# A COMPARISON OF WORD FLUENCY AMONG FIRST GRADE CHILDREN WITH HEADSTART BACKGROUND AND THOSE WITHOUT HEADSTART

by

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## ABSTRACT

This study was an effort to determine the difference in word fluency among sample groups of first grade children in a designated disadvantaged area of Tucson, Arizona. Headstart experience for some of the children was the independent variable.

Hypotheses which indicated children with Headstart experience would show greater word fluency were not supported except in one area. Children with a school year of Headstart experience showed a significant gain over children with an eight-week summer program. This difference appeared after children had completed first grade.

Teachers evaluated children's school progress and attitude. Analysis of this data did not support any of the hypotheses. Children's oral responses to unknown items indicated they had ability to cope with school situations not reflected in standardized tests. There were strong implications for more carefully defined programs for Headstart and primary grades.

# CHAPTER I

## INTRODUCTION

The focus of many recent research studies has emphasized the importance of oral language in young children's intellectual development. Evidence also has been presented that oral language skills are largely non-existent among certain children of low-income families (Raph, 1965). These children appear to lack a basic vocabulary for ordinary communication. They do not know the names of items they use frequently, sometimes being unaware that there are labels for things. In addition to being unable to identify and label, these children often are unable to speak at all except in monosyllables or fragmented sentences which are shyly expressed. Their home-rooted language is frequently understood only by members of their immediate family (Allen and Allen, 1966).

When these children enter the public school systems at age six, they find it extremely difficult to make their needs known to either peers or teachers. They find language responses to most first-grade programs an impossibility, and frequently retire in silent frustration as the demands for oral response pile up. Raph (1965) cited studies by Deutsch and others which indicated that class differences correlated with language development, with the relationship clearer at fifth grade

level than at first grade. She suggested the importance of improving language skills during the crucial pre-school years. Richmond (1965) emphasized the need for evaluating pre-school programs on the local level to avoid the pitfalls of having children fail to develop language because of inadequate understanding and unrealistic programs. He stressed the need for follow-up studies on children who had been in pre-school programs for the culturally disadvantaged. School personnel in Tucson School District Number One desired information concerning the oral language performance of children who had attended Headstart programs during summer sessions and during a full school year.

Pre-school experience in the form of Headstart programs for some children in the district had been provided through federal funds. Many observations had been made about the children as they moved into the primary grades. Reactions had been favorable from teachers and administrators. They seemed to have sensed a positive change in both attitude and progress among the children. School personnel generally had voiced satisfaction with results of Headstart programs. However, those responsible for primary programming were vitally interested in some means of quantitative analysis which would provide statistical support for the apparent changes they had been observing.

This study was an attempt to evaluate on a local level the extent to which children from Headstart programs did exhibit gains in language fluency. It also had the purpose of assessing their attitudes and

their progress during their first year of school. The children studied were from three categories. One group had had no Headstart experience. A second group had been in summer Headstart programs of eight weeks duration. A third group had been in Headstart programs of nine months duration. In the report of the study which follows, these groups will be referred to in the following manner:

Group I - Children with no Headstart

Group II - Children with summer Headstart

Group III - Children with winter Headstart

The three groups were comparable in the following respects:

1. All of the children were enrolled in one of three schools in a designated poverty area in Tucson, Arizona.

2. The schools were all part of Tucson Elementary School District Number One.

3. Classrooms were similar in size and all the children were six years old by the end of December, 1966.

4. It was the first formal school experience for all of the children except for Headstart.

5. All the children remained in the district throughout the year and there were no teacher changes.

6. There was a comparable number of boys and girls in each group, as well as a similar range in their sibling placement within family groups (See Tables I and II).

## Statement of the Problem

The problem of the study was to compare the oral language development of three groups of disadvantaged children in the first grade. The independent variable was the Headstart experience.

Two problems were involved in the study in addition to the oral language comparison as judged by standardized tests. The first problem related to the children's attitude and progress during the first year of school. This was done by teacher judgment and assessed by them as to whether the Headstart experience had affected children's progress. The second problem concerned the oral language behavior of children as they coped with pictures of unknown items.

