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A STUDY OF SCHOOL ACHIEVEMENTS OF PUPILS FIVE YEARS  
AND ELEVEN MONTHS OF AGE ADMITTED TO GRADE ONE  
OF THE ELEMENTARY SCHOOL SYSTEM  
DISTRICT ONE, MISSOULA, MONTANA

by

GWYNETH JONES ELLWOOD

B.A. University of Montana, 1958


Presented in partial fulfillment of the requirements for the degree of

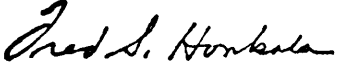
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1965

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Chairman, Board of Examiners

  
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## CHAPTER I

### INTRODUCTION

The effect of the age at which a child enters kindergarten or first grade is not well recognized or taken into account. Chronological age has long been used as the sole criterion for entrance into school at kindergarten or first grade. A considerable number of parents and school officials sometimes open the door to the first grade to relatively young children even as early as five years and eight months. The young child often encounters trouble if he is admitted to a traditionally programmed school, that is, one in which standards for each grade are set up. Shields found in a study that children starting school who were six years and one month or less and had an intelligent quotient of 100 or less had a limited chance for success.<sup>1</sup>

On the other hand, when the door is closed too early with respect to chronological age, some of the young but academically able pupils are penalized by having to wait a year before entering school. A pertinent question is, can a satisfactory selection be made among the children who are less than six?

### THE PROBLEM

Statement of the Problem. From 1955 to the present time the School District 1, Missoula, Montana, elementary, has had a special

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<sup>1</sup>Shields, Reed L., "A Study of Some Factors that Are Related to the Success and Failure in the First Grade Program of School District 1, Missoula, Montana," Thesis, Montana State University, 1956. p. 25.



policy for admitting children to first grade whose sixth birthdays are in October of the year of entrance. The policy is that the young entrants be admitted primarily on the basis of achieving a certain level on a reading readiness test which is administered a few days before school begins in the fall.

With respect to these children so selected: Do they attain academic success? Do they possess higher than average intelligence? To what extent do they need to be referred for remedial reading and/or for speech correction? Do boys and girls differ in achievement or need for special services?

Importance of the Study. Rulings regulating the age at which pupils are allowed to enter school are various. Each district decides its own policy. School personnel, parents, and others are becoming more and more aware that chronological age should not be the only criterion to be considered for school entrance at first grade level.

Different means of identifying young children who could be good academic risks have been devised and tried. Parent-teacher observations, a trial in school, intelligence tests are some of the devices used. A reading readiness test has been used in District 1, Missoula each year since 1955. Questions often arise as to the success or failure of the children so selected. It seems necessary that some concrete facts be examined to indicate if these "young" children so selected have achieved successfully.

Hypothesis. Most of the pupils, age five years and eleven months, admitted to first grade on the basis of a reading readiness score of 39.5 will eventually succeed academically as well as the

## CHAPTER II

### ASSUMPTIONS, DELIMITATIONS, LIMITATIONS, AND DEFINITIONS OF TERMS USED

Assumptions. A minimum score on the individual Van Wagnen Reading Readiness Scale<sup>2</sup> was used as a basis for admitting into District 1, children who became six years of age in October after school started in September. It is assumed that a point of 39.5 or better on the range of scores in the test would be indicative of ability to succeed in school for the student entering at that time. If the percentage of referrals for speech therapy and remedial reading is considerably less than that of the Missoula total population group's percentage, it would be indicative that the young child so selected would have less speech and reading problems than that of the typical child.

The Iowa Tests of Basic Skills, achievement test batteries, are administered in October of each year in grades four through eight in the Missoula school system. It is assumed that these tests are valid and reliable instruments for measuring school achievement.

Delimitations. In the Missoula school system only the Van Wagnen Reading Readiness Scale<sup>3</sup> was used to ascertain which young children were to be admitted to first grade. In this study the children who were admitted in 1959 through 1960 and who were still enrolled during the 1963-1964 school term are included.

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<sup>2</sup>Van Wagnen Reading Readiness Scale, Minneapolis, Minn., Van Wagnen Psycho-Educational Research Laboratories.

<sup>3</sup>Ibid.

The intelligence tests used were the Otis Quick Scoring Mental Ability Tests<sup>4</sup> or the Revised Stanford-Binet Scale.<sup>5</sup>

Limitations. This study was limited to the use of standardized achievement and intelligence test data and records of referrals to remedial reading and speech therapy. Data were not used on physical, social, or emotional factors. Comparisons were made between the boys and girls in the selected group only.

#### DEFINITIONS OF TERMS

1. Academically able. Those who have sufficient intellectual development to succeed satisfactorily in a grade school system.
2. Academic achievement. Performance in school subjects.
3. Composite of scores. The average scores of all the achievement battery scores for each pupil tested.
4. Missoula total population group. All the children enrolled in District One, Missoula, Montana, at any one year.
5. National norm. Fiftieth percentile on the Iowa Tests of Basic Skills.
6. Selected children. Children admitted to the first grade by having attained a 39.5 score on the Van Wagnen Reading Readiness Scale.
7. Reading success. Achievement score in reading above the 50th percentile.

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<sup>4</sup>Otis, Arthur S., "Otis Quick Scoring Mental Ability Tests," Yonkers, N.Y. World Book Company.

<sup>5</sup>"Revised Stanford-Binet Scale," New York: Houghton Mifflin Company. Form L(1937).

8. Young child. A child whose sixth birthday falls in October of the year in which he enters school in September.

## CHAPTER III

### BACKGROUND OF RELATED LITERATURE

Summaries of Reviewed Literature. Eleven selections were reviewed before making this study. Some of the findings are taken into account here.

Morphett and Washburne reported:

1. Correlation between mental age and ability to learn to read showed a high degree of relationship.
2. Mental age alone showed a larger degree of relationship with reading progress than did intelligence quotient or average of mental and chronological ages.
3. Consequently, it seems safe to state that, by postponing the teaching of reading until children reach a mental age of six and a half years, teachers can greatly decrease the chances of failure and discouragement and can correspondingly increase their efficiency.<sup>6</sup>

Gates concluded that different methods and individual instruction make the difference in a child's achievement, also, that the older child achieves better under standard group procedure than does the younger one; that it is possible to organize material and methods to teach children even as young as 53 months to learn to read but he does not imply that it is desirable to do so.<sup>7</sup>

Hampleman stated that the older child has a greater chance of success, and, that the child of better than 100 intelligence quotient

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<sup>6</sup>Morphett, Mabel V. and Washburne, Carleton, "When Should Children Begin to Read," Elementary School Journal, 31 (March, 1931), pp. 496-503.

<sup>7</sup>Gates, Arthur I., "The Necessary Mental Age for Beginning Reading," Elementary School Journal, 37 (March, 1937), p. 508.

has an excellent chance of success in reading even if he is only six years three months of age.<sup>8</sup>

Lowell Burney Carter drew the following conclusions:

1. The chronologically older children appear to have the advantage in academic achievement over the younger child when given the same school experience.
2. In general, the degree of scholastic achievement attained on the first achievement test tends to remain constant throughout the years of elementary schooling.
3. The underage pupils making lower scores on the first achievement test did not overcome this inferior position in the remaining years in the elementary school.
4. The factor of chronological age has more effect on boys in relation to academic achievement than on girls. The underage boys made lower scores and fewer high scores than the underage girls.
5. Factors other than intelligence and chronological age appear to have operated in the case of some underage children to produce achievement equal to or superior to normal age children.
6. Conversely factors other than intelligence and chronological age have operated in the case of some normal age children to retard normal academic achievement.
7. In the subject areas most effectively taught, the coefficient of significant difference tends to rise sharply. For instance, grade level achievement in arithmetic was constantly lower than that of other academic fields tested. The t-Tests revealed no significant difference in the achievement of normal-age girls and underage girls in arithmetic but in spelling, reading and English, the academic achievement of normal-age girls was very significantly higher than that of the underage girls.

According to the data used in the above study, 87 per cent of underage children do not equal the average scholastic achievement of

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<sup>8</sup>Hampleman, Richard S., "A Study of the Comparative Reading Achievement of Early and Late School Starters," Elementary English, 36 (May, 1959), pp. 331-334.

normal-age children.<sup>9</sup>

Several instruments have been devised and used to select the academically able from among the children who are less than six at school entrance time. Reading readiness tests, intelligence tests, parent's or teacher's evaluations, or a combination of some or all of these have sometimes been used.

Hall found:

In 1959, 6.6 per cent of the districts poled in the National Survey reported that they had no established minimum school entrance age. Of these 90 per cent used individual examinations to help determine readiness.<sup>10</sup>

Rowland and Nelson found that the use of several instruments help to select more satisfactorily the academically able from among the young. They found in one survey that many parents reject the intelligence test score as criterion for refusing or admitting children to first grade.<sup>11</sup>

Karlin concluded that reading readiness tests do not predict probable growth in reading. He stated that the readiness tests used at that time (1937) did not measure reading readiness.<sup>12</sup>

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<sup>9</sup>Carter, Lowell B., "The Effect of Early School Entrance on the Scholastic Achievement of Elementary School Children in the Austin Public Schools," Journal of Educational Research, 50 (October, 1956), pp. 91-103.

<sup>10</sup>Hall, R. Vance, "Does Entrance Age Affect Achievement," Elementary School Journal, (April, 1963), pp. 391-399.

<sup>11</sup>Rowland, Thomas D., and Nelson, Calvin C., "Off to School--At What Age?," Elementary School Journal, LX (October, 1959), pp. 18-23.

<sup>12</sup>Karlin, Robert, "The Prediction of Reading Success and Reading Readiness Tests," Elementary English, 34 (May, 1937), pp. 320-322.

Medinnus, in an article about an experiment with parent evaluation, reported that he developed a First Grade Adjustment Scale composed of fifty-two items. Parents rated their five-year-olds on this scale. The children's success in first grade was predicted from the information on this scale. At the end of the first year in school, these children were divided by their teachers into two distinct groups, the "good adjustment group," and the "poor adjustment group." In general, he concluded:

The number of items differentiating between the two groups did not exceed that expected by chance alone. It can be concluded, therefore, that parental descriptions of their five-year-olds are not highly predictive of the child's future first-grade adjustment.

The above study hints that some means other than parental evaluation must be used as a criterion for school entrance.<sup>13</sup>

Kottmeyer maintained that teacher's judgement alone is not evidence for withdrawing a child from first grade after a trial of a few weeks:

Worthy of particular attention, however, is the fact that teachers seem to make most of their errors of judgement in assuming readiness on the part of children who are not ready for reading. Best is the combination of teacher's judgement with either intelligence or a readiness test.<sup>14</sup>

Ammons stated in a study of children who entered school after being administered readiness tests:

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<sup>13</sup>Medinnus, Gene R., "Parental Q--Short Descriptions of Five-Year-Olds as Predictors of First Grade Adjustment Scale," Elementary School Journal, (October, 1963), pp. 54-58.

<sup>14</sup>Kottmeyer, William, "Readiness for Reading," Elementary English, 24 (October, 1947), p. 336.



Bright children, whose physical, social and emotional maturation has kept pace with their intellects and who are carefully screened, are good risks for entering school several months earlier than the usual minimum age.

Those who are not admitted who are bright are held back from beginning their tasks (succession of carefully graded tasks beginning with first grade), they would have less difficulty in accomplishing them and the school may take whatever questionable credit is coming.<sup>15</sup>

Shields, in a study in District 1, Missoula, comments on the young child with average or lower ability as follows:

Interesting observations may be made with respect to the "70-73" months chronological age group whose mental ages are "60-69" months. . . .The highest intelligence quotient of any member of this group of so called late birthdays, was approximately 100. For this group of so called late birthdays, sixty-nine per cent were retained in grade one; 93.8 per cent achieved below the Missoula average; and seventy-five per cent achieved below the national norm.<sup>16</sup>

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<sup>15</sup>Ammons, Goodland, "When to Begin Dimension of First Grade Entrance Problem," Childhood Education, XXXII September, 1955, pp. 21-26.

<sup>16</sup>Shields, Reed L., "A Study of Some Factors that Are Related to the Success and Failure in the First Grade Program of School District 1, Missoula, Montana," Thesis, Montana State University, 1956, p. 25.

## CHAPTER IV

### PROCEDURES

Procedure and Collection of Data. This study was made on five groups of children whose birthdays were in October of the years they entered school. The five groups were those who entered in September of each of the years 1956 through 1960. These children, referred to as the selected groups, were admitted on the basis of achieving a raw score of 39.5 or better on the individually administered tests, The Van Wagnen Readiness Scale. The total number of children who entered the schools in Missoula and remained in the school system through the year of 1963-1964 was eighty-five. The 1956 group was studied over a five year period; the 1957 group over a four year period; the 1958 group over a three year period; the 1959 group over a two year period; and the 1960 group over a one year period.

Data were obtained from the school district's record books which contain the achievement scores of all children from the beginning of fourth grade through the eighth grade. From this source were obtained the academic achievement level for the children. From the permanent record cards retention, withdrawal and intelligence information and data on remedial reading help were obtained. Information on referrals for speech therapy was obtained from the school district's speech therapist.

The median achievement scores for the selected pupils in reading, in vocabulary, and their composite of scores were compared with those of the total population groups and with those representing the national

norm. The national norm or better, that is, the fiftieth percentile rank scores or better, was used as a definition of academic success.

