A SURVEY OF THE MENTAL ABILITY AND THE

## PERSONALITY ADJUSTMENT OF THE 250

PUPIIS OF CONCANNON HIGH SCHOOL

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## CHAPTER I

## INTRODUCTION

## I. GENERAL STATEMENTS

Only twenty years ago many teachers of secondary schools in Indiana were sure that their classes would be reasonably homogeneous in chronological age, mental age, and purpose in attending high school. The purpose was in a very large percentage of cases to meet the requirements for college entrance. Several forces have, however, worked together to make the present-day secondary school a very heterogeneous institution. Among them are (1) the compulsory attendance law of 1921; (2) the tendency for grade teachers to fail only the very weakest pupils in their classes; (3) the demand of industry that its employees have more and more training; (4) the insistence of parents that their children be at least high-school graduates; (5) the money value which educators have insisted a high school diploma assures its possessor; and (6) the lack of anything else to do.

As a result, at the present time, practically every Indiana child sooner or later enters a high school. This thesis has been written in an attempt to analyze the enroliment of one of these Indiana high schools.
II. STATEMENT OF THE PROBLEM

It was the purpose of this study (1) to ascertain the amount and distribution of mental ability of the pupils of Concannon High School; (2) to learn the degree to which these pupils were adjusted to their school and home environment; and (3) to secure other personal and sociological data which would be helpful in accounting for the findings concerning mental ability and adjustment.
III. TMPORTANCE OF THE PROBLEM

The importance of this problem is in direct proportion to the degree to which a school is child-centered. For those who insist that children be herded into classrooms and exposed to broken doses of isolated subject matter with no attempt made at integration or placing each subject in its proper relationship to the general objectives of education, this study has little significance. However, for those who see children as individuals and are interested in the development of their personalities, this study is important. Ben Wood expressed these thoughts very forcefully as follows:

Under the old prescribed curriculum idea, the first and chief duty of the teachers has been to "put over" a certain carefully defined tidbit of the curriculum called a course. Under the new and more humane theory of public education, the first duty of the teachers is to help the individual to become a better citizen, with the aid of the established curriculum or in spite of it,

> If necessary. The emphasis now is on what sort of a person the pupil becomes, not how much useless or irrelevant book learning he may be coerced into learning.

In order to accomplish this, Professor H. C. Morrison says, "Teachers should spend half their time studying their children and the rest of the time daing what that study shows 2 to be necessary and helpful."

In summary this study is important (I) in aiding teachers to understand the human material with which they are working, thus permitting the teacher to exert a greater influence in the development of each individual to the limit of his possibilities; (2) in promoting good mental health of teachers and pupils which comes only from a thorough understanding of a pupil's capacities, Ifmitations, family background, and attitude toward his environment; and (3) in pointing out cases which demand a thorough personality study and furnishing basic data for such studies.

## IV. SCOPE OF THE PROBLEM

As stated earlier, this study is a survey of the pupils of Grades IX to XII of the Concannon High School. This is a

1
Frank E. Howard, Frederick L. Patry, Mental Health (New York: Harper and Brothers, 1935), p. 431.

2
Ibid., p. 410.
townhip high school serving all of Sugar Creek Township in Vigo County, Indiana, with the exception of the incorporated town of West Terre Haute. The reader must not, however, form the conclusion from this that the enrollment of Concannon is from a preponderantly agricultural source. In fact only 12.4 per cent of the two hundred nine fathers represented were Iisted as farmers in the survey of occupations which was made. The fathers who were farmers furmished thirty of the 250 pupils of the school; the remaining 220 were supplied by eight small hamlets, each a rather distinct community in itself.

The school was divided into classes as shown by Table I. The almost equal division of pupils according to sex made interesting comparisons between the boys and girls possible.