## Significance of the Study

A recent study concerning drop outs at junior high level in Tucson School District Number One indicated that these young people felt failure from their first grade experience right on through school (Committee of One Hundred Report, 1964). They expressed the feeling that they had been placed in a low group in their first school encounter and had been retained until they had no positive relationship to the school environment. They related that nothing connected with school was successful or satisfying; in effect, they had become mental drop outs long before reaching the legal age for leaving school. The citizen's committee surveyed the district schools and reported that the largest

percentage of drop outs interviewed stated that they had started their school careers as members of 1-C classrooms. These rooms were established for six-year-old children who had no English fluency. For these children, first grade began at age seven, or later if fluency was not considered adequate to handle the curriculum required of all first grade students (Committee of One Hundred, 1964).

School officials were concerned that many of these young people connected school failure with their early experience of having spent two years at first grade level. Social and academic success after that became increasingly difficult. The administration felt that a kindergarten or pre-school experience might alter the attitude and progress of such children enough to help them enter school at age six better equipped to function in a regular classroom. Inasmuch as there is no state provision for public kindergartens in Arizona, this study was undertaken with the support of the district in an effort to determine the advantages of a kindergarten experience for these particular children.

## Hypotheses

The study was based on the following hypotheses:

1. Children with summer Headstart experience will show a significantly higher word fluency than children with no Headstart experience.

2. Children with winter Headstart experience will show a significantly higher word fluency than children with no Headstart experience.

3. Children with winter Headstart experience will show a significantly higher word fluency than children with summer Headstart experience.

4. Children with summer Headstart experience will show a significant rate of increase during the year over children with no Headstart experience.

5. Children with winter Headstart experience will show a significant rate of increase during the year over children with summer Headstart experience.

## Definition of Terms

For the purposes of this study the following definitions were applied:

Disadvantaged was considered as defined by the official Headstart Bulletin (Headstart Child Development Programs, 1965). The term is used interchangably with impoverished and explained as follows:

> The degree of poverty in a community can be measured by the extent of persistent unemployment and underemployment, by the proportion of a community's families on welfare and the number of families with low incomes. ...It is essential to consider the number of people in a household when making the determination. The chart below gives income levels and household sizes to be used

in helping to measure the number of families which are impoverished...

| Non-Farm Households | |
|---|---|
| Persons | Family Income |
| 1 | $1,500 |
| 2 | 2,000 |
| 3 | 2,500 |
| 4 | 3,000 |
| 5 | 3,500 |
| 6 | 4,000 |
| 7 | 4,500 |
| Above 7 | 5,000 |

Fluency relates to the number of words used and understood in English by the child.

Headstart means a classroom experience with peers under supervision of certified instructors with teacher aides, officially known as Headstart Child Development Programs, a Community Action Program financed by federal funds and administered through the Office of Economic Opportunity. For this study, the Headstart programs were confined to those housed in public school classrooms or parochial schools. The curriculum provided conformed to the recommendations made in the official Headstart bulletins.

Oral Language in the analysis of this study relates to verbal identification of pictures used in the test items. It refers to naming of items and to oral elaboration as to function of the item pictured in the test.

Pre-school in the analysis of data refers to any formalized experience with peers in a classroom setting with adults as teachers or aides.

## Limitations of the Study

This study is of a small sample of children who might reflect the influences of early school experiences for a larger population. Certain limitations forced the study to reflect information which must be interpreted informally rather than for statistical significance. The following limitations are recognized:

1. The study is limited to three groups of children in Tucson Public Schools District One.

2. Three standardized tests were administered and results analyzed.

3. The oral language responses were restricted to those made in direct answer to questions asked by the interviewers.

4. The opinions of the teachers were subjective responses given in personal interviews after the tests were scored.

5. No attempt was made to confine teachers to direct "yes" or "no" answers if they preferred to elaborate.

6. Children for the study were selected from schools where standardized tests had been given in the fall by school personnel.

7. Nothing was known in advance about teacher attitudes or teaching methods.

8. It was not possible to match children from the same income families. No effort was made to do so.

9. In many cases it was not known if questions were understood by children of Spanish speaking background. No translation was attempted. The study was conducted only on the basis of their understanding of English vocabulary and testing was done on the basis of manual directions in all the standardized tests. This may have placed some children at a disadvantage.

10. There was no retesting to establish the reliability of interview procedures.

## Procedures for the Study

To carry out the study, the following procedures were used:

1. The study was conducted during one school year, 1966-1967.

2. Principals at Drachman, Mission View, and Ochoa schools arranged for teachers to furnish background data on children in their classrooms (See Appendix B).

3. Children were chosen on the basis of age, pre-school experience, enrollment during fall testing, and initial year in first grade.

4. Fall tests scores were supplied by the district for the Metropolitan Readiness Test, Form A. Raw scores were tabulated.