Data on those referred for speech therapy and remedial reading were obtained to determine how the per cent of those of the selected children referred for special services compared with those of the Missoula total population. Intelligence scores were used to determine the level of scholastic aptitude for the selected pupils.

Most of the scores on the Iowa Tests of Basic Skills in the Missoula schools were recorded in grade equivalents. By using the tables provided in the teacher's manuals, those scores were converted into percentile scores.

The medians of the vocabulary, reading, and composite of scores were determined for grades four through eight for the 1956 group; for grades four through seven for the 1958 group; for grades four and five for the 1959 group; for grade four for the 1960 group.

## CHAPTER V

### TREATMENT AND REPORTING OF DATA

Analysis. Table I, page 15, shows the total number of students selected, therefore, they were the students who remained in District 1 through the 1963-1964 school year. It may be noted that two of the 1956 group were withdrawn because of immaturity. This was 2.3 per cent of the selected group.

Table II, page 16, shows that four of the selected children were retained a year. Two were retained because of illness; one of them was absent 50½ days - she had "S"es in all subjects during the first two years she was in school. One child listed under "Other Causes" in Table II, p. 16, had remedial reading several quarters and attended the University Summer School Reading Laboratory one summer. The other child was absent twenty days during the second grade. Although he was promoted by his teacher, his parents requested that he be retained.

It is interesting to note that three of the four children who were retained were relatively low on the intelligence score. Two were at the bottom of the lowest quartile with scores of 104. The third child was near the top of the lowest quartile with a score of 113. The fourth one was near the bottom of the upper quartile with a score of 133.

These four retentions made up approximately five per cent of the final number in the selected group.

Table III, page 18, shows the percentile medians of each of the selected groups as well as those of the Missoula total population groups for each year. The selected groups scored higher than the Missoula total popu-

TABLE I.

NUMBER OF CHILDREN ADMITTED BY READINESS TESTS  
AND THOSE DROPPED FROM THE STUDY

Groups by Year	Number of Students in the Study		
	Initial Number	Number Withdrawn	Final Number
1956	21	2	19
1957	18		18
1958	16		16
1959	17		17
1960	15		15
	87	2	85
1956-1961	100%	2.3%	97.7%

TABLE II.

NUMBER OF CHILDREN ADMITTED BY READINESS TEST  
RETAINED BUT REMAINED IN THE STUDY

SELECTED GROUPS		CHILDREN RETAINED				
YEAR	FINAL NUMBER	GRADE IN WHICH RETAINED	RETAINED BECAUSE OF ILLNESS	OTHER CAUSES	I. Q.	TOTAL
1956	19	I	1		113	1
1957	18					
1958	16	IV	1		104	1
1959	17	IV		1	104	1
1960	15	II		1	133	1
1956 -	85		2	2		4
1961	100%		2.35%	2.35%		4.7%

lation groups in most areas. In general, these differences were very slight.

Table III, page 18, also shows the percentile medians of the combined selected groups and of the Missoula total population groups in vocabulary, reading, and composite of scores for the years 1959 through 1960. The selected groups' median is slightly higher than that of the Missoula total population groups' median with the exception of the composite of scores.

Figures 1, 2, 3, pages 19, 20, and 21 respectively, show the distributions of the scores for the 1956 through the 1960 selected groups.

Figure 1, page 19, shows that the median of vocabulary scores of all the groups combined was at the 72nd percentile rank compared with the national norm, the 50th percentile. One-third of the cases were above the 84.5 percentile rank. Seven students, 8.4 per cent, were below the national norm. The median of the five groups' medians in vocabulary was higher than the Missoula total population group's median for the 1956-1957 through the 1963-1964 school terms.

Figure 2, page 20, shows that the median of reading scores of all the groups combined was at the 77th percentile rank compared with the national norm, the 50th percentile. More than one-third of the cases were above 84.5 percentile. Sixteen students, 18.8 per cent, were below the national norm. The five groups' median in reading was higher than the Missoula total population median for the 1956-1957 through the 1963-1964 school terms.

Figure 3, page 21, shows that the median of the composite of

TABLE III.

## COMPARISON OF PERCENTILE MEDIANS OF SELECTED GROUPS

## WITH THE MISSOULA TOTAL POPULATION GROUPS

Groups by Year	Selected Groups			Missoula Total Population Groups		
	Vocabu- lary	Reading	Com- posite	Vocabu- lary	Reading	Com- posite
1956	72	75	67	69	75	74
1957	82	75	86	76	79	79
1958	73	77	71	69	70	69
1959	77	77	82	69	70	80
1960	67	72	72	68	64	73
Years of Ach. Tests	Selected Groups			Missoula Total Population Groups		
1959-1963	Vocabu- lary	Reading	Com- posite	Vocabu- lary	Reading	Com- posite
	72	77	73	69	70	74

Key: Blue - Highest Percentile  
Red - Lowest Percentile



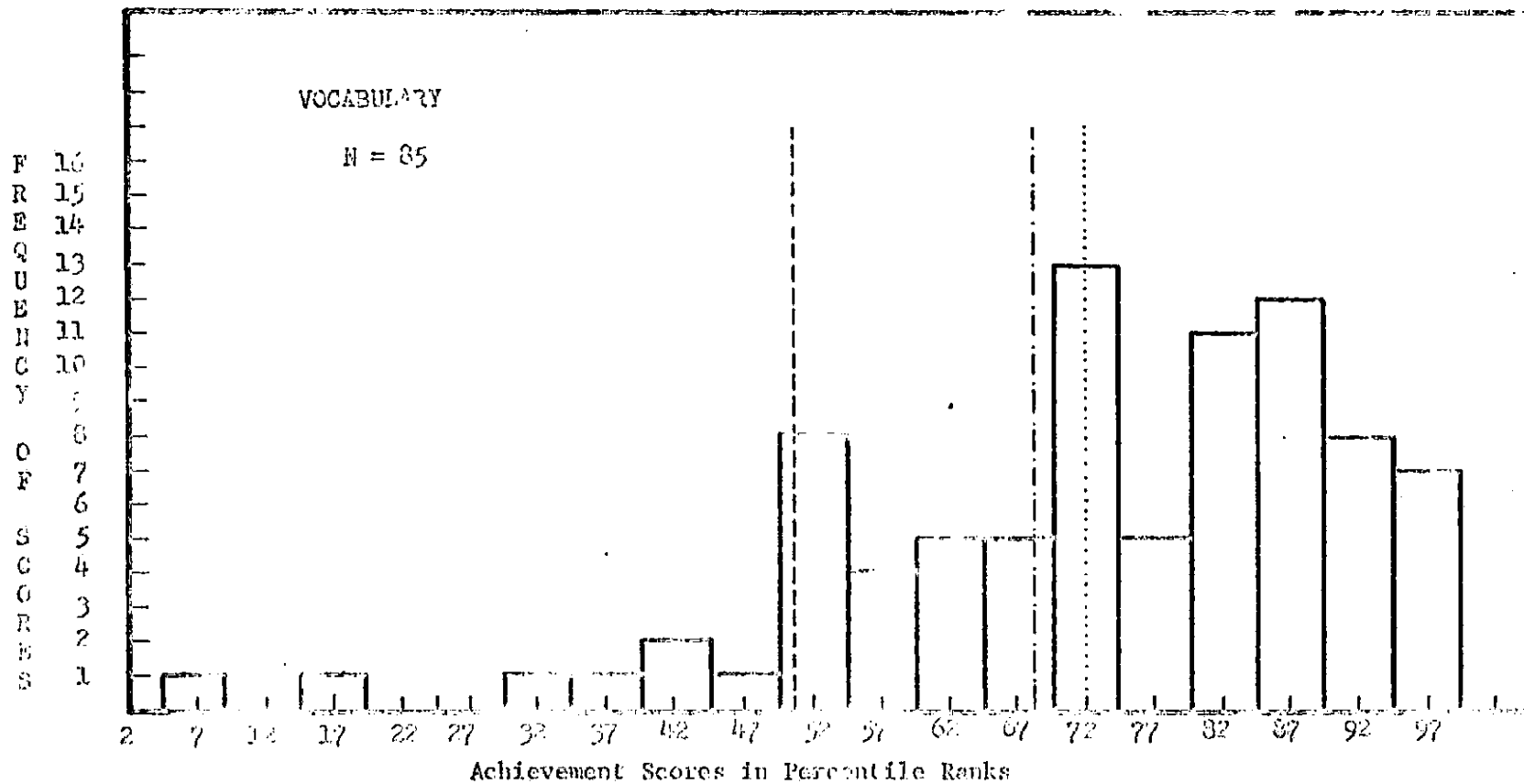


Figure 1

Distribution of the Percentiles of the 1956-1961 Selected Groups and  
a Comparison of the Median of the 1956-1961 Selected  
Groups' with the Missoula Total Population  
and the National Norm Groups'.

Key: National Norm - - - - - Missoula Total Population . . . . . Selected Group

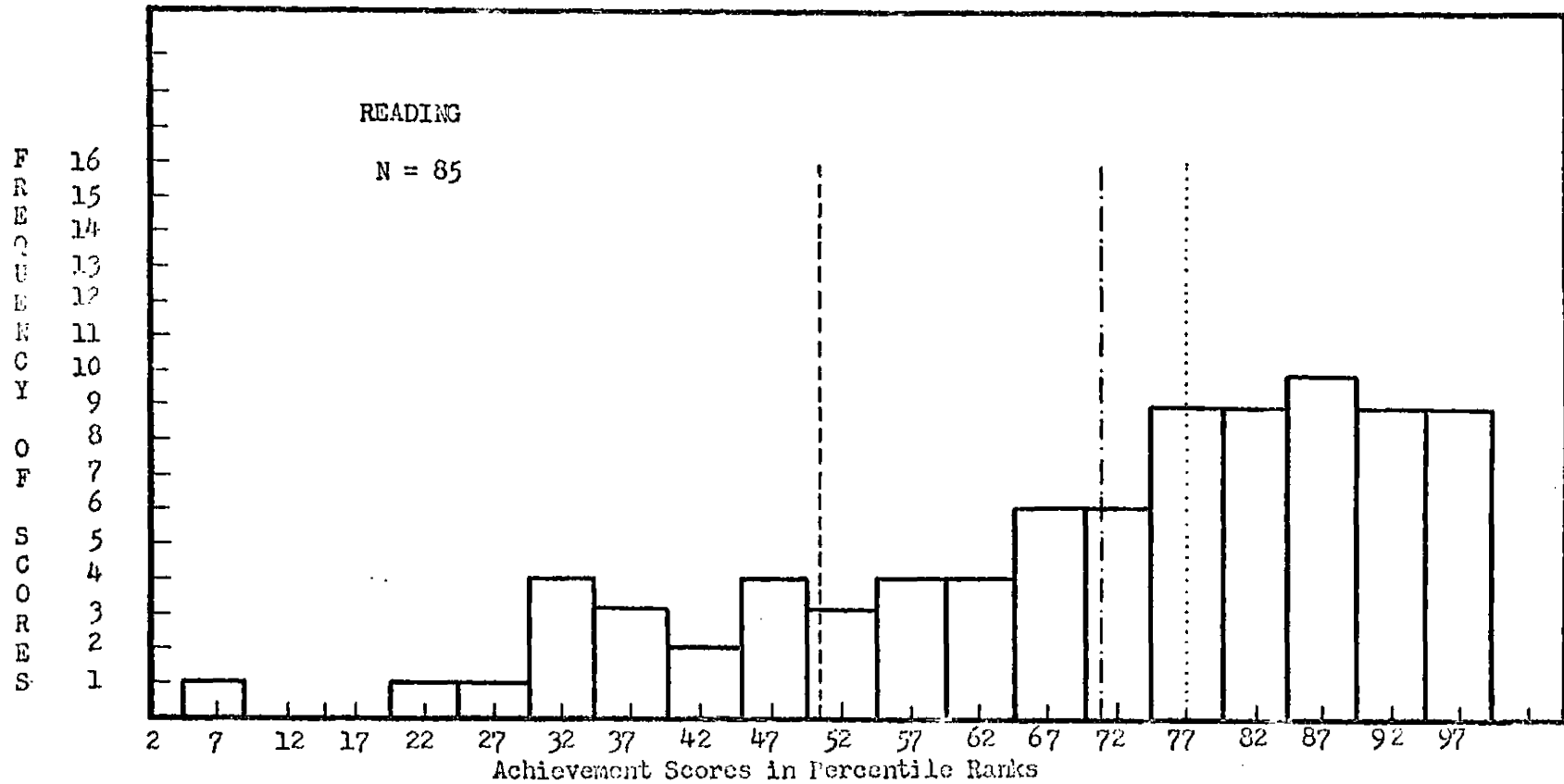


Figure 2

Distribution of the Percentiles of the 1956 - 1961 Selected Groups and  
a Comparison of the Median of the 1956 - 1961 Selected  
Groups' with the Missoula Total Population  
and the National Norm Groups'.

Key: National Norm      - - - - - Missoula Total Population      - . - . - . Selected Group      .....

