SOCIAL AND ACADEMIC STATUS OF KINDERGARTEN AND
NON-KINDERGARTEN ELEMENTARY SCHOOL
CHILDREN

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SOCIAL AND ACADEMIC STATUS OF KINDERGARTEN AND
NON-KINDERGARTEN ELEMENTARY SCHOOL
CHILDREN

THESIS

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By

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CHAPTER I

INTRODUCTION

The Problem

The kindergarten has become rather firmly established as an integral part of our modern system of primary education. Much has been written about its merits and some few authorities have, at one time or other, endeavored to bring some disfavor on the kindergarten by questioning whether the results justify the effort and expense of maintaining it in view of the fact that teachers with special kindergarten training are needed if the full value of the department is to be realized. Such highly trained specialists as the kindergarten teacher justly deserve, and often receive, a somewhat higher salary than the ordinary run of primary or elementary teachers. The question might well arise as to just how much better off socially and academically is that child who has received kindergarten, or pre-primer, training than is the child who has not experienced such training.

It is the purpose of this study to try to determine the answer to this question. The fact is well known that the purpose of a kindergarten is primarily to adjust the child
socially, and to prepare the child to take its place in the society of the school. Therefore, it is the primary purpose of this study to determine the difference in the social development of children having experienced kindergarten with those who have not had this experience. Most schools, however, expect more of a kindergarten than mere social development. Kindergartens often are expected to begin the academic subjects, and for that reason this study has been extended into a second phase which proposes to determine the difference between children who have had kindergarten work with those who have not, from the standpoint of academic development, or achievement.

Plan of the Study

This study was carried out in two school systems of practically the same size, located but seven miles apart. One of these schools has the kindergarten work, the other does not. The students in both schools are almost entirely from two types of homes, namely, farm homes, and the homes of oil field workers. The physical conditions of various students in each school were studied, then the home conditions were studied, and any other outstanding characteristics of the students were recorded. Intelligence tests were given, and finally the students were paired in such a way as to try to get a perfect balance between those who have had kindergarten experience with those who have not. Then the social and achievement tests
were given, and the results studied. More will be said about the nature of cases and the types of tests given in another part of this report.

Limitations

This work has its limitations despite efforts to make it as accurate as possible. One of the limitations is the fact of individual differences among the pupils. Another limitation is the fact that two school systems are used. Even though the systems are practically identical, the fact remains that two different groups of teachers have taught the two groups of children. To off-set this limitation, considerable time has been used in determining the similarity of the teaching personnel of the two schools as based upon scholastic training, experience, and tenure. The fact remains, however, that there are individual differences in teachers that cannot be shown on charts.

A third limitation is in the fact that identical pupils could not be secured for pairing. There is a variation of as much as three months in the ages of some of the pupils paired. Even allowing for this much variation, it was extremely difficult to find a sufficient number of pairs to make this study. This was due to the fact that several characteristics were taken as the basis for comparing students in the two schools in addition to the age characteristic. It is apparent that the larger the number of characteristics used for comparison
of pupils in the pairs, the more difficult it becomes to find two pupils who exactly match. Despite the fact that a rather large number of characteristics were used in pairing, and that there is some slight difference found in two members of a pair, when the totals were taken for all the grades, and averages taken for the various grades, they were unusually well balanced.

The average intelligence quota for the thirty pupils used from the school having a kindergarten was 96. The average of the thirty pupils from the school not having a kindergarten was 96.7.

The home life of the pupils living in the two localities is almost identical. This may be understood when one remembers that the two schools are but seven miles apart and that the two school districts are adjacent. Often a child going to one of the schools has a neighboring playmate who attends the other school.

The home life of the pupils from oil-field workers' families are even more similar in that the two school districts share an oil field. The oil field covers the southern part of each school district, both of which are adjacent and parallel to each other. Furthermore, the oil companies furnish their workers with small homes where there possibly is gas or electricity for lights. The homes are all very much alike, and the workers, most of whom are pumpers, receive about the same salary. Hence their home conditions are very similar.
The relative similarity of the two school districts as to size and wealth results in well-equipped schools in each case. Each school has an excellent bus system of transportation, and about the same courses are offered, and in about the same manner in each of the elementary schools, except that one has a year of kindergarten work and the other does not.

These similarities help to off-set any irregularities that would seem to be made possible as a result of the limitations given.
CHAPTER II

CRITERIA USED IN THE STUDIES

The Case Studies

The children used in this study were selected by a series of case studies that were made in two closely adjoining school systems. When the cases were complete, six from each school for each of the first five grades were selected on the basis of similar characteristics. These were then set off in pairs, and achievement tests and social adjustment tests were given. A full analysis of the characteristics studied and method of selecting the cases used will be found in the succeeding chapter.

The Intelligence Tests

The large number of nationally accepted intelligence tests made a selection rather difficult. However, the Kuhlmann-Anderson test was finally chosen for several reasons. First, it includes all grades beginning with grade one and including all grades needed in this work. Second, it offers a separate test for the second half-year of grade one. Third, it is easily given. Fourth, it is easy to check the results of the Kuhlmann-Anderson test accurately; especially is this
true when the Noyes icumeter is used.

The Achievement Tests

The Gray-Votaw achievement tests were chosen to be given to the pairs of pupils used in the case studies because these tests have recently been revised and are considered by many school officials to be an excellent series of tests. These tests are of the battery type and are divided into several parts including reading, arithmetic, social science, physical education, and general science. Each of these divisions is divided into subdivisions. For example, reading was divided into three parts: comprehension, vocabulary, and choice of words. Arithmetic was divided into two parts: reasoning and computation. Furthermore, these tests were worked out by two Texans who should realize the conditions that prevail in Texas schools, and therefore should probably be more able to conceive and produce tests best suited to testing children of our schools in Texas. Another reason for the selection of the Gray-Votaw tests is that the author is more familiar with this test than with any other and felt that it could be administered perhaps better than some other test with which he is not familiar.

The Social Tests

The test that had the greatest importance in this work was the social test. The test used was the California Test of Personality. A brief outline of the test follows:
Components: (Elementary, grades 4-9)

I. Self Adjustment
   A. Self-reliance
   B. Sense of personal worth
   C. Sense of personal freedom
   D. Feeling of belonging
   E. Withdrawing tendencies (freedom from)
   F. Nervous symptoms (freedom from)

II. Social Adjustment
   A. Social standards
   B. Social skills
   C. Anti-social tendencies (freedom from)
   D. Family relations
   E. School relations
   F. Community relations

This test, as stated, is the advanced series for grades four to eight. A new series for the primary grades was advertised by the California Bureau of Tests, but when an order was placed, a reply was received stating that the primary tests were not ready for distribution. The advanced series was given to the primary grades orally, in groups of six. The pupils were given a sheet with numbers corresponding to the questions in the tests. The tests were read to the pupils and they wrote the answer "yes" or "no" by the side of each number just as they would have done had they each had a test before them. Large words were reduced to primary level. The language
used was on a level understandable by these pupils. The tests were given to all groups by the same person. The questions were read in an ordinary reading pitch of voice with emphasis that would not in any way assist the pupils in giving the correct answer.
CHAPTER III

THE CASE STUDIES

The Basis of Study

The case studies given in this chapter were worked out after considerable thought was given to the idea of determining just what characteristics one should use in dealing with families and pupils of the locality studied. Certainly there could be no set rules for making case studies that would apply to all sections of Texas; therefore an effort was made to select characteristics common to all the people of the communities used, to serve as a basis for the cases studied.

The industries found in the districts studied are farming and oil-producing businesses, chiefly; and the communities in which the schools used are located are so small that only three or four cases were taken from this source. In checking the enrollment of the two schools, the writer found that more than ninety per cent of the children come from farms and oil-field camps outside the community in which the school is actually located.

Acquiring the Data

A questionnaire was made up, principally with farming and oil-producing industries in mind, but one that would also
be suitable for any one of the few other businesses found in the small communities in which the schools studied are located. This questionnaire was presented to the pupils, to the teachers, and to the parents, where possible, and a double check, sometimes even a triple check, was made before the information given was used.

The questions on the questionnaire (see Table 1 on the following page) were asked by the author and the results tabulated. In no case did either pupil, teacher, or parent know the answers given by the others. The results were gratifying in that they were usually checked very nicely. The questions were divided into two parts: (1) those concerning the individual, such as health, out-of-school work, information concerning number of picture shows attended, type of pictures preferred, and also the number of children in the family; and (2) those concerning the parents, family and home conditions of the pupils studied. These included occupation of the father, whether the home is owned or rented, type of home equipment such as lights, radio, books and magazines, and, finally, the extent of the educational experiences of each parent.

A word of explanation regarding an apparent discrepancy in the ages given in some of the cases seems necessary. At the beginning of the cases the age of the pupil is given in years only, but at the end of the case study in the paragraph giving the results of the intelligence tests the chronological
### TABLE 1
THE QUESTIONNAIRE TO OBTAIN CASE DATA

<table>
<thead>
<tr>
<th>Statement or Question</th>
<th>Pupil's Answer</th>
<th>Teacher's Answer</th>
<th>Parent's Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Individual</strong></td>
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<td></td>
</tr>
<tr>
<td>1. Sex</td>
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<td>2. Age</td>
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<td>3. Size (normal, small, large)</td>
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<td>4. General health</td>
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<td>5. Apparent condition of:</td>
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<td></td>
<td></td>
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<tr>
<td>(a) Tonsils</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(b) Adenoids</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(c) Eyes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. Attitude toward other children</td>
<td></td>
<td></td>
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<tr>
<td>7. Amount of sleep</td>
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<tr>
<td>8. Apparent nervous condition</td>
<td></td>
<td></td>
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<tr>
<td>9. Picture shows:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Attendance per month....</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(b) Time of day attended....</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(c) Type of picture preferred...........</td>
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<tr>
<td>10. Sunday School:</td>
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<td></td>
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<tr>
<td>(a) Church attended.</td>
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<td></td>
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<tr>
<td>(b) Regularly or irregularly............</td>
<td></td>
<td></td>
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<tr>
<td>11. Outside work:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Afternoons</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(b) Saturdays</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement or Question</td>
<td>Pupil's Answer</td>
<td>Teacher's Answer</td>
<td>Parent's Answer</td>
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<tr>
<td>12. Number of children in family</td>
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<tr>
<td>B. Home and its conditions</td>
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<td></td>
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<tr>
<td>1. Father's occupation</td>
<td></td>
<td></td>
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<tr>
<td>2. Home owned? Rented?</td>
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<td></td>
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<tr>
<td>3. Distance from town?</td>
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<td></td>
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<tr>
<td>4. Type of artificial light used</td>
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<tr>
<td>5. Home equipment:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Newspapers</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(b) Magazines</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(c) Books</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(d) Radio</td>
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<td></td>
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<tr>
<td>6. Father's education</td>
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<td></td>
<td></td>
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<tr>
<td>7. Mother's education</td>
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</tbody>
</table>

age giving both years and months appears, and in some cases the pupil is shown to be a year older than the first age reported. The reason for this apparent error is the fact that the case study was made early in the school year, whereas the tests were given in the latter part of the year. Some of the pupils having had a birthday in between the time of the case study and the tests are thus shown in two different age groups.
At the end of each case is given the chronological age of the child, the mental age, and the intelligence quota. These varied very little in most of the pairs used, and in the final average of all the pupils used in each group the intelligence quota varied by but .6 of one point.