5. Children were classified into groups of 27 each for Groups I, II, and III.

6. In February, each child was given Form A of the Peabody Picture Vocabulary Test. The testing was conducted by two members of the school system's certified staff. Raw scores were tabulated.

7. In May, a retest was given to groups of five children at a time. This test was the Metropolitan Readiness Test, Form A. Raw scores were tabulated.

8. Individual interviews with each child were given by one interviewer. The children were asked to identify the three pictures on Items 9 and 13 on the word recognition section of the Metropolitan Test. These items had been those with the most incorrect responses in that Section. At the same interview, the children were asked to identify Item 51 on the Peabody Picture Vocabulary Test. This item was selected by the interviewer to represent those which children answered correctly out of proportion to normal expectancy. It was considered most unlikely that any of the children had had a real experience with submarines. If they identified the item correctly, they were asked how they knew, or how they had found out about it.

9. Interviews with each teacher were held by the same interviewer. They were asked to rate the children on progress and attitude using a four point scale. They also provided information concerning

family income, sibling placement, and family concern about the child in school. They evaluated the effect of Headstart experience for children in Groups II and III.

10. The district Research Department provided the statistical analysis for the raw scores of the three tests. Means for each test, standard deviations, and comparison of means for group differences were required. The table of t scores was used to determine statistical significance at the .05 level (See Appendix A).

11. The children's oral responses to questions were recorded and grouped according to label or function. Appendix C provides samples of how children coped with unknown items. Appendix D provides samples of children's elaboration concerning their knowledge of one known item.

12. The summary was based on conclusions made from interviews, observations of the children in the test situation, and discussions with the teachers.

# CHAPTER II

## REVIEW OF RELATED RESEARCH

The first Headstart programs began in the summer of 1965. School year programs were initiated in 1965-1966. Because of the recent development of special programs for disadvantaged children, there is limited literature on the effect of such programs on subsequent school experiences. Those available are reviewed in terms of the importance of early education to school success, the influence of program designs, and the procedures for analyzing the follow-up of Headstart programs.

### Literature on the Importance of Pre-school Experience

There is much evidence that language developed in early years relates to success in school achievement, but there is a lack of well-designed experimental studies (Ching, 1966). One researcher summarized all available evidence as supporting the prediction that the quality of children's early linguistic environment is the most important external factor affecting the rate of language development (Harris and others 1960, p. 749). Keliher and others (1965, p. 32) reached the conclusion that language as an efficient way to store information becomes a vital tool in early education.

While many of the pre-school programs initiated during the summer of 1965 are being evaluated, experimental data are not complete. Many longitudinal studies are still in process. The Early Admissions Project in Baltimore began in 1962, and evidence here is beginning to indicate that children have greater verbal ability and fewer adjustment problems if they have had kindergarten experience. They also have a better start in reading (Brunner 1965, pp. 180-184). Benjamin Bloom (1964, p. 110) stated "We believe it is likely that more careful investigations will reveal even larger values for the pre-school period and the first three years of elementary school than is suggested by the studies we have been able to assemble to date."

Among the most recent publications, there are some more extensive surveys of first grade children who have had Headstart. Norton (1967) related parental education to possibilities for children's success as well as the child's individual visual perception abilities. In her section of disadvantaged elementary school children, Doris Nason (1967, p. 199) stated that the one handicap of an insufficient opportunity to learn and understand and to speak standard English was a major set-back inhibiting all verbal school learning. Harvey and others (1966) in their survey of teachers found that the pre-school atmosphere affected children's learning, but in a very direct way related to the teacher's belief systems. This survey listed teacher flexibility,

attitude towards rules, encouragement of the children's independence and creativity, teacher need for structure and her feeling towards punitive measures as being factors which made a difference in the ability of the children to relate to the school experience.

Minders and Keliher (1967), in reviewing research related to the advantages of kindergarten, found studies stressing the need for stimulating environment and play situations. They cited the Wolff study in New York, which reported that Headstart programs enriched the pre-school experience of children so that there was less difficulty with both social and speech adjustment. In addition they quoted the statistical gains children in the experimental group had made at Peabody; these included a gain in mental age of 6.6 months compared to a .9 gain for the controls.