TABLE I
DIVISION OF CONCANNON PUPILS
INTO CLASSES BY SEX

| Pupils | Seniors | Juniors | Sophomores | Freshmen | Combined |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Boys | 19 | 31 | 29 | 52 | 131 |
| Girls | 17 | 36 | 31 | 35 | 119 |
| Combined | 36 | 67 | 60 | 87 | 250 |

V. REVIEW OF RELATED STUDIES

Since the development of standardized tests has made school surveys possible, many have been made of the intelligence,
achievement, and personality adjustment of high-school pupils. Several such investigations were found which were directly related to different divisions or phases of this survey, which is a combined study of the mental ability and personality adjustment of the pupils of Concannon High School. 3
Olander and Walker made an investigation to see how closely teachers can estimate I. Q.'s. Four teachers who had fifty-five freshman pupils in their classes were asked at the end of a three months' period to estimate, each independently, the I. Q.'s of these pupils. After this was done, the pupils concerned were given three intelifgence tests: the Otis Self-Administering Test, the Henmon-Nelson Test, and the Kuhlman-Anderson Test. I. Q.'s were then computed for each pupil on the basis of his score on each test. These I. Q.'s were then compared with those which were determined subjectively by the four teachers.

They concluded that when the average judgment of the four teachers is used, I. Q.'s with a fair degree of validity are obtained.

4
Burgert made a study of the 191 graduating ninth-grade

3
Herbert T. Olander and Bert S. Walker, "Can Teachers Estimate I. Q.'s?": School and Society, 44:744-6, December 5, 1936.

4
Robert H. Burgert, "The Relation of School Marks to Intelligence in Secondary Schools," Jaurnal of Applied Psycholagy, 27:284-91, April, 1936.
pupils from the Roosevelt Junior High School of San Diego, California, to learn, among other things, the correlation between I. Q.'s and teachers' marks. An average school grade was calculated from the data filed on their personnel and permanent record cards. The I. Q. of each pupil was obtained. He found low correlations when he compared I. Q.'s with teachers' marks. This led him to conclude that, for the purpose of predicting school success, a more scientific basis is needed than teachers' marks alone. He suggests the use of a combination of several factors such as intelligence, grade-school record, teachers' judgments, mental age, et cetera. 5
Burns and Henmon found the relation between parental occupation and the mental ability of 100,820 high-school seniors of the state of Wisconsin. They found that the correLation is Iow (.I8) between parental occupation and the mental ability of the pupils. The investigators, however, admit that interpretations and conclusions must be made with greatest caution, since the amount of selection within the various groups was not ascertained, and that the selective process had not, in all probability, been consistently rigorous in all groups.

5
Ruth Burns and V. A. C. Henmon, "Parental Occupation and Mental Ability," Journal of Educational Psychology, 27: 284-91, April, 1936.

Wrenn, Ferguson, and Kennedy desired to learn the relation between intelligence level and personality. To find this relation, they selected two groups from the extremes of the intelifgence-test scores of 9,990 funiorcollege students, most of whom resided in California. The intelligence scores of these students closely resembled a normal curve of distribution. A total of three hundred twenty-four men and women students who had Psychological Examination scores in the upper 5 per cent and two hundred forty students having scores in the lower 15 per cent was successfully reached for desired additional data. These additional data included scores on the Bernreuter Personality Inventory, ratings on the Strong Vocational Interest Test, and information on educational and vocational histories. The extreme scores of the two groups were separated by 77 per cent of the total distribution. The investigators found no evidence of any relationship between level of intelligence and the traits of introversion-extroversion and emotional stability. The traits of selfsufficiency and dominance, however, vere found to vary considerably in strength with level of intelligence,

6
C. G1Ibert Wrenn, Leonard W. Ferguson, and John L. Kennedy, "Intelligence Level and Personality," Journal of Social Psycholagy, 7:301-8, August, 1936.
although the former varied positively and the latter negatively.

The studies reported above have this element in common with the present survey: the attempt to understand human material better so that the school can be adapted to the needs of the pupils.
VI. METHOD OF PROCEDURE AND SOURCES OF DATA

In anticipation of the testing program to follow, two teachers who were teaching all members of a given class were asked to rank the members of that class according to general innate ability rather than achievement in a particular subject. Six different teachers participated in this ranking of the four clesses.

Later eleven teachers who were fairly well acquainted with most of the pupils listed the ten pupils whom they considered best adjusted and the ten pupils who were in their opinion the most maladjusted members of the high school.

