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ABSTRACT

The results of five studies dealing with the social and educational characteristics of Appalachian families of young children are presented as a planning base for home-oriented education. Four of the studies assessed: (1) the educational and occupational attributes of parents, (2) the availability and usage patterns of television and radio by children and parents, (3) the ability of parents to follow printed instructions of specified readings levels (second, fourth, and eighth grades) and different presentation styles, and (4) the competencies which parents expected their children to possess by six years of age. These studies were conducted in 1974 through home visits by paraprofessionals to a single sample of 699 families living in selected areas of seven states. The fifth study was a re-analysis of U.S. Census data pertaining to the parent population. Among the findings were indications that about one-fourth of the parents were unable to use materials prepared at a second grade reading level, that more than 91 percent of the mothers had at least an eighth grade education, that more than 96 percent of the families in non-urban Appalachia had television sets, but that less than 78 percent of the families had telephone service. Data are presented in tabular and narrative form; a typical Appalachian family of 1970 is described. Implications of the studies for the planning of home-based programs are suggested.

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Social and Educational Characteristics of the
Families of Appalachian Preschool Children
as a Basis for Home-Based Education

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ABSTRACT

The results of five different studies dealing with the social and educational characteristics of the families of young children living in Appalachia are presented as a planning base for home-oriented education. The five studies deal with: (1) the relative effectiveness of parent materials of different reading levels and styles; (2) selected demographic information from the families; (3) television ownership, reception qualities, and viewing habits of the families; (4) parents' expectations for their children's competencies; and (5) a re-analysis of U. S. Census data pertaining to the parent population. The studies concluded, for example, that about three-fourths of the parents could effectively use materials prepared at a second grade reading level or above, that over 91 percent of the mothers have at least an eighth grade education, that more than 96 percent of the families in non-urban Appalachia have television sets, but that less than 78 percent of the families have telephone service. Implications of the studies for the planning of home-based programs are given in the report.

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Social and Educational Characteristics of the
Families of Appalachian Preschool Children
as a Basis for Home-Based Education

Introduction

In another era, home demonstration agents visited homes, and high school students learned vocational agriculture through on-the-farm practice. More recently, however, the home has come to be regarded as an educational institution for the very young children. Educators are concerned with using the parents to facilitate the instruction of children from birth through entrance into formal schools; other educators see the family as an interactive system re-enforcing each family member's learning, and thereby creating a lasting educational effect.

Regardless of the reasons and the theoretical considerations, an accurate description of the many characteristics of the families and their physical surroundings should aid in the design of home-based education programs. The purpose of this paper is to illustrate the use of field data in making educational decisions and, in particular, in planning, revising, and disseminating a complex educational program for home-based education to a multi-state region of the country. No one finding or even one complete study would have provided the desired information, but perhaps a review of the entire series will indicate how field data may be used to plan educational programs, and, in some cases, support educational decisions which have already been made on a preliminary basis.

The geographical and cultural region called Appalachia includes various portions of thirteen states, but only one, West Virginia, is completely contained within the region. Although some investigations have been conducted at one site or another in the Region (Loof; ARC, NIMH), few studies of the education-related characteristics can be found. Two exceptions are a study

of teacher supply by the Appalachian Regional Commission (ARC) and a study of educational needs by the Appalachia Educational Laboratory (Campbell).

The Appalachia Educational Laboratory (AEL) has developed and field tested a process of home-based preschool education during the past six years and the studies described in this paper were designed to yield additional information concerning the population of preschool children and their families.

The Program

The program under consideration was HOPE --Home-Oriented Preschool Education. HOPE is regarded as an alternative to conventional classroom instruction for three, four, and five year old children. The program was field tested over a four-county area of rural West Virginia for three years and then tested more widely at various places around the country for an additional two years. HOPE is a process of developing the home as an educational institution. Educational materials produced at a central location are delivered to parents each week by a paraprofessional home visitor, and the parents convene in small group sessions once each week. The children also meet in group sessions once each week, primarily for socializing experiences and to gain other experiences difficult to duplicate in the somewhat isolated homes. A central part of the HOPE process is a daily television program, aimed primarily at the children, which delivers basic information into the homes.

The terminal objective of the program is to make available to rural children a preschool educational program which will: (a) utilize existing public and private television transmission facilities to deliver the program; (b) encourage multi-district and multi-state planning, funding, and implementation; (c) be more cost effective than the traditional classroom approach in an area that is lacking in preschool facilities; (d) make use of paraprofessionals; and (e) involve and assist the parent in the instructional role (Appalachia Educational Laboratory, 1972).

The Studies

Before HOPE could be implemented on a multi-district or multi-state basis, several types of data were desired. Five studies were planned and completed according to a very tight schedule which did not permit deliberation or hesitation and, as will be noted, the actual order of studies completed was not always in the best interest of the total study design.

Four of the studies were completed on the same sample of the population and will be described together. The fifth study was based on data from the total population from sections of 13 Appalachian states and will be described separately. Of the first four, one study measured the relative effectiveness of materials of different reading levels and styles of presentation in parent instructional materials. Another study was based on selected demographic information from the preschool families, and a third was a survey of television ownership, reception quality, and viewing habits of the families. A fourth study was of parent reactions to competencies expected of six year old children and a comparison of the parent expectations with similar statements from a panel of experts on child development. These studies were all completed by the fall of 1974, and most data collection was completed during the latter two weeks of March, 1974.

A fifth study was based on an analysis of U. S. Census data completed for AEL by the U. S. Census Bureau. Apparently, this is the only specially prepared aggregation of U. S. Census data available descriptive of the parents of children under age six. Each of these five studies will be described in more detail in the following section.

These five studies have been described in separate reports and submitted to ERIC for general distribution. The detailed reports contain all data tables and instruments used in the studies and include much more description

of the methodology than does the following brief descriptions. The five studies are listed in a separate section of the Bibliography.

Methodology

Selection of Sample

The original sample for the first four field studies consisted of families living in the states of Alabama, Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. In order to locate possible sites within the area, a survey was made of existing programs utilizing regular home visits.

As will be seen, the sites varied in the nature of preschool program as well as sample characteristics including number of available families. The original sample of 951 families selected for the four field studies met most of the criteria listed in the field studies plan.

Table 1 indicates the location, size, and type of program for each of the sites which was selected for inclusion in the field surveys. However, the survey sample distribution and the U. S. Census Bureau distribution were found to be dissimilar (using a χ^2 approach) and a matrix sampling technique was used to obtain a survey sample which was representative of the regional population. Specifically, the revised sample distribution and the U. S. Census Bureau distribution were similar on the variable of educational level of mother--a variable of importance in these studies of parent characteristics. There were 699 families in the revised survey sample.

Data Collection Techniques

Evaluation staff at AEL trained the supervisory staff of the seven states, who in turn trained the staff who administered the four surveys, since it was not practical for AEL to train all of the paraprofessionals to administer the instruments.

The surveys were conducted between March 15 and March 29, and most para-professionals gathered data after regular working hours. This schedule helped to prevent any interference with normal program operation within the sites.

The "selection of sample" for the U. S. Census Bureau study is in reality a somewhat different definition of the population. In the fifth study, Appalachia is the area contained in 397 counties located in 13 states in or around the Appalachian mountain chain. West Virginia is totally included within the Region, and the other dozen states with counties in Appalachia are Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. The list was established by the Appalachian Regional Commission, Washington, D. C., and serves as a convenient political definition. Another reason for using the 397 county definitions for this study is that these data may be compared with other data collected by the ARC. The rural or non-urban population, was defined as all persons living in the Appalachian Region, except those living in cities having a population of 50,000 or greater. This somewhat unusual definition of rural was chosen because the HOPE approach was thought to be suitable for families living in small towns, as well as in more sparsely settled areas. A town of 20,000 in Appalachia is usually considered to be rural, with most of the business and social interactions revolving around rural people and their concerns.

Preschool families included all parents, or guardians, and their children in family units with children between birth and five years of age. Family could include simply a parent and child, as well as adults and children living in extended family situations. The age range of birth through two years was not included in the HOPE population, but since the most recent general U. S. Census data available was from the 1970 enumeration, information

concerning the families of younger children was considered important for longitudinal study. The children born in 1970 are coming of school age in 1976.

Instrumentation

The survey instruments used in each of the studies is described below.

Effectiveness of Parent Materials Survey. The technique which was used to determine the effectiveness of various levels of reading difficulty and styles of presentation of parent materials was based on direct observation of parent behavior. The technique used to elicit this behavior consisted of three activities to be carried out by the parent. Each activity was written at the second, fifth, and eighth grade level of vocabulary and with two styles of illustration as described below.