The abbreviation at the beginning of each case has a definite meaning. The expression "G" stands for grade and the number that follows represents the pair number. The letter "K" stands for kindergarten, the letters "NK" stand for non-kindergarten. For example, G-1, NK-2 means grade one, non-kindergarten pupil in pair number two.

The purpose of the case studies was to get exact information concerning each child in order to select pairs of pupils, one from the kindergarten school and one from the non-kindergarten school, who were as nearly similar as possible. Thirty pairs of pupils were used, although to secure these thirty pairs a great many more than sixty cases were studied. When two pupils were found to be closely similar in matter of home life, grade, age, intelligence, quota, and health, they were paired off and the social, personality, and achievement tests were given. No attempt was made to pair the pupils according to sex. As a matter of fact, thirty-one boys and twenty-nine girls were used in the cases. A lot of information which either directly or indirectly influenced the pairing of the pupils may be found in Tables 7 and 8.
Grade One

G-1, NK-1. -- Janice is six years of age, normal in height and weight. She has never been troubled by defective eyes, tonsils, or adenoids. No signs of nervousness are apparent. She is seventh in a family of seven. She works about thirty minutes on school days, and about the same on Saturdays. She goes to the picture show one time each month and likes cowboy pictures and comedies. She goes to Sunday School at the Lutheran Church regularly. She is even-tempered and likes to play with children of her own age, with whom she usually plays harmoniously.

Her family lives six miles from town on a farm, which they own. Gasoline lights are used, and they receive a newspaper and some magazines. They have a few books for children. Her father quit school while in the ninth grade. Her mother has an elementary school education.

Results of the Kuhlmann-Anderson intelligence test are listed here:

Chronological age........ 6 years 10 months
Mental age.............. 7 years 2 months
Intelligence quotient.. 105

G-1, K-1. -- This case presents a boy seven years of age, in good health, having had no ailments of adenoids, tonsils, or eyes. He is of normal size and his disposition is agreeable. He sleeps ten hours each night and shows no signs
of nervousness. He works at home after school, which requires approximately one-half hour of his time each afternoon. Some work is required on Saturdays, but the amount is variable. The boy goes to two picture shows each month, and he likes cowboy pictures and comedies. Attendance at the Baptist Sunday School is regular. He is the fourth child in the family. He likes to play with children of his own age, and this association is usually an agreeable one.

His family lives on a rented farm, four miles from town. Oil lamps are used. No magazines or books are found here, except for some magazines given by some friends; however, a daily paper is received, and the family owns a radio. His parents each finished elementary school but neither attended high school.

The results of the intelligence test in this case are given here:

Chronological age...... 8 years 2 months
Mental age.............. 7 years 9 months
Intelligence quotient.. 96

G-1, NK-2. Ann is a girl seven years of age. She is in good health and has experienced no trouble with tonsils, adenoids, or eyes. She shows no signs of nervousness. She usually gets ten hours of sleep each night, and has no required work to do in the afternoon. This girl is the youngest of a family of four children. She sees about four picture
shows per month, usually on Saturday afternoon, and her preference as to types of pictures is either cowboy pictures or comedies. She goes to Sunday School at the Baptist Church irregularly. She likes to play with children of her own age, and apparently gets along well with her playmates.

Ann's father works for an oil company and the family lives ten miles from town in a home furnished by the oil company. The family does not receive a daily newspaper and they have few if any books suitable for a seven-year-old child to read; however, they do receive a few magazines, none of which are suitable for Ann to read. The home is equipped with gas lights, and the family owns a radio. The father has an elementary school education, and the mother has some high school training, but did not graduate.

The results of the intelligence test in this case are given here:

Chronological age...... 7 years 6 months
Mental age............ 7 years 8 months
Intelligence quotient.. 102

G-1, K-2. -- Pearl is seven years old, slightly small for her age, but is in good health except for her tonsils, which are often troublesome. She is generally good-natured, but possesses a rather high temper, and shows some signs of nervousness. She sleeps an average of ten hours each night. She enjoys shows and goes to see an average of four per month,
generally on Saturday afternoon, and prefers cowboy pictures or comedies. She attends Sunday School regularly at the Christian Church. She likes to play with children of her own age, and usually plays in harmony, although infrequently she fusses with other children.

Her father is an oil-field worker. The family lives two miles from town in a house furnished by the company for which the father works. They have electric lights. There are newspapers and a radio in the home, but no magazines or books. The father went to the ninth grade in school; the mother has an elementary school education.

The results of the intelligence test given in this case are:

- **Chronological age**: 7 years 6 months
- **Mental age**: 7 years 6 months
- **Intelligence quotient**: 100

**G-1, NK-3.** -- Donald is seven years of age and is normal in height and weight. He is in normally good health, and has never experienced defects of nose, throat, or eyes, so far as is apparent. He sleeps at least ten hours each night and is apparently not unusually nervous. Donald does not have any work required of him either after school or on week-ends. He goes to the picture show twice each month, and prefers cowboy pictures and comedies. He attends the Baptist Sunday School regularly. He is of even disposition and likes to play with
children of his own size. He gets along very nicely in these associations. He is the third of four children in the family.

Donald's father is an electrician and garage operator. He owns his home in town. It is equipped with electric lights and a radio. This family receives a daily newspaper and some magazines, but has very few books suitable for Donald to read. The father and mother have some high school education, but neither of them graduated.

Results of the intelligence test given in this case are listed here:

- Chronological age...... 7 years 5 months
- Mental age............. 7 years 8 months
- Intelligence quotient.. 103

G-1, K-3. -- This girl is seven years of age, and is in good health. She has had no trouble with either tonsils, adenoids, or eyes. She is of a likeable disposition, and likes to play with children of her own age. She shows no sign of nervousness; sleeps ten hours each night; and appears normal in every way. She has no required work to do after school or on Saturdays. She goes to the picture show an average of three times per month, usually on Saturday afternoon; but cares little for pictures, preferring cowboy pictures and comedies. She attends the Baptist Sunday School regularly. She likes to play with children of about her own age and is apparently very happy in her associations. She is the youngest of three children.
Her father operates a gasoline station in the country. The family owns the home, which is about five miles from town. The home is equipped with electric lights. There are daily newspapers, some magazines, but few books for her to read at home. Her parents each dropped out of school at the end of the tenth grade.

The results of the intelligence test given in this case are:

Chronological age....... 7 years 9 months
Mental age.............. 7 years 9 months
Intelligence quotient.. 100

G-1, NK-4. -- James is seven years of age; rather small for his age but is in normally good health; and has never had any trouble resulting from defective tonsils, adenoids, or eyes. He is good-natured and likes to play with children of his own age. He sleeps an average of ten hours each night and is apparently not of nervous disposition. No work is required of him after school or on Saturdays. This boy does not especially care for picture shows, but nevertheless goes four times per month, usually on Saturday afternoon. He prefers comedies, and some western pictures. He attends the Baptist Sunday School and goes about half the time. He is the third of three children in the family.

His home, which is fifteen miles from town, is furnished by the oil company for which his father works. Newspapers
and some few books are available in this home, but there are no magazines. The home has electric lights and a radio. The father and mother finished the seventh grade in school.

Results of the intelligence test given in this case are presented as follows:

Chronological age...... 8 years 1 month
Mental age............... 7 years 7 months
Intelligence quotient... 94

G-1, K-4. -- Joann is seven years of age, of normal size and in good health with the exception of rather bad tonsils, which have caused her to miss a few days from school. She also has experienced some trouble with her eyes. She is of good disposition and likes to play with children of her own age. She appears slightly nervous. She has no regular work to do either after school or on the week-ends, and she averages sleeping ten hours each night. She likes cowboy pictures and goes to the show an average of four times per month, generally on Saturday afternoons. She attends the Baptist Sunday School regularly. She likes to play with children of her own age, and usually gets along very nicely in this association.

Her home is nine miles from town and is furnished by the oil company for which her father works. It has gas lights. She has access to a few books and a radio, but no newspapers or magazines are taken. Her father has an elementary
school education, but her mother graduated from high school.

Results of the intelligence test given in this case are:

Chronological age...... 8 years 2 months
Mental age............. 7 years 7 months
Intelligence quotient.. 93

G-1, NK-5. -- Melvin is seven years old and is in excellent health. He has had no trouble with any defects of tonsils, adenoids, or eyes. There is no sign of nervousness, and he averages sleeping ten hours each night. His disposition is good, and he likes to play with children of his own age or slightly larger. He is very cooperative in playing, and the contacts made are apparently mutually agreeable. He is normal in height and weight. He attends Sunday School regularly at the Christian Church. He goes to shows usually twice each month, generally in the afternoon, and likes to see cowboy pictures and comedies. He works one hour each afternoon after school and does some work on Saturdays, especially during the busy farming season. He is the fourth of five children in the family.

He lives six miles from town and lives on a farm rented by his father. His home has gasoline lights, a radio, a newspaper, and several magazines and books. His father has a college education, but his mother did not finish high school.

Results of the intelligence test given in this case are as follows:
G-1, K-5. -- Jervis is a boy, seven years of age. He is of normal size and weight, and is apparently in good health. He has never experienced severe difficulties from defective adenoids or tonsils, and his eyes apparently are not defective. He sleeps ten hours each night and does not appear to be unusually nervous. He likes to play with children of his own age, either boys or girls, and these associations are mutually agreeable. He goes to the picture show three times each month, and prefers cowboy pictures and comedies. He goes to Sunday School at the Church of Christ, regularly. He does not have any work to do after school or on Saturdays. He is the third of three children.

His mother works as a bookkeeper and his father is deceased. The family owns their home, in which electric lights are used. They receive a daily paper and a few magazines. They own a few books suitable for a child of this level, and also a radio. The mother graduated from high school.

The results of the intelligence test given in this case are as follows:

Chronological age...... 8 years 1 month
Mental age............. 7 years 8 months
Intelligence quotient.. 95
G-1, NK-6. -- Faye is seven years old and is in good health except for some attacks of tonsilitis. She is apparently not nervous and gets more than ten hours of sleep each night. No work is required of her either after school or on Saturdays. She goes to the picture show four times each month and likes cowboy pictures and comedies best. She regularly attends Sunday School at the Baptist Church. Faye likes to play with children of her own age and usually gets along harmoniously in her associations. She is the youngest of three children.

Her father works for an oil company, but he owns his home in town. The family receives a newspaper, but does not take any magazines or own any books. They have a radio, and use electric lights. Faye's father and mother each attended high school, but neither graduated.

Results of the intelligence test in this case are:

- Chronological age...... 7 years 10 months
- Mental age............ 7 years 6 months
- Intelligence quotient.. 96

G-1, K-6. -- Peggy is seven years of age, of average size, and is in good health except for slight trouble caused by tonsils. She is of even disposition and likes to play with children of her own size. There are no apparent signs of nervousness. She sleeps an average of ten hours each night, and has work to do about thirty minutes each afternoon after school, and some work of odd-job variety on Saturdays. She
has access to some books and a daily newspaper, but there are no magazines regularly received. She goes to the show once every three or four months; likes cowboy pictures and comedies. She attends the Methodist Sunday School regularly. She is the fifth of six children in the family.

Her parents own a radio, rent their home, and live in town. Electric lights are used. Her father works for a retail oil company. Her parents went to high school but did not graduate.

