

C O M M U N I T Y A C T I O N I N A P P A L A C H I A

An Appraisal of the "War on Poverty"
in a Rural Setting of Southeastern Kentucky

(Report of a study by an interdisciplinary team of the University of Kentucky, performed under Contract #693 between the University of Kentucky Research Foundation and the Office of Economic Opportunity, 1965-68)

UNIT 11

THE EARLY CHILDHOOD PROGRAM

By

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COMMUNITY ACTION IN APPALACHIA

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ABSTRACT

THE EARLY CHILDHOOD PROGRAM

by

Paul Street and Linda Tomes

One-hundred forty children (68 boys, 72 girls) in the first grade for the years 1966-67 and 1967-68 who had participated the previous year in the Early Childhood Program conducted by an OEO community action group in a rural Appalachian county in southeastern Kentucky were matched with other first graders of their own classes respectively in terms of progress toward promotion to second grade and social adjustment (on the basis of rankings by their first-grade teachers during February of each year respectively) and then on grades at the end of first grade.

Boys were matched to boys, girls to girls, so that matched pairs of groups were established respectively in terms of the three criteria, and these compared on the basis of each of the criteria, first with the sexes separately, then with sexes combined. The variables used in the comparison were those related to home background of the youngsters, and to age of entering first grade. Differences significant at the .05 level were determined by t-test of differences between means of paired groups.

It appeared from the study that there were rather clear tendencies for the child in first grade who had had the Early Childhood experience to be matched (on the basis of the three criteria used in this study, and especially by grades at end of first grade)

to a child who was slightly older and who came from a home in which:

- 1) The parents had measurably more interest in having the child go further in school. (Boys and combined sexes matched on grades.)
- 2) The parents had themselves had more schooling. (Boys and combined sexes matched on grades.)
- 3) The level of employment of the head of household was higher. (Boys matched on progress toward promotion in February and on grades; girls on grades; combined sexes both on progress toward promotion, and grades.)
- 4) The family income, measured either in gross or adjusted in terms of size of the family and location, was higher. (Boys and combined sexes matched on grades.)

Despite some vagaries which may variously be attributed to sampling or measurement errors, the Early Childhood Program product may be viewed, therefore, as having overcome such handicaps of background as these differences represent, as well as a slight age handicap, in "catching up" with those with whom he was matched in this study. Age was the most recurrently significant variable distinguishing the two groups. In all the pairings, it failed to emerge as significant only in comparisons between the matched groups of boys and of girls on progress toward promotion, and of boys on grades.

There was, however, a recurrent tendency--not clearly demonstrated, it is true, in any of the matches on grades, but appearing in matchings of boys and combined sexes on progress toward promotion and social adjustment and girls on social adjustment--for the Early Childhood Program product to come from homes where newspaper reading is more commonly practiced.

ACKNOWLEDGMENTS

This study could never have been done without the generous support of the people of the schools in Knox County, particularly the administrative office staffs--but most especially the first grade teachers! It was they who exhibited the cooperative spirit and patience required to carry out our somewhat complicated instructions and provide us the information we needed about their pupils--and most of them performed this task twice for us, once for 1966-67 and again for 1967-68. We are grateful.

Others we should thank are the mothers of the children we studied--both those who had youngsters in the Early Childhood Program and those who, by fortuitous circumstance, happened to have youngsters in first grade who became match-mates to those in the Early Childhood group. Their willingness to answer questions that helped us do our study will, we hope, eventually contribute toward a better understanding of how to improve education, and life generally, for all children.

--Paul Street, Principal Investigator
Linda Tomes, Research Assistant

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THE EARLY CHILDHOOD PROGRAM

Both the goals and character of the OEO community action program (CAP) are so mixed with intangibles and its potential impacts so intertwined with those of other programs that anyone attempting to appraise it should be alert to the hazard of committing a non-sequitur. These investigators should like first of all to declare that they have no illusion that the most important impacts of the CAP, and specifically in the case of the Early Childhood Program, are those measured here.

They would be first to admit that any failure of data presented here to demonstrate a clear impact of the CAP should not be regarded as conclusive of its ineffectiveness. Some imponderables are obviously beyond the scope of any research methodologies now available. Some essentially germane to the appraisal of the Early Childhood Education Program appear to be:

- 1) How has the program affected the aspiration levels of youngsters, in ways that perhaps would be measurable only in later, even adult, years and perhaps in only some or even a few individuals?
- 2) Are there effects which, perhaps even in diminutive degrees at first, may in the long run generate among parents higher educational aspirations and ambitions for their children?
- 3) Are there impacts in socialization of parents of children

in the program who may be drawn into neighborly contacts and involvements that may extend their social and intellectual horizons?

- 4) Are there impacts upon education as an institution in the community, especially in the long run?
- 5) Are there impacts upon the health and physical growth of the youngsters in the program, especially in the long run?

Weighing these against such counter-imponderables as the low living standards and very real and considerable disadvantages generally characteristic of the environment of children in the Early Childhood Program in Knox County, one may judge that any attempt to reduce the evaluation to immediately available objective data could result in a missing of the crucial value issues of the program entirely.

Despite such concessions, the investigator herewith proceeds to deal with data which did appear available, in a sense groping toward some possibility of evaluation from such broad-framed perspectives while, at the same time, attempting to hold onto hard-data realities.