## Literature on Designs for Pre-school Programs

At Staten Island it was possible to have a program designed to develop language because of a very small adult-child ratio, thus maximizing positive language experience. Headstart children here appear to have made great gains, and testing and teacher rating data were in preparation at the time of the report by Silberstein (1966). Strang and Hocker (1966, p. 40) indicated that there is need to study children's language patterns and to restructure our curriculum to include these spontaneous child-oriented expressions which are meaningful for them,

and which they will recognize in written form. Children's other language needs include more standard forms of syntax, enunciation, and pronunciation (Robinson and Mukerji, 1965). Bernstein (Hess and Shipman 1965, p. 871) identified two forms of speech in 1961 reports as being restricted or elaborated. Most of the Headstart children would be described as being confined to a restricted code of speech which uses general, easily understood terms of limited range. The need for teachers to strive for use of more precise vocabulary was made quite clear. In particular, it was pointed out that there is a real demand for teachers to use sentences which will discriminate and individualize. This would involve deliberate and careful planning to set up programs and activities which would lend themselves to much interaction of the children with adult models for language.

## Literature on Procedures for Analysis of Pre-school Programs

One comprehensive study comparing Headstart students and those without Headstart was made for the Department of Health, Education and Welfare by Giles and Daniel (1966). They reported refined procedures for analyzing children's language as outlined by Loban in one study and Strickland in another. In a previous study, Giles had developed a measure of comparison for six aspects of oral language which were replicated both in collection and analysis procedures in the study reported. In the detailed analysis of one hundred four children in

Texas, seven aspects of twenty variables produced a significant difference in the total groups, all favoring the Headstart children. Although differences were measurable on all variables, those on the remaining thirteen aspects did not reach a level of significance.

The study concluded that Project Headstart, an eight-week summer program in this case, did enhance oral language development. Pupils experiencing the program used longer sentences with more words from an advanced word list. They used fewer incomplete sentences and made use of more vivid and colorful expressions. Included in the summary were strong recommendations for the type of activities and teacher-pupil interaction considered necessary to effect permanent change in oral language and measured intelligence.

In reviewing the literature, it has become increasingly clear that the need for additional data exists. There are strong indications that oral language development may be an essential prerequisite for any formal school learning. There are comparatively few follow-up studies of children who have had specific language development experience before entering first grade. More definite statistical information on such children must be provided before curriculum changes can be implemented in more than a relatively few experimental situations.

# CHAPTER III

## COLLECTION AND ANALYSIS OF THE DATA

Data for this study to compare the fluency of language of disadvantaged first grade children were collected for three groups of children. Group I consisted of twenty-five children who had had no pre-school experience before entering first grade in September of 1966. Group II was composed of twenty-five children who had been enrolled in the summer Headstart program provided either by Tucson School District Number One or by the local parochial diocese. Group III was made up of twenty-seven children who had been enrolled in the Tucson School District Number One Headstart program for the school year of 1965-1966. They had not attended the summer program.

All groups used in the study were enrolled in three schools designated as being in the poverty area of Tucson. The school neighborhoods were adjoining and were similar in population. Teachers had comparable educational backgrounds. Except for one teacher, who was a first year teacher, all were experienced in teaching children in low-income areas of Tucson.

## Collection of Data

Data for the study were collected in the following ways:

1. During the month of September, all children were given the Metropolitan Readiness Test, Form A. These tests were administered by teachers or other school personnel according to directions in the test manual.

2. In February, each child was tested individually with the Peabody Picture Vocabulary Test, Form A.

3. The Metropolitan Readiness Test, Form A, was administered in May.

4. Each child was interviewed and asked to identify all the pictures in two items on the Metropolitan in the word recognition section. These items had been marked incorrect the most number of times.

5. Each child was asked to identify an item on the Peabody which was selected by the interviewer as one representing those which the child would not be expected to know from his experience at home and school. If correct, he was asked how he knew or how he found out about it.

6. Teacher interviews were held individually and were all conducted during May after the tests were scored and the children's interviews completed. They were asked to rate each child's progress

and attitude during the school year and to state their opinion on the effect Headstart had made on the children in groups with summer and winter experience. They were asked to give information about each child according to siblings in the home and employment of parents. They were expected to comment on each child's attitude toward school and to reflect information about parent attitudes and participation.

## Analysis of Data

The statistical analysis was provided by the Research Department of Tucson School District Number One. Means for each group, standard deviations, and differences among the means were required. The table of t scores was used to test the significance of differences in the mean scores of the three groups. The .05 level of significance was used to determine statistical significance.

The design of the study was experimental and was not intended to be used with other groups unless similar situations and population samples were available. It was an attempt to use existing instruments to test first grade children in regular classroom environments. The one variable was the Headstart experience.