After the ratings by teachers were obtained, two standardized tests were given. The first of these to be given was the Henmon-Nelson Group Test of Mental Ability. This particular intelligence test was used because of its reputedly high correlation with Terman's Revised SimonBinet Scale. The other test administered was the Adjustment

Questionnaire by Percival M. Symonds, a pioneer and leader in the field of personality testing.

Additional information was asked for at the time the tests were given. As a result the following data were now available: (I) chronological age; (2) mental age; (3) I. Q.; (4) teacher ratings of intelligence and adjustment; (5) favorite subject; (6) intention to go to college or not; (7) number of children in family; (8) broken home or not; (9) father's occupation; (10) amount of schooling of parents; and (11) personality adjustment ranking.

To understand each pupil more completely, the scholarship index was found. This gave a good measure of a pupil's achievement in relation to his ability. The scholarship index was found by arbitrarily setting the following values for the letter grades: $A=100 ; B=75 ; C=50$; $D=25$; and $F=0$. The report cards were then checked, and a scholarship index was established for each pupil.

## VII. TREATMENT OF DATA

All pupils were ranked by classes from highest to lowest according to intelligence quotient, hereafter designated as I. Qo, chronological age, mental age, scholarship index, teacher rating of intelligence, and adjustment ranking. The following information was also summarized: (1) favorite
subject; (2) intention to attend college or not; (3) number of children in family; (4) broken home; (5) father's occupation; (6) amount of schooling of perents.

The I. Q.'s of Concannon pupils were compared with I. Q.'s of pupils of the United States in general. An attempt was made to explain and substantiate the variation from the normal distribution by comparing oocupations of fathers, size of families, number of broken homes, and amount of schooling of parents with the similar data for the country as a whole.

The coefficient of correlation was then found between I. Q. and teacher rating ability; between mental age and scholarship index.

The favorite subjects as listed by pupils were summarized in table form and correlated with I. Q.'s.

The number expressing intention of attending college upon graduation from high school was checked. The percentage of pupils intending to attend college according to I. Q., sex, and education of parents was then compared with the percentage of all the pupils who expressed such intention.

A careful study and comparison of teacher adjustment rating with adjustment questionnaire findings was made.

The effect upon personality adjustment of the number of children in family, of a broken home, of a high or low
I. Q., of sex, and of health was carefully studied. Attempts were made to compare the degree of adjustment found in this school with that in other schools.

REPORT OF THE FINDINGS CONCERNING I. Q.'S
I. INTELLIGENCE OF CONCANNON HIGH SCHOOL PUPILS AND OTHER DATA WHICH

SUBSTANTIATED THESE
FINDINGS

Dr. Robert M. Hutchins, President of Chicago University, recently said, "The development of the intellect is the special concern of education. It must be restored to its position of primacy in the American schools." Granting that this be true, the best method to use in the development of the intellect must be conditioned to a great extent by the level of intelligence which any given community possesses. Dr. Symonds, although interested primarily in the personality phase of the individual, believes that this information can be secured most economically from the results of an intelifigence test. He says, "Probably more information concerning a pupil's abilities can be had in a short time through an intelligence test than can be obtained in any other way."

1
Robert M. Hutchins, "We Are Getting No Brighter," The Saturday Erening Post, December 11, 1937, pp. 5-7, 98.

## 2

Percival M. Symonds, "Testing Program for the High School," School Review, 40: 97~108, February, 1932.

The writer, believing that Dr . Symands was right, gave the Henmon-Nelson Group Test of Mental Ability and the distribution of intelligence of the Concannon pupils was established. A summary of this information left no doubt of the heterogeneity of the present-day high school from the standpoint of intelligence. The findings of this study which are presented by classes in Table II would doubtless be approximated in any community of similar occupational and economic status.