Styles of illustration were defined by the relevance of the background illustrations on each sheet handed to the parent. Decorative illustrations (D) pertained to the general subject matter of each activity, but did not portray activities similar to those requested in the written portion of each activity. Instructional illustrations (I) gave visual clues to the nature of the activity to be carried out by the parent.

In one role situation, the parent was asked to pretend that the home visitor was her child and to request the "child" to place a group of ten bears into two sets of five, assisting if necessary. Role playing of the child by the home visitor was also required for the second activity, and in this case, the parent was asked to tell a short story based on her childhood. The third activity involved a request for the parent to ask the home visitor, again role playing the child, to assemble pieces of a puzzle, aiding if necessary.

The parent was handed a sheet requesting her to carry out each one of these three activities. Each parent received all three activities written

in one reading level and presented with one style of illustration. That is, each parent was requested to carry out three activities presented in one of six reading levels and styles of presentation. Each parent was requested to carry out the same three activities, and parents were randomly assigned within sites to each of the six combinations of reading levels and presentation styles.

In addition to asking the "child" to complete a given activity, the instructions to the parent also requested them to aid the "child" if necessary in completing those activities which the "child" was to do. The home visitor was instructed to perform those activities incorrectly the first time, thus requiring the parent's aid for successful completion. The number of questions each parent asked during the activities was also recorded on the answer sheets.

The rationale underlying the previously described measurement procedure is that the described activities are typical of those presented to parents as a part of the HOPE program, and that the response technique is a measure of the behavior in which parents, home visitors, and children are expected to engage. The parents should not only be able to recognize the words but be able to use the activity sheets as a guide to conducting learning activities with their children.

Demographic Survey. The instrument contains 13 items dealing with various characteristics of the target population. Various items pertain to the number of children by age level living within the home; previous educational experiences of the preschool children; the mother of the preschool child as head of the household; the occupation of the head of the household; the population density of the area in which the home is located; reading materials found in the home; educational level of both the head of the household and of the mother; the person in charge of the preschool child during the day; those meals that the preschool child eats with the family; and the frequency of visits by the child to various places of interest.

The instrument was constructed to survey those characteristics of the target population which were deemed of importance in the development of the educational program. Since only specific questions were raised, the items on the instrument provide a valid mechanism for obtaining the answers.

It should also be pointed out that several of the items are constructed in a format parallel to items found on other survey instruments for which data are available. For example, six items also appeared on the U. S. Census questionnaire of 1970. Similarly, three items appeared in a survey conducted in two sites in Appalachia in 1968 (Hooper and Marshall, 1968).

Television Survey. One set of characteristics selected for intensive study was television ownership and viewing habits of parents and their children. The instrument used to gather data on television ownership and viewing characteristics of the sample was a 62-part questionnaire designed by AEL.

Part of the questionnaire was answered directly by the home visitor who viewed the television set while in operation, and part was based on the responses of the parent to questions asked by the home visitor. On the average, the instrument took about 25 minutes to administer in each home where it was given.

Due to the straightforward and objective nature of the questions asked, data on reliability of this instrument were not gathered. Where subjective judgments were made by the parent on the quality of television reception, a check was made with more objective ratings based on three photographs of television reception of varying quality.

Child Competency Expectations. During the initial phase of the study a primary competency list was developed and submitted to a group of child development scholars. Subsequent analysis of the reactions resulted in the development of a competency rating instrument. This instrument was then

resubmitted to a National Panel and an Appalachian Panel of Child Development Scholars.

While the National and Appalachian Panels of Child Development Scholars were asked to respond to a child competencies questionnaire in terms of the directional supportiveness of the empirical evidence for the child competencies, it was obvious that parents could not be aware of the research or other formal empirical evidence. Consequently, the competency rating instrument was used as a basis for a questionnaire to be used by the parents. Instead of responding to the empirical evidence, parents were asked to respond in terms of their expectations for their child to be able to do the competencies by the time he/she entered the first grade.

The parents were instructed to rate the items on the instrument according to a four-category response mode:

- 1 - Yes (the child should be able to do the competency)
- 2 - No (the child should not be able to do the competency)
- 3 - I am not sure (the child should be able to do the competency)
- 4 - I don't understand (either the competency or the example)

U. S. Census Bureau Study. The staff of AEL expended considerable effort in trying to locate information about the population of preschool parents, either in the seven or thirteen-state Appalachian Region. Most data available from the Appalachian Regional Commission were based on U. S. Census data already processed in a manner such that adult members of families could not be associated with their preschool children. In addition, some sampling areas did not correspond to counties included in the Appalachian Region.

The only recourse appeared to be a re-analysis and compilation of the basic 1970 U. S. Census tapes for each of the 397 counties in the Region. The first step was to screen the 67 items on the 1970 census questionnaire (1970 Census Users' Guide, 1970, pp. 12-20) for questions which might possibly have

implications for educational planning. Five main areas of interest emerged. They were (1) educational characteristics of the parents and their children, (2) occupational and income characteristics of the families, (3) availability of telephone and television, (4) housing characteristics, and (5) a general category which included other demographic items such as race, sex, and mobility of the population. Twenty-two variables were selected as most important to the study. The "instrument" for the study became a set of "dummy tables" which were given to the U. S. Census Bureau. The actual data for these tables were provided according to the total Appalachian Region and for the Appalachian section of each of the 13 states included in the Region. Similar data were obtained on microfiche for each of the 397 counties in the Region.

Limitations

A possible limitation of the parent materials survey results from the nature of the instrument used. The survey technique used was concerned with the functional reading level of parents rather than a measured level of reading attainment. Therefore, the content validity of this instrument is of considerable importance in making extrapolations to the overall effectiveness of various reading levels of parent materials. Another possible limitation exists with respect to the television survey. The geographic and topographic features of the local sites, insofar as these affect quality of television reception, may have differed from other non-urban areas of the Region. In fact, quality of reception can differ depending on the side of the mountain on which a family's home is located.

Data Analysis Techniques

The primary data analysis technique used for the parent materials survey was a χ^2 comparison of each possible combination of two cells with the three by

two matrix of reading levels and presentation styles. That is, each of the six cells was compared with the remaining five cells by means of a χ^2 analysis of complete and incomplete responses. These χ^2 comparisons were made for total completion of the activity. This analysis was carried out for the total sample of 699 parents for each activity. Additionally, a χ^2 was performed on the total of all three activities for each cell on the total sample. Each of these χ^2 routines includes a correction factor for unequal n's across cells.

In addition to the χ^2 analysis of primary data, the completion rate of the activities was partitioned first according to the level of educational attainment of the mothers, and second, according to the category of occupation in which the head of household was engaged.

For the other studies which were designed as surveys, the most appropriate data analysis techniques were descriptive, i.e., a single tabulation of responses to each of the questions and a calculation of percentages of each response category. For these surveys, no inferential statistics were utilized.

Results of the Studies

A summary of the results of the five different studies is presented below in the same order in which the studies have been presented previously.

Study of Parent Materials

The differences in parents' ability to complete the learning activities according to the reading level and type of illustration of the materials is presented in Tables 2, 3, 4, and 5. Selected results are presented in graphic form in Figure 1 for each activity, while the results for the total of all three activities are presented in Figure 2.

Several trends emerge from both Tables 2 through 6 and Figures 1 and 2. First, it is apparent that even at the second grade reading level, approximately

Table 2

Partial and Complete Number and Percent Responses to
"Bear" Activity (Total Sample by Cells)

		8D*	5D	2D	8I	5I	2I	Total
Partial Activity	Complete	96 69.1	89 76.7	80 70.2	73 62.9	74 67.3	70 72.2	482 69.7
	Incomplete	43 30.9	27 23.3	34 29.8	43 37.1	36 32.7	27 27.8	210 30.3
	Total n	139	116	114	116	110	97	692
Full Activity	Complete	96 69.6	88 75.9	78 68.4	74 63.8	72 65.5	69 72.6	477 69.2
	Incomplete	42 30.4	28 24.1	36 31.6	42 36.2	38 34.5	26 27.4	212 30.8
	Total n	138	116	114	116	110	95	689

*8D is the eighth grade reading level materials with decorative illustrations, etc.