## The Population Sample

Table I indicates the group distribution of boys and girls. Each sample group was found to have a comparable number of boys and girls.

Table I

Population Distribution of Boys and Girls

| Sex | Group I | Group II | Group III | Total |
|---|---|---|---|---|
| Boys | 12 | 13 | 12 | 37 |
| Girls | 13 | 12 | 15 | 40 |
| Total | 25 | 25 | 27 * | 77* |

*Groups originally had equal numbers, but groups I and II lost members during the year.

Table II shows the placement of the sample children within their immediate families. The largest number of children in each group fell in the middle group of siblings.

Table II

Position of Siblings within Family Setting

| Placement | Group I | Group II | Group III | Total |
|---|---|---|---|---|
| Eldest | 6 | 3 | 5 | 14 |
| Middle | 15 | 16 | 14 | 45 |
| Youngest | 4 | 5 | 8 | 17 |
| Unknown | | 1 | | 1 |
| Total | 25 | 25 | 27 | 77 |

In Table III, family employment shows a comparable distribution also. The largest number of families on welfare appeared in the summer group. However, the other groups had at least four families known to be receiving welfare funds. The eight families whose income was unknown were thought to be on welfare. This decision reflected the teachers' opinions based on the children's spending patterns for school requirements and activities, their dress and their medical records.

Table III

Employment of Parents

| Employment | Group I | Group II | Group III | Total |
|---|---|---|---|---|
| Father only | 14 | 10 | 15 | 39 |
| Mother only | 1 | 2 | 2 | 5 |
| Both parents | 4 | 1 | 2 | 7 |
| Welfare | 4 | 8 | 6 | 18 |
| Unknown | 2 | 4 | 2 | 8 |
| Total | 25 | 25 | 27 | 77 |

## Results from Standardized Tests

Table IV presents the data for the fall Metropolitan Readiness Test, Form A. Comparison of the means did not produce a statistical difference for any group. Therefore the first hypothesis that summer Headstart children would show a difference over the group with no Headstart had to be rejected. The second hypothesis that winter Headstart children would show a higher word fluency than children with no Headstart experience was rejected. The third hypothesis was that winter

Headstart children would show a greater word fluency than summer Headstart children. This was rejected also.

Table IV

Comparison of Means
Fall MRT,* Form A

| | Group I | Group II | Group III |
|---|---|---|---|
| Mean | 31.32 | 30.84 | 35.85 |
| S. D. | 11.04 | 10.57 | 11.94 |
| Level of Statistical Significance | | | |
| Group I | 0.00 | 0.00 | 0.00 |
| Group II | 0.00 | 0.00 | 0.00 |
| Group III | 0.00 | 0.00 | 0.00 |

*Metropolitan Readiness Test
The critical ratio was shown only if greater than 1.65 .

Results of the Peabody Picture Vocabulary Test data are contained in Table V. Here too, each of the hypotheses was rejected. However, the group of children who had had winter Headstart did show a measurable difference of 1.90 over the group with no Headstart. This difference did not reach the level of significance for this study, which had to be 2.01 or better for the .05 level.

Table V

Comparison of Means

| | February PPVT, * Form A | | |
|---|---|---|---|
| | Group I | Group II | Group III |
| Mean | 48.72 | 48.48 | 52.81 |
| S. D. | 8.67 | 12.17 | 6.79 |
| Level of Statistical Significance | | | |
| Group I | 0.00 | 0.00 | 1.90 |
| Group II | 0.00 | 0.00 | 0.00 |
| Group III | 1.90 | 0.00 | 0.00 |

*Peabody Picture Vocabulary Test

Table VI presents the data for the spring testing, which was a retest of the Metropolitan Readiness Test, Form A. A significant difference of 2.24 was recorded for the winter Headstart children over the summer Headstart children. Since no measurable difference appeared on the fall test, the rate of increase shown in Table VI applies to hypotheses four and five. Hypothesis four stated that summer Headstart children would show a significant rate of increase during the year over children with no Headstart experience. This hypothesis was rejected. The fifth hypothesis stated that children with winter Headstart experience would show a significant rate of increase during the year over children with summer Headstart experience. This hypothesis was accepted.

