDREN AND PARENTS

Data collected from Even Start families in the EDS show that children and parents make gains on many different measures of literacy. However, data collected from families who were randomly assigned to a control group show that Even Start children and their parents perform as well as, but no better than, control group children and their parents. The data show that children and parents in the control group made the same kinds of gains on literacy assessments, on parent reports of child literacy, on parent-child reading, on literacy resources at home, on family economic self sufficiency, and so on, that were seen for Even Start families.

Because we assessed the effectiveness of Even Start on 41 different outcome measures, we expected to see a few significant differences by chance alone. In fact, there are three significant differences between Even Start and control group participants. One of these favors Even Start and two favor the control group. Because of the large number of outcomes assessed and because of the mix in direction of results, we do not assign any meaning to these findings.

There is one area in which Even Start children do better than control group children. In elementary school (but not in preschool), Even Start children were rated (using the Social Skills Rating System) by their teachers as exhibiting significantly fewer problem behaviors than control group children. However, there was no difference in teacher ratings of the social skills of Even Start and control children, nor in the teacher ratings of the literacy skills of the two groups of children on the Vineland Communication Domain. Further, an analysis of school records shows no difference between Even Start and control group children in terms of school attendance, absences, tardiness, or use of special education services. There are two measures on which control group children do better than Even Start children – the Woodcock-Johnson Applied Problems and Incomplete Words subtests. For each of these, control group children gained about 0.3 standard deviations more than Even Start children.

These findings raise a question about the goals of programs like Even Start, programs that serve such needy families. One goal would be to keep children and parents progressing relative to their initial status. This study shows that Even Start children and parents do indeed make progress over time. A second goal, more difficult to achieve, would be to keep children and parents from losing ground relative to a control group of similar peers. Data from this study show that Even Start children and parents do not lose ground compared to a control group, but they do not surpass the control group either. A third possible goal, even more difficult to achieve, would be to help children and parents “catch up” to their more advantaged peers, represented by the national norms group. Data from this study show that Even Start children and parents lag behind national norms by very serious amounts.

EVEN START CHILDREN AND PARENTS MADE GAINS

Although they did not gain more than control group children, children and parents did improve their literacy levels while in Even Start. While participating in Even Start, children made significant improvements on the Peabody Picture Vocabulary Test (gain of .27 standard

deviations). Exhibit 6.14 shows pretest and posttest scores for Even Start children, control group children, and children who participated in the Head Start FACES study. Similar graphs for all other outcome measures are contained in Appendix 6.1.

In addition to improving on the PPVT, Even Start children demonstrated significant improvements in their literacy scores on all of the five different Woodcock-Johnson subtests that were administered in the EDS including Letter-Word Identification (.32sd), Dictation (.76sd), Applied Problems (.80sd), Incomplete Words (.54sd), and Sound Blending (.72sd), on the Woodcock-Johnson Early Development Skills cluster (.78sd), and on the Story and Print Concepts prereading assessment (.23sd). Similarly, after participating in Even Start, parents scored significantly better on two of the four subtests of the Woodcock-Johnson that were administered in the EDS including Letter-Word Identification (.21sd) and Word Attack (.40sd), as well as on the Woodcock-Johnson Basic Reading Skills cluster (.33sd).

After participating in Even Start, parents reported that their children were significantly more likely to know the alphabet (increase of 4.3 percentage points), to be able to count to 100 (increase of 6.3 percentage points), and to know several colors (increase of 17.2 percentage points). Further, parents reported that children read more (.95sd for children under 2,6; .29sd for children over 2,6), engaged in age-appropriate writing (.33sd), and had an improved understanding of print concepts (.21sd). Parents also reported that they had significantly more books at home (.27sd), a wider variety of print literacy resources at home (.21sd), a wider variety of non-print resources at home (.29sd), they wrote more (.38sd), they improved the quality of reading to their children (.29sd), and they were more engaged in their child's school (.64sd).

These are the same kind of gains that have been reported in the Head Start FACES study (U.S. Department of Health and Human Services, 1998, 2001b; Zill, Resnick & O'Donnell, 2001), which has documented the achievements of Head Start children.

EVEN START CHILDREN AND PARENTS SCORED LOW COMPARED TO NATIONAL NORMS

While they made gains on many outcome measures, as described above, Even Start children scored very low when compared with national norms for the general population.⁴⁴ When posttested, the average Even Start child scored at the 6th percentile on the PPVT, the 23rd percentile on Letter-Word Identification, the 14th percentile on Dictation, the 19th percentile on Applied Problems, the 15th percentile on Incomplete Words, the 24th percentile on Sound Blending, and the 12th percentile on the Early Development Skills cluster. All of these scores were under grade K.0.

Similarly, in spite of their gains, Even Start parents scored very low when compared with national norms based on the general population. When posttested, the average Even Start parent scored at the 5th percentile (grade 5.4) on Letter-Word Identification, the 2nd percentile on

⁴⁴ Woodcock-Johnson norms are based on data gathered in the late 1980s from 6,359 subjects in over 100 communities across the U.S. There were separate subsamples for preschoolers, school-age children, college-age young adults, and adults. PPVT norms are based on data gathered from 2,725 subjects, age 2,6 through adulthood, in 240 sites across the nation.

Passage Comprehension (grade 3.0), the 14th percentile on Word Attack (grade 3.8), the 1st percentile on Reading Vocabulary (grade 3.3), the 2nd percentile on the Reading Comprehension cluster (grade 3.2), and the 8th percentile on the Basic Reading Skills cluster (grade 4.6).