Research Context

A review of the literature regarding pre-school programs for the disadvantaged child nets little germane to the problem of evaluating the Knox County CAP in Early Childhood Education. Unless something has been overlooked in the review done by these investigators, this study is of a distinctive pattern, both in the

logic of its design and, to some extent, in the pattern of variables with which it is concerned.

The relationship between child growth and environment, of course, is generally recognized, as is the principle of maturation. Classical studies, such as the pioneer works of Binet in France and Terman¹ in the United States, in developing measures of intellectual growth calibrated by age (mental age in months), substantiate the relation between the child's inherent maturation tendencies and his age--and generalizations relating their measures of this development to success in school have been the starting point for multitudes of studies.²

Relationship of the general environment of the child to his achievement level in school--and to his IQ--has in recent years had considerable attention, both in research and debate. With regard to the child from the impoverished home, Deutsch observes ". . . that disadvantaged children, who have a meager environmental base for developing cognitive skills, are often unprepared to cope with the formal intellectual and learning demands of the school."³

¹Lewis M. Terman, The Measurement of Intelligence (Boston: Houghton Mifflin Company, 1916), p. 40.

²D.R. Green and S. V. Simmons, "Chronological Age and School Entrance," Elementary School Journal, Vol. 63 (October, 1962), pp. 41-7.

Paul Street, "How Old Should a First Grader Be?" School Service Report, Bureau of School Service, University of Kentucky, Vol. 1, No. 1 (May, 1968).

³Martin Deutsch, "Some Psychological-Social Aspects of Learning in the Disadvantaged," Teachers College Record, Vol. 67 (January, 1966), p. 261.

Obviously, environment and native ability are each clusters of variables most difficult to separate, since the inherently able are presumed to be able somehow to effect an environment congruent with their ability. The general relationship between home background of the child (be it cause, effect, or both)⁴ and his educational growth is documented by many studies--mostly, however, for age groups above the pre-school level.

This study is different, therefore, in that it examines into some variables presumably related to the general supportiveness of the home environment of the pre-school child intellectually and socially and to the variable of age, relating these to the variable which is the concern of this study--participation in the Knox County CAP Early Childhood Program.

Two hypotheses set up in the original design for this study to be tested in evaluation of the Early Childhood Program are that:

- 1) The program will change the environment in which children are reared, not only in control of conditions in the centers where participating children of ages 3-5 spend some twenty hours per week but primarily (in a measurable sense) by influence upon attitudes and aspirations held for the children by their parents (with participating parents compared to others of like socio-economic background).
- 2) The children who have participated in the Early Childhood Program, in comparison to a paired group who have not

⁴A matter for further study might well be more incisive examination into the dynamic relationships among the variables treated in this study.

participated, will demonstrate in first grade a greater reading and academic readiness and capacity to participate cooperatively but self-sufficiently in group activities, as indicated by a rating index applied by teachers.

Some modifications of the original design have become necessary. Evidence of change in parents is to be indirectly inferred on the basis of data gathered for other phases of the study. The evidence here regarding the second hypothesis is, however, explicitly directed toward testing it.

Character of the Early Childhood Program

Characteristically, the Early Childhood Program is operated in a former school building which also serves as the Community Center under the OEO Community Action Program. It has been adapted by:

- 1) Addition of a kitchen and serving facilities.
- 2) Addition of indoor plumbing and toilet facilities, if they did not previously exist.
- 3) Screening of windows and general rehabilitation.
- 4) Arrangement and furnishing of a room equipped generally as is a modern kindergarten, with children's furniture and play equipment.

Typically, children are brought by motor car (a small "Scout" bus) about 9 a.m. four days per week. (The driver is usually a parent of a participating child.) They are given a variety of experiences roughly similar to those of kindergarten: playing, eating, napping, toilet, listening, general socialization, and


occasional field trips. They receive hot lunches at noon and are returned home about 3 p.m. Although in the beginning 22 children were accepted for each unit, the number has since been dropped to 17. In some areas, there are too few children to fill even this reduced quota.

Efforts were made to employ qualified teachers in the program. Although there was no certification requirement for the teaching personnel, in each case of employment an effort was made to obtain either duly certified persons by Kentucky standards in the elementary education field (requiring the bachelor's degree with certain course patterns) or equally qualified persons in related fields such as social work or psychology. Teacher's aides were recruited from the available people in the community. These people, naturally, were not as qualified educationally as the teachers, but they were interested in helping in the program and were able to relieve the teachers of some of their routine duties.

The program was opened and operated in time sequence as indicated in the table on page 7.























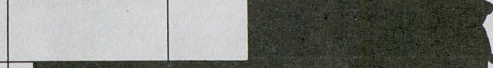



























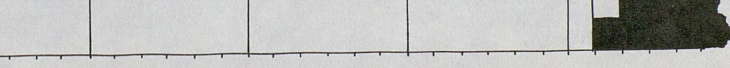





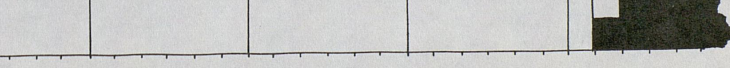
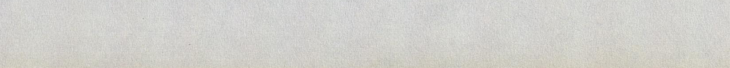