Table VI

Comparison of Means
Spring MRT, Form A

| | Group I | Group II | Group III |
|---|---|---|---|
| Mean | 56.04 | 52.36 | 60.41 |
| S. D. | 11.44 | 13.68 | 12.26 |
| Level of Statistical Significance | | | |
| Group I | 0.00 | 0.00 | 0.00 |
| Group II | 0.00 | 0.00 | 2.24* |
| Group III | 0.00 | 2.24* | 0.00 |

*2.01 was required for significance at the .05 level, 2.68 for significance at .01 level.

## Ratings by Teachers

Teachers commented favorably about the advantages of Headstart programs, especially the winter Headstart experience of children in their classes. However, when asked to rate children in terms of school progress, the responses reflect no significant differences in children with no Headstart, summer Headstart, and winter Headstart. When "good" and "excellent" ratings are combined, the results show Group I with twenty-three, Group II with twenty, and Group III with twenty-one. The number of "excellent" ratings (12) given children with winter Headstart can be interpreted as a reflection of the strong feeling teachers verbalized for progress which might not have been possible

without winter Headstart. No evidence was gathered to support or to reject the strong positive feeling of teachers, as shown in Table VII.

Table VII

Teacher Appraisal of Children's Progress

| Rating | Group I | Group II | Group III |
|---|---|---|---|
| Poor | 2 | 5 | 3 |
| Fair | | | 3 |
| Good | 14 | 10 | 9 |
| Excellent | 9 | 10 | 12 |

The teachers' appraisal of the children's attitude was similar to that on their school progress. Teacher comments for children in Group III, those with the winter Headstart, indicated that these children entered school in the fall with more confidence and maintained this positive attitude toward themselves. Table VIII does not reflect this rating by teachers. When asked to rate each child, teachers tended to give similar ratings to children in all three groups with only a slight advantage to those in Groups II and III.

Table VIII

Teacher Appraisal of Children's Attitudes

| Rating | Group I | Group II | Group III |
|---|---|---|---|
| Poor | 3 | 5 | 3 |
| Fair | | 1 | 3 |
| Good | 13 | 8 | 9 |
| Excellent | 9 | 11 | 12 |

Teachers were quite positive in the feeling that Headstart during the winter had helped the children in Group III. Twenty-five of the twenty-seven children in the group were judged by teachers to have been helped and one other had been helped some. The teachers were divided in their feelings about the summer Headstart group. They felt that eight children had been helped and six others helped some, but that eleven of the children had not been helped. One child not in Headstart was mentioned as needing the experience. Table IX tabulates this distribution.

Table IX

Teacher Appraisal of Children and Headstart

| Rating | Group I | Group II | Group III |
|---|---|---|---|
| Needed HS | 1 | | |
| Were helped | | 8 | 25 |
| Helped some | | 6 | 1 |
| Not helped | | 11 | 1 |

## Responses to Selected Test Items

In the remaining tables (X-XV), tabulations are made of the results of the item analysis of children's language used to identify pictures in the tests administered. For purposes of this analysis, the tables show the total group of seventy-seven children.

Tables X and XI indicate the choices children made on the two items most frequently marked incorrect on the Metropolitan Readiness Test.

Table X

MRT Item 9 - Children's Choices

| Pictures | No. choosing |
|---|---|
| Compass* | 14 |
| Easel | 16 |
| Hammock | 47 |
| Total | 77 |

Table XI

MRT Item 13 - Children's Choices

| Pictures | No. choosing |
|---|---|
| Spectacles* | 15 |
| Rocking chair | 7 |
| Spinning wheel | 55 |
| Total | 77 |

*correct response

The two words "compass" and "spectacles" were not known to the children, but the pictures were positively identified as "clock" and "glasses", respectively. The children used deductive processes to make the choice in many instances, sometimes saying "It's not that, or that - it must be this."

Table XII tabulates the results of Item 51 on the Peabody Picture Vocabulary Test. Here the item to identify was submarine, and the correct answers were out of proportion to expectancy. The children choosing the submarine usually did so immediately, frequently saying "TV" or "It goes in the water" or something to indicate where they had seen a similar picture.

Table XII

| Children's Choices PPVT-Item 51 | |
|---|---|
| Items | No. choosing |
| Train on track | 5 |
| Automobile jack | 15 |
| Bicycle | 1 |
| Submarine* | 53 |
| No response | 3 |

*correct response

In analyzing the oral language of the children, the tables show clearly the number of labels children applied when they were confident that they knew the item. In cases where labels of items were unknown to them, the choices jump to a much greater proportion of answers indicating function. Table XIII reflects the number of positive answers which label and those which must be considered function. The answers do not necessarily infer correct responses as judged by the test, only positive identification using the child's criteria to cope with pictured items.