EVEN START CHILDREN GAINED AS MUCH AS HEAD START CHILDREN

Between pretest and posttest, the average Even Start child gained 4.0 standard score points on the PPVT. This is comparable to the average gain of 4.2 standard score points on the PPVT for children who spent a year in Head Start, as reported by Zill, Resnick & O'Donnell (2001) who analyzed data from the Head Start FACES study. However, Even Start children did not make gains relative to the norms group on the WJ-R Dictation subtest, while Head Start children gained 4.3 standard score points. Both Even Start and Head Start children lost ground relative to the norms group on the WJ-R Letter-Word Identification subtest.

DOES AMOUNT OF PARTICIPATION MAKE A DIFFERENCE?

A question commonly asked in studies of early childhood interventions is whether the extent to which children participate makes a difference to the amount they gain. Most researchers who have addressed this issue believe that, for early childhood education, more is better. For example, Ramey & Ramey (1992) reviewed the literature on early childhood education programs and concluded that "Programs that are more intensive...produce larger positive effects than do interventions that are less intensive. Children and parents who participate most actively and regularly show the greatest overall progress" (p.133). A large-scale counterexample is provided by Puma, et al. (1997) who conducted an analysis of the impact of Chapter 1 (now Title I) services that were targeted to low-income, low-achieving children in high-poverty schools. They found that the longer children were in Chapter 1, the lower were their average scores on achievement tests. Instead of concluding that Chapter 1 was actively harmful to children, the interpretation was that children who participated the longest had the greatest need, and it was this need that caused them to perform poorly, not Chapter 1.

The EDS is a randomized experiment, and if we examine gains for subgroups of participants we lose the advantages offered by randomization and open up the findings to competing interpretations. Although cautious about the potential pitfalls of this approach, we conducted analyses of the relationship between amount of participation and outcomes for Even Start children and parents.

Comparison of Outcomes for Even Start Children Who Received Early Childhood Services With Control Children Who Did Not Receive Early Childhood Services. In one analysis we eliminated all Even Start children in the EDS whose parents reported that they did not receive early childhood services, as well as all control group children whose parents reported that they did receive early childhood services. Presumably a comparison of Even Start children, all of whom received early childhood education, with control group children, none of whom received early childhood education, might offer the best chance for seeing a difference in outcomes between the groups. The graphs in Appendix 6.1 show that segmenting children in

this fashion does not make an obvious difference to the findings. Even Start children who received early childhood education appeared to gain slightly, but not significantly, more than the full group of Even Start children. Control children who did not get early childhood services sometimes had a higher pretest score (depending on the subtest) but appear to gain about the same as the full group of control children. The same general conclusion holds for parents.

Predicting Child and Parent Literacy Outcomes From Amount of Participation. In this analysis we used data from about 100 Even Start families in the EDS to investigate the relationship between child and parent literacy outcomes and a host of variables including monthly hours of child participation in early childhood education, monthly hours of parent participation in adult education and parenting education, and family background factors. Findings from this analysis are summarized below and in Exhibit 6.15.

- ❑ There is a positive relationship between the number of hours that children spend in early childhood education and their scores on three Woodcock-Johnson subtests (Dictation, Applied Problems, and Incomplete Words).
- ❑ There is a positive relationship between the number of hours that parents spend in parenting education and their children's scores on the PPVT as well as their children's scores on three Woodcock-Johnson subtests (Dictation, Applied Problems, and Incomplete Words), and to the Woodcock-Johnson Early Development Skills cluster.
- ❑ There is a negative relationship between the number of hours that parents spend in adult education and their children's scores on two Woodcock-Johnson subtests (Dictation and Applied Problems).
- ❑ There is no relationship between the number of hours that parents spend in adult education or in parenting education and their scores on any of the parent assessments.

Thus, we found no relationship between the amount that parents participate in adult education and their scores on literacy outcomes. On the other hand, the extent to which both parents and children participate in literacy services has a positive relationship to several child outcomes. In particular, children who participate more intensively in early childhood education score higher on literacy outcomes. Further, parents who participate more intensively in parenting education have children who score higher on literacy outcomes. On the other hand, it appears that more intensive participation in adult education is associated with lower scores on some child outcomes. Perhaps parents in this latter group are placing so much emphasis on their own literacy development that they are not able to spend enough time with their children.

It is important to remember that amount of participation was not manipulated experimentally, and so factors other than participation in Even Start may be responsible for the observed relationships. For example, parents who participate more in Even Start may be more motivated or may have more opportunities to participate, and it may be these factors (instead of Even Start) that lead to the predicted increases in child outcomes.

For exploratory purposes, let us assume that increases in hours per month of parenting education can be legitimately translated into increased posttest scores for children. Exhibit 6.15 shows that child PPVT scores are expected to increase by .655 raw score points for every

additional hour per month that a parent participates in parenting education. We saw in Chapter 5 (Exhibit 5.5) that Even Start families across the nation participated in an average of six hours of parenting education per month; the same holds for Even Start families in the EDS. Suppose that this amount were to double, to 12 hours per month. In this case, we would expect to see an increase of about 3.9 points on the PPVT (.655 points per month * 6 months = 3.9 points). This would be an increase of about one-quarter of a standard deviation, a fairly substantial increase considering it would be due solely to increasing the amount of time that parents participate in parenting education. The same kind of increases would be predicted for the Woodcock-Johnson subtests (Dictation, Applied Problems, Incomplete Words, or the Early Development Cluster).

These findings are consistent with findings from similar analyses conducted as part of the first national Even Start evaluation (St.Pierre, et al, 1995, pp. 175-180) and lend support to the hypothesis that providing parenting education services to parents ought to be related to changes in their children.

PROJECT AND FAMILY CHARACTERISTICS ASSOCIATED WITH ENHANCED LITERACY PROGRESS

This section seeks to identify characteristics of Even Start projects and families that are associated with enhanced literacy progress as reported by Even Start parents. The analyses presented here rely on the full ESPIRS data set for the 2000-2001 program year, where information is available on many hundreds of Even Start projects and thousands of participating families. The literacy progress of Even Start families is measured by using parent reports on child literacy, on parent literacy at home, and on parenting skills. No control group data are available, since the ESPIRS only collected data on Even Start families.