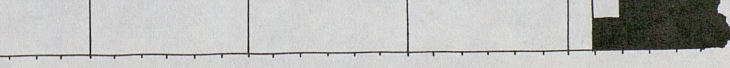
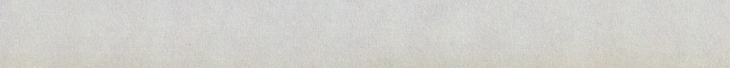
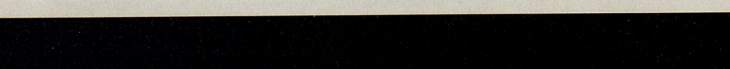



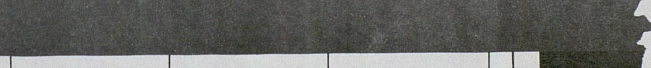
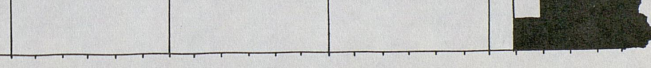
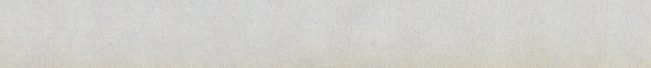
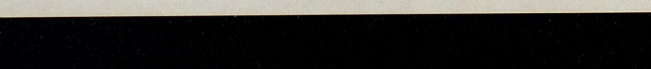







The Sample

Available population for the study is limited, of course, by the enrollment in the program. There were 94 who were in the program in 1965-1966 and were expected to enter grade 1 in fall of 1966. Then, 138 more were enrolled in 1966-1967 and 75 moved into first grade in fall of 1967. These represent the "pool" from which the sampling was necessarily drawn--and the drawing was of every one

 = half-time

 = full-time

TIME OF EARLY CHILDHOOD EDUCATION PROGRAM IN CENTERS

	Oct.'65	Jan.'66	July'66	Jan.'67	July'67	Jan.'68	June'68
Community Center Program							
Barbourville							
Bethel							
Cannon							
Flat Lick							
Fount							
Grays							
Grove							
Jackson							
Kay Jay							
Messer							
Rosenwald							
Wilton							

available. (Eighteen of these were from the Barbourville and 8 from the Rosenwald center, in areas comparatively more urban than would have fit the purposes of the study, ideally.)

Furthermore, only 76 of the total of the 1965-66 group were found to be enrolled in first grades of the county. In 1966-67, also, only 75 of the 1966-67 group were so enrolled in 1967-68. Of the first group, two were the only first-graders in a one-room school, so that they had no classmates with whom to be compared. Also, a few moved before their parents could be interviewed so that they could not be included in the sampling for some purposes. Other obstacles eliminated a few (the atypical cases of children reared in an orphanage, for instance) so that eventually only 69 could be included as the "experimental" group for all phases of this report in the first group and only 71 of the second group for all phases.

Rationale for Comparing Groups

The design for this study is unusual in that instead of matching paired groups at a "starting point" the matching was done at the "finish line"; that is, the groups were paired on the basis of achievement in first grade, then tests applied to see whether or not the home backgrounds and ages of the two groups, in terms of characteristics presumed to be related to success in school work generally, differed. That is, achievement was treated as though it were the independent variable, potential (as measured by home background and age) as though it were the dependent variable.

The procedure was:

- 1) During February 1967, and again in 1968, first-grade teachers in the county who had in their classes any youngsters who had had the Early Childhood Program experience the previous year were asked to rank all their students in two bases separately:
 - A) Success toward promotion to second grade.
 - B) Success in adjustment independently and cooperatively in group activities.
- 2) Two paired groups of males and two paired groups of females were selected by alternately pairing each child who had been in the program with one of the same sex who had not, and who alternately ranked either immediately above or below him.⁶ This was done separately for the two criteria--

⁶Some impasses were encountered where, for instance, two or more of the same group were ranked consecutively. Consequently, choices were made, "above" or "below," to balance the rankings as nearly as possible. Even so, the A₁ group (see table, page 11) had a cumulative ranking of 6 points above¹ (actually lower ranking) its cohorts: B₁ of 9 points; C₁ of 1 point; D₁ of -11 points; E₁ of -2 points; F₁ of 3 points; G₁ of 5 points; H₁ of 9 points; I₁ of -14 points; J₁ of -14 points; K₁ of -18 points, and L₁ of 23 points. The means of all rankings (though obviously rankings were of differing values because of differences in class size--as well as of teacher judgments) were respectively: For A₁, 6.74; for A₂, 6.57. For B₁, 6.86; B₂, 6.60. For C₁, 7.51; C₂, 7.51. For D₁, 6.13; D₂, 6.41. For E₁, 8.80; E₂, 8.85. For F₁, 10.25; F₂, 10.25. For G₁, 7.71; G₂, 7.57. For H₁, 7.94; H₂, 7.62. For I₁, 6.19; I₂, 6.97. For J₁, 6.41; J₂, 6.83. For K₁, 9.14; K₂, 9.67. For L₁, 11.69; L₂, 10.50. Obviously, the advantage, accidentally, falls to the control groups except for D₂, H₂, and L₂ where the mean ranking turns out to be lower (a higher figure) than for D₁ (in comparison of girls on the basis of social adjustment), H₁ (in comparison of boys on the basis of social adjustment), and L₁ (in comparison of girls on the basis of grades). The differences are presumed, however, to be slight. Actually, among the combined 27 class groups (14 from 1966-1967 and 13 from 1967-1968) from which

success toward promotion and success in group activities-- and then on the basis of final grades in the three "fundamentals," reading, writing, and arithmetic, at the end of the school year.⁷

The result was the pattern for classifying the subjects exhibited on the page which follows. Actually, the groups for both years were combined, first with sexes separated, but finally with boys and girls combined. (Using matched pairs preserved the balance between the paired groups, of course.) Assumptions underlying this pattern were:

- 1) That girls are generally more mature than boys at entry to first grade.⁸

samples were taken, we were able to have rankings exactly balanced by class groups of boys and girls separately in 57 of the 154 groups, with the greatest difference being 8 ranking points between two groups.