Table 3

Number and Percent Responses to "Story" Activity
(Total Sample by Cells)

		8D	5D	2D	8I	5I	2I	Total
Full Activity	Complete	92 67.2	79 68.1	99 86.8	77 66.4	70 63.6	75 78.1	492 71.4
	Incomplete	45 32.8	37 31.9	15 13.2	39 33.6	40 36.4	21 21.9	197 28.6
	Total n	137	116	114	116	110	96	689

Table 4

Partial and Complete Number and Percent Responses to
"Puzzle" Activity (Total Sample by Cells)

		8D	5D	2D	8I	5I	2I	Total
Partial Activity	Complete	110 79.1	108 93.1	97 85.1	94 81.0	90 82.6	81 84.4	580 84.1
	Incomplete	29 20.9	8 6.9	17 14.9	22 19.0	19 17.4	15 15.6	110 15.9
	Total n	139	116	114	116	109	96	690
Full Activity	Complete	111 80.4	106 93.0	92 82.9	89 78.1	89 81.7	76 82.6	563 83.0
	Incomplete	27 19.6	8 7.0	19 17.1	25 21.9	20 18.3	16 17.4	115 17.0
	Total n	138	114	111	114	109	92	678

Table 5

Sum of Complete and Incomplete Responses to All Three Full Activities

Responses		8D	5D	2D	8I	5I	2I
Complete	n %	299 72.4	273 78.9	269 79.4	240 69.4	231 70.2	220 77.7
Incomplete	n %	114 27.6	73 21.1	70 20.6	106 30.6	98 29.8	63 22.3

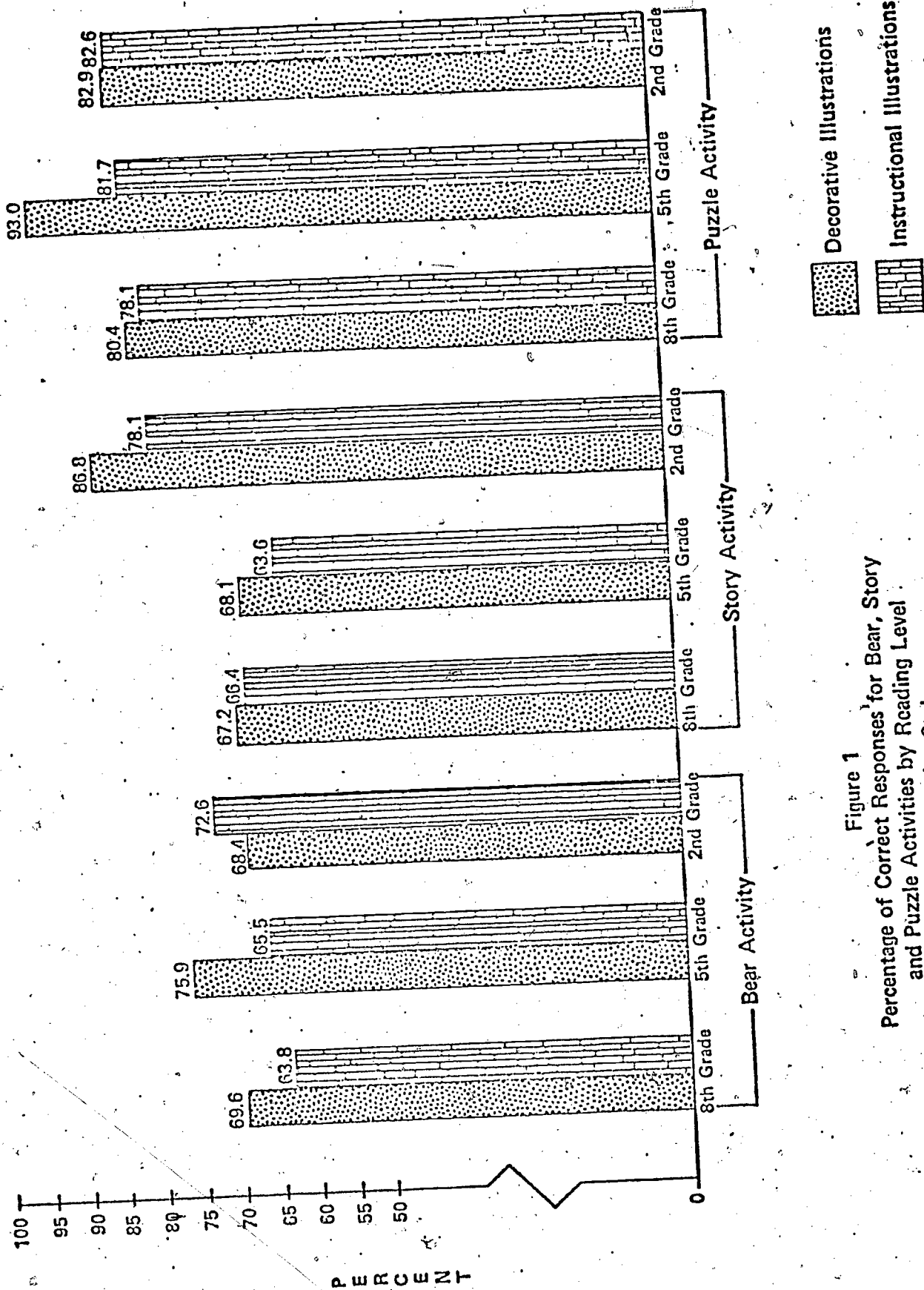


Figure 1
 Percentage of Correct Responses for Bear, Story
 and Puzzle Activities by Reading Level
 and Illustrative Style

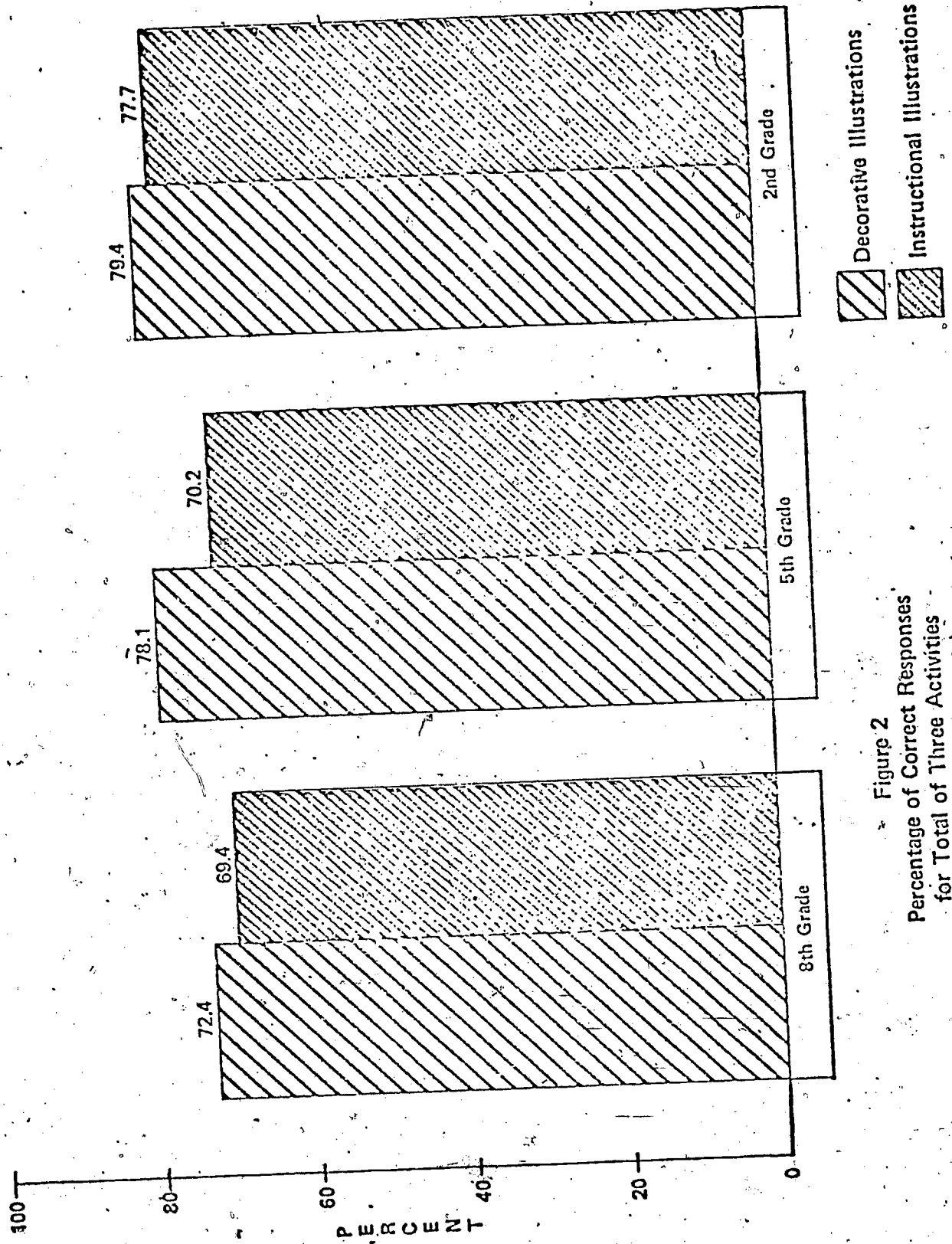


Figure 2
Percentage of Correct Responses
for Total of Three Activities
(Bear, Story and Puzzle)