TABLE II*
SUMMARY OF CHRONOLOGICAL AGE, MENTAL AGE, AND INTHLLIGENCE QUOTIENT FINDINGS

BY CLASSES

|  |  | Seniors | Juniors | Sophomores | Freshmen |
| :--- | :--- | :---: | :---: | :---: | :---: |
| C. A. | Oldest | $20-1$ | $18-7$ | $17-10$ | $17-2$ |
| (Nov. 9, | Youngest | $15-6$ | $15-4$ | $14-6$ | $12-11$ |
| 1937) | Range | $4-7$ | $3-3$ | $3-4$ | $4-3$ |
|  | Median | $17-6$ | $16-6$ | $15-10$ | $15-2$ |
|  | Highest | $20-3$ | $17-10$ | $18-1$ | $18-4$ |
|  | Lowest | $12-2$ | $11-11$ | $11-11$ | $10-10$ |
| M. A. | Range | $8-1$ | $5-11$ | $6-2$ | $7-5$ |
|  | Median | $16-5$ | $15-1$ | $15-1$ | $14-4$ |
|  | Highest | 127 | 113 | 117 | 131 |
|  | Lowest | 76 | 74 | 74 | 68 |
|  | Q. | Range | 51 | 39 | 43 |
|  | Median | 103 | 94 | 97 | 63 |
|  |  |  |  |  | 95 |

*This table is read as follows: the chronological age of the oldest senior was 20 years and 1 month, of the oldest junior 18 years and 7 months, of the oldest sophomore 17 years and 10 months, and of the oldest freshman 17 jears and 2 months, et cetera.

A careful study of Table II reveals some rather starting facts: (l) the range in mental age exceeds the range in chronological age in every class; (2) the median mental age of the junior and sophomore classes is exactly the same, 15 years and 1 month; (3) the median mental age Of the freshman class is only nine months below that of the junior class which is two school years in advance of it according to educational classification; and (4) the senior class is the only class which has a median I. Q. as high as 100.

A further analysis of the intelligence test results showed that ninetymeight of the 250 pupils had an I. Q. of 100 or above, and that one hundred fifty-two had an I. Q. below 100. The boys showed a higher percentage with I. Q. of 100 or above than did the girls. This is given by classes in Table III.

TABLE III
DISTRIBUTION OF I. Q.'S 100 OR ABOVE BY SEX

| Class | Boys | Girls |
| :--- | ---: | ---: |
| Seniors | 12 out of 19 | 13 out of 17 |
| Juniors | 8 out of 31 | Io out of 36 |
| Sophomores | 14 out of 29 | 9 out of 31 |
| Freshmen | 22 out of 52 | Io out of 35 |
| Total | 56 out of 131 | 42 out of 119 |
|  | or 42.8 per cent | or 35.3 per cent |

This test also bore out the rather general impression that the male sex is inclined toward the upper and lower extremes, whereas the female sex tends to cluster 3
more closely about the central tendency. Only two girls were represented in the ten highest $I$. Q.'s; only three girls were among the ten Iowest I. Q.'s. Table IV presents this information in detail.

TABLE IV
THE TEN HIGHEST AND THE TEN LOWEST I. Q.'S OF CONCANNON HIGH SCHOOL ACCORDING TO SEX

| The Ten Highest | The Ten Lowest |
| :---: | :---: |
| 131 | $68^{*}$ |
| 130 | 70 |
| $127^{*}$ | 71 |
| 124 | $74^{*}$ |
| 123 | 74 |
| 121 | 74 |
| 117 | 75 |
| 116 | 76 |
| 116 | 76 |
| $115^{*}$ | $77^{*}$ |

*Girls

3
Bdmund S. Conklin, Principles of Adolescent Psychology (New York: Henry Holt and Company, 1935), p. 39 .

In order to have a broader basis for comparison than the local school, the results were next compared by olasses (1) with the norms established for the HenmonNelson Test based on returns from the testing of 212,034 pupils in twenty-nine states; (2) with the accepted idea of normal distribution of intelligence; (3) with the distribution of intelligence of American born white children, 4 ages 2 to 18 , according to Terman.

In every comparison, the school as a whole fell bee low norms established for the nation at large. A study of the senior class seemed to indicate that elimination of many of those of lower mental ability had taken place; however, the junior class did not show superiority over the sophomore and freshman classes. These comparisons are given on the following pages in Tables $V$ and $V I$, and Figure 1.