Cohorts were selected individual by individual, not simply to balance the total rankings between matched groups. This was done so that when a sample had to be discarded for any reason his cohort could be dropped also and the balance between groups adequately preserved.

⁷Grade matching involved summation of final grade "scores" in reading, writing, and arithmetic, counting: A=5, B=4, C=3, D=2, F=1. The pupil, therefore, could score as high as 15, as low as 3.

⁸This assumption was actually given a rather superficial testing on the basis of the data on the experimental group. For the first-year group (1966-1967) in 7 of the 11 classes in which both sexes had been in the program, the girls had a median ranking above that of the boys on the basis of progress toward promotion to second grade, with a tie in one. On the basis of social adjustment they ranked higher in 7 of the 11. On the basis of grades the girls outranked the boys in 7 out of 11 classes and tied in 2. For the second-year group (1967-1968) in 6 of the 10 classes in which both sexes had been in the program, the girls again had a median ranking above that of the boys on the basis of progress toward promotion to second grade, with a tie in 2. On the basis of social adjustment the girls ranked higher in 4 of the 10 and tied in 2. Of some interest, also, is the ranking of the experimental group, boys and girls combined, in comparison to the total of the entire classes in which they were ranked. Although the

GROUPING PATTERN OF STUDY

<u>Experimental</u> (Those who had Early Childhood Development Experience in 1965-66)	<u>Control</u> (Those of matched rankings who were not in program)	<u>Experimental</u> (Those who had Early Childhood Development Experience in 1966-67)	<u>Control</u> (Those of matched rankings who were not in program)
A ₁ Boys on basis of progress toward promotion	A ₂ Boys on basis of progress toward promotion	G ₁ Boys on basis of progress toward promotion	G ₂ Boys on basis of progress toward promotion
B ₁ Boys on basis of social adjustment	B ₂ Boys on basis of social adjustment	H ₁ Boys on basis of social adjustment	H ₂ Boys on basis of social adjustment
C ₁ Girls on basis of progress toward promotion	C ₂ Girls on basis of progress toward promotion	I ₁ Girls on basis of progress toward promotion	I ₂ Girls on basis of progress toward promotion
D ₁ Girls on basis of social adjustment	D ₂ Girls on basis of social adjustment	J ₁ Girls on basis of social adjustment	J ₂ Girls on basis of social adjustment
E ₁ Boys on basis of grades	E ₂ Boys on basis of grades	K ₁ Boys on basis of grades	K ₂ Boys on basis of grades
F ₁ Girls on basis of grades	F ₂ Girls on basis of grades	L ₁ Girls on basis of grades	L ₂ Girls on basis of grades

- 2) That teacher judgments of the youngsters within a single class group are expressed with acceptable reliability and validity through rankings according to the two criteria-- though judgments between teachers of different groups might not have been assumed to be acceptable.
- 3) That the measures selected for evaluating the initial potential of each subject to do first-grade work were within acceptable limits of reliability and validity when applied to the groups.
- 4) That if the groups paired on achievement on either of the two criteria differ significantly in the measures of their home backgrounds or of age it is reasonable to conclude that the Early Childhood Program has had a significant impact.

The null hypothesis to be tested in comparisons between each of the paired groups was that: The home backgrounds and/or ages of the experimental and of the control groups do not differ significantly.

The data appear to lend themselves to very simple statistical

initial assumption was that the former, being drawn from disadvantaged backgrounds, would compare unfavorably on the basis of mean rankings, such did not turn out to be the case. Indeed, by an insignificant margin the experimental group showed an advantage above the group of which they were a part. Among the 14 classes in which the first-year group were scattered, the experimental groups had a slightly higher median ranking in achievement toward promotion to second grade in 6 of them and tied in another. On basis of social adjustment, they led in 6 and tied in 2. On the basis of grades, they led in 6 and tied in 4. For the second-year group of the 13 classes of which the experimental group were a part, on the basis of progress toward promotion to second grade and on the basis of social adjustment, in 12 cases they were above the class median and tied in 1. On the basis of grades, they led in 2 and tied in 8.

treatment: The mean scores of the respectively paired groups were compared, with tests applied for significance of difference between means. The results are in the tables which follow in which parallel groups for both years are combined.