one-fourth of all responses made by the parents were incorrect. Although difficulty in role playing by the parent may have accounted for some of these failures, on the "story" activity where no role playing was required, approximately 20 percent of the parents still were unable to complete the activity even at the second grade reading level. This finding argues for detailed explanations of the activities by the home visitors as the materials are presented to the parent, since many of the parents will not understand the printed materials even if written at a second grade reading level. Further evidence for the possible confounding effect of role playing can be found in Table 6. In those comparisons which were statistically significant, the story activity occurred in eight comparisons, the bear activity in three comparisons, and the puzzle activity in five comparisons. Thus, the three activities were not equivalent in their ability to discriminate between reading levels or illustrative styles. This may have been caused by the difficulties experienced by parents in role playing in the bear and puzzle activities.

Table 7 summarizes the significant χ^2 comparisons for each pair of cells on a total of the three activities. From Table 7 the following relationships can be seen: Cells 2D, 2I, 5D > 5I, 8I, 8D. From the above figures, similar trends are apparent for a summation of all three activities as could be seen for each of the individual activities. At the fifth grade reading level, the decorative illustrations produced a higher number of correct responses than did the instructional illustrations. At the eighth and second grade reading levels the differences were not statistically significant. It is possible that the instructional illustrations detracted from the parents' ability to understand the written content of each activity. This finding has further implications for future planning of parent materials. Such materials should include only decorative illustrations to add interest, and explanations of

Table 6

Summary of Significant (.10 or Less) χ^2 Comparisons
Between Parent Materials Cells

<u>Name of Activity</u>	<u>Direction of Difference</u>
Complete Puzzle	5D > 8D
Complete Puzzle	5D > 2D
Complete Puzzle	5D > 8I
Complete Puzzle	5D > 5I
Complete Story	5D > 2I
Complete Story	2D > 8D
Complete Story	2D > 5D
Complete Story	2D > 8I
Complete Story	2D > 5I
Complete Story	2I > 8D
Complete Story	2I > 5D
Complete Story	2I > 8I
Complete Story	2I > 5I
Complete Bear	5D > 8I
Complete Bear	5D > 5I
Complete Bear	2I > 8I

Table 7

Significant (.10 or Less) χ^2 Comparisons Between Cells
on Total of Three Activities

Direction of Differences	Description
2D > 5I	Decorative 2nd Grade better than Instructional 5th Grade
2D > 8I	Decorative 2nd Grade better than Instructional 8th Grade
2D > 8D	Decorative 2nd Grade better than Decorative 8th Grade
2I > 5I	Instructional 2nd Grade better than Instructional 5th Grade
2I > 8I	Instructional 2nd Grade better than Instructional 8th Grade
2I > 8D	Instructional 2nd Grade better than Decorative 8th Grade
5D > 5I	Decorative 5th Grade better than Instructional 5th Grade
5D > 8I	Decorative 5th Grade better than Instructional 8th Grade
5D > 8D	Decorative 5th Grade better than Decorative 8th Grade

the activities should be left to the home visitor when the materials are presented to the parent. Apparently, not enough is yet understood by those producing instructional materials to support the distinction between decorative and instructional illustrations.

As was expected, parents generally performed activities more successfully when those activities were described at a lower level of reading difficulty. Lower levels of reading difficulty consistently produced significantly higher numbers of activity completion than did higher levels both within and between illustrative styles. As was mentioned above, however, approximately one-fourth of the parents were unable to complete these activities presented at even the second grade reading level. This finding at least raises the possibility that a significant percentage of the families in AEL's target population are functionally illiterate or that the instrument was not a valid measure of reading comprehension.

Other analyses indicated that the mother was reported to be head of household in 12.6 percent of the sample families and the correlation (r) between educational levels of mothers and heads of household was 0.52 ($N = 697$, $p < .01$). The mother's ability to complete the activities was most certainly related to their levels of educational attainment. The mothers with high school and college training completed almost twice as many activities as did the mothers with six years or less elementary school (80% - 89% versus 42% + 44%). This finding may serve as an indirect validation of the measured procedure, since one would expect reading ability to be correlated with educational attainment. The measurement procedure did not discriminate among high school graduate educational levels and beyond. Parents who were at least high school graduates completed about 80% of the activities, and parents with additional education had very similar completion rates.

The differences in parents' ability to complete activities were not as pronounced when analyzed according to occupational classifications, but the response rate was related to the amount of education generally required for the occupation. The highest rate of completion was in families in which heads of household were managers and administrators (86.0%) and the lowest completion rates were with the 27 families in which the head of household was a farmer or farm manager (64.2%), and the six families in which the heads of household were farm laborers or foremen (22.2%). The completion rate was related to the occupational classification, but not as dramatically as was the educational attainment of the mothers.

Demographic Survey

There were 236 three year old children, 264 four year old children, and 343 five year old children in the sample 699 families. Over one-half (54.8%) of the families have only one or two children at home and over three-fourths (75.4%) of the families had three or less children at home. Over three-fourths (77.4%) of the families lived in areas of less than 2500 population.

As reported previously, the mother was considered to be head of household for 12.6% of the sample families. In comparison, the mother was considered to be head of household in 7.3% of the 13 state population of the U. S. Census Bureau study. About three-fourths of the mothers (73.1%) were not employed outside the home, although 35% of the mothers in the Alabama sample worked full time outside the home. The occupational and educational characteristics of the home will not be elaborated upon in this section, since the U. S. Census Bureau data given later are considered much more definitive than these local site data.

About three-fourths of the families have newspapers, magazines, a dictionary, and library books in their homes on a regular basis. However,

less than one-half of the families had an encyclopedia in their homes. In comparison with the 1968 Hooper-Marshall data, there were fewer newspapers, but more magazines, dictionaries, encyclopedias, and library books in the home.

One question on the survey was "During the day who is in charge of the preschool children if they are in the home?" The mother was reported to be in charge in 79.7% of the cases, and the grandmother in 8.9% of the families. The father was reported to be in charge in only 2.1% of the families. Therefore, a home visitor might expect to find either the mother or grandmother in charge of the preschool child in almost 90% of the instances.

Over 60% of the preschoolers eat breakfast with the family, about 40% eat lunch, and almost all the preschoolers (97%) eat dinner with the family. During the six years between the 1968 Hooper-Marshall study and the 1974 AEL study, there appears to have been little change in the frequency of visits to the zoo, museum and art gallery, fire station, railroad station, and the airport. However, there was a substantial increase in the frequency of visits to an athletic event. More than twice as many families visit the library now as in 1968. The fact that 86% of the children have not visited a museum or art gallery and more than 50% have not been in a library or zoo has implications for home-based preschool education programs.

The education level of the mother and of the head of household are only slightly correlated with community size (.05 and .08, respectively). Program developers and/or evaluators of program materials should therefore notice that Appalachia contains about the same ratio of parents with lower and higher education levels. Apparently, highly educated as well as less educated parents are found in all sizes of communities. The U. S. Census Bureau analysis presented later would also tend to support this claim.

Television Ownership and Viewing Habits

The availability of television within each state surveyed and a composite for the total Region are given in Table 8. As can be seen from that table, an average of over 95% of the families surveyed had at least one television set, and of those, approximately 46% had at least one color television set. The average percentage of families owning a television set ranged from a low of 91% in Pennsylvania and Virginia to a high of 100% in the Kentucky site. Virginia also showed the lowest percentage of families owning color television sets with a figure of 29.6% while Ohio showed the highest percentage of ownership of color television sets with 60.3% of the families owning at least one color television.

Overall, these figures indicate that a very high percentage of the families surveyed do own a television set, and that a surprisingly high percentage of these families own a color television. It is interesting to note that the 95.7% of ownership of at least one set for the total sample is somewhat greater than the earlier figure of 93.3% obtained by AEL (Stepp, 1973) and approximates the national ownership percentage of 96.6% reported by A. C. Nielsen (1974). U. S. Bureau of the Census data indicates that the percent television ownership by the total HOPE population is 96.7%.