Results of the intelligence test in this case are given here:

Chronological age...... 7 years 6 months
Mental age............. 7 years 7 months
Intelligence quotient.. 101

Grade Two

G-2, NK-1. -- Joyce is eight years old, rather large in size, and in good health. Her tonsils, adenoids, and eyes have given her no trouble. She sleeps an average of ten hours each night, is of even temper and agreeable disposition, and apparently is not nervous. She likes to play with children of her own age, and these associations are usually very harmonious. She has no work to do either after school or on week-ends. She goes to the picture show twelve times each month, usually late in the afternoon, and prefers cowboy pictures and comedies. She attends the Baptist Sunday School
regularly. She is the older of two children in the family.

She lives fifteen miles from town in a home furnished by the oil company for which her father works. There is a good supply of books and magazines in this home, and a daily newspaper is received. Electric lights are used, and there is a radio in this home. Her father stopped school while in the tenth grade, and her mother went to the ninth grade.

The results of the intelligence test given in this case are shown below:

Chronological age....... 9 years 3 months
Mental age............. 8 years 4 months
Intelligence quotient.. 90

G-2, K-1. -- Jo Ann is eight years of age. She is normal in size and weight and in very good health. She has never had any difficulty with tonsils or adenoids. She sleeps ten hours at night and apparently is not nervous. She is good-natured and likes to play with children of her own size. She has fifteen minutes of work to do after school on week days and on Saturdays. She goes to the picture show three times a month and prefers pictures on the order of Snow White and the Seven Dwarfs and Mickey Mouse. She goes regularly to Sunday School at the Baptist Church. She is the oldest of six children.

Jo Ann's father is a farmer who works a rented farm three miles from town. Electric lights are used. They re-
ceive a daily paper and some magazines. They also have a few books suitable for Jo Ann to read, and they own a radio. Her father and mother are high school graduates.

The results of the intelligence test given in this case are as follows:

Chronological age...... 9 years 4 months
Mental age.............. 8 years 6 months
Intelligence quotient.. 91

G-2, NK-2. -- Juanita is nine years of age, normal in size and weight. She is in good health except for severe tonsilitis. Her eyes are good and she is at present well adjusted emotionally. She sleeps ten hours and has regular habits. She enjoys playing and seems very fond of her friends. She helps her aunt with little chores and says she likes this work. She attends picture shows on Saturday afternoons and enjoys Gene Autry most. Juanita's home has four cousins, three boys and one girl, older than herself, with whom she is at present well adjusted. She attends the Baptist Sunday School regularly.

Juanita's mother died when she was seven, and she came to live with her aunt (sister of her mother). The aunt was very sympathetic and succeeded in helping the child make satisfactory adjustments to the new home situation. This farm home has a daily newspaper, magazines, and a radio. It
is equipped with electricity. The aunt and uncle have elementary school education.

The results of the intelligence test given in this case are shown below:

Chronological age....... 9 years 11 months
Mental age............... 8 years 7 months
Intelligence quotient... 87

G-2, K-2. -- This case is about a boy nine years of age. He is of normal height, but rather large for his age. He is in good health except for a few attacks of tonsilitis. His disposition is fairly good. He likes to play with children of his own age, but wants his way in the games. This trait sometimes leads to lack of harmony in playing with his playmates. No signs of nervousness are noticeable. He sleeps ten hours each night. No work is required of him after school or on Saturdays. This boy goes to see a picture show an average of one time per month. He prefers cowboy pictures, and usually goes on Saturday afternoon. Attendance at Sunday School is irregular, but when he goes it is to either the Methodist or the Baptist Sunday School.

His father is deceased. His mother lives ten miles from town on a farm which is worked by his older brothers and his uncle. The farm is rented. Oil lights are used. One daily newspaper is received, a few magazines are bought; the family owns a radio, and there are a few books found that are suitable for a child of his level to read. His mother has an elementary
school education.

The results of the intelligence given in this case are as follows:

Chronological age...... 10 years 1 month
Mental age............... 8 years 6 months
Intelligence quotient... 84

G-2, NK-3. -- This boy is nine years old, of normal weight and size; he has good health, with tonsils and adenoids in good condition; and he has good eyesight. He has a good disposition; likes to play with boys of his own age; and shows no sign of nervousness. He sleeps about ten hours each night, and works about twenty minutes in the afternoon of each school day. He likes cowboy pictures and comedies. He gets along well in his associations on the playground. He goes to about six picture shows per month (his brother works at the picture show). He does not go to Sunday School at present, as his brother uses the car. However, he formerly attended regularly.

The boy's family lives about three miles from town in a rented house. They have kerosene lights. Newspapers are furnished to them by a neighbor. They take no magazines and have few books in the home. They do own a radio. The father works on relief. Both father and mother have an elementary school education.

The results of the intelligence test in this case are
as follows:

Chronological age...... 9 years 3 months
Mental age............. 8 years 1 month
Intelligence quotient.. 88

G-2, K-3. -- Joyce is nine years old and is of average size. She is in good health but apparently of rather disagreeable disposition. She is high-tempered, but likes to play with children of her own age. She sometimes has disagreements with her playmates, but gets along well with the other children on the playground. She prefers to play with children of her own age. Apparently she is slightly nervous. She sleeps an average of ten hours each night. She has very little work to do after school or on Saturdays. She goes to the picture show four times each month, and likes cowboy stories and comedies. The usual time of attendance is on Saturday afternoon. This girl goes to the Baptist Sunday School irregularly. She is the third of five children.

Her parents rent the home in which they live. It is nine miles from town, on a farm. They receive a daily paper and some magazines, but do not have books suitable for a child of nine years. Electric lights are used, and the family has a radio. Her father quit school in the ninth grade, and her mother has an elementary school education.

The results of the intelligence test given in this case are as follows:
G-2, NK-4. -- The child in this case is eight years of age and is of average weight and height. She has had a few cases of tonsilitis, but otherwise is in normal health, and has never suffered from defective eyes or adenoids. This child is normally good-natured and likes to play with children of her own age. She gets along nicely with her playmates, and is well received by the other children on the playground. She appears to be slightly nervous, but sleeps an average of nine hours each night regularly. She has no work to do in the afternoons after school or on Saturdays. She is the seventh of eight children in the family. Her entertainment includes a picture show four times each month, generally on Saturday night, and cowboy pictures, comedies, and Shirley Temple pictures are her favorites.

Her family lives nineteen miles from town, and her father works for an oil company which furnishes their home. They have electric lights, a radio, a daily newspaper, a few magazines, and some books suitable for this child to read. The father and mother each have a high school education. Each graduated from high school. The entire family regularly attends the Methodist Sunday School.

The results of the intelligence test given in this case
are as follows:

Chronological age...... 8 years 5 months
Mental age............. 8 years 5 months
Intelligence quotient.. 100

G-2, K-4. -- The child in this case is a girl, eight years of age, apparently in good health. She has had no difficulties from defective eyes, nose, or throat. Her height and weight are normal. She has an even-tempered disposition, but shows some slight signs of nervousness such as inability to stand still. She likes to play with children of her own age, and is good-natured in playing on the schoolground. She is well received by her playmates, and these associations are apparently mutually agreeable. She keeps regular hours and sleeps ten hours each night. She has no work to do after school or on Saturdays other than school preparation. She goes to the picture show an average of five times each month, generally in the afternoon or early evening and likes to see comedies. She attends the Baptist Sunday School regularly. She is the second of two children.

Her father is an electrician and has a home furnished by the company for which he works. The family lives five miles from town. The home has a good supply of newspapers, books, and magazines. They have electric lights and also a radio. The father and mother each have an elementary school education.
The results of the intelligence test given in this case are as follows:

Chronological age....... 8 years 9 months
Mental age............. 8 years 2 months
Intelligence quotient... 94

G-2, NK-5. -- Florence is nine years of age, slightly large for her age, and is normally in good health resulting from defective adenoids or tonsils, and her eyes are apparently normally strong. She sleeps ten hours each night and shows no signs of nervousness. She likes to play with girls of her own age and size, but does not have much use for boys. She gets along nicely with her playmates on the schoolground. She goes to picture shows four times each month, generally on Saturday afternoon. She prefers cowboy pictures and comedies. Florence does not go to Sunday School but prefers the Lutheran Sunday School in the eventuality she should go. She is the fifth of five children in her family.

Her father works in the relief program and her brother works at a dairy to assist in supporting the family. Her home is furnished by the dairy for which her brother works. This home is seven miles from town. The family uses gasoline lights. They do not receive a daily paper or magazines, and do not have any books suitable for Florence to read. They have a radio in their car but do not have a radio for their home. Both her father and mother have an elementary school
education.

The results of the intelligence test given in this case are as follows:

Chronological age...... 10 years 5 months
Mental age............. 8 years 7 months
Intelligence quotient.. 83

G-2, K-5. -- Luther is nine years of age. He is normal in size and weight and is in excellent health. He has never experienced trouble from defective throat, nose, or eyes. He is apparently good-natured and likes to play with boys and girls of his own size, and he gets along very well in these associations. He sleeps about ten hours each night and shows no signs of nervousness. He works after school and on Saturdays for about twenty minutes each day. He goes to the picture show every Saturday, generally in the afternoon, and likes cowboy pictures and comedies. He goes to Sunday School at the Baptist Church nearly every Sunday. He is the second of two children in the family.

Luther's father is an oil-field worker and the family lives in a home given them by the company for which the father works. Gas lights are used. The family does not receive a daily paper, but does take some magazines and has a few books suitable for Luther to read. They own a radio. His father and mother have some high school training, but neither of them graduated.
Results of the intelligence test given in this case are shown below:

Chronological age...... 10 years 1 month
Mental age............. 8 years 5 months
Intelligence quotient.. 84

G-2, NK-6. -- Clois is nine years of age, of normal size and weight, and is apparently in excellent health. He has had very little trouble with his nose or throat, and his eyes apparently are not weak. He sleeps ten hours, and apparently is not nervous. His disposition is fairly good and he enjoys playing with children of his own age or older, especially boys. This association appears to be agreeable to both Clois and his playmates. He attends Saturday afternoon picture shows, likes Jack Randall and Gene Autry. He does not attend Sunday School regularly. He is the third child in a family of four children.

His father is a day laborer and the family lives in town in a home which they own. They do not receive a daily paper, do not take any magazines, and they do not have any books at a level suitable for this boy to read. They use oil lights and do not own a radio. The father and mother each has an elementary school education.

The results of the intelligence test given in this case are shown here:
Chronological age...... 10 years 5 months  
Mental age.............  8 years 7 months  
Intelligence quotient.. 83

G-2, K-6. -- Billy is nine years of age, of normal size and weight and is apparently in good health. He has never experienced any trouble from defective nose, throat, or eyes. He is good-natured and gets along well with his playmates. He likes to play with boys and girls of his own age. He sleeps about ten hours at night and does not show any signs of nervousness. He has about the same amount on Saturdays. He goes to the picture show about twice a month, generally on Saturday afternoon, and prefers cowboy pictures and comedies. He does not go to Sunday School because he lives several miles from the church; however, the parents belong to the Methodist Church. He is the first of two children.

His father is a farm laborer and works by the day on the farm on which he lives. The farm is three miles from town. Kerosene lights are used. The family does not take a daily paper or magazines, and have very few books suitable for Billy to read. They own a radio. His father and mother have elementary school educations.