Table $V$, page 17 , indicates that the classes of Concannon High School fell below the established norms for the Henmon-Nelson Test in every case. The junior class made an especially poor showing, as it fell twelve points below the norm for that group.

From Table VI, page I8, it is evident that the enrollment of Concannon High School does not represent a highly

4
Lewis M. Terman and Maud A. Merrill, Measuring Intel11gence (Boston: Houghton Mifflin Company, ig37), p. 37.
selected group on the basis of I. Q.'s; on the other hand, with the exception of the senior class its enrollment falls below the normal distribution of $I$. Q.'s for the entire nation.

Figure l, page 19, presents further evidence that Concannon High School has few pupils of exceptional ability from a scholastic standpoint.

TABLE $V$
CLASS MEDIANS COMPARED WITH MEDIANS OF HENMON-NELSON TESTS

| Class | Concannon <br> Median <br> Score | Median Score for <br> TestUsed in 29 <br> States | Points Be- <br> low Norm |
| :--- | :---: | :---: | :---: |
| Senior | 53 | 58 | 5 |
| Junior | 42 | 54 | 12 |
| Sophomore | 44 | 50 | 6 |
| Freshman | 37 | 41 | 4 |

TABLE VI

## INTEELIGENGE OF CONCANNON PUPILS COMPARED WITH NORMAL

 DISTRIBUTION OF INTELLIGENCE
p. 79.

* Lewis M. Terman, The Measurement of Intelligence (Chicago: Houghton Miffilin Company, 1916),


Such convincing evidence of mental ability below the normal needed to be substantiated by other corollary studies. The occupations of fathers, size of families, education of parents, and broken homes were then studied. All of these are supposed, in the opinion of many educators, to reflect upon the intelligence of the children. These findings were then compared with the findings of other studies in an attempt to explain the variation of this community below the norm.

1. Occupations of fathers. Concerning the relationship between occupational status and the degree of intelligence, Pintner says:

A natural but probably very rough selective process is gaing on all the time, whereby the less intelligent are relegated to simpler occupations and only the more intelligent survive in more complex occupations. 5

On the same subject, Terman writes:
In the army data the mean test-scores of recruits, classed accarding to civilian occupation regularly decreased from the higher to the lower occupational levels. Numerous subsequent studies have shown that a similar relationship exists between the intelligence of children and parental occupation. 6

5
Rudalph Pintner, Intelligence Testing (New York: Henry Holt and Company, 1931), p. 492.

6
Lewis M. Terman and Maud A. Merrill, Measuring Intelligence (Boston: Houghton Mifflin Company, 1937), p. 48.

In the light of the above quotations, if it could be proved that a disproportionately large per cent of the fathers of this community are in the lower occupational levels, some justification would be found for the rather low ranking of the children on the intelligence test. The occupations of the 209 fathers of Concannon High School pupils were compared with the occupations of $38,077,804$ emw ployed males in the United States in 1930, according to Goodenough's classification. The outstanding finding in this comparison was the preponderance of unskilled or day laborers found among the fathers of the children of this school in comparison with the nation as a whole. The fact that 60.3 per cent of the male patrons of this school are listed as day laborers in contrast with 19.5 per cent for the nation as a whole helps greatly to verify and confirm the I. Q. findings. Table VII, page 22, gives complete occupational comparisons of this community with the entire nation. This seems to be a fair comparison, as the pupils were asked to give, if the father were onemployed at present, the work which he had regularly done when he had employment.

7
Ibid., p. 14.

## TABLE VII

## COMPARISON OF OCCUPATIONS OF CONCANNON FATHERS WITH OCCUPATIONS OF $38,077,804$ HMPLOYED MALES IN THE UNITED STATES IN 1930

|  | Father's Occupational Classification | Percentage of Enployed Males in United States | Percentage Distribution of occupations of Fathers of Concannon Pupils |
| :---: | :---: | :---: | :---: |
| I. | Professional | 3.1 | 1.0 |
| II. | Semi-professional and managerial | 5.2 | 1.9 |
| III. | Glerical, skilled trades, and retail business | 15.0 | 4.8 |
| IV. | Farmers | 15.3 | 12.4 |
| V. | Semi-skilled occupations, minor clerical positions, and minor businesses | 30.6 | 9.6 |
| VI. | Slightly skilled trades and other occupations requiring little training or ability | 11.3 | 10.0 |
| VII. | Day laborers (urban and rural) | 19.5 | 60.3 |
|  | Total | 100.0 | 100.0 |
|  | Total number | 38,077,804 | 209 |