Simple descriptive statistics on the literacy status of Even Start participants when they entered the program (pretest) and at the end of the 2000-2001 program year (posttest) are shown in Exhibit 6.16. Means are shown for children age 0,0 to 2,6, for children age 2,7 to 4,11, for children age 5,0 to 7,11, and across children of all ages. Scanning the exhibit shows that Even Start parents report gain or growth on each of the constructed variables. In other words, new Even Start families report higher levels of desirable literacy behaviors at the end of their first program year than they did when they entered the program. This holds for child literacy outcomes, parent literacy at home, and various parenting skills.

Of course, many of these behaviors are developmental and we would expect to see improvements without Even Start. This is especially the case for child literacy outcomes, where we expect children to learn the alphabet, learn to count, learn colors, and learn to read and write, without help from Even Start. So it is difficult to judge how much of the change documented in Exhibit 6.15 is due to normal maturation and how much is due to participation in Even Start.

Still, a substantial amount of change occurred between pretest and posttest for families that were new to Even Start. Multi-level modeling was used to explain, or account for, variation in that change on the basis of project characteristics and family characteristics. For example, we would like to know whether the kinds of literacy changes that families report are related to

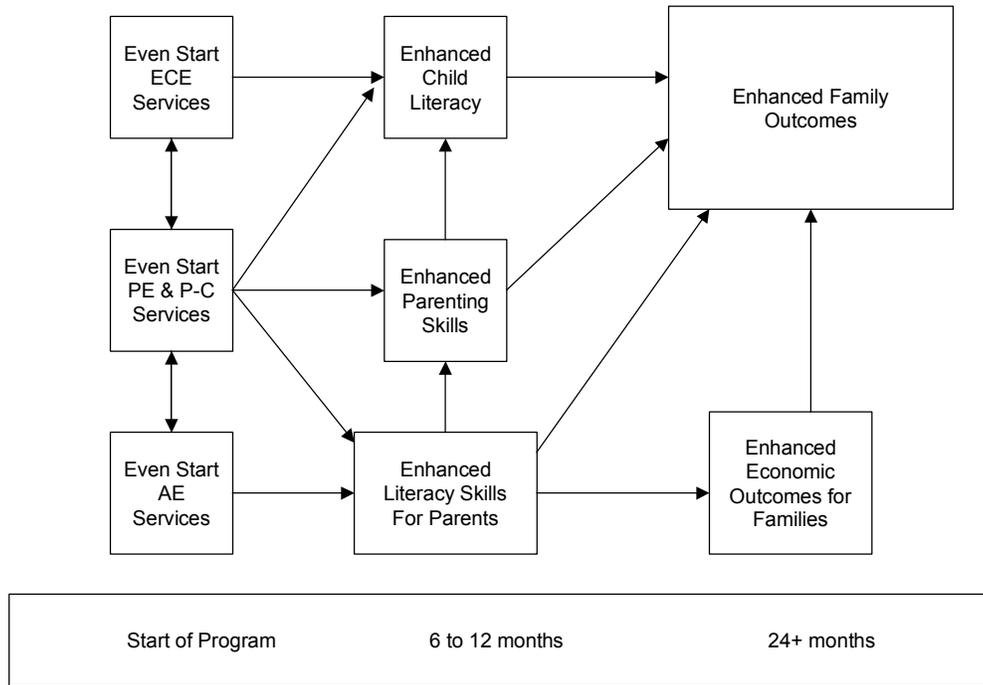
project-level variables such as whether projects are center-based or home-based. Similarly, we would like to know whether literacy changes are related to family-level variables such as duration of participation and hours of service received. Findings from the analysis are:

- ❑ The total number of hours that a family participates in Even Start had a positive relationship to pre-post gains on 13 of 14 parent-reported outcomes.
- ❑ The length of time that a family participates in Even Start had a positive relationship to pre-post gains on 11 of 14 parent-reported outcomes.
- ❑ Child age and years of parent education also had a positive relationship to pre-post gains on several parent-reported outcomes.
- ❑ This study collected a limited amount of data on project-level quality variables that might be related to child outcomes. Still, based on the available data, none of the project-level variables available for analysis had a positive relationship to more than a few of the parent-reported outcomes. Parents in center-based projects reported greater gains on three outcomes (child knowledge of print concepts, extent to which parent reads at home, parent participation in school), parents in projects that used the same instructor for multiple instructional services reported greater gains on three outcomes (extent to which parent reads at home, extent to which parent writes at home, parent participation in school), and parents in projects that offered a wider variety of parenting education topics reported greater gains on three outcomes (non-print resources at home, extent of parent reading at home, extent of parent writing at home). No significant relationship to parent-reported outcomes was found projects that do/do not have a formal attendance policy, projects that do/do not have a preparatory period for families, projects that do/do not offer the same level of services year-round, the number of parent-child together activities that the project offers, and whether staff delivering instructional services participate in joint inservice training.

Thus, parents from families that participated more intensively in Even Start (both in terms of total hours of participation and months of participation) reported that their children do better on literacy-related tasks (e.g., knowledge of the alphabet, numbers and colors), that they read a greater variety of materials to their children more frequently, that they have more books and other print resources at home, and that they themselves read and write more than parents from families that participated less intensively. Parents in projects that are center-based, that use the same staff for multiple instructional services, and that offer a wider variety of parenting education topics reported that they were more likely to read and write at home and to participate in school activities.

As was the case with relational analyses based on data from the EDS, the relationships between parent-reported outcomes and family/project characteristics might be due to factors such as differences in the motivation of families or in their opportunity to participate in Even Start. Still, the findings do offer useful insights into how the extent of participation in Even Start relates to the way in which parents perceive changes in literacy-related activities for themselves and their children.