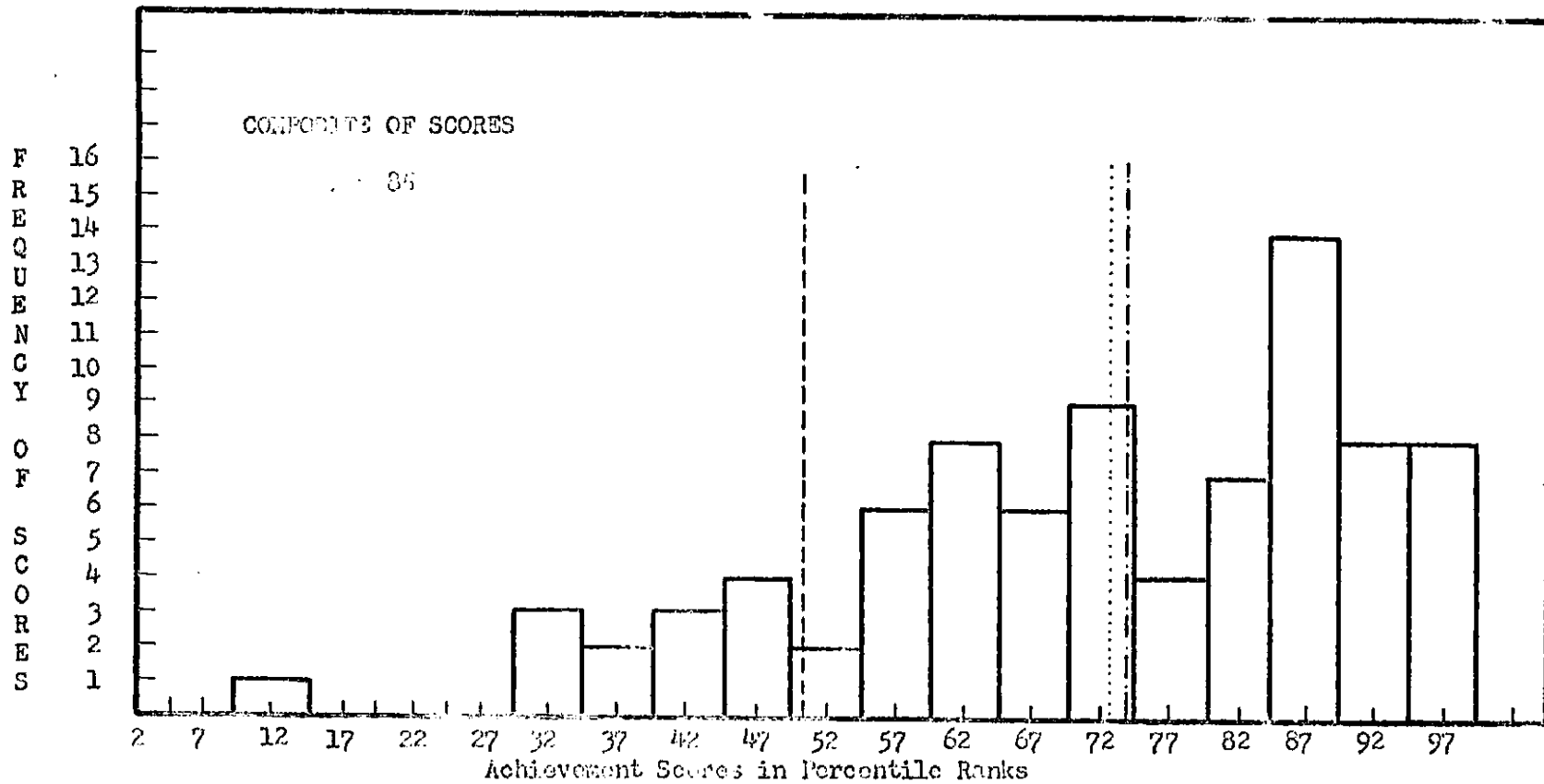


Figure 3

Distribution of the Percentiles of the 1956 - 1961 Selected Groups and  
 a Comparison of the Median of the 1956 - 1961 Selected  
 Groups' with the Missoula Total Population  
 and the National Norm Groups'.

Key: National Norm      - - - - - Missoula Total Population      ..... Selected Group

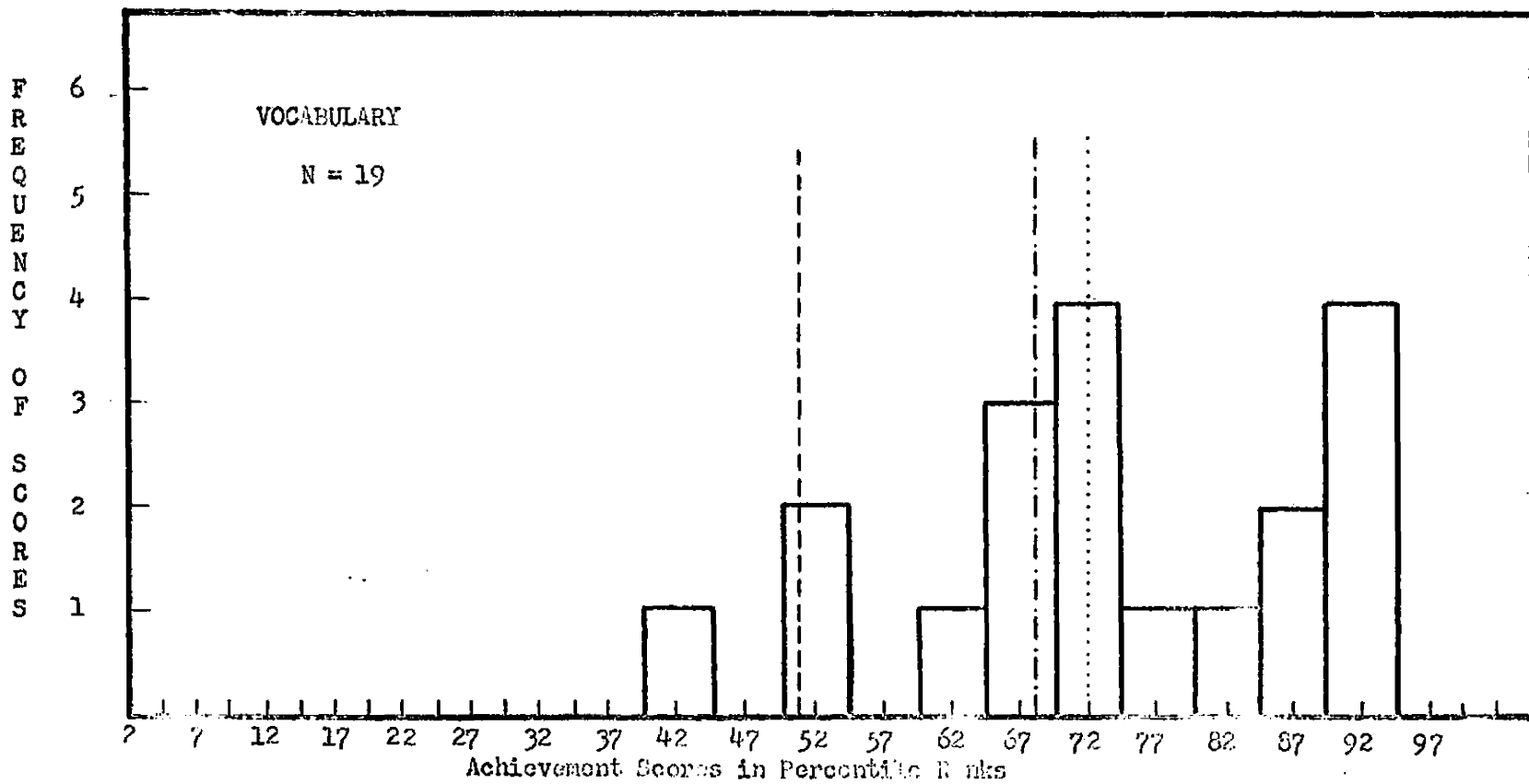


Figure 4

Distribution of the Percentages of the 1956 Selected Group and a Comparison of the Median of This Group with the Median of the 1956 Missoula Total Population and with the National Norm.

Key: National Norm      - - - - - Missoula Total Population      - · - · - Selected Group      ······

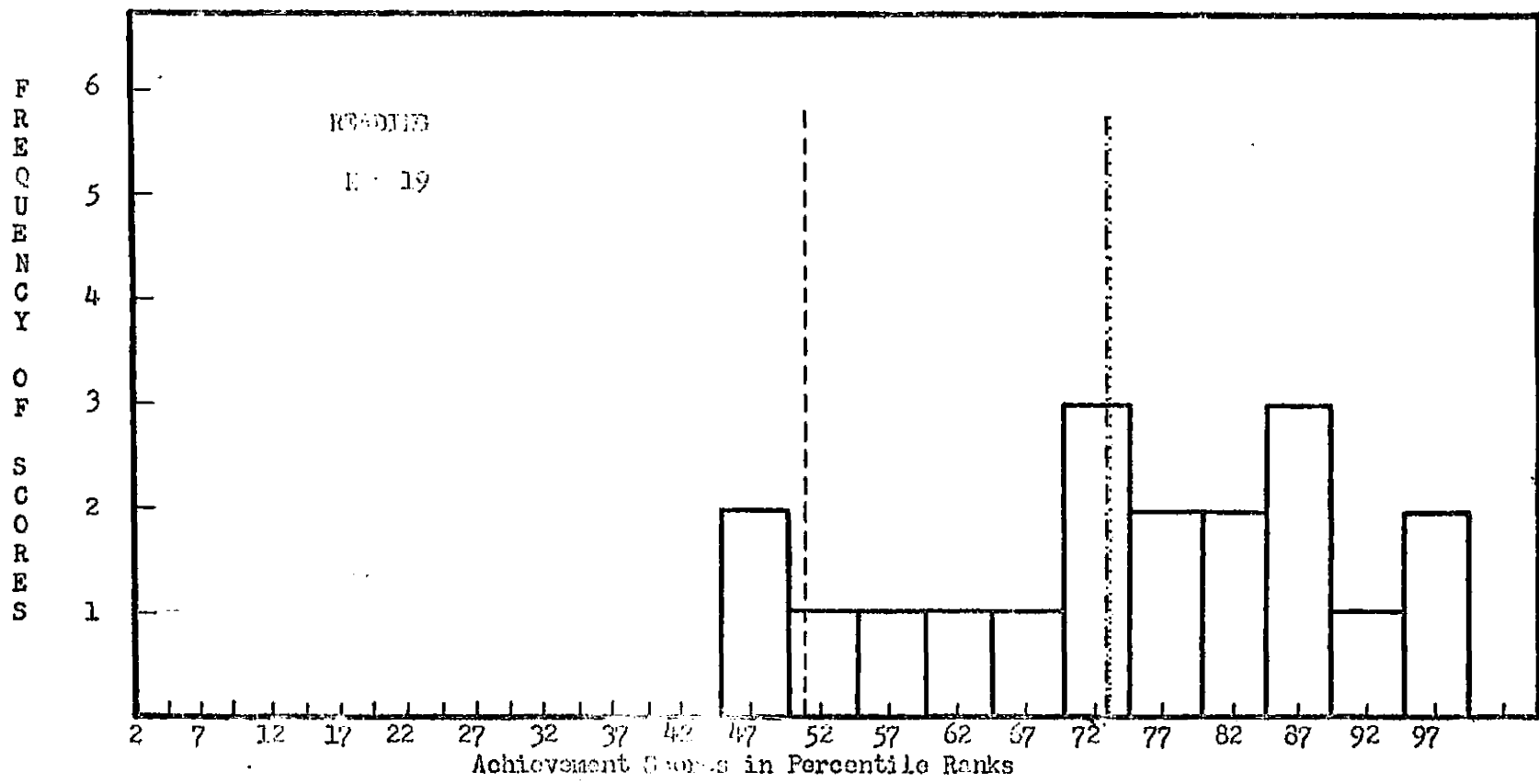


Figure 5

Distribution of the Percentiles of the 1956 Selected Group and a Comparison of the Median of this Group with the Median of the 1956 Missoula Total Population and with the National Norm

Key: National Norm      - - - - - Missoula Total Population      - · - · - · - Selected Group      ·······