The results of the intelligence test in this case are:

Chronological age...... 10 years 0 months  
Mental age.............  8 years 5 months  
Intelligence quotient.. 84
Grade Three

G-3, NK-1. -- Horace is nine years of age, of normal weight and height, and is in good health. Tonsils or adenoids have never troubled him, and his disposition is good with no apparent signs of nervousness. He is good-natured and likes to play with children of his own age. He gets along very nicely in his playground associations, and he is received well by his playmates. He usually sleeps ten hours each night. He likes picture shows and gets to go on an average of three times each month, generally on Saturday afternoon. His favorite pictures are western stories and comedies. He also goes to Sunday School at the Baptist Church on an average of half of the time. He has some work to do each afternoon which requires about twenty-five minutes of his time. On Saturdays he has very little work to do. He is the only child in the family.

His father is a farmer, and rents the farm upon which they live. They live four miles from town. Some magazines and books are available, and they receive a daily paper. They have a radio, and have recently installed electric lights. The mother did not finish high school, and the father has an elementary school education.

The results of the intelligence test in this case are:

Chronological age...... 9 years 10 months
Mental age............. 9 years 7 months
Intelligence quotient.. 98
G-3, K-1. -- Maurice is a boy nine years of age. He is normal in size and weight, and is in normally good health. He has never been bothered by defective tonsils, adenoids, or eyes. He is apparently good-natured and likes to play with boys and girls of his own age. These associations are very agreeable to all concerned. He sleeps ten hours each night and does not show tendencies toward nervousness. Maurice goes to one picture show each month, and prefers cowboy pictures and comedies. He attends Sunday School regularly at the Church of Christ. After school he has duties that take about two hours of his time. He is the fourth of five children.

This boy's father works for the county, at the job of operating a road grader. The family lives in town in a home which they own. Electric lights are used. They receive a daily paper and some few magazines, but do not have any books suitable for Maurice to read. They own a radio. The father went to the tenth grade in school, the mother to the ninth grade.

The results of the intelligence test in this case are given here:

Chronological age....... 9 years 9 months
Mental age.............. 9 years 6 months
Intelligence quotient.. 98

G-3, NK-2. -- B. W. is a boy nine years of age, in good health, has a good disposition, and likes to play games with
children of his own age. His associations with his playmates are apparently good. He is good-natured, even-tempered, and democratic in his relations with his friends. He has very little work to do on school days or Saturdays. He sleeps about ten hours per night. B. W. goes to picture shows about three times each month, and likes cowboy pictures and comedies. He goes to Sunday School at the Church of Christ irregularly. He is the second of three children.

His father is an oil-field worker who owns his home and lives in town. This family takes a newspaper, and has some few books, but does not take any magazines. They also own a radio and use electric lights. His mother went through the eighth grade. His father has an elementary school education.

The results of the intelligence test given in this case are as follows:

Chronological age....... 9 years 8 months
Mental age............... 9 years 9 months
Intelligence quotient.. 101

G-3, K-2. -- Clara is nine years of age, normal in size, and in very good health. She has an even disposition, and likes to play with children of her own age. She sleeps ten hours each night regularly, and is apparently not unusually nervous. She likes to play with children of her own age, and these associations are evidently mutually agreeable. She has one hour of work to do after school, and some odd jobs to do
on Saturdays. She does not go to picture shows, but goes regularly to Sunday School at the Church of Christ. She is the eighth of eight children in the family.

Her father works for an oil company. He rents his house and uses electric lights. The family does not receive newspapers or magazines, and have few if any books suitable for a child of this level. They own a radio. The father went to the sixth grade in school; the mother is deceased.

The results of the intelligence test given in this case are as follows:

Chronological age...... 9 years 8 months
Mental age............... 10 years 0 months
Intelligence quotient.. 103

G-3, NK-3. -- C. F. is a boy nine years of age, of normal size and weight, and in normal health. He has never been bothered by defective tonsils, adenoids, or eyes. This boy sleeps ten hours each night regularly, and shows no signs of nervousness. He has no outside work to do on week days or on Saturdays. C. F. gets along fairly well with his playmates, but is inclined to want to play with a small group rather than with the entire group. This characteristic does not seem to make him any the less liked by his playmates, and he is well received by all when he wants to play with the whole group. He attends a picture show once each month and likes cowboy pictures and comedies. He attends the Baptist Sunday
School regularly. He is the youngest of seven children.

His father rents a home in town, and works as a day laborer. The home has oil lights, and the family does not own a radio. They take a daily paper and a few magazines, but have no books suitable for a child of this level. The father and the mother each have an elementary school education.

The results of the mental test given in this case are:

- Chronological age...... 10 years 4 months
- Mental age.............. 9 years 5 months
- Intelligence quotient.. 92

G-3, K-3. -- Dorothy is a girl nine years of age, of normal size and weight, and in good health except for some slight attacks of tonsilitis. These attacks sometimes keep her out of school for a day or two, but she usually has very few such attacks each year. She appears to be slightly nervous, and to have a rather high temper. However, she is popular with her playmates and likes children of her own age. She prefers to play with a few friends rather than with the whole group. She sometimes has disputes with other girls, but generally gets along rather well with her playmates. She has to work thirty minutes each afternoon, and on a few occasions has had to stay out of school to work, but this does not happen frequently. She is the third of seven children. She goes to a picture show less than once a month, but likes cowboy pictures and comedies. She attends the Baptist Sunday
School irregularly.

Her father rents a farm five miles from town, which is equipped with oil light. They do not own a radio, and do not take any magazines. They do receive a daily paper, but own few books. The father has an elementary school education, but the mother went to the tenth grade.

The results of the intelligence test in this case are given here:

Chronological age...... 9 years 9 months
Mental age............. 9 years 2 months
Intelligence quotient.. 94

G-3, NK-4. -- C. R. is a boy nine years of age, in good health, but below average in height and weight. He has had no difficulties from defective adenoids, tonsils, or eyes. His disposition is good. He sleeps an average of ten hours each night and shows no signs of nervousness. He likes to play with boys of his own age, and gets along very well in these associations. He is the fifth of five children. This boy goes to the picture show four times each month, usually on Saturday afternoons, and he likes western stories and comedies. He regularly attends Sunday School at the Baptist Church. His home duties include about one hour of work after school, but he very seldom works on Saturdays.

His father is a farmer who rents a farm, which is four
miles from town. The family uses oil lights, but owns a radio. They take a daily paper, some magazines, but have few books. His father went to the ninth grade in school, and his mother to the eighth grade.

The results of the intelligence test given in this case are recorded as follows:

Chronological age...... 9 years 9 months
Mental age.............. 9 years 5 months
Intelligence quotient... 95

G-3, K-4. -- E. L. is a boy nine years of age, in good health, and of normal size. He has had no trouble with his eyes, nose, throat, or ears. He is of even disposition, and apparently is not nervous. He likes playmates of his own age and sex. He gets along well in these associations upon the playground. He sleeps an average of ten hours each night and keeps regular hours. This boy goes to see a picture show about six times each year, and his favorite pictures are cowboy stories and comedies. He goes to Sunday School at the Baptist Church about once each month. He works forty-five minutes after school and some on Saturdays. He is the fourth of seven children in the family.

His father farms a rented farm which is five miles from town. They use oil lights and do not own a radio. They receive a daily paper, but no magazines, and they have few if
any suitable books. His father has an elementary school education; his mother finished the tenth grade of high school.

The results of the intelligence test in this case are given below:

Chronological age....... 9 years 9 months
Mental age.............. 9 years 6 months
Intelligence quotient.. 98

G-3, NK-5. -- The child described here is a girl nine years of age, slightly underweight, but of normal height. She has had tonsils and adenoids removed. There are some signs of nervousness, and although the child has not been out of school from illness, she does not appear to be normally full of life. She sleeps an average of ten hours nightly, and keeps regular hours. She enjoys playing with children of her own age, and gets along well in her associations. She is well received by her playmates. She has no work to do either after school or on Saturdays. She goes to the picture show twice a month and likes to see western pictures and comedies. She attends Sunday School regularly at the Baptist Church. She is the third of four children.

Her father works for an oil company and the family lives fourteen miles from town in a house furnished by the company. They use gas lights, do not possess a radio or any suitable books for the child, but they do take a newspaper and some magazines. The father and mother each went to the
tenth grade in school.

The results of the intelligence test given in this case are:

Chronological age....... 9 years 5 months
Mental age.............. 9 years 7 months
Intelligence quotient.. 102

G-3, K-5. -- R. L. is a boy nine years of age, of normal height and weight. He is in good health at the present and has never had trouble from defective eyes, nose, or throat. His disposition is good and he likes to play with children of his own age. He gets along very nicely in his associations with his friends on the playground. He sleeps ten hours at night, regularly, and apparently is not at all nervous. He has a few odd jobs to do after school and on Saturdays. R. L. goes to see a picture show four times each month, usually on Saturday afternoon. He likes cowboy pictures and comedies. He attends Sunday School about one-half of the time, at the Baptist Church.

His father works for an oil company which furnishes a house for his family. They use oil lights. The house is nine miles from town. They take one daily paper, one magazine, and they own a few books and a radio. The father has had some college training but is not a graduate. The mother went to the eighth grade in school.
The results of the intelligence test in this case are given here:

Chronological age...... 10 years 1 month
Mental age............. 9 years 10 months
Intelligence quotient.. 98

G-3, NX-6. -- The boy used in this case is ten years of age, of normal weight and height and is in good health. His tonsils have been removed, and he has experienced no trouble from defective adenoids or eyes. He is good-natured, even-tempered, and likes to play with children of his own age. He is well received by his playmates and apparently these playground associations are very mutually agreeable. He sleeps ten hours each night and keeps regular hours. He works after school an average of two hours daily. He also works sometimes on Saturdays. This boy goes to picture shows four times a month, usually on Saturday afternoon, and likes comedies such as Mickey Mouse and Donald Duck. He attends Sunday School about half the time, at the Baptist Church. He is the second of two children.

His father works for an oil company and the family lives in a home furnished by the oil company. It is fifteen miles from town and is equipped with electric lights. A daily newspaper is taken and there are magazines, some books, and a radio. The father quit school while in the eleventh grade, and the mother went to the tenth grade.
The results of the intelligence test given in this case are as follows:

Chronological age...... 9 years 7 months
Mental age............. 9 years 6 months
Intelligence quotient.. 99

G-3, K-6. -- The young man used in this study is ten years of age, slightly underweight, but of normal height. He has not been in normally good health, but has recently had his tonsils removed and at the present is in good health. He has never been troubled by defective adenoids or weak eyes. His disposition is good and he likes children of his own age. He gets along very nicely in his playground associations. There are no apparent signs of nervousness. He goes to the picture show four times each month, usually on Saturday afternoons, and likes cowboy pictures and comedies. He goes to Sunday School about one-third of the time at the Church of Christ. He is the third of three children.

His family lives thirteen miles from town in a house furnished by the oil company for which his father works. Electric lights are used in this home, and the family receives one daily newspaper, and several magazines. There are few books suitable for this child to read, but they own a radio. The boy's father has an elementary school education; his mother quit school while in the tenth grade.
The results of the intelligence test given in this case are as follows:

Chronological age...... 10 years 4 months
Mental age............. 9 years 5 months
Intelligence quotient.. 92

Grade Four
G-4, NK-1. -- Darlene is ten years of age, average in height and size, and is in good health. She has never been troubled by tonsils and adenoids, but thinks her eyes are below normal although tests have never been made to determine whether this is true. She is very good-natured, and likes to play with children of her own age or older. She gets along very nicely with her playmates. These associations are always harmonious and apparently are mutually agreeable. She likes to go to the picture show three times a month and prefers children's pictures and aviation pictures. She attends Sunday School regularly at the Baptist Church. Her outside work averages about thirty minutes each day, and she assists with house work on Saturdays. She also helps her mother operate the telephone switchboard. She sleeps an average of ten hours each night and shows some signs of nervousness. She is easily frightened, and does not like for her father to drive rapidly in the car. She is the only child in the family.