Comparisons Between Matched Groups--Sexes Separated

Assuming that the .05 level of significance is an acceptable one, the table following may be interpreted as showing that the boys who had had the CAP Early Childhood Program experience before entering first grade, by comparison to others ranked equally with them academically, came from homes in which more newspaper reading (presumed to be related to participation in other mass media) took place-- a fact which suggests an unexpected advantage in the background of the Early Childhood Program youngster. This is offset by the disadvantage of coming from a home in which the father is of a lower level of employment. As will be seen shortly, these conclusions get modification as the sex groups in the sampling are combined so that the N is enlarged. It may be noted that some items had comparatively high levels of significance--representing tendencies too "weak" to be measured as significant with so small a sample but emerging as the N is enlarged, as appears to be the case when the two sexes are combined. (The two are kept separate here so that it can be judged whether or not there is a difference in the impact of the program between the sexes.)

Table 1 (A₁-G₁ versus A₂-G₂)
 COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF FIRST-GRADE BOYS
 MATCHED ON BASIS OF STUDENT'S PROGRESS TOWARD PROMOTION TO
 SECOND GRADE DURING SIXTH MONTH OF 1966-67
 AND 1967-68 SCHOOL YEARS

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	29.46	30.40	.12
Years of schooling both parents had	11.93	13.14	.20
Employment level of breadwinner	2.76	3.40	.05
Newspaper reading index score	3.39	2.39	.04
Gross family income level	5.01	5.56	.13
Number in family	6.49	6.71	.57
Adjusted family income level	2.69	2.91	.45
Age in months at entering first grade	74.89	76.04	.33
N of each group	70	70	

Table 2 does demonstrate a significant difference between groups in age--with Early Childhood boys younger--but no other of the tendencies quite reached the .05 level. Either the instruments used were too crude to detect the trends or the sample was too small--or the trends did not exist. Again, as the N is enlarged as the boys and girls are combined, some of these tendencies become statistically verified. The difference in mean age between the

two groups, significant at only .33 for the boys, is, for example, more strongly demonstrated when the groups are combined. It appears here, of course, as significant.

Table 2 (B₁-H₁ versus B₂-H₂)
COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF FIRST-GRADE BOYS
MATCHED ON BASIS OF SOCIAL ADJUSTMENT DURING SIXTH MONTH
OF 1966-67 AND 1967-68 SCHOOL YEARS

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	29.42	30.38	.12
Years of schooling both parents had	12.07	12.77	.47
Employment level of breadwinner	2.75	3.32	.08
Newspaper reading index score	3.39	2.04	.004
Gross family income level	5.06	5.14	.80
Number in family	6.49	6.46	.94
Adjusted family income level	2.80	2.74	.84
Age in months at entering first grade	74.74	77.00	.005
N of each group	69	69	

In the table above two items appear significant at $<.05$, and a third one approaches doing so--employment level of parent (.08). (All three of these emerge as recurrently more significant as the groups of boys and girls are combined.)

Table 3 (C_1-I_1 versus C_2-I_2)

COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF FIRST-GRADE
GIRLS MATCHED ON BASIS OF STUDENT'S PROGRESS TOWARD PROMOTION
TO SECOND GRADE DURING SIXTH MONTH OF 1966-67 AND 1967-68

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	30.00	29.78	.72
Years of schooling both parents had	13.19	13.24	.96
Employment level of breadwinner	3.06	3.57	.11
Newspaper reading index score	3.00	2.25	.10
Gross family income level	5.66	5.91	.48
Number in family	6.99	6.58	.36
Adjusted family income level	2.97	3.33	.28
Age in months at entering first grade	73.94	75.52	.05
N of each group	67	67	

Table 4 (D_1-J_1 versus D_2-J_2)

COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF FIRST-GRADE
GIRLS MATCHED ON BASIS OF SOCIAL ADJUSTMENT DURING SIXTH MONTH
OF 1966-67 AND 1967-68 SCHOOL YEARS

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	29.82	29.55	.69
Years of schooling both parents had	13.25	13.34	.92
Employment level of breadwinner	3.06	3.36	.35
Newspaper reading index score	3.07	2.06	.02
Gross family income level	5.67	5.66	.97
Number in family	6.97	6.87	.83
Adjusted family income level	2.97	3.19	.50
Age in months at entering first grade	73.99	76.78	.001
N of each group	67	67	

The above table again indicates a significant relation between participation of the child in the program and newspaper reading in the home, a relationship which in the previous tables appeared peculiar to the boys.

Note that age again appears significant, as it does almost regularly in other comparisons to come.

It is perhaps worth considering that the comparisons made on the basis of grades at the end of the year may have greater validity than those based on teacher rankings during the year. Cooperative and conscientious as the Knox County first grade teachers may have been, they had considerably less information about their pupils in February and were not expected to make judgments in ranking them on the basis of daily or term records or test results that might provide more objective bases for their judgments. Presumably, also, as conscientious teachers they would be more concerned about the precision of their judgments of final grades for their pupils than they might about a ranking that, so far as immediate impact upon their pupils is concerned, was pointless. In any case, the matchings on the basis of grades seem to have sharpened differences between the two matched groups.

The table which follows shows differences, disadvantageous in the background of the Early Childhood Program child and demonstrated at an acceptably significant level, between the groups of boys in terms of amount of schooling their mothers wish for their children, the amount of schooling of their parents, and the level of total family income. Age was revealed as almost significant-- $.06$. All of these represent presumed handicaps which the Early Childhood boy has overcome by comparison to a boy to whom he was matched on grades at the end of grade 1. Level of news media participation in the home was not, in this comparison, demonstrated to be significantly different for the two groups.