Of those families who owned television, almost two-thirds had sets in the 20"-25" range, with 14% reporting one or more sets 12" or less and 3% owning sets 26" or more in diagonal measurement. (Percentage figures in Table 8 for this variable do not total 100 because of multiple set ownership in the sample.)

Table 8 also indicates the percentage of families surveyed who had at least one set attached to a cable television system. These figures showed considerable variance across the sites in the seven states, due in part to the different natures of the target population in each of the programs. Overall,

Table 8
Availability of Television by States and Total Region

	Ala.	Ky.	Ohio	Pa.	Tenn.	Va.	W.Va.	Total
% Owning At Least One Set	95.8%	100.0%	98.3%	92.5%	94.3%	92.6%	96.3%	95.7% (96.7%)*
% Who Own One or More Sets of Given Sizes. (Percents will not total 100)	8.3%	11.0%	23.3%	15.1%	9.7%	13.9%	13.1%	13.6%
	35.4%	40.7%	32.8%	45.3%	38.6%	43.5%	37.4%	38.8%
	64.6%	70.3%	63.8%	75.5%	68.2%	53.7%	57.0%	64.1%
	4.2%	0.0%	3.4%	0.0%	5.7%	1.9%	3.7%	3.1%
% Owning Color TV	39.6%	45.1%	60.3%	45.3%	48.3%	29.6%	46.7%	45.9% (57%)**
% on Cable	16.7%	85.7%	15.5%	41.5%	14.2%	32.4%	39.3%	32.6%
% of Sample With Non-Functional TV	0.0%	1.1%	0.0%	0.0%	2.3%	0.0%	0.0%	0.7%
% of Sets With UHF Capability	75.0%	4.4%	73.3%	30.2%	42.6%	24.1%	12.1%	36.5% (48.8%)*
% Who Can Watch Neighbor's TV	50.0%	---	50.0%	60.0%	80.0%	0.0%	50.0%	43.3%

*U.S. Bureau of the Census

**A.C. Nielsen Company survey for total county population of all counties served by sites

32.6% of the families had at least one television set connected to the cable. Individual sites ranged from a low of approximately 14% in Tennessee to a high of approximately 86% in Kentucky. The figure for Kentucky is probably atypical of the Region, in that the sites in Kentucky coincide almost exactly with an area of relatively high saturation of cable use. Figures from 1972 show that only 9.6% of all U. S. TV households had cable connections (Television Digest, 1972), although since non-urban areas are often "fringe reception areas," there may be a greater need there for cable facilities, as is suggested by the somewhat higher figure found in this sample.

According to Table 8, only about 0.7% of all those families surveyed had a television set which was not functioning at the time of the interview. Tennessee had the highest percentage of sets which were not functioning with 2.3%, while five states had no incidences of sets reported which were not functioning at the time of the interview. Overall, most families had no difficulty with non-functional television sets at the time of the survey.

The question on the television survey which dealt with the UHF capability of the sets owned by the sample shows a great deal of variance in mean responses across the seven states. This may well be due to a misunderstanding of the question by either the examiners or the families within the survey sites. The question asked simply "Does this television set have UHF capability?" It seems likely that either the parents or the paraprofessionals misunderstood the content of this item in some cases and interpreted it as meaning "Does your television set currently receive any UHF channels?" Since most television sets sold within the past several years do have UHF capability, it seems likely that the actual average percentage figure for the Region is somewhat higher than that presented in Table 8.

Of those families who did not own at least one television set, approximately 43% were able to use the television of the neighbor. Again, this

figure showed considerable variance from site to site in each of the states, with Tennessee showing 80% able to use a neighbor's television set and Virginia showing no one being able to use a neighbor's television set. This may well be due to the different types of geographical locations of the various samples. Overall, approximately 97% of the families who were surveyed either have a television set or have access to one in a neighbor's home.

Table 9 indicates the reception characteristics of the sample for each state and the total Region. These questions were asked only of families who did not have at least one set connected to a commercial cable system. Those questions which dealt with the reception characteristics asked for a judged overall reception quality from the parent and a rated reception quality by the home visitor as she observed the television set functioning. In this case, the home visitor matched the quality of reception on the screen with a template on the questionnaire which showed three photographs of actual television screens with different qualities of reception. The correlation coefficient between the judged and rated reception quality was quite high, with an r (triserial) of .77 for the total sample. For the total sample, an average of 3.6% of the parents responded they had poor overall reception, and an average of 3.4% of the television screens was judged by the home visitors to have poor reception quality. The greatest number of families with poor reception quality occurred in Kentucky, and the lowest number of those with poor reception occurred in Ohio.

Of the families in the sample, 45.8% said that overall they judged that they had excellent reception, and 45.7% of the television sets viewed by the home visitors were judged to have excellent reception. The highest percentage of excellent reception occurred in Ohio and Tennessee, with the lowest percentage of excellent reception in Kentucky. Again, these differences may well be due to the difference in terrain between these states, with Ohio having the

Table 9
 Reception Characteristics Within the Sample by States and Total Region

	Ala.	Ky.	Ohio	Pa.	Tenn.	Va.	W.Va.	Total
% With "Poor" Overall Reception*	7.9% ¹	8.3%	1.0%	7.1%	1.4%	4.5%	6.6%	3.6%
	3.0% ²	9.1%	1.1%	10.7%	0.0%	4.6%	8.2%	3.4%
% With "Excellent" Overall Reception*	39.5% ¹	8.3%	63.5%	46.4%	50.0%	34.8%	31.1%	45.8%
	45.9% ²	18.2%	52.6%	32.1%	57.4%	32.3%	32.8%	45.7%
% Receiving Three or Fewer Channels	18.8%	37.4%	75.0%	18.9%	56.3%	52.8%	47.7%	49.6%
% Receiving Four to Six Channels	66.7%	61.5%	17.2%	24.5%	38.1%	27.8%	40.2%	37.3%
% Receiving Seven or More Channels	14.6%	1.1%	7.8%	56.6%	5.7%	19.4%	12.1%	13.0%

*Of those not on cable

¹Judged by parent

²Rated by home visitor

flattest terrain and Kentucky having the most mountainous. As alluded to previously, interpretation of these data is made with the recognition that geographical and topographical factors influence reception and were not accounted for in the study design.

In general, then, approximately 96% of all the families who own television sets and who are not on the cable have excellent or good reception from their antenna system. It is probably unwise, however, to infer from these data that the quality of reception is the same for the non-urban Appalachian Region, although the sample sites proved to be quite similar to the Region on other population parameters (e.g., education). The representativeness on selected demographic parameters does not guarantee similarity of terrain which may affect TV signal reception at individual field study sites.

It should be noted that the highest percentage of families utilizing commercial cable systems occurred in Kentucky, the site with the poorest reception quality using standard television antenna systems. Thus, poor reception seems to lead to the installation of cable where it is possible.

The data concerning quality of reception were also analyzed according to the affiliation of the stations received by the sample. There were 318 incidences of families receiving ABC stations, 408 receiving NBC stations, 397 receiving CBS stations, and 227 incidences of receiving PBS affiliated stations. In general, there was little difference in the quality of reception among the networks. NBC had the largest percentage of excellent ratings (50.5%) and ABC had the lowest percentage (41.8%).

These figures are further amplified by information received from the A. C. Nielsen Company. Most counties had at least four stations available through regular and UHF broadcast stations. Generally, the counties in which the sites were located had representation from all three commercial networks and public broadcasting stations.

Viewing Characteristics of Sample

The percentage figures for each response category on those questions dealing with the viewing habits of the field study sample are presented in Table 10. Percentage figures are given for each state and for the total of all states.

On the question dealing with the hours per day which a child watches television, most children were found to watch from two to three hours a day (37%), and four to five hours per day (34%). Approximately 5% of the children watched eight to nine hours per day, and 11% of the children watched one hour or less per day. There was considerable variance across sites in the percentages of families who reported that their children watched zero to one hour per day with Alabama reporting only 6% of the children watching one hour or less, while in Virginia 25% of the families reported that their children watched an hour or less per day.

The greatest percentage of children watched television in the early morning, from 8:00 to 10:00 a.m., and the smallest percentage of children watched in the early afternoon from noon to 2:00 p.m. The period from 5:00 to 7:00 p.m. showed the second highest percentage of children watching. Again, there was considerable variance across sites for each of these categories. This may have been caused by the different times of day when the children's favorite programs were being presented.