2. Size of family. Many investigators assert that there is a direct relationship between the number of children in a family and the intelligence of those children. This is especially true at present because of child-labor laws and compulsory school-attendance laws which make children a continued expense rather than an early asset to the family income as they formerly were. Consequently, the more intelligent parents who quite naturally have intelligent offspring are limiting the size of their families so that a high standard of living may be maintained. Dow states, "There is everywhere a decrease in the size of the modern family, especially among the educated and cultured 8 classes." Professor Muckerman of Kaiser Wilhelms-Institut of Berlin obtained the following results in his study of this subject. Of four thousand noted university professors, 15 per cent were childess; the average number of children to a family was 2.8; about one fourth of these die before they are married. For these same families in a single generation, there had been a 43 per cent decrease in average number of children per family. Similar investigation

8
Graver Samuel Dow, Saciety and Its Problems (New York: Thomas Y. Crowell Company, 1929, p. 250.

9
Fditorial, "Birth Rate: Dying Out of Intellectual Families, "Mind and Body, 37:216, November, 1930.
of peasant families in villages showed six or seven children in a family with no higher mortality rate than in smaller fomilies.

This evidence indicates that as a general rule the children from large families will be duller than those from small families. The Concannon families were compared 10 in size with the report given in the World Almanac for 1938. This comparison proved that the community studied has much larger families than the nation as a whole. For example, the median number of children per family for the nation was between one and two, but the median number for Concannon families was between four and five. Details of this comparison are given in Table VIII, page 25. The writer of this study realizes that this comparison is not a fair one in all respects. The very fact that this study is dealing with a parent group reduces to zero the percentage of families with no children. In addition, the fact that these parents are parents of high-school pupils means they are old enough to have several children. However, 57.9 per cent of these pupils are mambers of families of four or more children. This, in itself, is incontrovertible

10
Yorld AImanac (New York World Telegram, 1938), p. 50.
evidence of large families in this community.

TABLE VIII
NUMBER OF CHILDREN IN CONCANNON HIGH SCHOOL FAMILIES COMPARED WITH THE NOMBER

OF GHILDREAN IN ALL AMERICAN FAMILIES ON A PERGENTAGE BASIS

| Children per Family | Percentage in <br> United States | Percentage in Con <br> cannon High School |
| :---: | :---: | :---: |
| 0 | 31.4 | 0.0 |
| 1 | 22.0 | 6.2 |
| 2 | 18.1 | 14.4 |
| 3 | 11.8 | 21.5 |
| 4 | 7.2 | 21.5 |
| 5 | 4.3 | 9.1 |
| 6,7, or 8 | 4.6 | 18.7 |
| 9 or more | .7 | 8.6 |
| Medians | $1+$ | $4+$ |

If it is granted that there is a relationship between size of family and brightness of the children, the intelligence of these pupils as a group would be expected to fall below the normal distribution.

Within the community itself, this study showed that the average number of children in the families of those ninety-eight pupils whose I. Q.'s were 100 or higher was 4.3; on the other hand, the average number of children in the families of those l52 pupils whose I. Q.'s were below 100 was 4.7. Although the difference was not pronounced,
it is significant to note that there was a pasitive relationship between intelligence and the smaller families.
3. Broken homes. Educators who look upon the I. Q. as quite variable, rather than relatively constant, believe that broken homes have a depreciating effect upon the intelligence of the children within them. This, they say, is due to the emotional stress and strain experienced, and the rather adverse environment which often is characteristic of the broken home. It was difficult to make a comparison of the percentage of broken homes represented at Concannon High School with broken homes for the nation because the Bureau of the Census does not make this information available. However, sample studies have been made on this subject. In 1930, Professor Ogburn found that of a group which included wives forty-four years of age or younger, and husbands forty-nine years of age or younger, there were 14.6 per cent of the homes broken by divorce, desertion, or death.