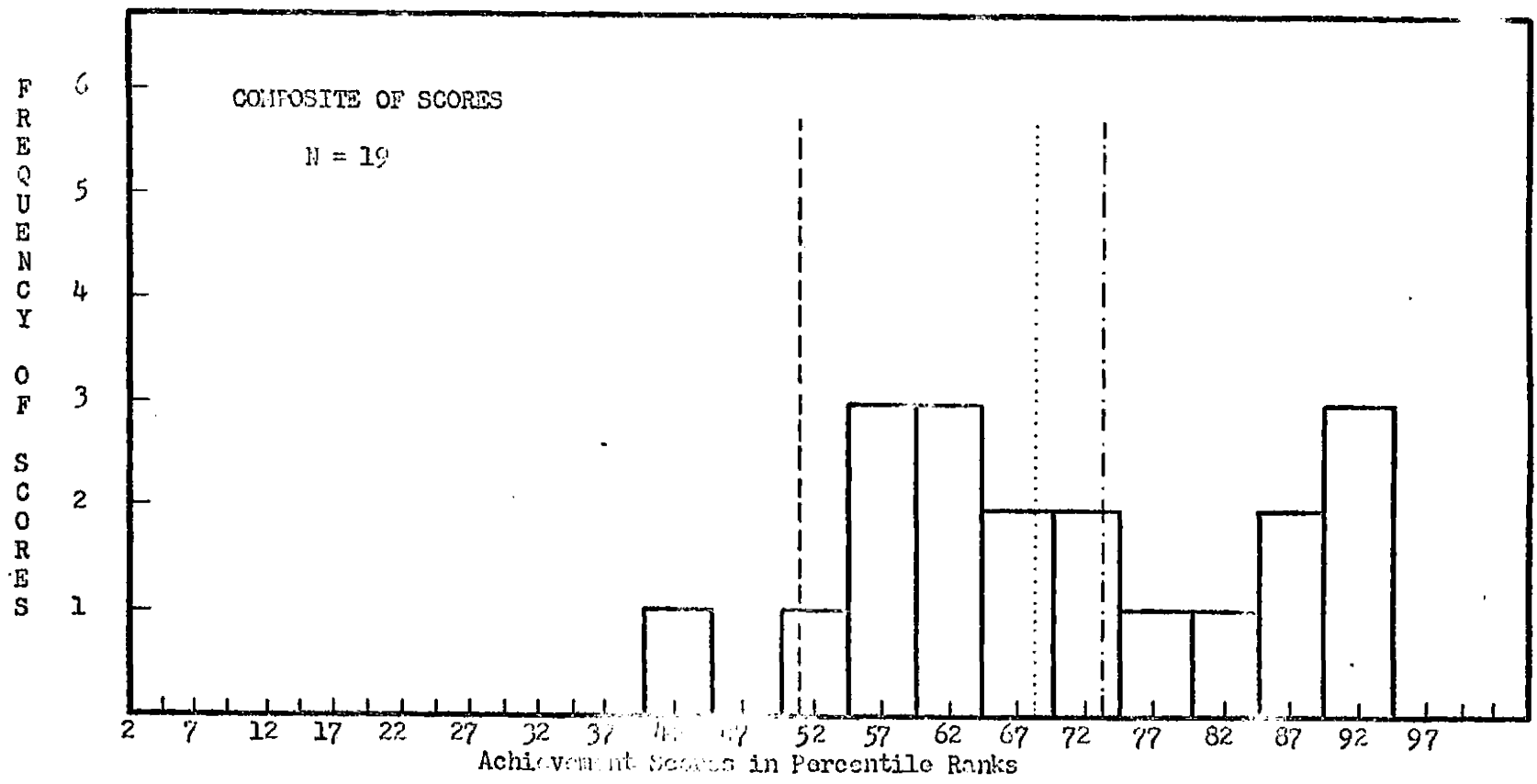


Figure 6

Distribution of the Percentiles of the 1956 Selected Group and a Comparison of the Median of this Group with the Median of the 1956 Missoula Total Population and with the National Norm.

Key: National Norm    - - - - -    Missoula Total Population    - - - - -    Selected Group    .....

In noting Figures 4, 5, and 6, it would seem that four children's scores were below the national norm. However, only two children scored below the national norm. One child scored below the national norm in vocabulary, reading, and the composite of scores and the other child fell below in reading. No score was below 39.5 percentile.

Additional figures show the distributions of scores in vocabulary, reading, and composite of scores, respectively, for the 1957 selected group. There were eighteen children in this group.

Figure 7, page 27, shows that in vocabulary the most cases were between the 79.5 and 94.5 percentile. This group's median was considerably above the national norm. There was one case, 5.5 per cent, below the national norm. This group's median was slightly above for the 1957 Missoula total population group's median.

Figure 8, page 28, shows the most cases in reading were between 79.5 and 94.5. This group's median was considerably above the national norm. There were four cases, 22 percent, below the national norm. This group's median in reading was slightly below the 1957 Missoula total population group's median.

Figure 9, page 29, shows the most cases in the composite of scores were between 84.5 and 89.5 percentile. This group's median was far above the national norm. Three cases, 16 per cent, were below the national norm. This group's median was a little higher than the Missoula total population group's median.

The child who scored below the national norm in vocabulary also scored below in reading and the composite of scores. Three others who scored below the national norm in reading also scored below in the composite of scores.

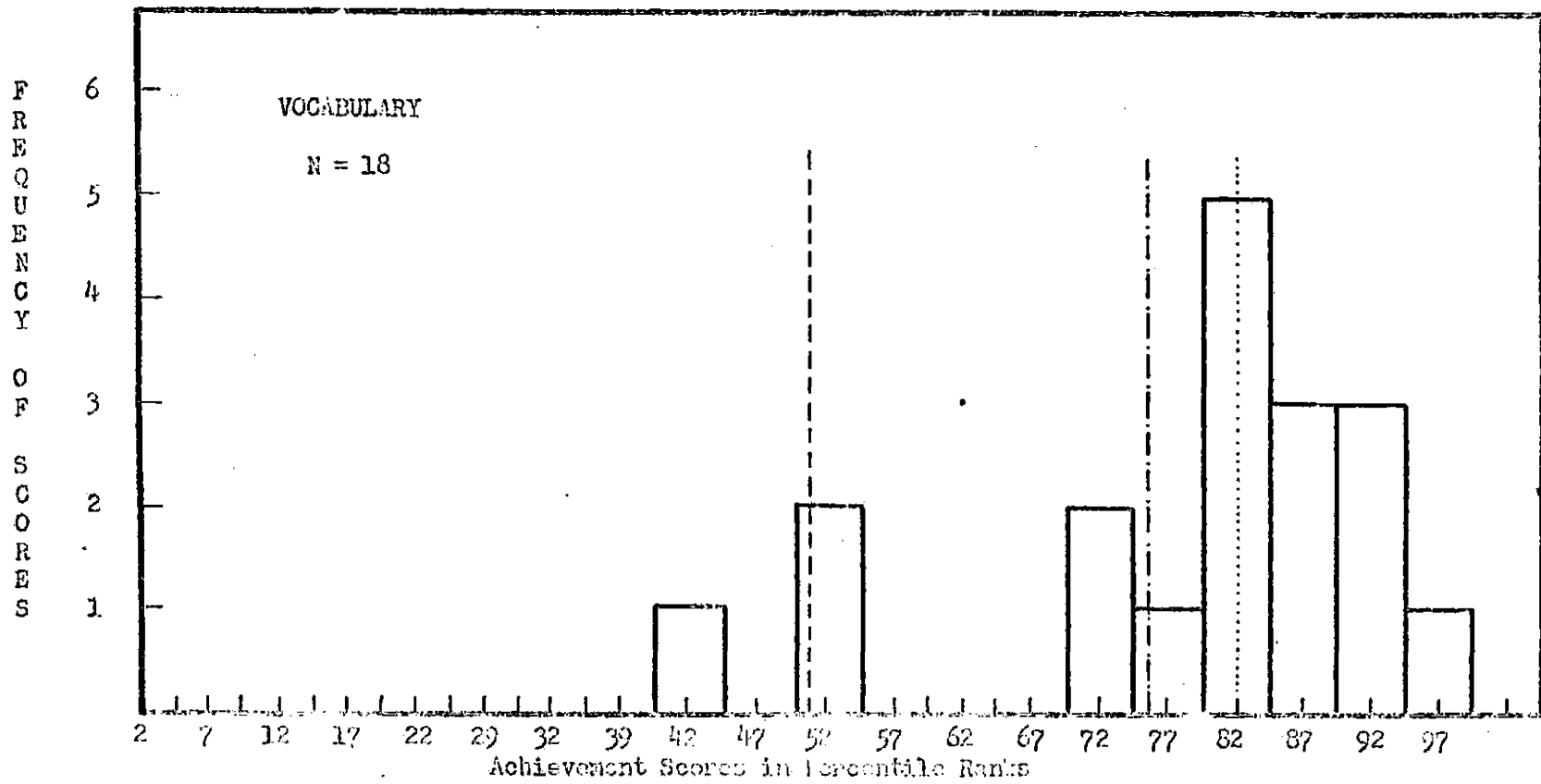


Figure 7

Distribution of the Percentiles of the 1957 Selected Group and a Comparison of the Median of this Group with the Median of the 1957 Missoula Total Population and with the National Norm.

Key: National Norm      - - - - - Missoula Total Population      - · - · - · Selected Group      ·······



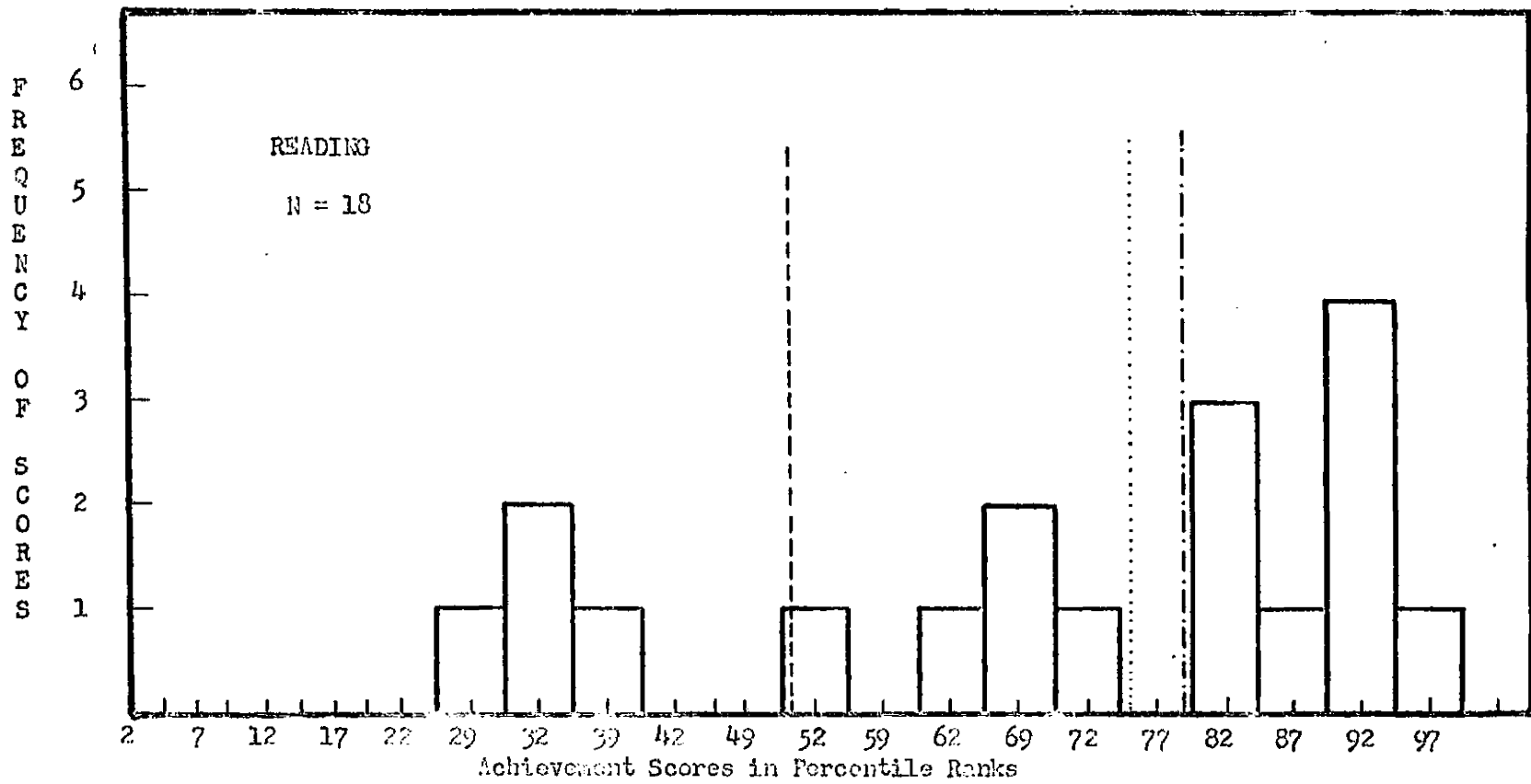


Figure 8

Distribution of the Percentiles of the 1957 Selected Group and a Comparison of the Median of this Group with the Median of the 1957 Missoula Total Population and with the National Norm.