Exhibit 6.1: Model of Even Start's Hypothesized Effects



Note: In this exhibit ECE stands for early childhood education; PE for parenting education; P-C for parent-child joint activities; and AE for adult education.

EXHIBIT 6.2			
DISPOSITION OF SAMPLE FOR THE EXPERIMENTAL DESIGN STUDY			
SAMPLE GROUP	EVEN START N OF FAMILIES (% OF RA)	CONTROL N OF FAMILIES (% OF RA)	TOTAL N OF FAMILIES (% OF RA)
Total (18 projects)			
Random assignment	309 (100%)	154 (100%)	463 (100%)
Pretest	277 (90%)	140 (91%)	417 (90%)
First posttest	246 (80%)	130 (84%)	376 (81%)
Second posttest	NA	NA	NA
First Cohort (11 projects)			
Random assignment	201 (100%)	100 (100%)	301 (100%)
Pretest	176 (88%)	88 (88%)	264 (88%)
First posttest	150 (75%)	81 (81%)	231 (77%)
Second posttest	151 (75%)	73 (73%)	224 (74%)
Second Cohort (7 projects)			
Random assignment	108 (100%)	54 (100%)	162 (100%)
Pretest	101 (94%)	52 (96%)	153 (94%)
First posttest	96 (89%)	49 (91%)	145 (90%)
Second posttest	NA	NA	NA
Notes: Percentages are calculated as number tested divided by number randomly assigned. NA = not applicable at this time; second posttest for the second cohort of seven projects will be conducted in spring 2002.			
Exhibit reads: In the EDS, a total of 463 families were randomly assigned to Even Start or the control group.			

EXHIBIT 6.3				
AGE OF EVEN START AND CONTROL GROUP CHILDREN AT THE TIME OF RANDOM ASSIGNMENT IN THE EDS				
CHILD AGE (YEARS)	EVEN START		CONTROL	
	N	PERCENT	N	PERCENT
<1	47	15%	17	11%
1	22	7%	13	8%
2	39	13%	24	16%
3	65	21%	30	20%
4	70	23%	34	22%
5	37	12%	22	14%
6	15	5%	8	5%
7	11	3%	5	3%
8	3	1%	1	1%
Total	309	100%	154	100%
Notes: Children were assigned through the Even Start age range.				
Exhibit reads: In the EDS, fifteen percent of Even Start children were less than one year of age at the time of random assignment.				

EXHIBIT 6.4				
PRETEST STATISTICS ON SELECTED VARIABLES FOR EVEN START AND CONTROL FAMILIES IN THE EDS				
VARIABLE	EXPERIMENTAL DESIGN STUDY			EVEN START NATIONAL STATISTICS
	EDS EVEN START FAMILIES (N=309)	EDS CONTROL FAMILIES (N=154)	P-VALUE (EVEN START VS CONTROL)	
% Spanish spoken at home	65%	65%	.74	37%
% English spoken at home	30%	29%	.74	58%
% Hispanic or Latino	75%	75%	.84	46%
% parents with HS diploma or GED	16%	19%	.43	17%
% single parent households	16%	23%	.10	26%
% employed	27%	23%	.37	22%
% household income <\$9,000	25%	28%	.29	39%
Notes: National statistics are from the ESPIRS data collection.				
Exhibit reads: In the EDS, 75 percent of the Even Start families identified themselves as Hispanic or Latino.				

EXHIBIT 6.5					
STATISTICAL POWER ANALYSIS FOR THE EDS					
EFFECT SIZE	PPVT (CHILD) (N=108/54)	WJ-R (CHILD) (N=108/54)	STORY & PC (CHILD) (N=142/66)	WJ-R (ADULT) (N=170/76)	PARENT REPORT (CHILD) (N=240/120)
.80sd (large)	.99	.99	.99	.99	.99
.50sd (medium)	.93	.93	.97	.99	.99
.40sd (medium)	.81	.81	.88	.93	.98
.30sd (small)	.60	.60	.68	.75	.88
.20sd (small)	.35	.35	.41	.46	.60
Notes: Assumes one-tail test (Even Start does better than control).					
Exhibit reads: If Even Start children gain .80 standard deviations more than control children on the PPVT, then the EDS sample will allow us to detect that effect with 99 percent confidence.					

EXHIBIT 6.6 CHILD OUTCOME MEASURES		
OUTCOME MEASURE	CHILD AGE	ANALYSIS VARIABLE(S)
Peabody Picture Vocabulary Test	2,6 – 7,11 years	Standard score (mean = 100, sd = 15)
Woodcock-Johnson (Revised)		
Letter-word identification	2,6 – 7,11 years	W score (mean of 500 for 5 th graders)
Dictation	2,6 – 7,11 years	W score (mean of 500 for 5 th graders)
Applied problems	2,6 – 7,11 years	W score (mean of 500 for 5 th graders)
Incomplete words	2,6 – 7,11 years	W score (mean of 500 for 5 th graders)
Sound blending	4,0 – 7,11 years	W score (mean of 500 for 5 th graders)
Early development skills	2,6 – 7,11 years	W score (average of LWI, DIC, APP)
Story & Print Concepts	2,6 – 7,11 years	Total score, range is 0-11
Social Skills Rating System		
Problem behaviors	Preschool	Standard score (mean = 100, sd = 15)
Social skills	Preschool	Standard score (mean = 100, sd = 15)
Problem behaviors	Elementary	Standard score (mean = 100, sd = 15)
Social skills	Elementary	Standard score (mean = 100, sd = 15)
Vineland Communication Domain		
Teacher rating	2,6 – 7,11 years	Standard score (mean = 100, sd = 15)
Parent rating	2,6 – 7,11 years	Standard score (mean = 100, sd = 15)
Parent Report of Child Literacy		
Child knows alphabet	0,0 – 7,11 years	Values are 0-1 (no/yes)
Child counts to 100 or more	0,0 – 7,11 years	Values are 0-1 (no/yes)
Child knows colors	0,0 – 7,11 years	Values are 0-1 (no/yes)
Extent to which child reads	0,0 – 2,6 years	Values are 0-4 (high = more reading)
Extent to which child reads	2,7 – 7,11 years	Values are 0-9 (high = more reading)
Age appropriate writing skills	0,0 – 7,11 years	Values are 0-2 (high = better writing skills)
Child knows print concepts	0,0 – 7,11 years	Values are 0-9 (high = better knowledge)
School Records		
Attendance	Preschool	% days attended
Absences	Preschool	% days absent
Tardiness	Preschool	tardy any days (no/yes)
Special education	Preschool	special ed referral or IEP (no/yes)
Attendance	Elementary	% days attended
Absences	Elementary	% days absent
Tardiness	Elementary	tardy any days (no/yes)
Special education	Elementary	special ed referral or IEP (no/yes)
Notes: W scores for the WJ-R are equal-interval scores, centered on 500 for 5 th graders. The W score scale is like a ruler – a one-point difference signifies the same amount, regardless of the subject's age.		
Exhibit reads: The PPVT was administered to children 2,6 to 7,11 years of age; the analysis variable was the PPVT standard score.		