Table 5 (E₁-K₁ versus E₂-K₂)

COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF BOYS MATCHED
ON BASIS OF GRADES AT END OF FIRST GRADE FOR 1966-67
AND 1967-68 SCHOOL YEARS

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	29.50	30.94	.01
Years of schooling both parents had	12.00	14.84	.008
Employment level of breadwinner	2.76	3.79	.002
Newspaper reading index score	3.37	3.04	.56
Gross family income level	5.01	6.03	.003
Number in family	6.50	6.37	.75
Adjusted family income level	2.72	3.37	.04
Age in months at entering first grade	74.76	76.29	.06
N of each group	68	68	

Table 6 (F₁-L₁ versus F₂-L₂)

COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF GIRLS MATCHED
ON BASIS OF GRADES AT END OF FIRST GRADE FOR 1966-67
AND 1967-68 SCHOOL YEARS

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	29.75	30.11	.54
Years of schooling both parents had	13.28	14.29	.22
Employment level of breadwinner	3.04	3.72	.03
Newspaper reading index score	3.00	2.29	.12
Gross family income level	5.71	5.83	.72
Number in family	7.07	6.46	.15
Adjusted family income level	2.88	3.44	.08
Age in months at entering first grade	73.82	75.71	.02
N of each group	72	72	

The matched groups of girls compared on grades in the table above have two significant differences: Employment level of parent, and age, with adjusted family income a "near miss."

It appears that there are small differential effects of the program upon the two sexes. In both teacher rankings, the Early Childhood boys, for instance, were matched with boys from homes in which the level of news participation was significantly lower. In only one of the teacher rankings were the girls so matched. This would suggest that, rather than having overcome a handicap in home background the Early Childhood boys, particularly, actually had an advantage over the group to which they were matched. In the matching on grades, however--which may be regarded as the most precise categorization--this point of difference was not demonstrated at an acceptable level of significance.

The idea has occurred that perhaps the people who use the news media are more likely to send their youngsters to the Early Childhood Program, or that, having done so, they have become involved in the community center activities and become generally more interested in magazines, newspapers and books provided at the centers.

It is perhaps worth noting that in every comparison the mean age of the Early Childhood Program group was below that of the group to which it was matched. The difference was greater, however, between girl groups, suggesting that the impact on the girls may be slightly greater.

Table 7 ($A_1-G_1-C_1-I_1$ versus $A_2-G_2-C_2-I_2$)

COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF FIRST-GRADE
BOYS AND GIRLS MATCHED ON BASIS OF STUDENT'S PROGRESS
TOWARD PROMOTION TO SECOND GRADE DURING SIXTH MONTH
OF 1966-67 AND 1967-68 SCHOOL YEARS

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	29.60	30.14	.21
Years of schooling both parents had	12.62	13.16	.39
Employment level of breadwinner	2.88	3.46	.01
Newspaper reading index score	3.17	2.29	.007
Gross family income level	5.32	5.71	.13
Number in family	6.76	6.70	.81
Adjusted family income level	2.80	3.10	.17
Age in months at entering first grade	74.36	75.82	.04
N of each group	140	140	

Comparisons--Sexes Combined

The combined sexes of the Early Childhood Program group, compared to their combined matched groups on the basis of academic progress in February are revealed in the table above as being significantly different in age and in family background in terms of employment level of the parent. Level of news participation

also reached a conclusively significant level, while gross and adjusted family income, though fairly high, were short of .05.

Table 8 ($B_1-H_1-D_1-J_1$ versus $B_2-H_2-D_2-J_2$)

COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF FIRST-GRADE BOYS AND GIRLS MATCHED ON BASIS OF SOCIAL ADJUSTMENT DURING SIXTH MONTH OF 1966-67 AND 1967-68 SCHOOL YEARS

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	29.55	29.96	.37
Years of schooling both parents had	12.73	12.99	.69
Employment level of breadwinner	2.89	3.32	.06
Newspaper reading index score	3.22	2.03	.0001
Gross family income level	5.32	5.40	.75
Number in family	6.75	6.64	.72
Adjusted family income level	2.85	2.96	.59
Age in months at entering first grade	74.41	76.90	.00003
N of each group	139	139	

Level of news participation of parents and age are demonstrated to be significantly different at quite acceptable levels of probability in the table above. Employment level of parent approached significance (.06).

Table 9 ($E_1-K_1-F_1-L_1$ versus $E_2-K_2-F_2-L_2$)

COMPARISON BETWEEN BACKGROUNDS AND AGES OF GROUPS OF BOYS AND GIRLS
MATCHED ON BASIS OF GRADES AT END OF FIRST GRADE FOR
1966-67 AND 1967-68 SCHOOL YEARS*

	Early Childhood Group Mean	Matched Group Mean	Level of Significance of Differences Between Means
Years of schooling parent feels son and daughter should have	29.62	30.51	.03
Years of schooling both parents had	12.66	14.56	.005
Employment level of breadwinner	2.91	3.76	.0002
Newspaper reading index score	3.18	2.66	.14
Gross family income level	5.37	5.93	.02
Number in family	6.79	6.41	.20
Adjusted family income level	2.80	3.40	.008
Age in months at entering first grade	74.28	75.99	.002
N of each group	140	140	

*In order to screen out of the sampling those youngsters who might not have had enough impact from the program to make them valid samples, those who had a low attendance record in the program (for the years 1965-1966 and 1966-1967) were separated from the groups (with their matching cohorts). The separation did not, however, affect the statistical significance of the results and, therefore, the results were not reported here.