Her parents live in town. Her father is an automobile mechanic, and her mother operates a telephone switchboard which is located in their home. They have electric lights
and a radio and they receive a daily paper and some magazines, but no books. They rent their home.

The results of the intelligence test given in this case are as follows:

Chronological age...... 10 years 6 months
Mental age............. 10 years 10 months
Intelligence quotient.. 103

G-4, K-1. -- Wanda is ten years of age, average in height and weight, and is in good health. She has never had defective eyes, nose, or throat. Her disposition is good and she is apparently not nervous and sleeps ten hours each night, regularly. She likes to play with children of her own age. Her friends like to play with her, and the associations on the schoolground are apparently very harmonious, and mutually agreeable. She is the sixth child of a family of eight. She goes to the picture show three times a year. Likes cowboy pictures and comedies. She attends Sunday School at the Methodist Church regularly. She works about thirty minutes each afternoon, and sometimes does extra work on Saturdays.

Wanda's father works for a retail oil company and lives in town in a rented home. The family receives a newspaper, has some books suitable for children, and owns a radio; but they do not receive any magazines. The father and mother have a partial high school education, but neither graduated from high school.
The results of the intelligence test given in this case are as follows:

Chronological age...... 10 years 9 months
Mental age............. 10 years 3 months
Intelligence quotient.. 96

G-4, NK-2. -- Wilma is nine years of age, of normal size and weight, and is in good health. She has never had defective eyes, tonsils, or adenoids. Her disposition is good, and she apparently is not bothered by nervousness. She likes to play with children of her own age, but seems to be a little shy and bashful, especially when someone unfamiliar to her is about. She gets along well with her closest friends, but seems to prefer to play with a few rather than with the whole group. She sleeps ten hours each night, regularly. Wilma has to work after school each day, sometimes as long as two hours, and she also works on Saturdays. During the cotton-picking season she works all day Saturdays. She goes to the picture show twice each month, generally on Saturdays. She also goes to Sunday School at the Baptist Church, but she attends irregularly. She is the third of five children.

Her father is a farmer. He rents a farm located nine miles from town. Oil lights are used in the home, and the family owns a radio, but does not receive a newspaper or any magazine, although they do have quite a few books suitable for children. Neither parent has more than an elementary school education.
The results of the intelligence test given in this case are:

Chronological age....... 10 years 7 months
Mental age.............. 10 years 7 months
Intelligence quotient... 100

G-4, K-2. -- Everett is ten years of age, average size, and in good health except for a few scattered attacks of tonsillitis, which have never bothered him to the extent of keeping out of school. He is high-tempered and rather nervous. He sleeps ten hours each night and does not have more than twenty minutes of work to do on school afternoons. He is not required to work on Saturdays. He likes to play with children of his own age, but does not always get along with his playmates in a harmonious way, due to the fact that he wants his way too much. Everett goes to picture shows four times each month, usually on Saturday afternoons, and likes cowboy pictures best of all. He also attends Sunday School sometimes, at the Baptist Church. He is the second of five children.

His father works a rented farm which is located nine miles from town. This home has electric lights and a radio. The family receives a newspaper and magazines, but does not possess any books suitable for children. The father quit school while in the ninth grade. The mother finished elementary school.
The results of the intelligence test given in this case are:

Chronological age....... 10 years 10 months
Mental age............... 10 years 11 months
Intelligence quotient... 101

G-4, NK-3. -- Patsy is nine years of age, of normal weight and height, and is in good health. Apparently, she has no defects of eyes or teeth, and she has never had any trouble with her tonsils or adenoids. She has a good disposition and likes to play with other children of her own age. She gets along well with her playmates and is well received by them. Her associations are mutually agreeable. There are some signs of nervousness. She sleeps ten hours each night. She works about twenty minutes each afternoon, and has variable amounts of work to do on Saturdays. She goes to picture shows about once each year, likes love stories and comedies. She goes to Sunday School at the Church of Christ. She is the third of five children in the family.

Her father is a day laborer, and lives in a rented house on a farm four miles from town. They use oil lights. They receive a daily paper, but they do not have any magazines, and very few books for children. They own a radio. Each of the parents has an elementary school education.

The results of the intelligence test in this case are given here:
Chronological age...... 9 years 8 months
Mental age............. 10 years 1 month
Intelligence quotient.. 104

G-4, K-3. -- Jodie is a boy nine years of age and normal in size and health. He has never had defective nose or throat, and his eyes are good. He sleeps an average of ten hours each night, keeps regular hours, and apparently is not nervous. He works one hour after school each day and sometimes works on Saturdays. He has a good disposition, and likes to play with children of his own age, or older. He gets along well with his playmates, and is well received by them. Jodie apparently enjoys playing, and his enthusiasm makes his associations mutually agreeable. He goes to the picture show three times each month and likes cowboy pictures. He attends Sunday School at the Baptist Church, regularly. He is the fifth of six children in the family.

His father runs a filling station and owns his home, which is located five miles from town. Newspapers and some magazines are received, but there are no books here suitable for children. Oil lights are used, and the family owns a radio. The father and mother each went to the tenth grade in school.

The results of the intelligence test in this case are:

Chronological age...... 10 years 3 months
Mental age............. 10 years 3 months
Intelligence quotient.. 100
G-4, NK-4. -- James is ten years of age. He is of normal weight and size, in good health, and is not troubled by tonsils, adenoids, or poor eyesight. He has a fair disposition, but is rather clannish, preferring to play with a few close friends rather than with the whole group in his grade. He is well liked by the other children, however, and when he wants to play at a game with larger groups, he is generally well received. He does not show signs of nervousness, and sleeps ten hours each night. He has to work twenty minutes each school day, and has no regular work to do on Saturdays. James goes to the picture show about three times each month. He likes cowboy pictures and comedies. He goes to Sunday School regularly at the Church of Christ.

His father is a day laborer and lives in town. He owns his home, in which electric lights are used. The family receives a daily paper, but does not receive any magazines. They own a few books, and have a radio. The father and mother each has an elementary school education.

The results of the intelligence test given in this case are as follows:

Chronological age........ 10 years 10 months
Mental age............... 10 years 5 months
Intelligence quotient... 96

G-4, K-4. -- Bill is ten years of age, of average size and weight, and is in good health except for tonsils which
should be removed. His tonsils do not trouble him enough to cause him to miss many days in school. He likes to play with boys and girls of his own age, but is slightly received. His friends receive him very agreeably on the schoolground, and he is apparently well liked by the other children, but he does not show as much enthusiasm for playing as do some of the other children. He sleeps ten hours each night, but appears to be slightly nervous. Bill does not have any work to do either in the afternoons after school or on Saturdays. He goes to the picture show an average of two times each month, generally on Saturday afternoons. His favorite films are cowboy pictures. He also likes comedies. Bill attends Sunday School irregularly, at the Christian Church.

His father runs a laundry and lives in town. The family rent the home in which they live. They use electric lights, but have few if any books suitable for children in the home. They do not own a radio. The father quit school while in the eighth grade; the mother is a high school graduate.

The results of the intelligence test given in this case are:

Chronological age....... 10 years 10 months
Mental age.............. 10 years 11 months
Intelligence quotient.. 101

G-4, NK-5. -- Tommy is ten years of age, normal in size and weight, and in normally good health. He has never been
troubled by ailments of nose, throat, or eyes. He is good-natured, as a rule, but has spells of stubbornness. He likes to play with people of his own age or smaller people, and prefers boys to girls as playmates. His association with his playmates is harmonious. He sleeps ten hours each night and apparently is not nervous. He goes to picture shows once every two months, and prefers cowboy pictures and comedies. He does not go to Sunday School often because of lack of transportation facilities, but prefers the Baptist Sunday School. He goes occasionally with a neighbor’s boy. Tommy has to work one hour after school each afternoon, and on Saturdays and Sundays. He is the second of three children in the family.

Tommy’s father farms, and lives on a rented farm, six miles from town. Electric lights are used in the home. This family does not receive a daily paper or any magazines, and has few if any books suitable for Tommy to read. His father quit school while in the ninth grade. His mother quit school while in the eighth grade.

The results of the intelligence test given in this case are as follows:

Chronological age...... 10 years 2 months
Mental age............. 10 years 8 months
Intelligence quotient.. 105

G-4, K-5. -- June is ten years of age, slightly larger
than normal, and is in good health. She has never been troubled by defects of nose, throat, or eyes. She is good-natured, apparently not nervous, and she sleeps ten hours at night, regularly. June likes to play with children of all ages. She gets along very nicely in her playground associations, and is well received by her playmates. She goes to the picture show three times each month and prefers children's pictures and comedies. She attends Sunday School regularly at the Church of Christ. She works fifteen minutes after school and forty-five minutes each Saturday.

Her parents and the family live four miles from town. Her father works for an oil company which furnishes the home in which they live. Electric lights are used. This family does not take a newspaper and has few magazines or books. The family owns a radio. The father left school while in the tenth grade; the mother went to the ninth grade.

The results of the intelligence test given in this case are listed below:

Chronological age...... 10 years 1 month
Mental age............. 10 years 3 months
Intelligence quotient.. 102

G-4, NK-6. -- Mary is nine years of age, of normal size and weight. Apparently she is in normally good health. She has never experienced difficulty with defective tonsils or adenoids, but does have slightly weak eyes. This statement is
based upon the fact that, although she has glasses, she seldom wears them, yet never suffers from eyestrain unless an unusual amount of reading is done. She sleeps ten hours each night and keeps regular hours, but apparently is slightly nervous. Mary enjoys playing with either boys or girls of her own age, and evidently these associations are mutually agreeable. She does not have any work to do after school or on Saturdays. She goes to the picture show once every two months, and prefers Shirley Temple or other pictures starring child stars. She also likes Walt Disney's pictures. Mary goes regularly to Sunday School at the Methodist Church. She is the only child in the family.

Her father farms, and owns his farm, which is a rather well-equipped one, having electric lights, running water, and other modern conveniences. This family receives a daily paper and magazines; and there are plenty of books suitable for Mary to read. Her father and her mother both graduated from high school. Her mother is a university graduate.

The results of the intelligence test given in this case are as follows:

Chronological age...... 9 years 8 months
Mental age.............. 10 years 4 months
Intelligence quotient.. 107

G-4, K-6. -- Robert is nine years of age, and is of normal size and weight. He is in normally good health. He has never
experienced difficulties as a result of defective tonsils, adenoids, or eyes. He sleeps ten hours each night and does not appear to be unusually nervous. He likes to play with both boys and girls of his own age, and these associations are usually very harmonious. Robert has to work fifteen minutes after school each day and about the same length of time on Saturdays. He goes to the picture show twice each month and prefers cowboy pictures. He does not like comedies very much. He attends Sunday School at the Baptist Church regularly. He is the only child in the family.

Robert's family rents a farm two miles from town. They use oil lights at present but hope to have rural electrification soon. They receive a daily paper and some magazines, but have few if any books suitable for Robert to read. The father and the mother both went to the ninth grade in school.