EXHIBIT 6.7	
PARENT AND FAMILY OUTCOME MEASURES	
OUTCOME MEASURE	ANALYSIS VARIABLE(S)
Woodcock-Johnson (Revised) Letter-word identification Passage comprehension Word attack Reading vocabulary Reading comprehension Reading skills	W score (mean of 500 for 5 th graders) W score (average of PC, RV) W score (average of LWI, WA)
Economic Self-Sufficiency Parent years of education (ESPIRS items) Parent GED (ESPIRS items) Parent employment (ESPIRS items) Annual household income (ESPIRS items)	Values are 1-18 (years of education) Values are 0-1 (no/yes to HS diploma or GED) Values are 0-1 (no/yes to employed) Values are 1-8 (categorized income)
Parent report of literacy at home Variety of parent reading at home Variety of parent writing at home	Values are 0-12 (high = more reading at home) Values are 0-11 (high = more writing at home)
Parent-child reading Read to child daily Amount of reading to/with child Variety of reading to/with child Quality of reading to/with child	Values are 0-1 (no/yes) Values are 0-3 (high = more reading) Values are 0-5 (high = more variety in reading) Values are 0-5 (high = better reading practices)
Literacy resources at home Number of books child has Variety of non-print resources at home Variety of print resources at home	Values are 0-5 (high = more books) Values are 0-16 (high = more non-print resources) Values are 0-5 (high = more print resources)
Parent support of child's school Parent participation in school activities Parent opinion about school	Values are 0-12 (high = more participation) Values are 0-14 (high = better opinion)
Notes: W scores for the WJ-R are equal-interval scores, centered on 500 for 5 th graders. The W score scale is like a ruler – a one-point difference signifies the same amount, regardless of the subject's age.	
Exhibit reads: The Woodcock-Johnson letter-word identification subtest was administered to parents; the analysis variable was a W score.	

EXHIBIT 6.8 PERCENT OF EVEN START AND CONTROL GROUP FAMILIES IN THE EXPERIMENTAL DESIGN STUDY, BY TYPE OF SOCIAL AND EDUCATIONAL SERVICE RECEIVED BETWEEN PRETEST AND POSTTEST		
SERVICE	PERCENT OF EVEN START FAMILIES (N=246)	PERCENT OF CONTROL FAMILIES (N=130)
1. Fed/state cash assist. (e.g., TANF)	24%	20%
2. Employment training (e.g., JOBS)	3%	6%
3. Vocational education	2%	4%
4. Vocational rehabilitation	1%	0%
5. Parenting education classes	26%	16%
6. Beginning ABE (grades 0-4)	4%	0%
7. Intermediate ABE (grades 5-8)	1%	0%
8. Adult secondary education (grades 9-12)	4%	2%
9. GED preparation	26%	16%
10. English-as-a-second language	39%	14%
11. Even Start	53%	12%
12. Head Start	8%	8%
13. Title I preschool	18%	15%
14. Early intervention special education	2%	2%
15. Other preschool	7%	6%
16. Kindergarten	11%	13%
17. Primary school (grades 1-3)	6%	6%
Any adult education (6 or 7 or 8 or 9 or 10 above)	58%	29%
Any early childhood education (11 or 12 or 13 or 14 or 15 above)	72%	33%
Notes: This table is based on parent report of services received.		
Exhibit reads: In the EDS, 26 percent of Even Start parents reported that they participated in parenting education classes between pretest and posttest.		

EXHIBIT 6.9 PERCENT OF INTERVENTION AND CONTROL CHILDREN RECEIVING EARLY CHILDHOOD EDUCATION IN VARIOUS STUDIES		
STUDY	INTERVENTION	CONTROL
Even Start	72%	33%
Early Head Start	43%	27%
Comprehensive Child Development Program	61% (age 4)	45% (age 4)
	51% (age 3)	29% (age 3)
	48% (age 2)	22% (age 2)
Exhibit reads: In the Even Start evaluation, 33 percent of control group children participated in an early childhood education program.		