One child used the word compass. The other children were equally positive that the picture was that of a clock or watch. The children who described the function were correct except for one child who gave it the function of a clock. The word "easel" was given once

Table XIII

Children's Identification MRT Item 9

| Correct label | Children's labels | | | |
|---|---|---|---|---|
| | Labels | Functions | Don't Know | No Response |
| Compass | 70 | 4 | 3 | |
| Easel | 61 | 13 | 2 | 1 |
| Hammock | 35 | 41 | 1 | |

and one child identified it as an "eagle." The others labeled it "picture," "painting," "sign," or "board." Those which used function for the most part described it as a way to paint or make pictures.

In responding to the picture of the hammock, the correct label was used one time in the seventy-seven answers. This answer was given by a child who had marked it for compass during the testing. The other labels were "bed" or "sleep," indicating a knowledge of the correct function of the item. Functions were related to laying or sleeping in a bed, or in some cases rocking. While the two previous items were identified quickly the hammock brought slower response, and frequently required two questions. If the children did not respond to "What is it?", they were asked "What would you do with it?". The answer to the second question was more often function, but sometimes was a label.

Table XIV provides the same breakdown of answers for another item on the Metropolitan. The answers for this item indicate an even

more positive response for items the children knew. All but one child identified the spectacles as glasses, and that child responded with "Put them on" and gestured with her hands to indicate putting glasses over her eyes. The rocking chair was identified as chair, rocking chair, or rocker; in the two function answers, the responses were "to sit" or "to do like that" while the child rocked his hands.

Table XIV

Children's Identification MRT Item 13

| Correct Label | Children's Labels | | | |
|---|---|---|---|---|
| | Labels | Functions | Don't Know | No Response |
| Spectacles | 76 | 1 | | |
| Rocking chair | 75 | 2 | | |
| Spinning wheel | 24 | 40 | 11 | 2 |

When identifying the spinning wheel, the children used a great variety of answers both in labels and in function. Only in two instances was the item described correctly, both being descriptions of making thread (see Appendix C). For this item, two questions were often required to get an oral response.

For the Peabody Picture Vocabulary Test, the item chosen was the submarine. The children were asked to find the correct picture a second time. The correct responses increased from the original 53 to 67. For the remaining children, seven chose the automobile jack

and thirteen gave no oral response. Table XV tabulates only the 67 correct responses and indicates the general categories which the children used.

Table XV

| Children's Identification PPVT Item 51 | |
|---|---|
| Reason given | No. of choices |
| Television | 39 |
| Real thing | 14 |
| Book, picture | 4 |
| Guesses | 7 |
| Don't know | 3 |

The children used the term "TV" most often in telling where they had found out about a submarine. They identified Sea Hunt or Voyage to the Bottom of the Sea, which are two programs popular with children which feature submarines. The fourteen children who were rated as knowing about the real submarine described trips to the ocean or to water in sufficient detail that the account was accepted (see Appendix D).

Although it had been suspected that television would rate high among the reasons given, it was felt to be of value to tabulate the children's answers to see how many children would respond orally with this reason.

# CHAPTER IV

## SUMMARY, CONCLUSIONS, AND IMPLICATIONS

### Summary

This study to compare the oral language of children who had had no Headstart, those with a summer Headstart experience, and those with a winter Headstart experience yielded test data which rejected the following hypotheses:

1. Children with summer Headstart experience will show a significantly higher word fluency than children with no Headstart experience.

2. Children with winter Headstart experience will show a significantly higher word fluency than children with no Headstart experience.

3. Children with winter Headstart experience will show a significantly higher word fluency than children with summer Headstart experience.

4. Children with summer Headstart experience will show a significant rate of increase during the year over children with no Headstart experience.

Test data supported only one hypothesis. Children with a winter Headstart experience showed a gain over children with a summer Headstart experience in the rate of fluency during the first grade. Standardized tests indicated that the three groups were the same at the beginning of the first grade so that the difference reflected in results had to occur during the school year of first grade.

Teacher interviews yielded data which reject all hypotheses. After one year in first grade they rated children who had had Headstart and those who had not as having made about the same school progress and having developed positive attitudes toward themselves and school in similar proportions. At the same time they rated Headstart as having been a valuable experience for the children who had been in the program for a school year.

When children were given an opportunity to make personal responses to test items as contrasted to "right" answers in the test manual, there was ample evidence that children in the sample groups were much better prepared to use language to cope with school situations than the standardized tests reflected.