Key: National Norm    - - - - -    Missoula Total Population    - · - · - · -    Selected Group    ······

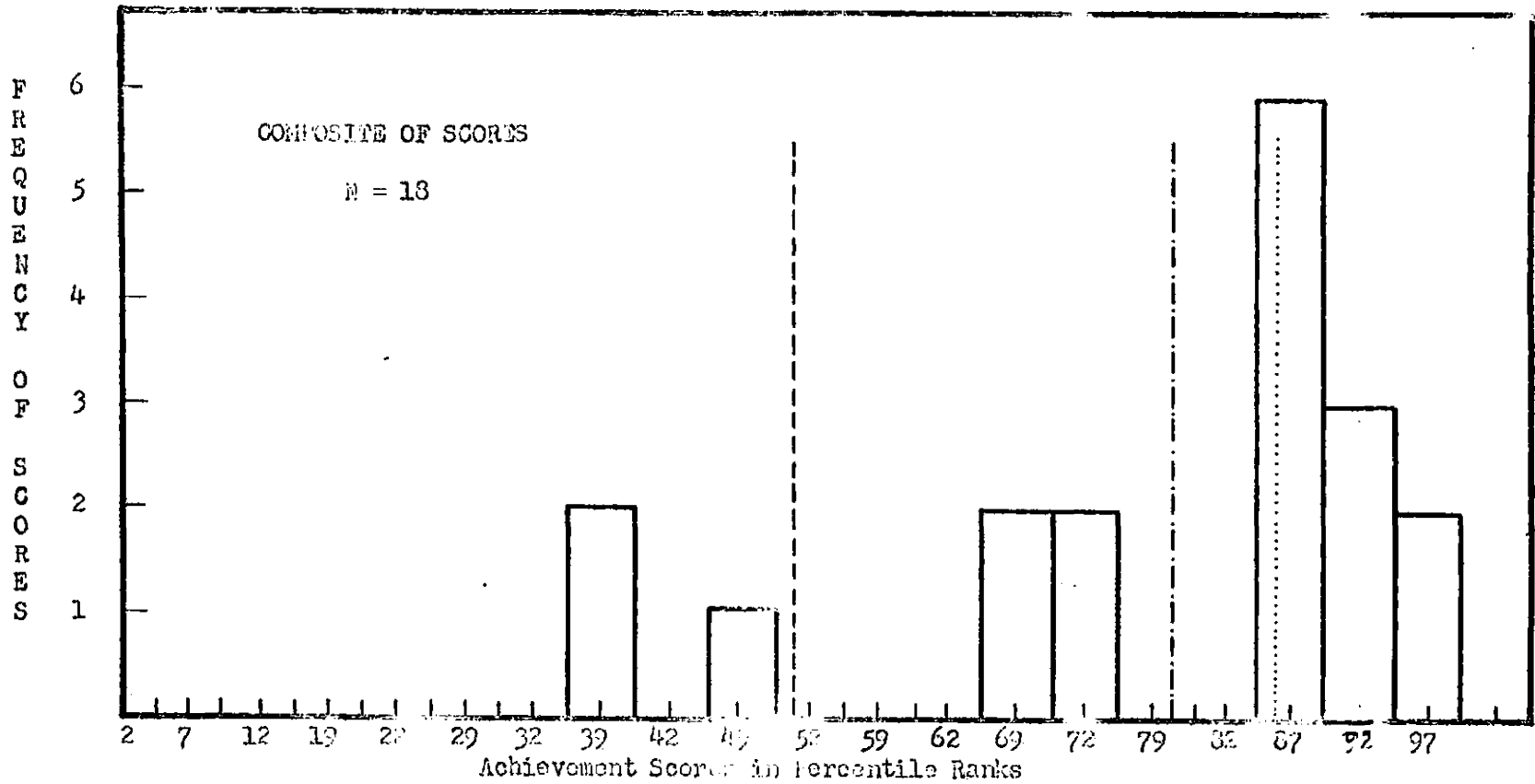


Figure 9

Distribution of the Percentiles of the 1957 Selected Group and a Comparison of the Median of this Group with the Median of the 1957 Missoula Total Population and with the National Norm.

Key: National Norm    - - - - -    Missoula Total Population    - · - · - ·    Selected Group    ·······

Three more figures show the distributions of the scores in vocabulary, reading and the composite of scores, respectively, for the 1958 selected group. There were sixteen children in this group.

Figure 10, page 31, shows the distribution of cases in vocabulary to be somewhat bi-modal with the most cases between 69.5 and 74.5, and between 85.5 and 89.5. This group's median was far above the national norm in vocabulary. There were two cases, 12.5 per cent, below the national norm. The median of this group was a little above the 1958 Missoula total population group's median.

Figure 11, page 32, shows that in reading the most cases were between 74.5 and 79.5. This group's median was far above the national norm. Three cases, 18 per cent, were below the national norm. The median was noticeably above the Missoula total population group's median for that year.

Figure 12, page 33, shows that for the composite of scores the cases were quite evenly distributed, but the most cases were between 59.5 and 89.5. The median of this group was considerably above the national norm. Two cases, 12.5 per cent, were below the national norm. The median was a little above the 1955 Missoula total population group's median.

It may be noted that the child who scored below in vocabulary was also below in reading and the composite of scores. Another was below in reading and the composite of scores. A third child was below in reading.

Three more figures show the distributions of scores in vocabulary, reading, and composite of scores, respectively, for the 1959 selected group. There were seventeen children in this group.

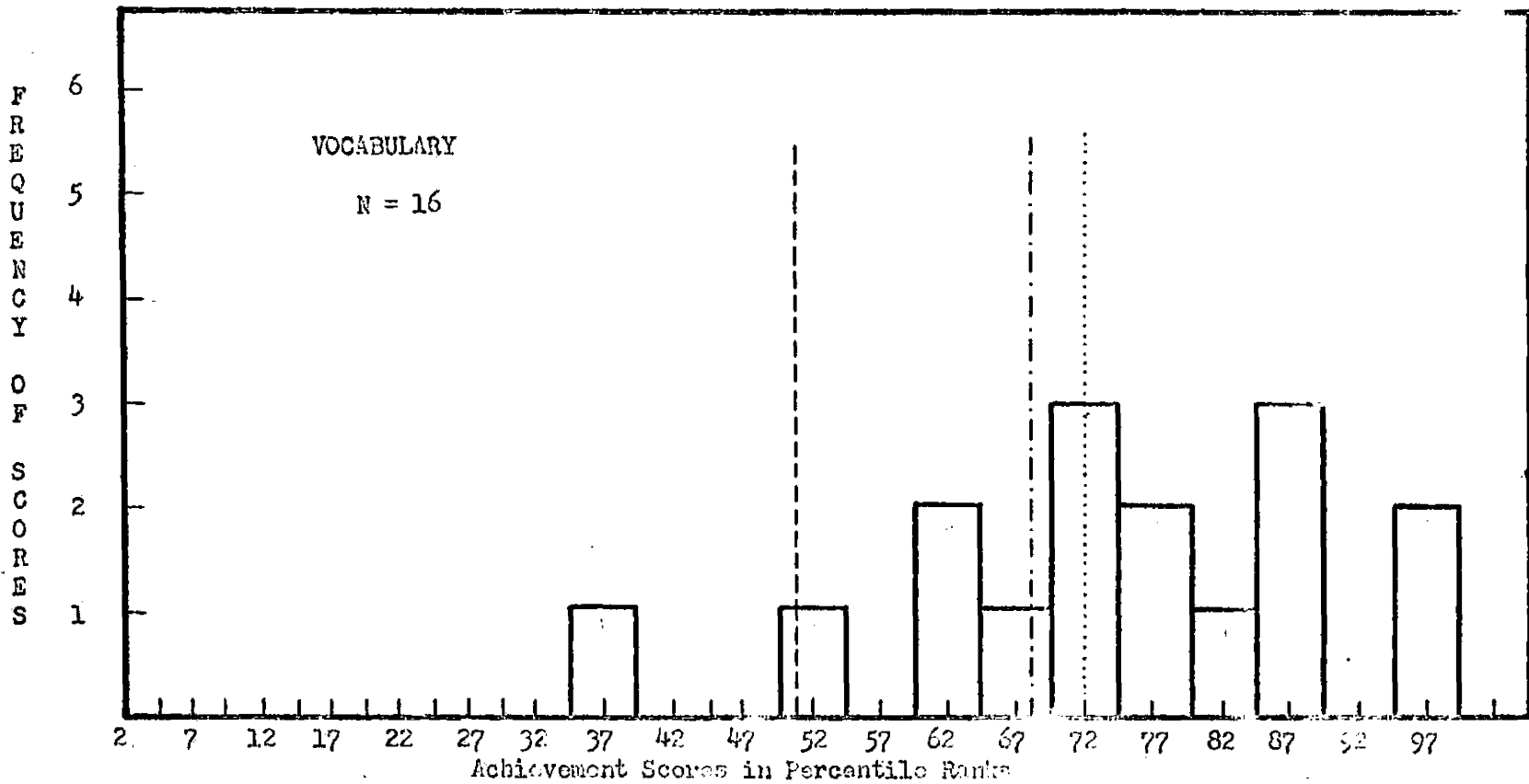


Figure 10

Distribution of the Percentiles of the 1958 Selected Group and a Comparison of the Median of this Group with the Median of the 1958 Missoula Total Population and with the National Norm.

Key: National Norm      - - - - - Missoula Total Population      - · - · - · Selected Group      ·······

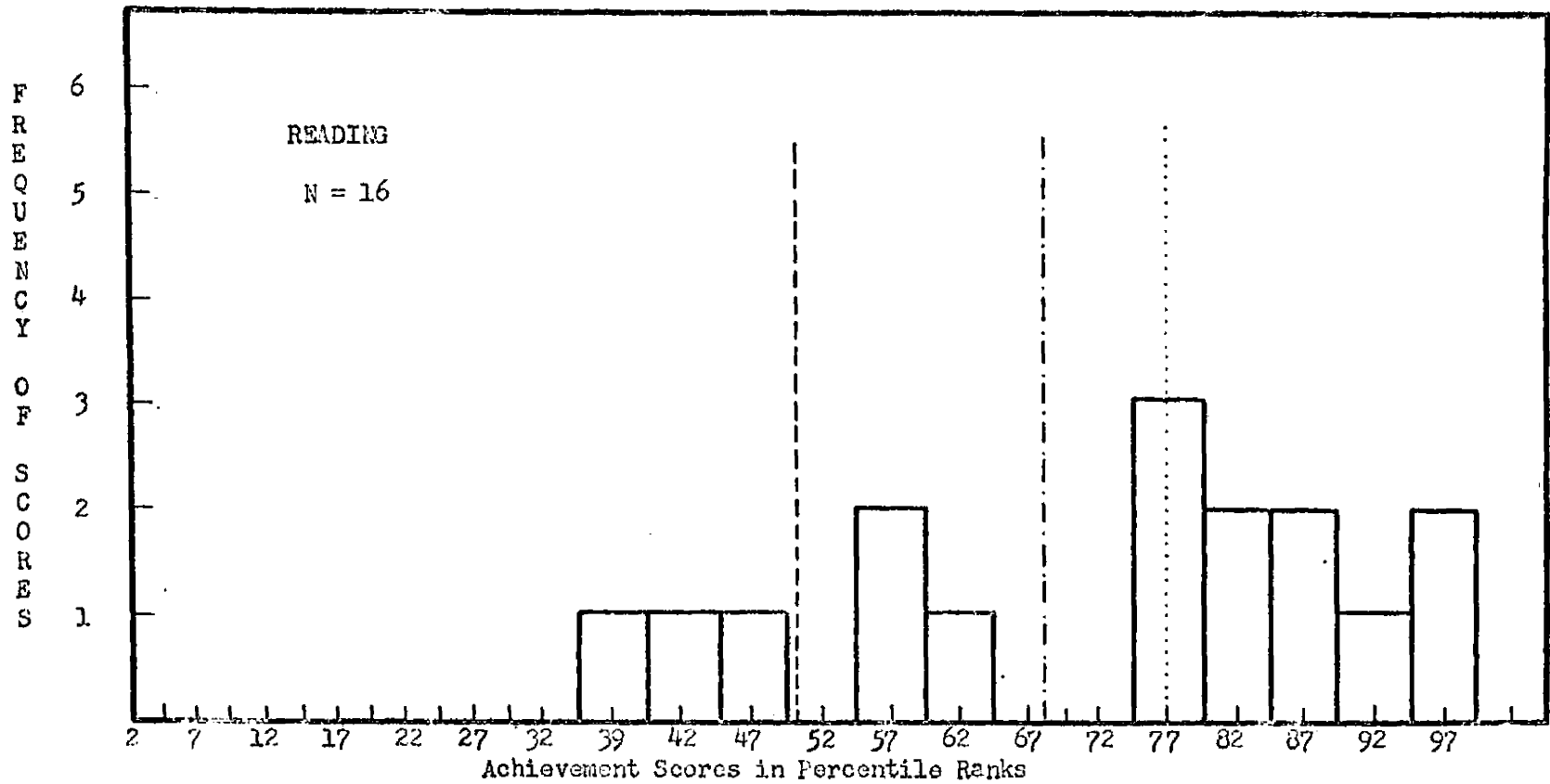


Figure 11

Distribution of the Percentiles of the 1958 Selected Group and a Comparison of the Median of this Group with the Median of the 1958 Missoula Total Population and with the National Norm.

Key: National Norm      - - - - -      Missoula Total Population      - . . . . .      Selected Group      . . . . .