EXHIBIT 6.10				
CLASSROOM ACTIVITIES FOR CHILDREN AT LEAST AGE THREE				
WHO WERE IN A CENTER-BASED PRESCHOOL OR KINDERGARTEN CLASSROOM,				
BY EVEN START AND CONTROL GROUP STATUS				
CLASSROOM ACTIVITIES	PERCENT OF CHILDREN FOR WHOM THE ACTIVITY IS OFFERED DAILY OR ALMOST DAILY			
	EXPERIMENTAL DESIGN STUDY			HEAD START
	EVEN START (N=115)	CONTROL (N=34)	P-VALUE (ES VS. C)	
Number concepts or counting	95%	100%	.17	92%
Letters of the alphabet or words	94%	88%	.27	69%
Block building or other construction work	90%	91%	.90	97%
Visual arts (drawing, painting, play dough, etc)	90%	88%	.71	96%
Reading stories	90%	100%	.06	96%
Free play including dress up, make believe, etc	87%	79%	.29	96%
Performing arts (music, movement, dance, etc)	83%	71%	.10	92%
Solving puzzles, playing with geometric forms	82%	76%	.51	95%
Naming colors	81%	76%	.59	89%
Outdoor physical activities	74%	85%	.17	93%
Indoor physical activities	70%	38%	.00	90%
Health, hygiene or nutrition	63%	47%	.09	93%
Science or nature	58%	62%	.72	83%
Computer time	51%	68%	.09	NA
Trips to local library	3%	3%	.92	NA
Notes: EDS data are based on teacher reports for preschool children in the 18 EDS projects. Head Start data are from U.S. Department of Health and Human Services (2001b, p18). NA = data not reported for Head Start.				
Exhibit reads: In the EDS, 95 percent of Even Start children in center-based classrooms are exposed to number concepts or counting on a daily or almost daily basis.				

Exhibit 6.11: Percent of EDS Families That Made it Through the Period of Preparation and Were Enrolled for At Least "N" Months



Exhibit reads: 50 percent of the EDS families that were assigned to Even Start and that made it through the period of preparation were enrolled for eight months or less; the other 50 percent were enrolled in Even Start for more than eight months.

EXHIBIT 6.12		
SUMMARY OF EVEN START GAINS AND IMPACTS, FROM THE EDS		
OUTCOME MEASURE	ANY ES GAIN? (ES GAIN > 0)	ANY ES IMPACT? (ES GAIN > CONTROL GAIN)
Child Outcomes		
PPVT	P<.01 (.27sd)	No
WJR: Letter-Word ID	P<.01 (.32sd)	No
WJR: Dictation	P<.001 (.76sd)	No
WJR: Applied Problems	P<.001 (.80sd)	C>ES (P<.06, -.36sd)
WJR: Incomplete Words	P<.001 (.54sd)	C>ES (P<.08, -.33sd)
WJR: Sound Blending	P<.001 (.72sd)	No
WJR: Early Development	P<.001 (.78sd)	No
Story & Print Concepts	P<.01 (.23sd)	No
SSRS: Soc Skills - Pre	--	No
SSRS: Soc Skills - Elementary	--	No
SSRS: Problem Behavior - Preschool	--	No
SSRS: Problem Behavior - Elementary	--	ES>C (P<.09, .35sd)
Vineland	--	No
Parent Report of Child Literacy		
Child Knows Alphabet (%)	P<.01 (4.3%)	No
Child Counts to 100 (%)	P<.01 (6.3%)	No
Child Knows Colors (%)	P<.001 (17.2%)	No
Extent Child Reads (<2,6 yrs)	P<.001 (.95sd)	No
Extent Child Reads (>2,6 yrs)	P<.001 (.29sd)	No
Age-Appropriate Writing	P<.001 (.33sd)	No
Child Knows Print Concepts	P<.10 (.21sd)	No
Parent Outcomes		
WJR: Letter-Word ID	P<.10 (.21sd)	No
WJR: Passage Comprehension	No	No
WJR: Word Attack	P<.001 (.40sd)	No
WJR: Reading Vocabulary	No	No
WJR: Reading Comprehension	No	No
WJR: Basic Reading Skills	P<.02 (.33sd)	No
Parent Education	No	No
Parent GED Attainment	No	No
Parent Employment	No	No
Annual Household Income	No	No
Parent Report of Parent Literacy at Home		
Variety of Parent Reading	No	No
Variety of Parent Writing	P<.001 (.38sd)	No
Parent Report of Parent-Child Reading		
Parent Reads to Child Daily (%)	No	No
Amount of Reading to Child	No	No
Variety of Reading to Child	No	No
Quality of Reading to Child	P<.001 (.29sd)	No
Parent Report of Literacy Resources at Home		
Number of Books Child Has	P<.001 (.27sd)	No
Variety of Non-Print Resources	P<.001 (.29sd)	No
Variety of Print Resources	P<.001 (.21sd)	No
Parent Report of Parent Support of Child's School		
Parent Participation in School	P<.001 (.64sd)	No
Parent Opinion About School	No	No
Notes: No gain shown for SSRS or Vineland as these were administered only at posttest.		
Exhibit reads: Even Start children gained a significant amount on the PPVT, but not more than control children.		