The results of the intelligence test given in this case are presented as follows:

Chronological age....... 9 years 8 months
Mental age............. 10 years 3 months
Intelligence quotient.. 106

Grade Five

G-5, NK-1. -- The boy in this case is eleven years of age, of normal size and weight. He has had his tonsils removed, and his eyes and adenoids have caused no trouble. He sleeps ten hours nightly, but appears to be somewhat of a
nervous disposition. He likes to play with children of his own age, and these playground associations usually are mutually agreeable. No duties are required of him either on school afternoons or on Saturdays. He goes to the picture show twice each month, and prefers cowboy pictures. He also goes regularly to the Baptist Sunday School. This child is the third of four children.

His father works for an oil company. It is fifteen miles from town. Gas lights are used in the home, and the family does not own a radio. Newspapers and magazines are received, but they own few if any books suitable for this child to read. The father and mother each went to the tenth grade in school.

The results of the intelligence test given in this case are as follows:

Chronological age...... 11 years 8 months
Mental age............... 10 years 11 months
Intelligence quotient... 97

G-5, K-1. -- Evelyn is eleven years of age, of normal size and weight, and is in normally good health. She is good-natured and apparently is not nervous. She sleeps ten hours each night, regularly. She likes to play with children of her own age, and gets along very harmoniously in these associations. Evelyn has to work about an hour each afternoon after school and three hours on Saturdays. She goes to the
picture show every Saturday and likes to see western pic-
tures and comedies. She attends Sunday School regularly at
the Christian Church. This child is the oldest of five chil-
dren.

Her father works for the railroad, and the family lives
in a rented home in town, and the home is equipped with oil
lights. They receive no magazines, newspapers, or books;
however, they own a radio. The father and mother each have
an elementary school education.

The results of the intelligence test made in this case
are as follows:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronological age........</td>
<td>11 years 9 months</td>
</tr>
<tr>
<td>Mental age..............</td>
<td>12 years 0 months</td>
</tr>
<tr>
<td>Intelligence quotient..</td>
<td>102</td>
</tr>
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</table>

G-5, NK-2. -- J. C. is ten years of age, slightly less
than normal in size, but has normally good health. He has
had some tonsilitis, but not enough to cause him to miss much
time from school. His adenoids and eyes apparently are not
defective. He works twenty minutes after school each day,
and does odd jobs on Saturdays. He likes to play with boys
of his own age or older, and these associations are apparently
very agreeable to his playmates. J. C. goes to the picture
show three times each month, generally on Saturday afternoons,
and to Sunday School at the Baptist Church nearly every Sunday.
He likes cowboy pictures and comedies. He keeps regular
hours and gets ten hours of sleep each night. He is the second of two children in the family.

His father is a farmer, and rents a farm which is four miles from town. This family does not take a daily paper or any magazines, but does have several books suitable for J. C. to read, and they own a radio. Kerosene lights are used. The father and mother each went part of the way through high school, but neither graduated.

The results of the intelligence test given in this case are:

Chronological age..... 11 years 3 months
Mental age............. 11 years 6 months
Intelligence quotient.. 102

G-5, K-2. -- Virginia is ten years of age, of normal size and is in good health. She has been ill very little; has never been bothered with defective throat, nose, or eyes. She has a good disposition, but is apparently slightly nervous, although she sleeps ten hours each night, regularly. She does not have any work to do at home either after school or on Saturdays. She is the older of two children. Virginia likes to play with children of her own age, and these associations with her playmates apparently are agreeable to everyone concerned. She goes to the picture show five times each month and likes comedies best of all. She also attends Sunday School regularly at the Baptist Church.
Her father is an electrician, and his home is furnished by the company for which he works. This home is five miles from town. It has electric lights, and newspapers. Magazines and books are rather plentiful in this home, and there is a radio. The father and mother each have an elementary school education.

The results of the intelligence test given in this case are:

<table>
<thead>
<tr>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronological age</td>
<td>10 years 10 months</td>
</tr>
<tr>
<td>Mental age</td>
<td>10 years 10 months</td>
</tr>
<tr>
<td>Intelligence quotient</td>
<td>100</td>
</tr>
</tbody>
</table>

**G-5, NK-3.** -- Edgar is twelve years of age, normal in weight and height, and is in good health. Adenoids have never bothered him, and his tonsils have been removed. He sleeps ten hours each night and shows no apparent signs of nervousness. He is the third of five children. He likes to play with boys of his own age, but does not have much use for girls. He gets along very nicely with his playmates, and these playground associations apparently are mutually agreeable. Edgar does not go to the picture show because he was frightened during one when he was very young and has not felt the urge to go since. He claims he has not been to a picture show in five years. He attends Sunday School each Sunday at the Lutheran Church. Edgar works after school about an hour each afternoon, and generally works some each Saturday.
Edgar's father is a farmer, and owns his home and farm, which are located five miles from town. This home is equipped with a radio and electric lights. Newspapers, magazines, and books are adequately supplied. The father went to the ninth grade in school; however, his mother has only an elementary school education.

The results of the intelligence test given in this case are as follows:

Chronological age....... 12 years 7 months
Mental age.............. 11 years 1 month
Intelligence quotient... 88

G-5, K-3. -- Dorothy is twelve years of age, slightly small for her age, but is in good health. She has never been bothered by defective nose or throat, and has had her tonsils removed. She is good-natured, and likes to play with children of her own age. She gets along nicely in her associations on the playground and apparently is well received by her playmates. She sleeps ten hours each night and apparently is not nervous. The only work she has to do at home is to practice her piano lessons. She does not have any work to do on Saturdays. She is the older of two children. Dorothy goes to the picture show four times each month, and likes Shirley Temple pictures. She attends Sunday school regularly at the Christian Church.

Her father works for an oil company and lives two miles
from town in a home furnished by the company. Electric lights are used by this family. There is a daily paper and a radio, but no magazines or books. Her father is a high school graduate, but her mother went only to the fourth grade in school.

The results of the intelligence test given in this case are:

Chronological age...... 12 years 4 months
Mental age............. 11 years 2 months
Intelligence quotient... 91

G-5, NK-4. -- The subject of this case is a boy, ten years of age, slightly larger than normal, and in good health with the exception of having a few slight attacks of tonsilitis. He has a slight speech impediment. Apparently, he is good-natured, and likes to play with children of his own age. He gets along agreeably with his associates on the playground. He is slightly nervous, but sleeps ten hours each night, and keeps regular hours and has no work either after school or on week-ends. He goes to the picture show four times each month, on an average, usually on Saturday afternoons, and prefers cowboy pictures and comedies. He attends the Baptist Sunday School regularly. He is the second of two children in the family.

His father works for an oil company, and their home is furnished free of rent. It has gas lights and is located fifteen miles from town. There is a radio in the home.
Magazines are plentiful there and a daily paper is received, but there are few books. Neither of the boy's parents finished high school.

The results of the intelligence test in this case are given here:

- Chronological age....... 12 years 3 months
- Mental age............. 10 years 11 months
- Intelligence quotient.. 89

G-5, K-4. -- Eloise is ten years of age, of average height and size. She is in good health and has never had defective eyes, tonsils, or adenoids. Apparently, she is good-natured, and of even disposition. She likes to play with children of her own age, or older. She gets along very agreeably with her playmates, and these associations apparently are mutually agreeable. She averages sleeping ten hours each night, and keeps regular hours. She appears to be a normal child. She works approximately one hour after school each day, and also works some each Saturday. She goes to the picture show very seldom, perhaps four times a year. She attends the Methodist Sunday School regularly. She is the oldest of four children.

Her father works for an oil company, which furnishes a home for his family, free of rent. It is twelve miles from town and is equipped with gas lights. There is little in the way of reading material in the home. Magazines and
newspapers are not received regularly and there are few books suitable for this girl. The family owns a radio. Her father withdrew from school while in the tenth grade. Her mother has an elementary school education. This home is neat and rather clean but leaves the impression of limited financial income.

The results of the intelligence test given in this case are:

Chronological age...... 11 years 2 months
Mental age............... 10 years 3 months
Intelligence quotient... 92

G-5, NK-5. -- Fred is eleven years of age, normal in height and weight, and in good health. He has had no ailments of throat, nose, or eyes. He is good-natured, and apparently suffers no form of nervousness. He sleeps ten hours each night and his habits of living are regular. Fred has no work to do after school or on Saturdays. He is especially fond of picture shows and goes ten to twelve times each month, usually late in the afternoon. He prefers cowboy pictures and comedies. He attends the Baptist Sunday School almost regularly. He is the only child in the family. He likes to play with boys of his own age, and with girls also, and gets along very well in these associations.

Fred's family lives fifteen miles from town in a home furnished by the oil company for which his father works.
Electric lights are used and a radio is owned. There are plenty of magazines, newspapers, and books here. Fred's father dropped out of school while in the tenth grade; his mother finished the ninth grade.

The results of the intelligence test given in this case are as follows:

- Chronological age...... 11 years 6 months
- Mental age............... 11 years 3 months
- Intelligence quotient.. 98

**G-5, K-5.** -- Betty is eleven years of age, rather large for her age, in good health, and has had no trouble from defects of nose, throat, or eyes. She has an even-tempered disposition and likes to play with children of her own age. She gets along very harmoniously in these associations with other children. There are no apparent signs of nervousness. She sleeps regularly ten hours each night, and has about fifteen minutes of work each afternoon and very little on Saturdays. Betty goes to picture shows usually twice each month, generally on Saturday night. She prefers comedies. She regularly attends Sunday School at the Baptist Church. Betty is the second of four children in the family.

Her parents live fifteen miles from town in a home furnished by the oil company for which her father works. Gas lights are used. This home has few books, plenty of magazines and newspapers, and also a radio. Her father went to
the ninth grade in school, her mother to the seventh grade.

The results of the intelligence test given in this case follow:

Chronological age...... 11 years 7 months
Mental age............... 11 years 1 month
Intelligence quotient... 96

G-5, NK-6. -- Joe is eleven years of age, is rather small for his age, but is in good health. He has never been bothered by defective eyes, nose, or throat. He is good-natured and likes to play with boys of his own age. He gets along very amicably with his associates on the playground and is well received by his playmates. Joe sleeps nine hours each night, and apparently is not troubled by nervousness. He does not have work to do either after school or on Saturdays. He goes to the show four times each month, generally on Saturday afternoons, and he prefers cowboy pictures and comedies. Joe regularly goes to Sunday School at the Methodist Church. He is the seventh of eight children in his family.

Joe's father works for an oil company, and the family lives in a home furnished by the company. It is located nineteen miles from town. They have electric lights and a radio. They receive a daily newspaper and magazines, and have a few books suitable for a boy of Joe's level to read. Each of his parents is a high school graduate.

The results of the intelligence test in this case are:
Chronological age...... 11 years 3 months
Mental age............ 11 years 8 months
Intelligence quotient.. 104

G-5, K-6. -- Erma is eleven years of age, of normal size and weight, and is in good health. Her tonsils and adenoids have been removed, and her eyes have never troubled her. She is of good disposition, and likes to play with children of her own age. She gets along very agreeably with her playmates. These associations apparently are mutually agreeable. She is slightly nervous but sleeps ten hours each night, regularly. She does not have any work to do at home other than practicing on the piano. She is the older of two children. She goes to the picture show once a month and likes cowboy pictures and comedies. She attends the Baptist Sunday School regularly.