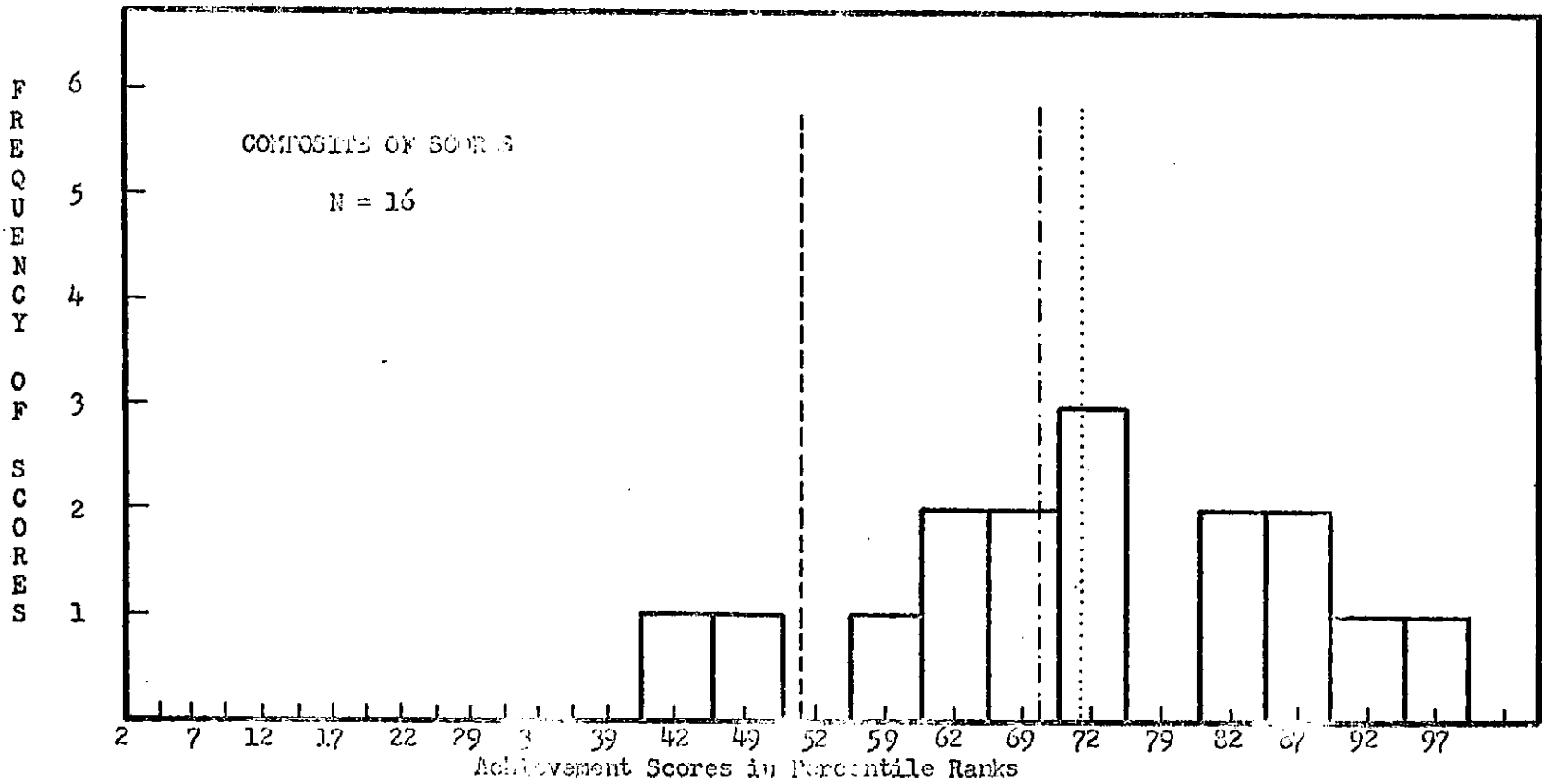


Figure 16

Distribution of the Percentiles of the 1958 Selected Group and a Comparison of the Median of this Group with the Median of the 1958 Missoula Total Population and with the National Norm.

Key: National Norm      - - - - - Missoula Total Population      - · - · - Selected Group      ······

Figure 13, page 35, shows that the scores in vocabulary were distributed quite evenly above the 69.5 percentile. This group's median was far above the national norm. Two cases, 11.8 per cent, were below the national norm. This group's median was slightly above the 1959 Missoula total population group's median.

Figure 14, page 36, shows that most cases in reading were distributed above 74.5. This group's median in reading was considerably above the national norm. Three cases, 17.7 per cent, were below the national norm. The median of this group was a little above the Missoula total population group's median for that year.

Figure 15, page 37, shows the distribution of cases for the composite of scores to be somewhat bi-modal with the most cases between 79.5 and 84.9, and between 94.5 and 99.5. Nine cases were above 79.5. This group's median of the composite of scores was far above the national norm. Three cases, 17.7 per cent, were below the national norm. This group's median was almost the same as the Missoula total population group's median for that year.

Four different children made scores below the national norm. One was below in vocabulary, reading, and the composite of scores. Two others were below in reading and composite of scores. Still another was below in vocabulary only.

The 1959 selected group included the one child in the entire study who had exceptionally low scores. He was one of the four children who were retained. This child brought the medians down for this group in vocabulary, reading, and the composite of scores. This particular child remained a puzzle. He was given remedial reading for several

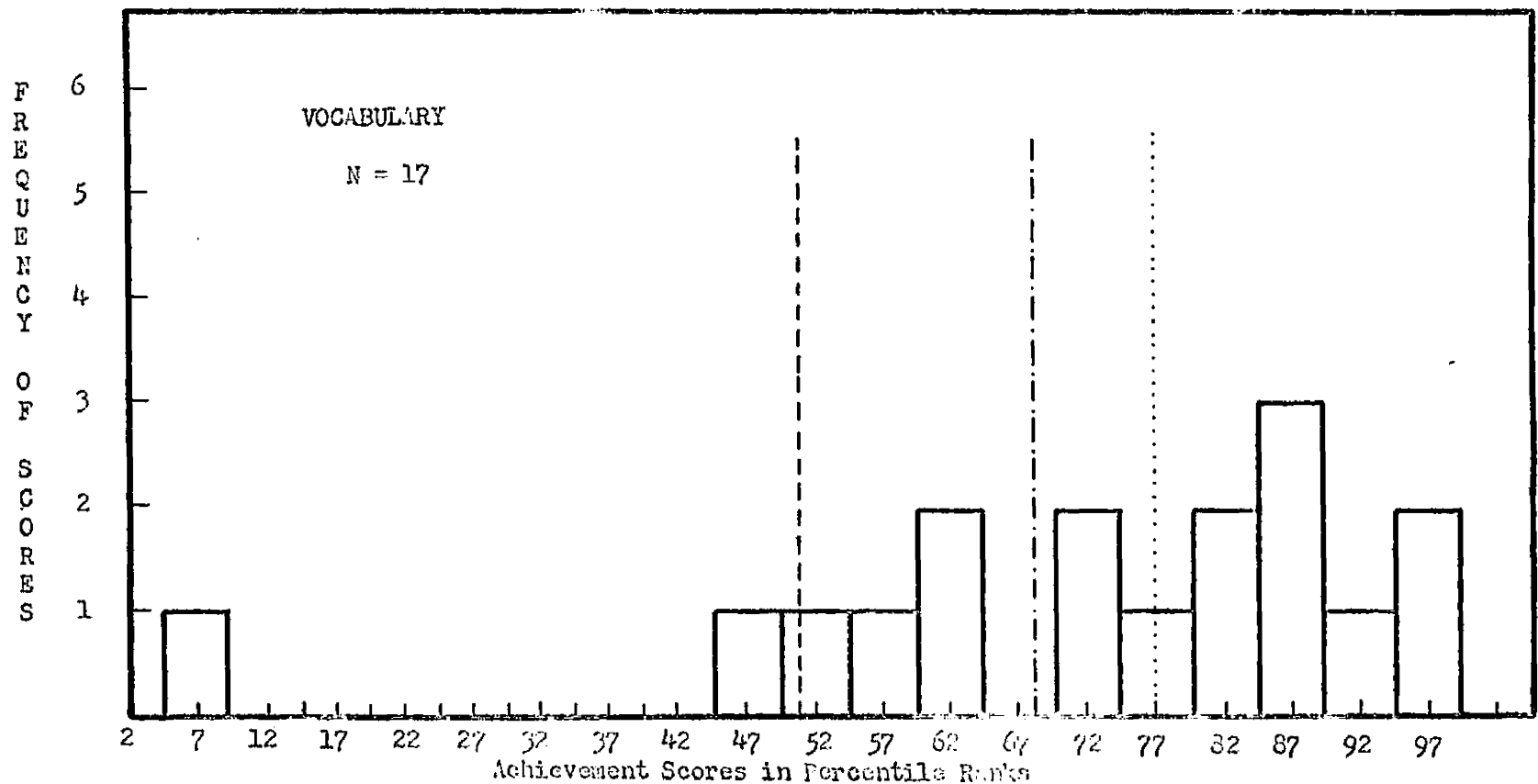


Figure 13

Distribution of the Percentiles of the 1959 Selected Group and a Comparison of the Median of this Group with the Median of the 1959 Missoula Total Population and with the National Norm.

Key: National Norm    - - - - -    Missoula Total Population    - · - · - ·    Selected Group    ·······



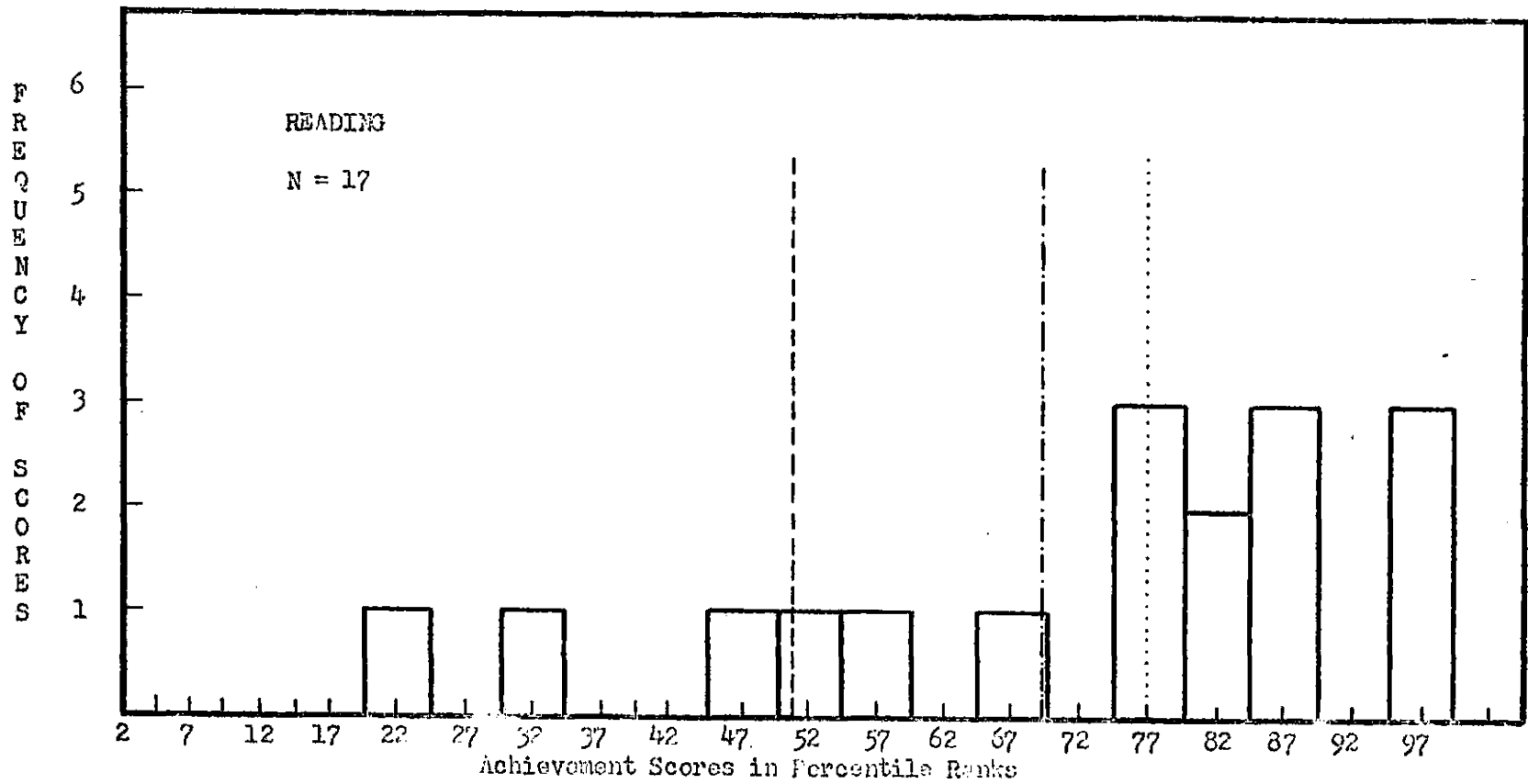


Figure 14

Distribution of the Percentiles of the 1959 Selected Group and a Comparison of the Median of this Group with the Median of the 1959 Missoula Total Population and with the National Norm

Key: National Norm      - - - - - Missoula Total Population      - · - · - Selected Group      ······