Surprisingly, some of the time periods in which the child had most control of the television set were those in which the least viewing took place. For example, although 34% of the parents reported that the children had control of their television sets in the late morning (10:00 - noon), only 6% of the children watched during this time period, most likely because few children's television programs are available during that time slot. Similarly, 43% of the parents reported that their children had control over the television in

Table 10
Viewing Habits of Families in Field Study Sample

Hours/Day Child Watches TV	Ala.	Ky.	Ohio	Pa.	Tenn.	Va.	W. Va.	Total
0-1	6%	8%	8%	8%	7%	25%	16%	11%
2-3	33%	58%	35%	34%	26%	38%	42%	37%
4-5	42%	24%	36%	38%	39%	26%	32%	34%
6-7	19%	10%	16%	15%	22%	5%	6%	13%
8-9	0%	0%	4%	6%	7%	6%	5%	5%
Time of Day Child Watches TV								
Early morning (8-10 am)	67%	4%	39%	17%	47%	31%	36%	35%
Late morning (10-12 am)	6%	1%	9%	8%	7%	7%	5%	6%
Early afternoon (12-2 pm)	0%	0%	2%	2%	3%	4%	0%	2%
Late afternoon (2-5 pm)	21%	44%	15%	19%	18%	12%	15%	20%
Early evening (5-7 pm)	0%	41%	27%	42%	10%	23%	32%	24%
Late evening (7-later)	2%	10%	7%	9%	9%	11%	10%	9%
Not indicated	4%	0%	3%	4%	5%	11%	2%	4%
Time of Day When Child Has Control of TV								
Early morning (8-10 am)	C* 91% NC** 9%	C 55% NC 45%	C 75% NC 25%	C 58% NC 42%	C 89% NC 11%	C 59% NC 41%	C 65% NC 35%	C 68% NC 32%
Late morning (10-12 am)	C* 48% NC** 52%	C 30% NC 70%	C 37% NC 63%	C 21% NC 79%	C 52% NC 48%	C 27% NC 73%	C 25% NC 75%	C 34% NC 66%
Early afternoon (12-2 pm)	C* 30% NC** 70%	C 26% NC 74%	C 27% NC 73%	C 17% NC 83%	C 26% NC 74%	C 9% NC 91%	C 14% NC 86%	C 20% NC 80%
Late afternoon (2-5 pm)	C* 59% NC** 41%	C 70% NC 30%	C 51% NC 49%	C 52% NC 48%	C 50% NC 50%	C 23% NC 77%	C 34% NC 66%	C 45% NC 55%
Early evening (5-7 pm)	C* 33% NC** 67%	C 58% NC 42%	C 45% NC 55%	C 52% NC 48%	C 41% NC 59%	C 43% NC 57%	C 47% NC 53%	C 43% NC 57%
Late evening (7-later)	C* 7% NC** 93%	C 37% NC 63%	C 18% NC 82%	C 17% NC 83%	C 20% NC 80%	C 14% NC 86%	C 16% NC 84%	C 18% NC 82%

*Control ** No Control

the early evening and only 24% of the parents responded that their children watched television most frequently during that time. Overall, children had least control over the television sets during the early afternoon (noon - 2:00 p.m.). This may well be due to the mothers' habits of watching soap operas and other programming during this time. Generally, children had most control over the television sets during the early morning hours of the day. As in other areas, there is considerable variance across states in the responses of parents to this area of the questionnaire, and little relationship was found between the time when children's television programs are available and the time when the children were reported to have control of the television sets.

Table 11 is a summary of the results of miscellaneous questions asked by the AEL research department. Although these questions were not specifically requested by NIE, they were considered important by the AEL staff since they extend previous studies completed by the staff.

The first question dealt with the children's favorite television programs, as judged by the parents. Overall, parents felt that the children liked Captain Kangaroo best, followed by Sesame Street, and other programming. This is of some interest when compared with the results of an earlier study (Bertram and MacDonald, 1971), which placed Captain Kangaroo below Sesame Street in ranked popularity with children and parents.

Overall, 95% of the families reported a radio in the home, and 78% of these had an FM radio in the home. Parents in each of the states agreed on their choice of favorite radio programming, which was pop and country music.

The final questions asked on the survey dealt with the presence of telephones in the home. Surprisingly, only 70.5% of the parents reported that they had a telephone in their home, with state figures ranging from 52% of the

Table 11
Miscellaneous Information From Television Survey

	Ala.	Ky.	Ohio	Pa.	Tenn.	Va.	W.Va.	Total
Children's Favorite TV Program (1st, 2nd, 3rd Choice)	1. Captain Kangaroo 2. Sesame Street 3. Misterogers	1. Captain Kangaroo 2. Other 3. Sesame Street	1. Other 2. Captain Kangaroo 3. Sesame Street	1. Sesame Street 2. Captain Kangaroo 3. Other	1. Captain Kangaroo 2. Sesame Street 3. Other	1. Sesame Street 2. Romper Room 3. Captain Kangaroo	1. Captain Kangaroo 2. Other 3. Sesame Street	1. Captain Kangaroo 2. Sesame Street 3. Other
Percent of Families With Radio	85.4%	95.6%	98.3%	98.1%	97.2%	89.8%	96.3%	95.1%
Percent of Families With FM Radio	62.5%	85.7%	83.6%	83.0%	80.7%	74.1%	72.9%	78.5%
Favorite Type of Radio Program	Pop & Country Music	Pop & Country Music	Pop & Country Music	Pop & Country Music	Pop & Country Music	Pop & Country Music	Pop & Country Music	Pop & Country Music
Telephone in Home	52.1%	61.5%	81.0%	77.4%	76.1%	60.2%	72.9%	70.5% (77.6%)*
Telephone Available in Neighbor's Home	80.8%	81.8%	90.9%	91.7%	97.5%	90.2%	92.6%	89.6%

*U.S. Bureau of the Census

families reporting ownership of a telephone in the Alabama site to 81% possessing a telephone in Ohio. Approximately 25% more of the families own a television set than own a telephone, which is an indication of the importance of television in Appalachian family life. Overall, of those who did not have a telephone, 90% were able to use a telephone in a neighbor's house. Thus, only about 2% of the families are totally without telephones or without the use of a telephone in the neighbor's home.

Site coordinators and other persons familiar with Appalachian families have suggested at least three reasons why more families possess television sets than telephone service. First, TV represents a link with the world outside the mountains which is not easily achieved through travel or reading. Secondly, although a TV set represents a large initial investment, less financial outlay is required to maintain the reception than with telephone service. Finally, although the rural houses have been supplied with electricity, placement of additional telephone lines over the rugged, sparsely settled terrain is very costly.

Parents Expectations of Child Competencies

Since this study has been superseded by various other studies completed by AEL, only a brief summary of results is presented. All "yes" responses indicated a positive set toward the particular item in the survey, and the "no" or "I am not sure" responses probably indicated a negative set towards the item. Very few parents responded "I don't understand" or left items unanswered.

Over 86% of the parents felt that their child should be able to possess classification competencies, and over two-thirds of the parents felt that their child should be able to attain ability to discriminate competency. Almost 85% of the parents felt their child should be able to possess the communication competencies, and over 88% of the parents expressed a positive set towards the

coordination competencies. Over 79% of the parents surveyed felt that their child should possess the habits and attitudes competencies, and over 80% of them felt that their child should be able to possess the social relationships competencies.

U. S. Census Bureau Study

According to the U. S. Census Bureau analysis, there were 1,132,175 pre-school families in the 397 counties of non-urban Appalachia in 1970. In the following discussion, all families have a "household head" by definition. The household head may be a father, mother, or some other person so designated by the Census enumerator. "Mother" is the female in the family unit who acts as the mothering one, and the mother may be included as the head of household by the Census Bureau if there is not an adult male acting in that role.

The median years of school completed by both the household heads and mothers was 12.2. In other words, the average educational level was slightly beyond high school graduation. More than three-fourths of the household heads had at least some high school, and 4.2% had less than a fifth grade education. Only 1.4% of the mothers had less than a fifth grade education, and an additional 2.5% had not attended beyond the sixth grade. These 42,171 mothers (3.9% of the total) might require oral as opposed to written instructions if they are responsible for preschool education in their homes. However, according to the Census Bureau data, at least 96.1% of the mothers could use written materials with little difficulty.

In the demographic study reported previously, 20.6% of the 678 mothers in the sample were found to be unable to successfully complete activities written at a second grade reading level (Shively, Bertram, and Hines, 1975, p. 12). According to the Census Bureau, 14.6% of the mothers had not completed eight grades of school, so the conclusions of the previous AEI study might bear further investigation.