Miss Campbell in a study of 185 homes found that

11
Frnest R. Groves, The American Family (Chicago: J. B. Lippincott Company, I934), p. 265.

12
Marian Wendelm Campbell, "The Effect of the Broken Home Upon the Child in School," The Journal of Educational Psychology, 5:274-281, January, 1932.
thirty-four, or 18.3 per cent of them, were broken. Incidentally, she reached the conclusion that no relationship exists between a broken home and ability to do school work. 13
Shideler computed that 19.3 per cent of all homes with children were broken in the year 1910. Sociologists believe this to be a fair estimate at the present time. The present study found that sixty-one of the 250 pupils, or 24.4 per cent of them, come from broken homes. In other words, virtually one out of every four pupils who attend Concannon High School is from a home broken by a death, divorce, or desertion. This certainly is a deplorable situation from a sociologic and economic standpoint. However, the results of this finding agreed with those of Miss Campbell in that there was no noticeable relationship between broken homes and intelilgence of the children from them. Speaking numerically, 39.3 per cent of the sixty-one pupils from broken homes possessed an I. Q. of 100 or above as compared with 39.2 per cent of the entire school tho ranked equally high. The high percentage of broken homes, therefore, did not aid in substantiating the low I. Q. finding. The broken home percentages given

Meyer F. Nimkoff, The Family (Boston: Houghton Miffin Campany, 1934), p. 421.
by Ogburn, Campbell, Shideler, and this study are illusw trated by Figure 2, page 29.
4. Education of parents. A report by Nemzeb and 14 Finch based on several studies supervised by the University of Minnesota found definite positive correlation between the intelligence of children and the education of their parents. The same relationship seemed to exist concerning the education of either the father or the mother.

Since there is a concurrence of findings by investigators on this point, if Concannon parents have less education than the adult population in general, further proof would be added to substantiate the I. Q. findings for this community.

After extended search for statistics on this subject, the writer found these statements concerning the education of the adults of the United States:

Thirty-three per cent of the nation's adult population have at least entered high school.

Fourteen par cent of all adult persons have graduated from high school or have continued their education beyond that point.

Three per cent of the country's adult population

14
C. L. Nemzeb and F. H. Finch, "Education of Parents and Intelligence of Children," Psychological Clinic, 22:263-9, December, 1933.


STUDIES OF BROKEN HOMES
have graduated from college and four per cent more have attended college. 15

Substituting similar information for the education of parents of the Concannon High School pupils, the statements would read:

Sixteen and five tenths per cent have at least entered high school.

Seven and nine tenths per cent have graduated from high school or have continued their education bejond that point.

Two and four tenths per cent have graduated from college and one and nine tenths per cent more have attended college.

Since these parents are old enough to have children In high school, they probably are not comparable with all adults. On the other hand, they probably are not very old, since they still have children in school. Thus it is seen that the parents of this community have not reached the standard of education attained by the adults of the nation.

Thirty-three of the 418 parents of pupils of this high school were found to be at least high-school graduates. These parents furnish thirtymone of the 250 pupils who attend

## 15

School Activities (Topeka, Kansas: School Activities Publishing Company), December, 1937, p. 190.

Concannon High School. Only six of these thirty-one fell below the median of their class in I. $Q$. Of this group of thirty-one, 63.5 per cent had an I. Q. of 100 or above in contrast with the 39.2 per cent of the entire group who rated that high.

Table IX, page 32, gives a complete summary of the findings concerning the formal education of parents of this community.

In concluding this part of the study, it may be said that occupations of fathers, size of family, and education of parents substantiated the rather low level of mental ability depicted by the intelligence test. However, the large number of broken homes was not found to influence the I. Q. rating.