Chapter 6: Findings About Even Start's Effectiveness

EXHIBIT 6.13: SUMMARY OF EDS RESULTS									
MEASURE	EVEN START			CONTROL			ES-C	STD DEV	EFF. SIZE
	PRE	POST	POST- PRE	PRE	POST	POST- PRE			
Child Outcomes									
PPVT	72.9	76.9	4.0	74.5	78.1	3.6	0.4	15.0	.03
WJR: Letter-Word ID	359.2	367.1	7.8	360.7	371.2	10.5	-2.6	24.2	-.10
WJR: Dictation	333.1	358.6	25.5	345.6	366.4	20.8	4.7	33.5	.14
WJR: Applied Problems	393.8	410.8	17.0	393.9	418.4	24.6	-7.6	21.3	-.36*
WJR: Incomplete Words	441.8	452.0	10.2	445.9	462.3	19.5	-6.2	18.9	-.33*
WJR: Sound Blending	447.3	459.7	12.4	449.3	459.8	10.6	1.8	17.2	.10
WJR: Early Development	361.6	379.1	17.5	365.6	384.8	19.2	-1.7	22.5	-.08
Story & Print Concepts	4.70	5.44	0.74	4.69	5.63	0.94	-0.2	3.2	-.06
SSRS: Soc Skills – Preschool	NA	99.9	NA	NA	96.7	NA	3.1	15.0	.21
SSRS: Soc Skills – Elementary	NA	102.7	NA	NA	100.9	NA	1.8	15.0	.12
SSRS: Prob Beh – Preschool	NA	97.6	NA	NA	97.5	NA	0.1	15.0	.01
SSRS: Prob Beh – Elementary	NA	95.7	NA	NA	101.0	NA	5.3	15.0	.35*
Vineland	NA	90.6	NA	NA	89.9	NA	0.7	15.0	.05
Parent Report of Child Literacy									
Child Knows Alphabet (%)	8.15	12.45	4.29	7.89	17.54	9.65	-5.36	NA	-.21
Child Counts to 100 (%)	6.29	12.58	6.29	8.86	18.99	10.13	-3.84	NA	-.14
Child Knows Colors (%)	43.31	60.51	17.20	51.95	66.23	14.29	2.91	NA	.08
Extent Child Reads (<2,6 yrs)	0.82	1.86	1.04	1.15	2.19	1.04	0.00	1.10	.00
Extent Child Reads (>2,6 yrs)	4.70	5.35	0.65	5.35	5.61	0.25	0.40	2.22	.18
Age-Appropriate Writing	1.08	1.30	0.22	1.16	1.41	0.24	-0.02	0.66	-.03
Child Knows Print Concepts	3.43	3.84	0.41	3.74	4.05	0.31	0.10	1.93	.05
Parent Outcomes									
WJR: Letter-Word ID	496.5	500.9	4.4	500.5	505.9	5.4	-1.0	21.4	-.05
WJR: Passage Comprehension	476.3	479.9	3.6	481.1	485.4	4.3	-0.7	16.1	-.04
WJR: Word Attack	488.0	493.4	5.4	491.0	495.5	4.5	0.9	13.5	.07
WJR: Reading Vocabulary	483.9	486.4	2.4	489.2	490.7	1.6	0.9	16.3	.06
WJR: Reading Comprehension	480.0	483.0	3.0	485.4	488.5	3.0	0.0	14.9	.00
WJR: Basic Reading Skills	492.2	497.1	4.9	496.9	502.2	5.3	-0.4	15.0	-.03
Parent Education	9.18	9.27	.09	9.42	9.24	-.18	.27	2.9	.09
Parent GED Attainment (%)	17.2	15.8	-1.4	17.9	15.3	-2.6	1.2	NA	.09
Parent Employment (%)	25.8	32.9	7.1	22.8	36.3	13.5	-6.4	NA	-.21
Annual Household Income	4.97	5.05	.08	4.98	5.08	.10	-.02	2.05	-.01
Parent Report of Parent Literacy at Home									
Variety of Parent Reading	7.07	7.32	0.25	6.92	7.56	0.65	-0.40	2.73	-.15
Variety of Parent Writing	3.22	4.10	0.88	3.13	3.70	0.57	0.31	2.33	.13
Parent Report of Parent-Child Reading									
Parent Reads Child Daily (%)	30.8	28.3	-2.5	29.8	22.6	-7.3	4.8	NA	.23
Amount of Reading to Child	0.59	0.57	-0.02	0.53	0.47	-0.06	0.04	0.80	.05
Variety of Reading to Child	1.68	1.78	0.10	1.72	1.90	0.19	-0.09	1.39	-.06
Quality of Reading to Child	2.80	3.27	0.47	2.80	3.36	0.56	-0.11	1.63	-.07
Parent Report of Literacy Resources at Home									
Number of Books Child Has	2.08	2.39	0.31	2.16	2.51	0.35	-0.04	1.16	-.03
Variety of Non-Print Resources	9.10	9.99	0.89	9.01	9.94	0.93	-0.04	3.11	-.01
Variety of Print Resources	2.70	2.96	0.26	2.93	3.01	0.07	0.19	1.22	.16
Parent Report of Parent Support of Child's School									
Parent Participation in School	2.62	3.87	1.25	3.07	4.63	1.55	-0.30	1.94	-.15
Parent Opinion About School	12.79	12.61	-0.18	12.73	12.73	0.00	-0.18	2.81	-.06
Notes: Effect size for continuous variables calculated as (ES-C)/(sd); for 0/1 variables calculated as per Cohen (1977, p.180-183). For WJ-R, SD is for children age 4 and adults age 30-39, from WJ-R Examiner's Manual. For PPVT, SSRS and Vineland, SD is 15 (norms group). For other measures SD is taken from Even Start pretest. * p<.10, ** p<.05									
Exhibit reads: Even Start children averaged 73 points on the PPVT at pretest.									

Exhibit 6.14: Pretest and Posttest Standard Scores on the PPVT for Even Start and Control Children in the EDS, and for Children in the Head Start FACES Study