The final grouping, matched boys and girls on the basis of grades in the table above reveals one difference which did not appear in any of the other comparisons, years of schooling of both parents. (Surprisingly, newspaper reading appeared less significant--though the tendency for it to persist is represented to the .14 level.) Significant differences appearing again are employment level of parent, gross and adjusted family income, and, of course, age of child entering first grade.

Summary

In summary, it appears that there are rather clear tendencies for the child in first grade who has had the Early Childhood experience to be matched (on the basis of the three criteria used in this study, and especially by grades at end of grade 1) to a child who is slightly older and who comes from a home in which:

- 1) The parent has measurably more interest in having the child go further in school.
- 2) The parents have themselves had more schooling.
- 3) The level of employment of the head of the household is higher.
- 4) The family income, measured either in gross or adjusted in terms of size of family and location, is higher.

Despite some vagaries which may be variously attributed to sampling or measurement errors with crude instruments, the Early Childhood product may be viewed as having overcome such handicaps of background as these differences represent, as well as a slight

age handicap, in "catching up" with those with whom he is matched in this study.

There was a recurrent tendency (not clearly demonstrated, however, in the match on grades of the combined sexes) for the product (especially the boys) to come from homes where newspaper reading is more commonly practiced. This phenomenon, apparent in four of the comparisons, merits more explanation than this investigator is able to provide, though two suggestions are offered--namely, that those who read newspapers are more likely to be "participators" and place their youngsters in the program; or, that participation of parents in community center activities as it is generated through the child's participation in the Early Childhood Program has exposed them to mass media and generated more interest in newspaper reading. Such an explanation has reasonable possibility, of course, of being a circular "begging of the question."

ADDENDA

First-Grade Attendance

Early Childhood Program youngsters are given physical examinations and routine shots to protect them from or raise their resistance to the "garden varieties" of childhood diseases. Then, the experience of attendance exposes them, those in charge of the program frankly admit, to most of the diseases early-age youngsters are expected to have. The anticipated consequence is that by the time these youngsters reach first grade they will have built up immunities to higher levels than will have those who were not in the program. They should, therefore, miss less school in first grade than do the others, assuming equal responsibility on the part of the parents in sending them to school regularly. This prediction appears not to have materialized for the 1966-67 group. In fact, attendance of the group to which the first Early Childhood group was matched on the basis of final grades for the 1966-67 year was actually better (mean 14.8 days absent compared to 17.6 days absent for the Early Childhood Program) though the difference between the two groups was not significant at .05 level. The Early Childhood Program group, however, had substantially fewer days absent in 1967-68, with the difference almost significant (.06). The mean for those who had been in the program was 9.0 days absent, for the matched group 11.7 days.

The reversal of tendency represented in the two sample years available in the study leaves no basis for any generalization one way or the other--except that one might well reflect that the entire Knox County CAP, including the Early Childhood Program, started

with some very considerable irregularities (as previously indicated in the chart of dates of operation at the various centers) so that the second year of the program may perhaps provide the better sample.

Results in Second Grade

The progress in the second grade of the 1965-1966 group of Early Childhood Program participants was studied to ascertain whether the group maintained the academic level of their first year in school (as measured by grades at the end of second grade) as compared to their matched non-participant group. (The group matched on the basis of end-of-first-grade grades provided the cohort group.) The study showed a slight decline over their first year in the Early Childhood Program participants' grade standing as compared to that of their matched mates, but the differences were not significant. There was a mean difference of 0.19 for the boys and 1.06 for the girls, favorable to the "control" group. With an N of 31 boys and 33 girls in each group (for some had moved or been otherwise lost from the sample), the mean difference with boys and girls combined in each group was only 0.33 on the twelve-point scale used in matching the groups.

Whiteman, Brown, and Deutsch found a similar decline of performance effect in their work with deprived children, a phenomenon rather widely reported. The authors concluded that as the age of the child increases the cumulative effect of his deprivation increases.⁵

⁵Martin Whitman, Bert R. Brown, and Martin Deutsch, "Some Effects of Social Class and Race on Children's Language and Intellectual Abilities" (Institute for Developmental Studies, Department of Psychiatry, New York Medical College, undated), p. 30. (mimeographed.)

A continuation of this study would provide a more adequate sampling, since the 1966-67 group will move into first grade next year. Also, it would afford an opportunity to extend the data into higher grade levels.

Popularity of Early Childhood Program

Donohew and Singh (Unit 7 of this study) report that between Time 1 and Time 2 of their measurements the acceptance of the CAP Early Childhood Program increased significantly in both the areas where CAP community centers were located as well as in non-center areas.

The Early Childhood Program is the most widely approved part of the Knox County OEO-CAP. Sutton (Unit 8 of this study) reports responses to the householder interview schedules and to the schedules used with community and CAP leaders in his part of the study. He asked respondents whether or not they felt educational services in the county had changed for better or worse since the CAP had come into the county. While the Early Childhood Program is not the only educational activity of the CAP, it is clearly the most outstanding and major one. The ratings were:

	Number in Group	Percentage Who Felt Education in County Had Improved
CAP staff	28	100.0
Members of CAP Board of Directors	22	95.2
Leaders of poor	33	91.7
Community leaders	23	79.3
Members Local Action Group of CAP	74	94.9
Non-Local Action Group	439	81.6

APPENDIX

TO SELECTED MOTHERS OF FIRST GRADERS IN KNOX COUNTY

(To be administered to fathers only when there is no mother in the household.) (Circle the letter representing each response.)