Erma's father works at an oil refinery, and her home is furnished by the company. The family receives an adequate supply of newspapers and magazines. They have a radio, use electric lights, and have several books suitable for children. The home is two miles from town. Her parents both quit school while in the tenth grade.

The results of the intelligence test given in this case are recorded below:

Chronological age...... 12 years 4 months
Mental age............ 12 years 6 months
Intelligence quotient.. 102
CHAPTER IV

RESULTS AND CONCLUSIONS

Results of the Social Test

The social test as well as the achievement test was given in the two schools in the spring of the year approximately two months before the end of school. The tests were given at approximately the same time in both schools. All tests were given by the author, or were given under his direct supervision. Everything possible was done to insure accuracy and fairness in giving the tests and recording and tabulating the results.

The results of the social test given were rather surprising when one looks at the profiles of the various grades, but when a composite profile of all the grades was made the results were more clearly defined. The school having the kindergarten held distinct advantage in all phases of the test given except two, one of these in self-adjustment and one in social adjustment. The school not having kindergarten showed slight superiority in freedom from withdrawing tendencies, in self-adjustment, and a very slight superiority in school relations under the social adjustment section.

The most unusual feature of the social test was the result
in the primary grades, which in most cases is higher than that in the intermediate grades. This may be explained by the fact that the questions in the test were read to the primary grades in a language they could understand, whereas the tests were given to the fourth and fifth grades directly, without any attempt to lower the wording to a level they might more easily comprehend.

The exact manner in which these tests were given might be of interest. Each grade was placed in a room, one grade at a time. Each child was given a sheet of paper which had a column of numbers from one to one hundred. On the right-hand side of each of these numbers the pupils were requested to write the answer as quickly as possible after the question had been read to them. Each question was repeated slowly and in a voice that would not give any clue to the answer by undue stress on certain key words. These children were able to finish their tests in the time allotted.

There is a great possibility that the tests given were worded above the level of the children, especially in the fourth and fifth grades. Stop to consider the fact that the test given to the fourth and fifth grades also carries on through the eighth grade. Numerous questions were asked by the children of the fourth and fifth grades concerning the tests, and perhaps ninety per cent of these questions were regarding the pronunciation of words.
The primary grades also have a higher intelligence quota than the intermediate grades. This unusual result did not change the general results, because the amount of difference between the kindergarten and non-kindergarten schools was fairly constant with the exception of the first grade, which shows the kindergarten school's first grade to be greatly superior in all phases of self and social adjustment.

A series of charts has been prepared to show the results of the social tests given. These charts appear on the succeeding pages of this chapter.

Results of the Achievement Test

The Gray-Votaw achievement test was used in both the primary and the intermediate grades. The results are not in harmony with the results of the social test, as one might expect, or as is usually the case. The results of these tests are shown by a table on page 90. The results as tabulated in this table show the school having a kindergarten to be superior in the first grade only. In the other grades the school not having a kindergarten has a slight advantage.

The author feels that this is rather unusual, but can be explained in this case by at least three conditions that prevail in the two schools. In the first place, the groups of children used in the tests are not perfectly balanced as to intelligence rating. The school not having a kindergarten has slightly the higher average. It is noteworthy that the first
Self-Adjustment:
Self-reliance
Sense of personal worth
Sense of personal freedom
Feeling of belonging
Withdrawing tendencies
Nervous symptoms

Social Adjustment:
Social standards
Social skills
Anti-social tendencies
Family relations
School relations
Community relations

Percentile......0 10 20 30 40 50 60 70 80 90 100

Figure 1. -- Social and Personality Profile, Grade One.

Kindergarten.
Non-Kindergarten.
Self-Adjustment:

Self-reliance
Sense of personal worth
Sense of personal freedom
Feeling of belonging
Withdrawing tendencies
Nervous symptoms

Social Adjustment:

Social standards
Social skills
Anti-social tendencies
Family relations
School relations
Community relations

Figure 2. -- Social and Personality Profile, Grade Two.

- Kindergarten.
- Non-Kindergarten.
Self-Adjustment:

Self-reliance
Sense of personal worth
Sense of personal freedom
Feeling of belonging
Withdrawing tendencies
Nervous symptoms

Social Adjustment:

Social standards
Social skills
Anti-social tendencies
Family relations
School relations
Community relations

Figure 3. -- Social and Personality Profile, Grade Three.

Kindergarten.
Non-Kindergarten.
Self-Adjustment:
Self-reliance
Sense of personal worth
Sense of personal freedom
Feeling of belonging
Withdrawing tendencies
Nervous symptoms

Social Adjustment:
Social standards
Social skills
Anti-social tendencies
Family relations
School relations
Community relations

Figure 4. -- Social and Personality Profile, Grade Four.

Kindergarten.
Non-Kindergarten.
Self-Adjustment:

Self-reliance
Sense of personal worth
Sense of personal freedom
Feeling of belonging
Withdrawing tendencies
Nervous symptoms

Social Adjustment:

Social standards
Social skills
Anti-social tendencies
Family relations
School relations
Community relations

Figure 5. -- Social and Personality Profile, Grade Five.

Kindergarten.
Non-Kindergarten.
Figure 6. -- Social and Personality Profile, Grades One Through Five (in Composite).

- Kindergarten.
- Non-Kindergarten.
Figure 7. -- Results of the Personality Test.

XXXXXX  Kindergarten.
ZZZZZZZ  Non-Kindergarten.
Figure 8. -- Results of the Social Test.

XXXXXX  Kindergarten.
ZZZZZZZ  Non-Kindergarten.
Figure 9. -- Composite Results of Social-Personality Test.

XXXXXXXX Kindergarten.
ZZZZZZZ Non-Kindergarten.
Figure 10. -- Results of the Achievement Test.

XXXXXX  Kindergarten.
ZZZZZZ  Non-Kindergarten.
grade in the kindergarten school has a superiority in achievement, even though its mental rating is slightly inferior. This is understandable when one considers the fact that some academic work is given during the latter part of the year in the kindergarten of the school used.

The rating of the teachers was made in three ways; first, the number of years of experience was considered, then the number of years of tenure was listed, and finally the opinion of the superintendent under whom the teacher was working was received. The superintendent of each school rated the teachers by the use of numbers from one to five. Number one represents an inferior teacher. Number two might be classified as "fair." Number three is considered a "good" teacher. Number four represents an "excellent" teacher, and number five is a "superior" teacher.

A point worthy of note is the fact that the kindergarten teacher received a rating of three and does not have a degree. This indicates a condition that might be improved by replacement with a higher grade of teacher. The kindergarten teacher is of more than middle age, and has taught in her present position for twenty-nine years, yet has but two years of college training. These facts seem to indicate a condition that would prevent normal kindergarten development as compared to other kindergartens, and should lend force to the splendid showing made by the pupils who have experienced kindergarten work in this school. Perhaps the results would have been much
more commendable had the teacher been a specialist in kindergarten techniques.

The rating of the other teachers is about equal for the two schools. Apparently the teachers in each of the systems used are above average when considered as groups, although the teachers of the non-kindergarten school have slightly greater amount of professional training, and are better balanced as to tenure and experience.

Another reason for the superiority of the non-kindergarten students academically is the fact that their daily schedule is crowded with classes and academic work and little time is given to social adjustment and development, whereas in the school having a kindergarten, more time is given to activities of a social nature. The table on page 87 gives a comparative analysis of time spent in the various phases of activities, both social and academic, in the two schools. This idea, of course, discounts the fact that social and personal adjustment can be carried on in any kind of class or activity. This is equally true in each school.

General Conclusions

It is apparent that the children having experienced kindergarten are generally superior to the children who have not had such experience, especially in personal and social adjustment. They are more self-reliant, and able to carry on their business without constant care or direction. They are
TABLE 2

COMPARISON OF TEACHERS IN EACH GRADE OF KINDERGARTEN AND NON-KINDERGARTEN SCHOOLS ON THE BASIS OF THEIR TENURE, EXPERIENCE, TRAINING, AND RATING BY THEIR SUPERINTENDENTS

<table>
<thead>
<tr>
<th>Teacher</th>
<th>N-K Tenure</th>
<th>K Tenure</th>
<th>N-K Experience</th>
<th>K Experience</th>
<th>N-K Training</th>
<th>K Training</th>
<th>N-K Rating</th>
<th>K Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten.</td>
<td>15</td>
<td>6</td>
<td>29</td>
<td>37</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>First grade.</td>
<td>8</td>
<td>20</td>
<td>19</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Second grade.</td>
<td>1</td>
<td>11</td>
<td>1</td>
<td>15</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Third grade.</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>11</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Fourth grade.</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

*Rating by superintendent according to system used, Southern Association of High Schools and Colleges.*
### Table 3

**Daily Schedule in the Kindergarten and Non-Kindergarten Schools**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Time for Classwork and Study</th>
<th>Time for Play and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N-K</td>
<td>K</td>
</tr>
<tr>
<td>1...</td>
<td>4 hrs. 40 min.</td>
<td>4 hrs. 20 min.</td>
</tr>
<tr>
<td>2...</td>
<td>4 hrs. 40 min.</td>
<td>5 hrs. ...</td>
</tr>
<tr>
<td>3...</td>
<td>5 hrs. 40 min.</td>
<td>4 hrs. 55 min.</td>
</tr>
<tr>
<td>4...</td>
<td>5 hrs. 50 min.</td>
<td>5 hrs. 15 min.</td>
</tr>
<tr>
<td>5...</td>
<td>5 hrs. 50 min.</td>
<td>5 hrs. ...</td>
</tr>
</tbody>
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**TABLE 4**