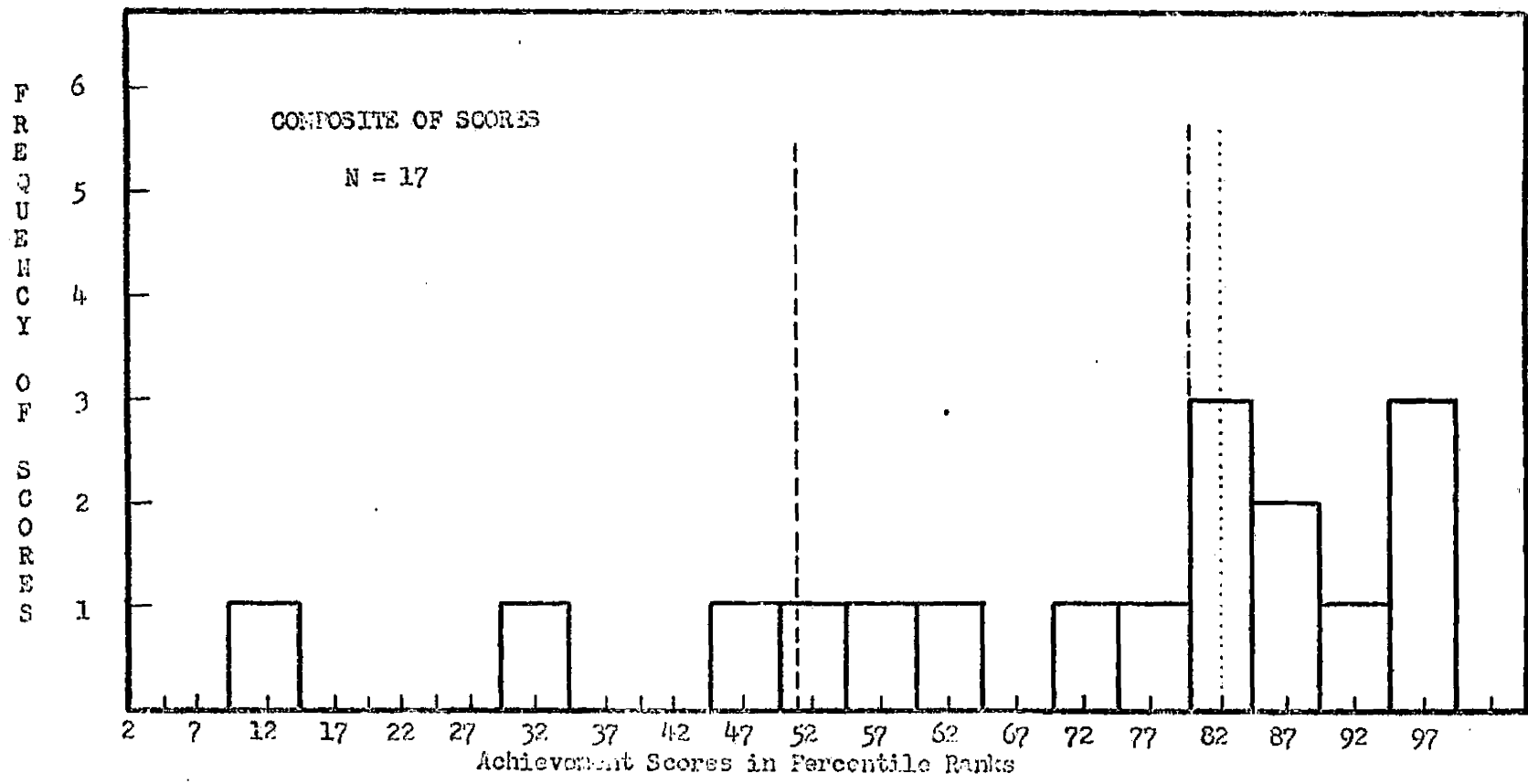


Figure 15

Distribution of the Percentiles of the 1959 Selected Group and a Comparison  
of the Median of this Group with the Median of the 1959  
Missoula Total Population and  
with the National Norm

Key: National Norm      - - - - - Missoula Total Population      - · - · - · Selected Group      ·······

quarters and attended the University Reading Laboratory for one session. For the purpose of those doing remedial work, he was never diagnosed adequately.

Again three figures were constructed to show the distributions of the scores in vocabulary, reading, and the composite of scores, respectively, for the 1960 selected group. There were fifteen children in this group.

It may be noted from these figures that there were no great numbers of cases concentrated in any area.

Figure 16, page 39, shows that this group's median in vocabulary was above the national norm but not as far above as were the other selected groups' norms. Three cases, 20 per cent, were below the national norm; two of those three were considerably below. This group's median compared with the median of the 1960 Missoula total population group's median.

Figure 17, page 40, shows that the 1960 group's median in reading was considerably above the national norm. Four cases, 27 per cent, were below the national norm. One fell below the tenth percentile. This group's median was a little higher than the Missoula total population group's median for that year.

Figure 18, page 41, shows that this group's median for the composite of scores was considerably above the national norm. Four cases, 27 per cent, were below the national norm. This group's median compared with the 1960 Missoula total population group's median.

Five children scored below the national norm. Three were below in vocabulary; two were below in reading and in the composite of scores. Two others were below in reading and in the composite of scores. One of

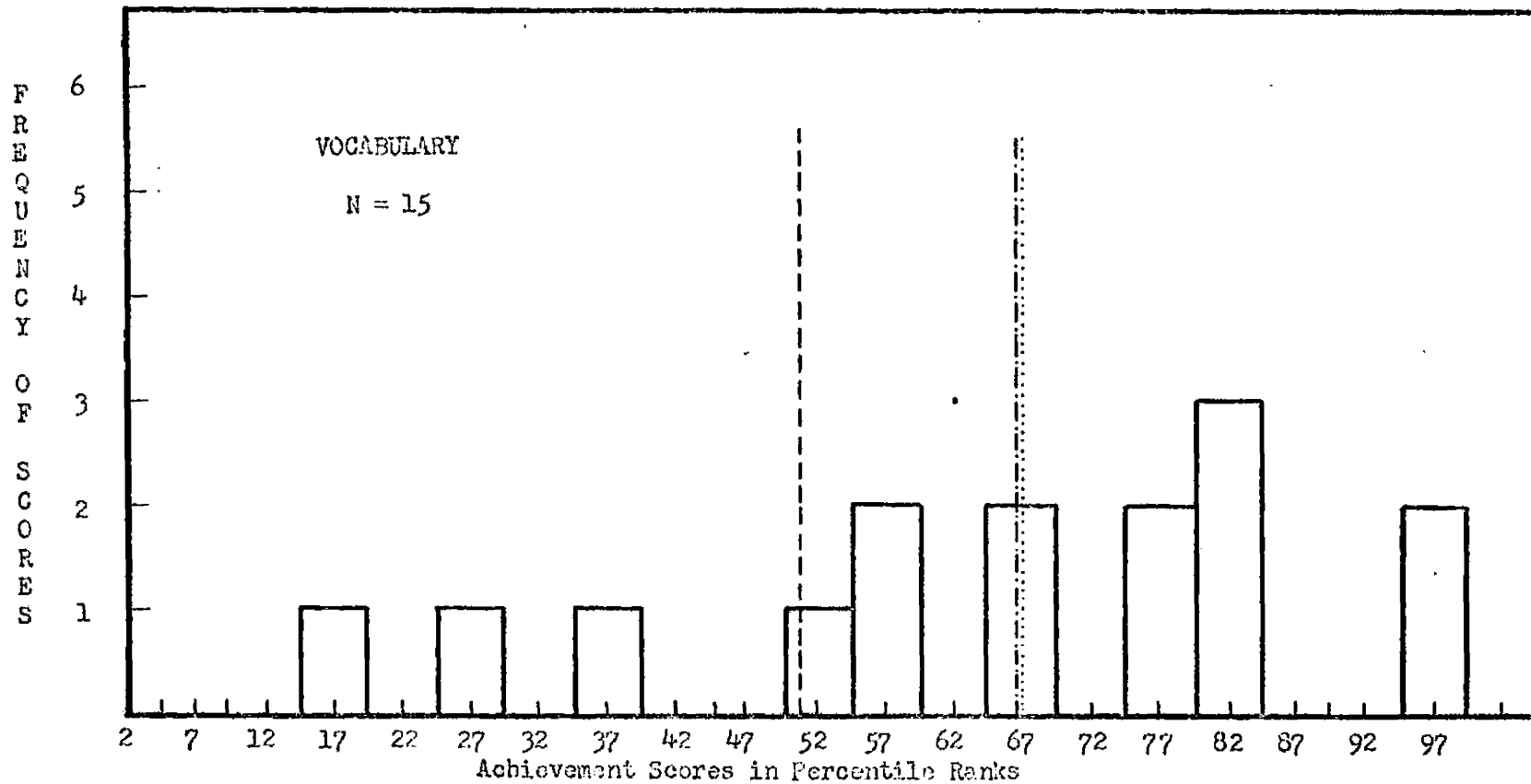


Figure 16

Distribution of the Percentiles of the 1960 Selected Group and a Comparison of the Median of this Group with the Median of the 1960 Missoula Total Population and with the National Norm.

Key: National Norm      - - - - -      Missoula Total Population      - · - · -      Selected Group      ·······

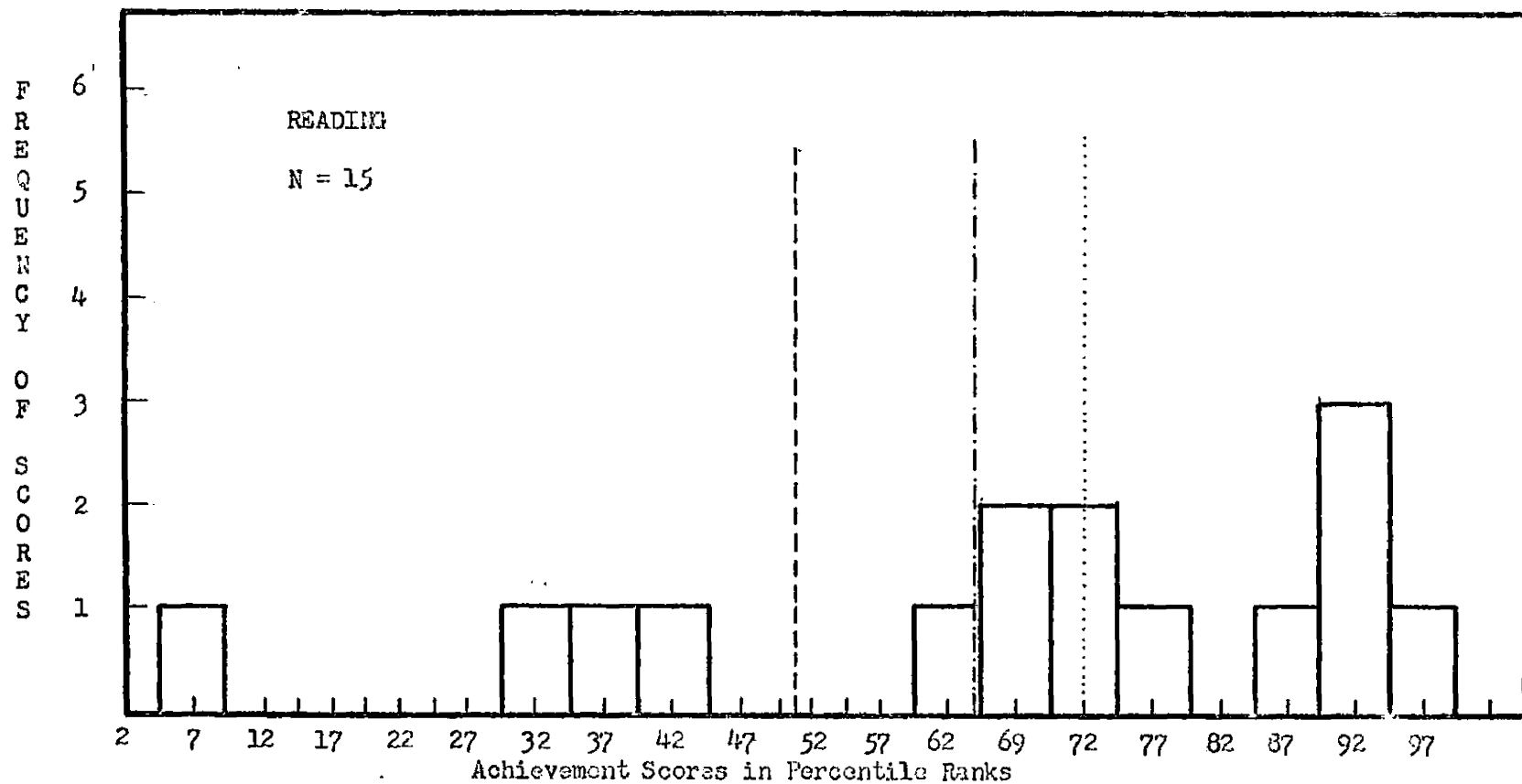


Figure 17

Distribution of the Percentiles of the 1960 Selected Group and a Comparison of the Median of this Group with the Median of the 1960 Missoula Total Population and with the National Norm.