1. You are the: a) Mother b) Father c) Male Guardian d) Female Guardian of _____,
who is in the first grade in _____.
(name of child) (school)
2. How much schooling do you think a son of yours ought to get? (If respondent doesn't have a son, then ask same question but substitute, "if you had a son.")
 a) # Years of elementary c) # Years of college
 b) # Years of high school d) Total years
3. How much schooling do you think a daughter of yours ought to get? (If respondent doesn't have a daughter, ask the same question but substitute "if you had a daughter.")
 a) Years of elementary c) Years of college or university
 b) Years of high school d) Total years
Total years reported in (2d) and (3d): 40 41
4. How far did you go in school?
 a) None e) 9 to 12 grades
 b) Did not go to school but can read and write well f) Some college or university
 c) Less than 5 grades g) College or university degree
 d) 5 to 8 grades h) Total years completed (Estimated. Credit 5 yrs. for response #2.)
5. What is the last grade completed by your husband (or wife, in case there is no mother)?
 a) Grade in elementary school d) College or university degree
 b) Grade in high school
 c) Year in college or university e) Total years schooling
Total years reported in (4h) and (5e): 42 43

6. Do you take any newspapers, or does anyone read newspapers and tell you what they read?

_____ A. Takes one or more. If so, what papers:
(If no newspaper is taken, skip to part B of this question.)

a) _____ c) _____
b) _____ d) _____

Credit 1 for each paper taken and total here: _____

IF SO, do you read a newspaper or newspapers fairly regularly?

a) No (1)
b) Yes, one (4)
c) Yes, more than one (5) Index of number read: _____
d) If you do read one or more regularly, what parts do you usually read?

_____ Credit 1 for each part named and total here: _____

_____ B. Doesn't take one, but:

a) Sees someone else's paper, the _____ (3)
(Credit only if paper is named.) (Name of paper)

b) Someone else reads one regularly and tells me about it.
What paper? _____

What person? _____ (3)
(neighbor, relative, member of family)

(Credit only if paper and person are named.)

c) Does not see or get regular reports on any paper. (1) 44 45
Total newspaper score (sum of credits): /

7. Employment of "breadwinner" of family: _____
(name of job)

a) Neither parent employed (1)
b) Husband employed in WET program (or such) (2)
c) Irregularly employed (to be judged) (3)

Regularly employed:

d) Unskilled labor (4)
e) Semi-skilled (5)
f) Skilled (6)
g) Professional (7)

Code of employment: 46 /

8. Roughly, what was your total family income last year:

a) \$ 0 - \$ 499	g) \$3,000 - \$3,499
b) 500 - 999	h) 3,500 - 3,999
c) 1,000 - 1,499	i) 4,000 - 4,499
d) 1,500 - 1,999	j) 4,500 - 4,999
e) 2,000 - 2,499	k) 5,000 - 5,499
f) 2,500 - 2,999	l) 5,500 - 5,999
	m) 6,000 - up

Code of income: _____

9. How many are in your family?

 a) Father
 b) Mother

 c) How many sons?
 d) How many daughters?

Total in family: $\frac{47}{\quad} \frac{48}{\quad}$

10. Setting of home:

a) Non-urban (1)
b) Urban (2)

Setting of home (non-urban 1, urban 2): $\frac{49}{\quad}$

Name of interviewer

Date

Name of interviewee

Address of interviewee

Living standard level--(Refer to 8.)

I. Calculated on \$2,000-line basis:

Income category a b c d e f g h i j k l m

Re-code as 1 1 1 2 2 3 4 5 6 6 7 7 7

Living level code I: $\frac{37}{\quad}$

II. Calculated by "refined" scale for non-urban.

For non-urban (item 10a) use this table:

Income Category	Number in family						
	one	two	three	four	five	six	sevent+
a.	2	1	1	1	1	1	1
b.	3	2	2	1	1	1	1
c.	4	3	3	2	2	1	1
d.	5	4	4	3	2	2	1
e.	5	5	5	4	3	2	2
f.	6	6	6	5	4	3	2
g.	6	6	6	6	5	4	3
h.	6	6	6	6	6	5	4
i.	7	7	7	6	6	6	5
j.	7	7	7	7	6	6	6
k.	7	7	7	7	7	7	6
l.	7	7	7	7	7	7	7
m.	7	7	7	7	7	7	7

Living level code II: $\frac{38}{\quad}$

III. Calculated by "refined" scale for urban.
 For urban (item 10b), use this table:

Income Category	Number in family						
	one	two	three	four	five	six	sevent+
a.	1	1	1	1	1	1	1
b.	2	1	1	1	1	1	1
c.	3	2	1	1	1	1	1
d.	4	2	2	1	1	1	1
e.	5	3	2	2	2	1	1
f.	5	4	3	2	2	2	1
g.	6	5	4	2	2	2	2
h.	6	6	5	3	3	2	2
i.	6	6	6	4	3	3	2
j.	7	6	6	5	4	3	3
k.	7	7	7	6	5	4	3
l.	7	7	7	7	6	5	3
m.	7	7	7	7	7	6	4

Living level code III: $\frac{39}{\quad}$

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