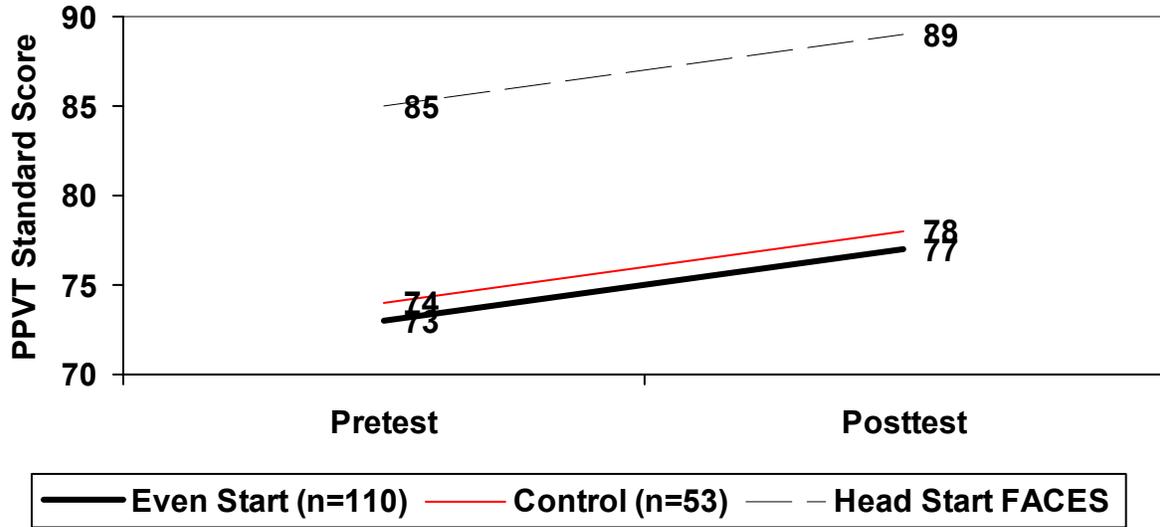


Exhibit reads: Even Start children in the EDS had an average score of 73 on the PPVT at pretest.

EXHIBIT 6.15 SUMMARY OF REGRESSIONS PREDICTING CHILD OUTCOMES FROM HOURS OF PARTICIPATION AND FAMILY BACKGROUND (ONLY SIGNIFICANT RESULTS ARE SHOWN)						
PREDICTOR	OUTCOME MEASURE					
	PPVT	LETTER WORD ID	DICTATION	APPLIED PROBLEMS	INCOMPLETE WORDS	EARLY DEVELOPMENT CLUSTER
AE hours/month			p<.017 b=-0.628	p<.010 b=-0.446		
PE hours/month	p<.021 b=0.655		p<.013 b=1.815	p<.002 b=1.508	p<.021 b=0.811	p<.012 b=1.088
ECE hours/month			p<.075 b=0.331	p<.041 b=0.248	p<.003 b=0.357	
R-square	.50	.69	.73	.67	.56	.76
<p>Notes: N = 98 families with complete data. In addition to monthly hours of participation in adult education, parenting education and early childhood education, the regressions also included pretest, child age, parent age, gender, mother's education, whether a parent was employed, and whether English was spoken at home. Regression coefficients (b) show predicted change in raw score points for a particular test for every 10 monthly hours of instruction.</p> <p>Exhibit reads: Monthly hours of participation in parenting education is positively related to child PPVT posttest scores (p<.021); child PPVT scores are expected to increase by .655 raw score points for every additional hour/month that the parent participates in parenting education.</p>						

EXHIBIT 6.16

PARENT-REPORTED OUTCOMES: PRETEST AND POSTTEST DATA FOR FAMILIES NEW TO EVEN START IN 2000-2001

VARIABLE (RANGE)	CHILD AGE: 0,0 – 2,6 (N=935)		CHILD AGE: 2,7 – 4,11 (N=950)		CHILD AGE: 5,0 – 7,11 (N=527)		TOTAL (N=2,679)	
	PRE MEAN	POST MEAN	PRE MEAN	POST MEAN	PRE MEAN	POST MEAN	PRE MEAN	POST MEAN
Child Literacy Outcomes								
Child knows alphabet (0-3)	NA	NA	0.63	1.02	2.15	2.59	1.22	1.63
Child counts to 100 or more (0-5)	NA	NA	1.65	2.22	3.55	3.92	2.34	2.836
Child knows colors (0-3)	NA	NA	1.23	1.56	1.81	1.93	1.44	1.70
Extent to which child reads, age 0,0 – 7,11 (0-9)	0.86	1.58	4.11	5.34	6.38	7.49	3.26	4.25
Child knowledge of print concepts (0-9)	NA	NA	3.92	4.95	NA	NA	3.92	4.95
Parent Literacy at Home								
Variety of parent reading at home (0-12)	7.11	8.31	7.12	8.22	7.47	8.47	7.16	8.35
Variety of parent writing at home (0-11)	4.37	5.76	4.20	5.52	4.44	5.78	4.32	5.69
Parent-Child Reading								
Amount of reading to/with child (0-3)	.55	.77	.50	.65	.51	.66	.52	.70
Variety of reading to/with child (0-5)	.80	1.36	1.30	1.80	1.68	2.25	1.19	1.73
Quality of reading to/with child (0-5)	1.18	2.03	2.77	3.63	3.24	3.89	2.26	3.07
Literacy Resources at Home								
Number of books child has (0-5)	1.83	2.51	2.35	2.81	2.39	2.76	2.16	2.68
Variety of non-print resources at home (0-16)	7.72	9.99	9.50	11.22	9.88	11.38	8.87	10.77
Variety of print resources at home (0-5)	2.57	3.02	2.70	3.10	2.98	3.49	2.71	3.16
Parent Support of Child's School								
Variety of parent participation in school (0-12)	NA	NA	1.83	3.10	2.06	3.30	1.92	3.18
Positive parent opinion about school (0-14)	NA	NA	NA	NA	13.03	13.27	13.03	13.27

Notes: Includes families new to Even Start in 2000-2001 that have a valid pretest and a valid first posttest. Pre = pretest, Post = posttest at end of program year. Data are included under a given Child Age column only if the family had pretest and posttest using the same child module. Families that changed child modules from pretest to posttest are not included in the Child Age columns, but are included in the Total column. N for Total column is the sum of N's for Child Age columns (excluding NA columns). Total column also includes children who switched modules between pretest and posttest. NA means that an outcome did not exist for a given Child Age level. Some of the variables in this analysis are defined slightly different than similar variables in the outcome analyses reported earlier in this chapter. Exhibit reads: On a scale from zero to three, children age 2,7-4,11 scored 0.63 at pretest on knowledge of the alphabet, according to parent reports.