The degree to which the educational needs of young children are currently being met was determined by a second analysis. Incidentally, these data would have changed more since they were collected in 1970 than any other data in this study, since several of the states have launched or accelerated extensive kindergarten programs.

Of the 837,890 three, four, and five year old children, only 134,827 or 16.1% had been enrolled in some type of program. Most of these (78.6%) had attended kindergarten and the remainder (21.4%) had been enrolled in a nursery school. Since there were 293,329 five year olds in the population, only about one-third (36.1%) of the available children had attended kindergarten. The number of three and four year olds attending some type of formal education was 28,894, or 5.3% of the available children.

The children of professional level and higher income heads of household tended to have a much better chance of having attended kindergarten or nursery school. The range in percentage enrollment was from 28.9% for professional workers to 9.2% for farm laborers and farm foremen. Less than 10% of the children of household heads with salaries of less than \$4,000 per year attended kindergarten or nursery school, contrasted with a 38.3% attendance rate for the children of those who made \$25,000 or more per year. Also, the children of more highly educated parents attended preschool programs more frequently, and the children of household heads who were 26 years of age or older had a better chance of having attended. There was little difference in preschool attendance according to whether the head of household was black or white, but children living in urban areas were more often found in nursery schools or kindergartens. Analysis indicated that 23.7% of the children in places of 10,000 - 49,999 attended nursery school or kindergarten, contrasted with 20.0% in places of 2,500 - 9,999, and only 13.4% in places of less than 2,500 population.

In summary, the data presented in Table 12 indicate that a large majority of three, four, and five year old Appalachian non-urban children were not receiving any formal training. In 1970, there were more than 700,000 children at this very formative age who did not participate in any educational program.

The planners of home-based educational programs should be concerned with the relative numbers of mothers and/or household heads who are employed outside the home. Of those 275,414 mothers who were employed, 43.3% worked at least 50 weeks per year. Since there were 1,081,788 mothers reported in the census and 275,214 were employed, 25.4% of the mothers were employed during 1969, the criterion year for the 1970 census. However, 18.7% worked more than 26 weeks during 1969.

The median family income for the young families was \$6,689 per year, and 21.7% of the families made less than \$4,000. At the higher end of the distribution, 18.2% of the families made \$10,000 or more per year. Most of the income was acquired by the heads of household, since their median income was only two dollars less than the median family income. A majority of the mothers (70.2%) made less than \$1,000 per year.

As might be expected, those with higher income were also (1) better educated, (2) of the professional or managerial occupational ranks, (3) had three children per family, (4) had three or more automobiles per family, (5) had a flush toilet, (6) lived in a house with six or more rooms, (7) had older children, (8) lived in more expensive houses or paid higher rent, and (9) lived in larger towns. The progression of median income figures is often revealing and a convenient way to interpret the data. For example, the progression of median family income from the category "no schooling" through the elementary and secondary school categories to the highest levels of college education completed is as follows: \$3,617, \$4,363, \$5,353, \$5,880, \$6,374, \$7,078, \$8,229,

Table 12

Number and Percent of Children (3-5) Enrolled in Preschool
Education by Level and Type of School

	Number	Percent
Total Children	837,890	
Total Enrolled	134,827	16.1
<u>Nursery School</u>	28,894	21.4
Public	12,568	43.5
Parochial	888	3.1
Private	15,438	53.4
<u>Kindergarten</u>	105,933	78.6
Public	85,257	80.5
Parochial	3,018	2.8
Private	17,658	16.7

\$9,191, \$11,940, and \$12,890. Each step in the educational ladder is accompanied by an increase in income.

Television and Telephone. Of primary importance to the study was the proportion of the population which had access to television and the geographical location of the television availability. According to Table 13, 96.7% of the families of Appalachian preschool children had a television set in their home, and 20.9% of the families had two or more sets. UHF was present with almost half of the families. This is a much higher rate of television ownership than has generally been acknowledged, and the proportion has probably increased since the time of the 1970 enumeration.

As of 1970, 36,821 of the families living in "occupied housing units" did not have a TV set. Other AEL research reported previously has indicated that about 43.3%, or 15,943 additional Appalachian families could conveniently watch a TV program with a neighbor (Shively, 1975, p. 10), so only about 1.8% of the Appalachian families could not have access to a pre-planned and announced television program such as with Home-Based Preschool Education. Nevertheless, other arrangements would be required for the 20,878 children who do not have access to TV. Perhaps educational radio or personal visitation should be considered.

The occupational group of Families which has least access to TV is the farmers and farm managers (89.2% with TV), and that is probably because they live in rural areas. There is a direct relationship between television ownership and income, but the range is less than 13%; from 85.8% with less than \$1,000 per year to more than 98% at the higher income levels. There is also a direct relationship between television ownership and years of school completed, but the range is even less than with income categories.

There is a direct relationship between the number of children in the family and the rate of television ownership, but except for one category, the

Table 13
 Number and Percent of Occupied Housing Units
 by Availability of Television

	Number	Percent
Total Housing Units	1,132,233	100.0
With TV	1,095,412	96.7
1 Set	859,338	75.9
2 or More Sets	236,074	20.9
With UHF	552,384	48.8
No Set Present	36,821	3.3

range is less than eight percent, from 90.5% through 97.4%. The exception is that for families with ten or more children, the rate of television ownership is only 85.7%. Otherwise, families with greater numbers of children are more likely to have TV. There is also only a small difference in television ownership among different racial groups; 94.2% of the Negro families and 96.9% of the white families own television sets.

The HOPE planners were also interested in telephone availability since many of the personal contacts with family members can be made by telephone. Surprisingly, only slightly more than three-fourths of the families possessed a telephone (77.6%), and there was considerable variability from region to region. For example, only 52.5% of the families of preschool children in the Appalachian portion of Kentucky have telephone service, and the rate is as low as 18.3% for one county. Those contemplating home-based programs should not necessarily depend on telephone service, and incidentally, the credibility of telephone surveys in rural areas can be questioned since they would tend to undersample in sparsely settled areas.

In summary, television is available to the population and generally available to different economic, occupational, and racial groups. In contrast, telephone service tends to vary considerably from region to region within the total Appalachian Region.

Other Demographic Variables. Several additional items of data concerning the Appalachian families were tabulated. These items are descriptive of the roles of individuals within families, social characteristics, mobility of the population, size of families, and other miscellaneous items.

There were 1,611,030 children in the population. The decreasing birth rate seems to have become somewhat attenuated since the fewest number of children were two years of age and the largest number were five years old. Of

the 1,050,407 male household heads, 95.5% were white, 4.3% were Negro, 0.1% were Indian (native Americans), and 0.1% were of other races. Of the 1,611,030 children, 93.3% were white and 6.5% were Negro.

The population of household heads and mothers was rather mobile. Analyses indicated that 17.6% of the heads and 19.2% of the mothers were born outside their state of residence in 1970. A few more of the mothers than household heads were born out of state, possibly because male household heads tended to have married females from out of state and then returned to rear a family. The figures are particularly significant since much of the Region is an area in which the rate of out-migration historically has tended to slightly exceed the rate of in-migration, although the flow may have been reversed some recently.

Most of the households with a three to five year old child had only one child of that age in the family (83.3%) and only 15.4% of the families had two children of that age. Therefore, educators should expect only one child of ages three, four, or five in each family, and only occasionally find two children of that age.

As for total family size, many families contained four persons (28.4%), and almost that many families had three persons (23.6%) and five persons (20.2%). These figures do not necessarily represent the median family size in Appalachia, since families with at least one preschool child are more likely to have additional births than are older families, and other families may not have any children. Families with a total of three children tend to have higher incomes, probably because they have older wage-earners than families with fewer children, and the median family income tends to decrease according to the number of children from four through eight or nine children per family, and then increase slightly for families with ten or more children. As expected, families with more children tend to have older household heads.

In Appalachia, 7.3% of the families do not have an automobile, and at least that many would need transportation to a central location if group sessions are conducted. Of course, many of those without automobiles might be transported by neighbors. Those families without an automobile tend to have less income; in fact, the median annual family income is \$3,493 for those without an automobile compared to \$8,083 for those with one. There is a fairly strong direct relationship between the number of automobiles owned and the number of rooms in the residence, although those families with no automobiles tend to live in houses with at least four rooms. Interestingly, three-fourths (74.7%) of those who own three or more automobiles live in rural areas of less than 2,500 population, whereas only 58.3% of the families without any automobiles live in the very rural areas. There is a tendency for those without automobiles to live in the larger towns.