## Conclusions

The following conclusions were reached concerning this study:

1. Standardized tests are not valid tests for disadvantaged children.

2. General conversations about values of Headstart are not supported by individual evaluations.

3. Disadvantaged children demonstrated ways of coping with unknown test items when given a chance to make personal responses. These responses indicate a level of ability to perform school tasks which is not indicated by standardized test scores.

4. The type of Headstart experience which these children had did not give them any advantage in the type of first grade they had.

## Implications

With regard to this study, four implications are in order:

1. If Headstart has any contribution to make to the oral language development of disadvantaged children, its program must be clearly defined and followed up in the primary grades.

2. Children from poverty areas who are sent to Headstart programs which are only loosely related to primary programs and evaluated by traditional standardized tests are at no advantage over children who do not attend Headstart and who are evaluated by traditional standardized tests.

3. If school programs are to take advantage of children's ability to use oral language to cope with unknown situations, curriculum must be re-designed and evaluation procedures must be selected to test the goals of oral language development.

4. There is a need for future studies which are designed to compare methodology and materials used in the Headstart programs and followed up in the primary grades.

# APPENDICES

# APPENDIX A

Standardized Tests Used in Collecting Data for the Study

1. Metropolitan Readiness Test, Form A

   by Gertrude H. Hildreth, Ph. D.
   Nellie L. Griffiths, M. A.
   Mary E. McGauvran, Ed. D.

   Harcourt, Brace and World, Inc.
   New York, New York

2. Peabody Picture Vocabulary Test, Form A

   by Lloyd M. Dunn, Ph. D.

   American Guidance Service, Inc.
   720 Washington Avenue, S. E.
   Minneapolis, Minnesota
   55414

# APPENDIX B

Participating Schools and Teachers

Drachman Elementary School
549 South Convent Avenue
Tucson, Arizona

Principal
Carl E. Lopez

Teachers
Miss Martha Bautzmann
Mrs. Prudence Botz
Miss Julia Reilly

Mission View Elementary School
2600 South Eighth Avenue
Tucson, Arizona

Principal
Miss Dorothy Chamberlain

Teachers
Mrs. Jane Buck
Mrs. Constance Fairbanks
Mrs. Rosalee Smith

Ochoa Elementary School
101 West 25th Street
Tucson, Arizona

Principal
Edwin B. Appleman

Teachers
Mrs. Era Horsky
Miss Eunice McGregor
Mrs. Edna MacLachlan

## APPENDIX C

Samples of the Oral Language Children Used to Cope with an Unknown Item

### Spinning Wheel

Group I

bike
the wheel that go round
you put the thing like that when you see a movie
a sickamo machine you make something go
I don't know - make some coat
turns it around so we can make gold
wheel-put dirt in it
make it run - the motor
a turn around
make exercise
a cooler
you sew-knitting
wheelbarrow
to the water
when you fix tires
sew
tire

Group II

bicycle
wheels
a rug
sew with it
hard name - see a movie
make a bike
you can make a bike
sewing machine
turn it around
turn the wheel
sharpen a knife
a bicycle that exercises ladies
it could be making some money or it can be cutting woods
I didn't know that one - to weaving that makes sewing string
I don't know - forgot the name of it - sew - put some stuff
take off the lamb - the fur - put it on this
sew

APPENDIX C--Continued

Group III

bike or bicycle
sew
wheelbarrow
wheels
bicycle rider
you put it right there and the wheel goes around
picture show them in a thing - a paper that hangs down
it's a wheel and something runs the wheel
that you show a show
a turn around
steering wheel
you fix tires on it
you work with that

## APPENDIX D

Sample of Elaboration Children Made When Explaining How They Knew About a Submarine

Group I

the ocean when I had five years old, my grandmother and my uncle and my aunt took me to Kino Bay
my brothers tell me - they see it in a picture in their books
my father took me over there to see it in the water
when I went to my friends I saw one because it's a boat in the U. S. A.

Group II

because I went to see my daddy in the army
I took my brother to the navy in California - it goes under water
I saw one before - a sailor - over there (pointed west)

Group III

when we went some place to see my brother over there - he was a sailor in the submarine
'cause it's long and it goes under water in the ocean
in California 'cause we went to see my friend
I know it's the Navy - my father took me and my sister - it was in Navyland - it was a bus took us
my father took us to see it once - far away - it had a stove in it - a ship, a boat

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