**SOCIAL-PERSONALITY TEST AVERAGES**

<table>
<thead>
<tr>
<th>Components</th>
<th>1</th>
<th></th>
<th>2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N-K K</td>
<td>N-K K</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-adjustment:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-reliance</td>
<td>5.8</td>
<td>7.5</td>
<td>7.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Sense of personal worth</td>
<td>7.1</td>
<td>7.1</td>
<td>8.8</td>
<td>8.5</td>
</tr>
<tr>
<td>Sense of personal freedom</td>
<td>5.3</td>
<td>8.0</td>
<td>9.3</td>
<td>8.0</td>
</tr>
<tr>
<td>Feeling of belonging</td>
<td>7.0</td>
<td>8.9</td>
<td>8.0</td>
<td>9.3</td>
</tr>
<tr>
<td>Withdrawing tendencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(freedom from)</td>
<td>7.3</td>
<td>7.3</td>
<td>8.1</td>
<td>8.9</td>
</tr>
<tr>
<td>Nervous symptoms (freedom from)</td>
<td>5.7</td>
<td>6.6</td>
<td>7.7</td>
<td>6.1</td>
</tr>
<tr>
<td><strong>Social Adjustment:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social standards</td>
<td>7.1</td>
<td>9.1</td>
<td>9.0</td>
<td>9.5</td>
</tr>
<tr>
<td>Social skills</td>
<td>7.3</td>
<td>8.6</td>
<td>7.6</td>
<td>9.5</td>
</tr>
<tr>
<td>Anti-social tendencies</td>
<td>8.5</td>
<td>9.3</td>
<td>9.5</td>
<td>9.0</td>
</tr>
<tr>
<td>Family relations</td>
<td>8.0</td>
<td>7.5</td>
<td>9.4</td>
<td>9.5</td>
</tr>
<tr>
<td>School relations</td>
<td>8.6</td>
<td>7.7</td>
<td>9.0</td>
<td>9.0</td>
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<tr>
<td>Community relations</td>
<td>6.6</td>
<td>8.9</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Grade average score</strong></td>
<td>84.3</td>
<td>96.5</td>
<td>103.9</td>
<td>105.8</td>
</tr>
<tr>
<td>Grade</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>General Average</td>
</tr>
<tr>
<td>-------</td>
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<td>---</td>
<td>---</td>
<td>-----------------</td>
</tr>
<tr>
<td></td>
<td>N-K</td>
<td>K</td>
<td>N-K</td>
<td>K</td>
</tr>
<tr>
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<td>7.5</td>
<td>7.5</td>
<td>6.0</td>
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<tr>
<td>7.8</td>
<td>7.7</td>
<td>8.3</td>
<td>9.5</td>
<td>8.1</td>
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<td>8.1</td>
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<tr>
<td>10.1</td>
<td>9.5</td>
<td>10.5</td>
<td>10.5</td>
<td>8.8</td>
</tr>
<tr>
<td>8.6</td>
<td>6.3</td>
<td>9.5</td>
<td>7.4</td>
<td>7.8</td>
</tr>
<tr>
<td>8.5</td>
<td>7.4</td>
<td>4.5</td>
<td>8.5</td>
<td>8.0</td>
</tr>
<tr>
<td>10.3</td>
<td>9.3</td>
<td>10.0</td>
<td>10.0</td>
<td>8.3</td>
</tr>
<tr>
<td>8.5</td>
<td>9.5</td>
<td>9.1</td>
<td>9.0</td>
<td>8.0</td>
</tr>
<tr>
<td>9.5</td>
<td>9.1</td>
<td>9.3</td>
<td>8.9</td>
<td>1.9</td>
</tr>
<tr>
<td>7.3</td>
<td>8.9</td>
<td>9.1</td>
<td>9.4</td>
<td>9.6</td>
</tr>
<tr>
<td>7.3</td>
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<td>10.1</td>
<td>9.7</td>
<td>7.3</td>
</tr>
<tr>
<td>9.1</td>
<td>11.0</td>
<td>9.5</td>
<td>11.1</td>
<td>8.8</td>
</tr>
<tr>
<td>103.8</td>
<td>104.0</td>
<td>103.0</td>
<td>110.0</td>
<td>96.7</td>
</tr>
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</table>
TABLE 5

ACHIEVEMENT TEST RESULT AVERAGES

<table>
<thead>
<tr>
<th>Items</th>
<th>Grade</th>
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<th></th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td></td>
<td>N-K</td>
<td>K</td>
<td>N-K</td>
<td>K</td>
<td>N-K</td>
<td>K</td>
<td>N-K</td>
<td>K</td>
<td>N-K</td>
</tr>
<tr>
<td>Elementary science&lt;sup&gt;a&lt;/sup&gt;</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choice of words&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td>7.6</td>
<td>21.0</td>
<td>15.6</td>
<td>28.1</td>
<td>24.5</td>
<td>21.5</td>
<td>31.5</td>
<td>36.0</td>
</tr>
<tr>
<td>Dictation</td>
<td>10.0</td>
<td>11.3</td>
<td>13.5</td>
<td>13.1</td>
<td>23.3</td>
<td>20.1</td>
<td>39.5</td>
<td>29.7</td>
<td>49.6</td>
</tr>
<tr>
<td>Reading vocabulary.....</td>
<td>12.5</td>
<td>14.3</td>
<td>19.5</td>
<td>18.0</td>
<td>28.8</td>
<td>26.7</td>
<td>35.9</td>
<td>31.1</td>
<td>42.8</td>
</tr>
<tr>
<td>Reading comprehension&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social studies&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical education&lt;sup&gt;a&lt;/sup&gt;</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arithmetic reasoning</td>
<td>11.3</td>
<td>13.6</td>
<td>18.0</td>
<td>20.9</td>
<td>31.5</td>
<td>35.5</td>
<td>36.5</td>
<td>35.9</td>
<td>38.5</td>
</tr>
<tr>
<td>Arithmetic computation.....</td>
<td>6.1</td>
<td>11.8</td>
<td>14.0</td>
<td>14.8</td>
<td>30.0</td>
<td>25.9</td>
<td>39.5</td>
<td>30.8</td>
<td>43.6</td>
</tr>
<tr>
<td>Grade av...</td>
<td>9.9</td>
<td>11.7</td>
<td>17.2</td>
<td>16.5</td>
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<td>26.5</td>
<td>35.9</td>
<td>33.6</td>
<td>41.8</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Not included in the primary test.
more aggressive and, from personal observation in the two schools studied, they seem to offer more of a discipline problem. This is not uncontrollable, and when this fiery spirit is guided in the right direction, it produces a citizen capable of fullest participation in community, state, or national life. The very aggressiveness that sometimes produces discipline problems is also the spirit which carries the pupil along to great personal and social achievement.

The results of the kindergarten are more noticeable in the first grade than in any other particular grade. Here the result of both the social-personality test and the achievement test showed the kindergarten first grade to be greatly superior to the non-kindergarten first grade. Of course, as the pupils get older, their interests diverge into many various fields of life's activities, which reduces the amount of time, thought, and study on each of these activities. It is possible that pupils having experienced kindergarten work have their interests diverged to wider fields of endeavor than do non-kindergarten pupils. Hence, kindergarten pupils are not so likely to spend as much time on any one of these things as are the other group. This is true of academic work, and the results of the achievement tests given justify this opinion. As the pupils advanced, the non-kindergarten pupils showed a slight but increasing superiority in academic achievement.
Another feature worthy of mention that, no doubt, affected the results of the achievement tests was the difference in the discipline in the two schools. The discipline in the non-kindergarten school was much better than that of the kindergarten school. Supervised study in the non-kindergarten school could be carried on much better and the greater results could be obtained, because the lack of discipline problems probably produced results that were at least partly responsible for the superiority of the non-kindergarten school in achievement.

There are many things not included in this study that would be worthy topics for observation, in connection with kindergarten and non-kindergarten schools. The kindergarten has many possible points of advantage other than those given here. The general health of a child in the kindergarten is no doubt better than it would have been had the child remained at home. The physical development of a child is greater under the supervised play in the kindergarten than it would have been had the child remained at home. There are other advantages such as greater physical cleanliness, personal neatness, and many other characteristics that make the kindergarten a very desirable part of our public schools.

Other studies have been made using children of kindergarten and non-kindergarten schools, in an effort to determine the extent to which the kindergarten children are superior. The results of some of these, all of which compare favorably
with this study, are given.

A study was made in the Edgewood Public Schools of Pitts-
burgh, Pennsylvania, to determine the difference in the traits
of character between the kindergarten children and the non-
kindergarten children. In the survey the kindergarten chil-
dren were denoted by a "K" and the non-kindergarten children
by "NK."

A summary of results shows considerable superiority for
the "K" children in some traits, slight superiority in some,
and slight disadvantage in a few traits. These results were
somewhat similar to the results of the social-personality
tests used in this study. Some of the results of the Edge-
wood experiment might be of interest. "K" children show
greater self-confidence in every group but two. In moral at-
titude, the "NK" children surpass in seven groups out of
twelve and show a total difference of 0.33. In love of na-
ture, "K" pupils surpass in every group but two. In ability
to think, in originality, in observation, in response to ideas,
in response to directions, in cleanliness, in oral expression,
and in ability to play, the "K" pupils were superior. The "NK"
pupils surpass in but four points, namely, moral attitude, at-
tention, manual ability, and orderliness.\footnote{L. Alden Marsh, "Kindergarten Versus Non-Kindergarten Children with Respect to Certain Traits of Character," Elementary School Journal, XV (June, 1915), 544.} This experiment
was made with a total of 380 grade children in twelve groups.
A study made in Kenosha, Wisconsin, for example, based on the records of 925 children who had had kindergarten instruction, and 738 children who had entered school without such training, while not conclusive, suggests that the first group had fewer who were retarded in their later school work.\(^2\)

Another survey shows that in the 19 towns without kindergarten the percentage of repeaters, all grades considered, is 28.7 per cent greater than in the 75 towns having kindergarten; while in the first grade, taken by itself, the percentage of repeaters in the towns having no kindergartens exceeds the towns having the kindergartens by 69.5 per cent.\(^3\)

Still another survey (in New Bedford, Connecticut) shows that 49.4 per cent of the pupils reaching the sixth grade, within strictly normal age, entered school in the kindergarten subprimary, while of those one year or more beyond normal on reaching the sixth grade, only 17.6 per cent started in the kindergarten.\(^4\)

The results of the above-mentioned surveys are to a large degree parallel to the results obtained in this study, when the same topics are used, which fact lends weight to the conclusion that kindergarten children move along better in their school work and are superior in social and personal development.


\(^3\)Ibid.

\(^4\)Ibid.
APPENDIX

TABLE 6
COMPARATIVE DATA FROM THE CASES

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Intelligence Quota</th>
<th>Achievement</th>
<th>Social Score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Kindergarten..</td>
<td>99.8</td>
<td>10.3</td>
<td>84.5</td>
<td></td>
</tr>
<tr>
<td>Kindergarten..</td>
<td>97.5</td>
<td>11.4</td>
<td>96.8</td>
<td>First</td>
</tr>
<tr>
<td>Non-Kindergarten..</td>
<td>87.7</td>
<td>17.2</td>
<td>103.0</td>
<td></td>
</tr>
<tr>
<td>Kindergarten..</td>
<td>87.6</td>
<td>16.7</td>
<td>105.9</td>
<td>Second</td>
</tr>
<tr>
<td>Non-Kindergarten..</td>
<td>97.8</td>
<td>28.4</td>
<td>103.8</td>
<td></td>
</tr>
<tr>
<td>Kindergarten..</td>
<td>96.2</td>
<td>27.5</td>
<td>104.0</td>
<td>Third</td>
</tr>
<tr>
<td>Non-Kindergarten..</td>
<td>102.2</td>
<td>35.9</td>
<td>104.6</td>
<td></td>
</tr>
<tr>
<td>Kindergarten..</td>
<td>101.0</td>
<td>33.6</td>
<td>110.0</td>
<td>Fourth</td>
</tr>
<tr>
<td>Non-Kindergarten..</td>
<td>96.3</td>
<td>41.8</td>
<td>97.2</td>
<td></td>
</tr>
<tr>
<td>Kindergarten..</td>
<td>97.0</td>
<td>41.1</td>
<td>106.5</td>
<td>Fifth</td>
</tr>
</tbody>
</table>
**TABLE 7**

INFORMATION DERIVED FROM THE CASES

<table>
<thead>
<tr>
<th>Items</th>
<th>Non-Kindergarten</th>
<th>Kindergarten</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of homes having radios......................</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>Number of homes having electric lights...............</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Number of boys used in the cases</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Number of girls used in the cases</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Family occupation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil-field workers</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Farmers</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Other occupations</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Average number of picture shows attended per month</td>
<td>3.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Number preferring cowboy pictures</td>
<td>23(^a)</td>
<td>23(^a)</td>
</tr>
<tr>
<td>Number preferring other types........</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Homes having newspapers and magazines...............</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Number having adequate books........</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Regular Sunday School attendance</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Irregular Sunday School att'nd......................</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Do not attend Sunday School.........................</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^a\)One child from each group does not go to shows.
BIBLIOGRAPHY