As should have been concluded by this time, the population was essentially very rural in nature; 68.0% of the population lived in areas of less than 2,500 population, and another 15.0% lived in small towns of less than 10,000. However, the fact that the family was classified as "not in a place" by the Census Bureau is no indication that the people lived in isolated areas. The "non-place" may have been three miles outside the Pittsburgh city limits.

Summary of Results

A great deal of data used in designing and implementing the Home-Oriented Preschool Education program has been presented in this paper. An attempt has been made to indicate how data might support various kinds of decisions and how it might be used to alert educational planners and administrators to particular circumstances which they might find in the homes of young children. One problem in presenting such data is that the data are difficult to summarize

and present briefly. Since a convenient classification system is not available, an attempt will be made to summarize the data presented in the following narrative.

The results of the parent materials study indicated that, even at the second grade reading level, approximately one-fourth of the parents were unable to carry out the activities described on the sheets and that the instructional illustrations which were intended to aid the parent in carrying out the activity actually produced a reduction in number of complete responses. This decrease may have been due to the distracting nature of the illustrations which caused parents to not attend fully to the written instructions for each activity. Overall, the most successful combination of reading level and illustrative style was found for those activities written at the second grade level and utilizing decorative illustrations. Another analysis indicated that the ability of parents to complete the activities was related to educational attainment, and that over one-half of the mothers with six years of elementary school or less could not complete the activities. The ability to complete the activities was also associated with the head of household occupational classifications, but not to as great an extent as with the mothers' educational levels.

These findings have several implications for future program planning. First, it seems apparent that the materials which the home visitor delivers should be written at the simplest vocabulary level at which it is possible to convey the ideas and activities which need to be communicated to the parent. If it is at all possible, these activities should be written at the second grade level and should incorporate decorative rather than instructional illustrations. Second, since this survey indicates that almost one-fourth of the parents were unable to carry out the activities at even the second grade level, a home visitor is essential--especially with parents with lower levels of

educational attainment. The home visitors should go over each of the activities with the parents before they leave the homes and should be sure that the parents understand exactly what is required of them. Finally, this study raises the question of functional illiteracy among parents in the HOPE target population. Due to the nature of the study, it was not feasible to determine the exact number of parents who were functionally illiterate, but it is apparent that a sufficient number of parents were unable to complete the activities. These parents need additional oral instructions rather than completely depending on printed materials for communication purposes.

Finally, although comprehension appeared to be quite low, it should be recognized that the activities were no-context situations. Parents participating in the HOPE program would have been made aware of the general context each day through the television program and would have been in directed discussions with groups of parents each week in addition to the discussions with home visitors each week. These factors would undoubtedly serve to improve comprehension.

The demographic survey lends support to claims of diversity in the Appalachian Region. Some stereotypic claims appear to be substantiated as a result of the survey whereas other claims appear to be refuted.

The size of the families with preschool children in the survey sample appears to be quite small. Over three-fourths of the families have three or less children in the home and only a few (about 13%) families are relatively large (5 or more children in the home).

In 87% of the homes surveyed, the mother of the preschool child is not considered to be the head of the household and 73% of the mothers are not employed outside the home. Consequently, in 80% of the homes the mother is the person who is in charge of the preschool child during the day. These

facts tend to generate a picture of a male-dominant environment where the male is employed and provides a home for the female and their children.

However, when one looks at the occupational listings of the heads of household, over 12% of the heads of household are unemployed. Over one-third are employed as laborers or craftsmen and only 14% could be considered to have "white collar" jobs. Possibly related to the type of employment held by the head of the household is the fact that nearly all the preschoolers eat the evening meal with the entire family, almost two-thirds eat breakfast with the family, but less than one-half of the preschool children eat the noon meal with the family.

As could be expected from the procedure used in obtaining the survey sample, over three-fourths of the homes surveyed are in areas where there are less than 2,500 people. These data suggest that most of the HOPE target population will be located in small farm-type residences or in small clusters of residences isolated from larger population centers.

The data also indicate that the educational level of the mother is slightly higher than the educational level of the head of the household. Over 91% of the mothers are at least eighth grade graduates, whereas 80% of the heads of household are eighth grade graduates. Similarly, over 58% of the mothers are at least high school graduates whereas about 50% of the heads of household are high school graduates. Since the HOPE process involves the use of parent materials, this knowledge of the level of educational attainment may be useful in preparing materials which are suitable to the reading level of the primary users. It should also be pointed out that about three-fourths of the homes have newspapers, magazines, a dictionary, or library books present for the adults and children to use.

Finally, although there has been little change in frequency of visits to the zoo, museum and art gallery, fire and railroad stations over a six year

period, parents are more frequently taking their children to athletic events and the library.

When one looks at the state/site data across the entire Appalachian Region, the presence of diversity becomes more apparent. Deprivation does not appear to be as extreme as does diversity. Consequently, this diversity must also be taken into account as program materials are prepared.

The primary intent of the television survey was to establish the practicality of the use of television as one of the components of AEL's HOPE program on a region-wide basis. The data which have been presented in this report supports AEL's conviction concerning the practicality of this method of presentation. The high percentage of families which own television sets, as well as the high percentage of those who could use a neighbor's television set if they did not possess one of their own, agrees well with previous figures obtained from television industry sources and published U. S. Census Bureau data. The relatively small percentage of families who had their sets connected to a commercial cable television company argues in favor of broadcast through regular commercial stations. The small number of television sets with poor reception quality or with operational difficulties indicates that the majority of families who own television sets would be able to receive an AEL broadcast with good fidelity. Although this survey did not find any major difficulties in the use of television as an educational medium in the Region, it did show that approximately one-third of the families did not have a telephone in the home, suggesting that program contacts would have to be made in person rather than by telephone.

Additionally, it is hoped that the other data gathered from this survey will be of use to program developers and evaluators in planning the logistics of implementing home-based programs such as HOPE. The data gathered on time

of day the child watched television most frequently and the time of day when the child had control of the television have particular implications for program planning.

The results of the parents' expectations of their children's competencies indicated that the Appalachian parents generally have high expectations concerning their children's developmental behaviors. However, certain characteristics of the instrument and the sampling procedures may have resulted in a biasing of the results toward the positive end of the response. Other research performed by AEL staff would appear to be more definitive.

The results of the U. S. Census Bureau study are even more difficult to summarize than the preceding four studies. As a means of summarizing the information, a typical Appalachian family of 1970 is described in the following concluding paragraphs. Certain misconceptions may be introduced by assuming that all families with preschool children resemble the typical family which is assembled from the measures of central tendency, but the alternative procedure of repeating a long string of "most important" percentages seems less useful. The following description is based on analyses of U. S. Census Bureau data.

The year is 1970. Tom and Mary Jones live in a West Virginia community of less than 2,500 near the Pennsylvania border. Tom is about 32, healthy, employed, and works full-time as a craftsman. His income is \$6,689, and since Mary does not work, that represents their total family income. Both Tom and Mary have completed high school. They were born in West Virginia, a Wetzel County, and moved into their present house three years ago. Their house has six rooms, indoor plumbing, and is a single unit structure valued at from \$10,000 - \$15,000. Tom and Mary own one automobile, and are not presently considering a second car.

Young Timmy Jones is four years old and does not attend kindergarten, since only some of the children in the larger towns have an opportunity to learn in an institutional setting. Of course, Timmy can watch Sesame Street, Kaptain Kangaroo, and Misterogers' Neighborhood, since his parents have a television set.

The other member of the family is Jeanie Jones, age two, and beginning to absorb and learn from the many experiences mountain life can offer. Tom and Mary have not started Jeanie in a part-time nursery school where she might

learn certain social and perceptual motor skills, and develop a readiness for the complexities of regular school. No nursery schools are available; neither are any other means of obtaining these skills available to Jeanie and Timmy Jones.

Thus, five studies have been completed which provide information for implementation of parent education programs, and Home-Oriented Preschool Education in particular. Those responsible for designing and implementing such programs should be made aware of these data and similar analyses should be completed as the data become more dated. For example, planning should begin now for analyzing the 1980 U. S. Census Bureau data so that parent education program planning can be based on facts rather than hunch.

Another recommendation is that these data be categorized and presented in a summary and perhaps graphic fashion so they can be easily understood and used by practitioners. For example, home visitors should know what effect the educational level of parents might have on the parents' ability to understand and properly use printed materials, and when it will be necessary for them to give verbal instructions to the parents. This type of information is best made available through study of data such as presented in this paper.

Those responsible for planning educational programs for the Appalachian Region should be especially interested in the data, since factual information rather than conventional stereotypes should guide the selection and design of the Region's educational programs. The future of more than one million Appalachian children will be improved through careful program planning.

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