Key: National Norm      - - - - - Missoula Total Population      - · - · - · Selected Group      ·······

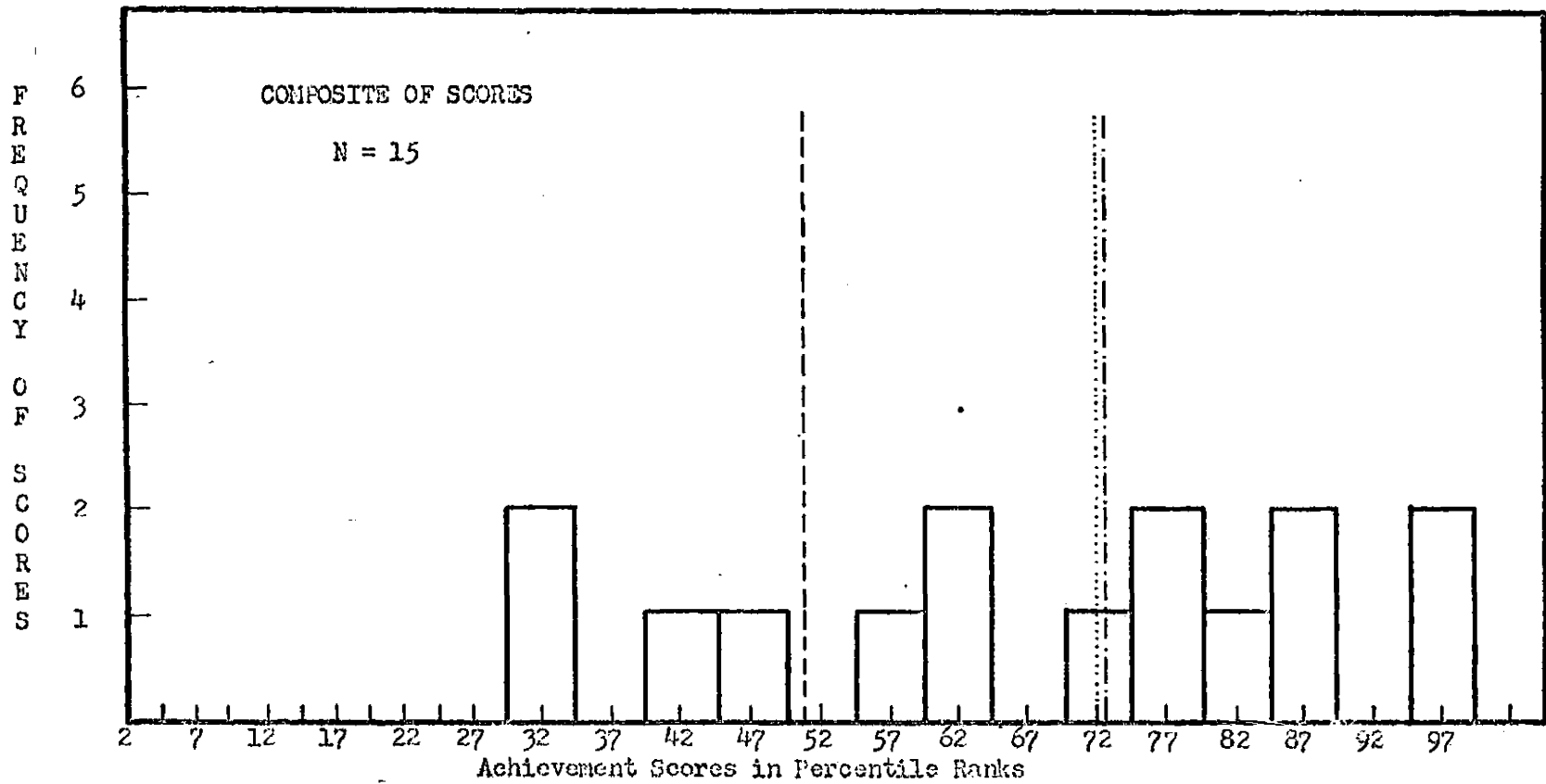


Figure 18

Distribution of the Percentiles of the 1960 Selected Group and a Comparison  
of the Median of this Group with the Median of the 1960  
Missoula Total Population and  
with the National Norms.

Key: National Norm    - - - - -    Missoula Total Population    - · - · - ·    Selected Group    ·······

these children was retained in second grade.

Figure 19, page 43, shows the distribution of the intelligence quotients of the selected group. The range was from 103 to 145; the median, 123; the interquartile range (Q3-Q1), 115-129.

In comparing the girls and boys it may be noted in Table IV, page 44, that there were more girls than boys in the selected group, 48 to 39.

From Table IV, page 44, it is evident that the girls' median in vocabulary and reading were somewhat higher than the boys', but the girls' and boys' median in the composite of scores were approximately the same. More boys than girls were below the national norm, 50th percentile. The boys' medians in all areas were practically equal to the Missoula total population groups'. The girls' medians in vocabulary and reading were considerably higher than the Missoula total population the same as the composite of scores. (See Table III, page 18.)

Three boys and one girl were retained. Two boys were withdrawn as immature. No girls were withdrawn. Six boys and one girl had remedial reading. Neither boys nor girls had speech therapy.

PERCENTAGE OF ROOMS

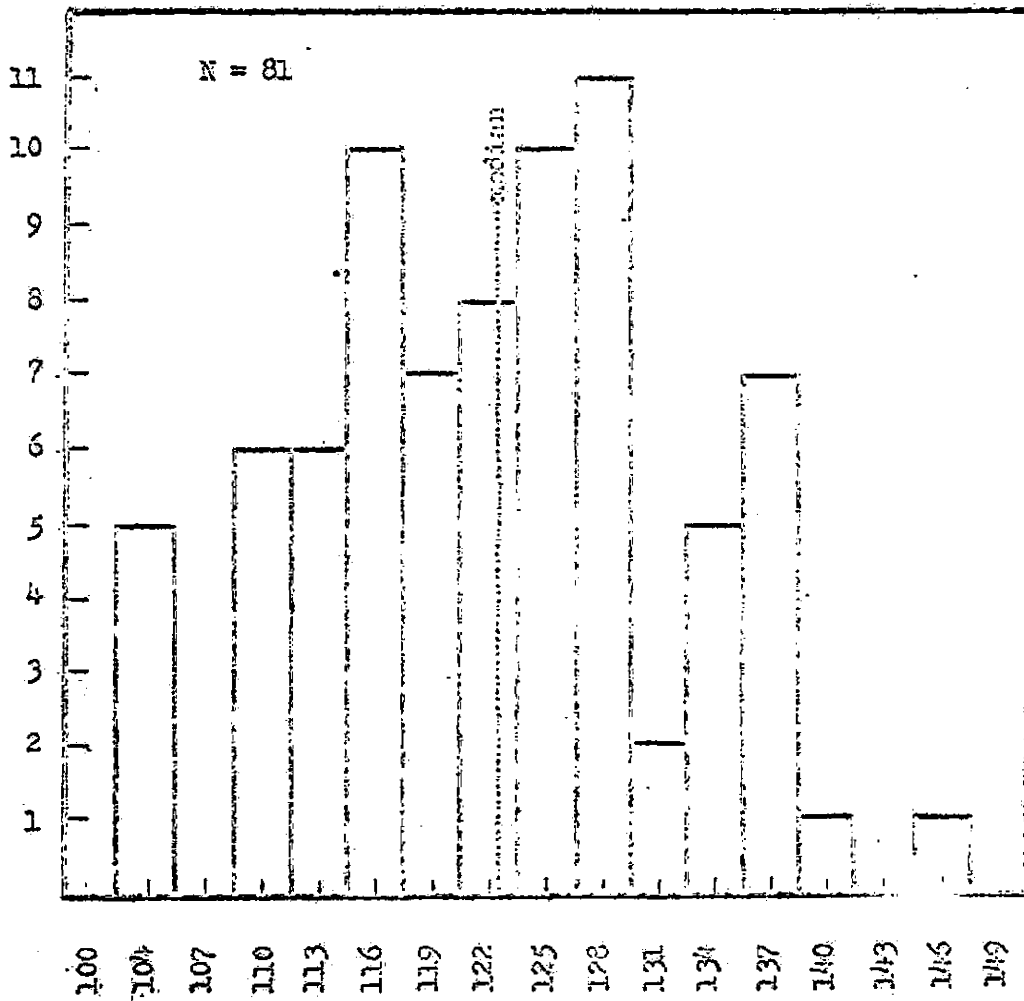


Figure 19

Distribution of the H.C.'s of the Selected Groups.



TABLE IV.

BOYS AND GIRLS OF THE SELECTED GROUPS  
 COMPARED IN ACHIEVEMENT, RETENTIONS,  
 WITHDRAWALS, AND SPECIAL SERVICES

	BOYS	GIRLS	TOTAL
TOTAL NUMBER SELECTED FOR STUDY	39	48	87
Vocabulary Median Percentile Rank	73	80	73
Number Below National Norm*	5	2	7
% Above is of Total	5.7	2.3	8
Reading Median Percentile Rank	72	78	75
Number Below National Norm*	10	6	16
% Above is of Total	11.5	6.9	18.4
Composite Median Percentile Rank	72	72	72
Number Below National Norm*	9	4	13
% Above is of Total	10.4	4.6	15
Retentions	3	1	4
% Retained is of Total	3.5	1.2	4.7
Withdrawals after Trial in the First Grade	2	0	2
% Withdrawn is of Total	2.3	0	2.3
Remedial Reading Cases	6	1	7**
% Cases are of Total	7	1.2	8.2
Speech Therapy	----	----	----

\* 50th percentile mark

\*\* Approximately an average of 20% of the Missoula Total population receive remedial reading.

## CHAPTER VI

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary. This study was made on five different groups of children who started school in September of the years 1956 through 1960. These children's sixth birthdays were in October of the years they started school. They were admitted to first grade on the basis of a raw score of 39.5 or better on the Van Wagnen Reading Readiness Scale, an individual test.

There were eighty-five children in five groups who remained in school through the 1963-1964 school term. The groups were studied for five years, four years, three years, two years, and one year, respectively. Achievement scores, withdrawals, retentions, referrals for special services, and intelligence quotients were studied. The data of boys and girls were compared.

The medians of the percentile scores in vocabulary, in reading, and for the composite of scores on the Iowa Test of Basic Skills of each selected group for each year, 1956 through 1963 were compiled. Each median was compared with the national norm and with the median of the Missoula total population group of the particular year.

The medians of the scores for the combined selected groups for 1959 through 1963 in vocabulary, in reading, and in the composite of scores were compared with the national norm, the 50th percentile, and the medians were compared with the medians of the combined Missoula total population group from 1956 through 1963.

The results of these comparisons are as follows:

The selected group's median for each year was considerably higher than the national norm, the 50th percentile. Each selected group's median each year was between the 72nd and 82nd percentile with the exception of the 1960 group whose median in vocabulary was 67. Each selected group's median each year in reading was between the 72nd and the 77th percentile. Each selected group's median each year for the composite of scores was between the 72nd and the 82nd percentile with the exception of the 1956 group whose median was 67.

The selected group's median for each year compared favorably with the Missoula total population group's median for each corresponding year in vocabulary, in reading, and for the composite of scores. They were a fraction higher with the exceptions of the composite of scores for 1956, and in reading for 1957.

The medians of the scores for the combined selected groups for 1959 through 1963 in vocabulary, in reading, and for the composite of scores were considerably above the national norm and equal to the combined Missoula total population groups' medians for 1959 through 1963.

Of the 87\* children originally selected, two were withdrawn after the first six weeks of school as immature and four were retained in grades one, two and four. Two of the retained were ill, one lost interest, one had an intelligence quotient considerably lower than the others of the selected group.

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\*The children who were withdrawn were dropped from the study. This accounts for N=85 in the final study.

The intelligence scores of the selected children ranged from 103 to 145; the median was 123, and the interquartile range,  $Q_3-Q_1$ , was 115-129.

None of the selected group was referred for speech therapy. Eight and two-tenth per cent (8.2 per cent) had remedial reading compared to approximately 20 per cent of the Missoula total population group.

There were nine more girls than boys in the original selected group. Their percentile medians varied little. More boys than girls fell below the national norm; were retained; and were referred for remedial reading.

Conclusions. With regard to School District 1, Missoula, it seems that most children entering the first grade in September who become six in October of that same year, and who score 39.5 or more on the Van Wagnen Reading Readiness Scale are likely (1) to attain achievement scores considerably above the national norm and comparable to the Missoula total population group's median; (2) to have higher than average intelligence; (3) not to be referred later for special services such as speech therapy or remedial reading.

It also seems that in comparing late birthday boys with late birthday girls that more boys than girls will be (1) refused admittance to first grade; (2) retained or withdrawn; (3) referred for remedial reading.

School personnel, parents, and others can be confident that young October birthday children who have scored 39.5 or more on the Van Wagnen Reading Readiness Scale, if admitted to the first grade of the

Missoula schools, are likely to succeed academically. This study has produced no evidence that the existing policy in District 1, Missoula, Montana should be discarded.

Recommendation. When data on the emotional, social and physical traits and characteristics becomes available on late birthday children, a more comprehensive study of this kind should be made.

## BIBLIOGRAPHY

- Ammons, Goodland, "When to Begin: Dimension of First Grade Entrance Problem," Childhood Education, XXXII (September, 1955), 21-26.
- Carter, Lowell B., "The Effect of Early School Entrance on the Scholastic Achievement of Elementary School Children in the Austin Public Schools," Journal of Educational Research, 50 (October, 1956), 91-103.
- Gates, Arthur I., "The Necessary Mental Age for Beginning to Read," Elementary School Journal, 37 (March, 1937), 497-508.
- Hall, R. Vance, "Does Entrance Age Affect Achievement," Elementary School Journal, 63 (April, 1963), 391-397.
- Hampleman, Richard S., "A Study of the Comparative Reading Achievement of Early and Late School Starters," Elementary English, 36 (May, 1959), 331-334.
- Houghton Mifflin Company, Boston. Teacher's Manual, Iowa Tests of Basic Skills, p. 20.
- Karlin, Robert, "The Prediction of Reading Success and Reading Readiness Tests," Elementary English, 34 (May, 1957), 320-322.
- Kottmeyer, William, "Readiness for Reading," Elementary English, 24 (October, 1947), 355-366.
- Medinnus, Gene R., "Parental Q--Short Descriptions of Five-Year-Olds as Predictors of First Grade Adjustment Scale," Elementary School Journal, (October, 1963), 54-58.
- Morphett, Mabel V. and Washburne, Carleton, "When Should Children Begin to Read," Elementary School Journal, 31 (March, 1931), 496-503.
- Rowland, Thomas D., and Nelson, Calvin C., "Off to School At What Age?," Elementary School Journal, LX (October, 1959), 18-23.
- Scott, Foresman and Company, Teacher's Manual for the New Streets and Roads, p. 6.
- Shields, Reed L., "A Study of Some Factors that are Related to the Success and Failure in the First Grade Program of School District 1, Missoula, Montana," A Study as Partial Fulfillment for a Master's Degree, Montana State University, 1956.