TABLE IX*
EDUCATION OF PARHANTS OF CONCANNON
HIGH SCHOOL PUPILS

| Extent of Formal Education | FATHERS |  | MOTHERS |  | BOTH |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Per Cent | Number | Per Cent | Number | Per Cent |
| Not an eighth grade graduate | 119 | 56.9 | 82 | 39.2 | 201 | 48.1 |
| Eighth grade graduate (only) | 70 | 33.5 | 78 | 37.3 | 148 | 35.4 |
| Attended high school (only) | 11 | 5.3 | 25 | 12.0 | 36 | 8.6 |
| High school graduate (only) | 3 | 1.4 | 12 | 5.7 | 15 | 3.6 |
| Attended college (only) | 4 | 1.9 | 4 | 1.8. | 8 | 1.9 |
| College graduate | 2 | 1.0 | 8 | 3.8 | 10 | 2.4 |
| Total | 209 | 100.0 | 209 | 100.0 | 418 | 100.0 |

*This table is read as follows: one hundred nineteen, or 56.9 per cent of the fathers, are not eighth-grade graduates; eighty-two, or 39.2 per cent of the mothers, are not eighth-grade graduates; and two hundred one, or 48.1 per cent of the four hundred eighteen fathers and mothers combined are not eighth-grade graduates, et cetera.
II. CORRELATION OF TEACHERS' RANKING OF PUPILS WITH THEIR I. Q. ${ }^{\text {I }}$ S

In order to ascertain how keenly teachers sense the difference in innate ability of their pupils, two teachers who were teaching all members of a given class were asked to rank the members of that class according to innate ability rather than achievement in a particular subject. Six different teachers, designated as $A, B, C, D, E$, and $F$, participated in this ranking of the four classes.

The rankings given the pupils were then correlated by classes ith the I. Q. rankings. The method of rankdifferences was used in all correlation studies.

$$
p=1-\frac{6 \Sigma D^{2}}{N\left(N^{2} 1\right)}
$$

This formula gave the rank order coefficient of correlation which was transmuted into a product-moment $\underline{x}$ by means of a table prepared for that purpose.

The average correlation found for each class was: senior, .72; junior, .53; sophomore, .76; freshman, .57. The findings indicated that these teachers knew their pupiI material quite well in general. Although these correlations are significant, they are far from perfect ones and allow for many cases of under or overestimations of considerable degree in individual cases. -Table $X$, page 34, presents this material in full.

TABLE X
CORRELATION OF TEACHER RATING
WITH I. Q.'S

| Teacher | Class | Correlation |
| :---: | :--- | :---: |
| A | Senior | .76 |
| B | Senior | .68 |
| A | Junior | .51 |
| C | Junior | .54 |
| D | Sophomore | .78 |
| B | Sophomare | .74 |
| E | Freshman | .62 |
| F | Freshman | .51 |
|  | Combined | .64 |

III. CORRELATION OF SGHOLARSHIP INDEX

WITH MENTTAL AGE

The ideal would be to find a perfect correlation between scholarship index and mental age, or between work done and ability to do work. In making this study the following values were given to the letter grades made by the pupils: $A=100 ; B=75 ; C=50 ; D=25 ; F=0$. The report cards were then studied to establish a scholarship index for each pupil. The scholarship indexes were then ranked and correlated with the ranked mental ages by classes. A positive correlation was found in all classes. The correlation was highest for the senior class and lowest for the junior class
with the sophomore and freshman classes showing practically the same coefficient of correlation. The junfor class should be studied carefully to determine the reason for its low rating compared with other classes of the same school. Table XI gives these correlations.

TABLE XI
CORRELATION OF SCHOLARSHIP INDEX
WITH MENTAL AGE

| Class | Correlation |
| :---: | :---: |
| Senior | .78 |
| Junior | .35 |
| Sophomore | .62 |
| Freshmen | .60 |
| Combined | .59 |

IV. FAVORITE SUBJECTS OF THESE PUPILS AND
THE EFFFECT OF THE I. Q.
UPON THEIR CHOICE

Each pupil was asked to name his favorite subject. No opportunity was given for discussing the question with friends or classmates. The subjects named were then sum-. marized in table farm by classes and an attempt was made to find the relation between choice of subject and intelligence of pupils.

Of the ninety-eight pupils who, according to this
intelligence test, had an I. Q. of 100 or above, fortynine named either EngIish, science, mathematics, social studies, or Latin as their favorite subject; the other forty-nine of this group preferred either typing, physical education, home economics, industrial arts, bookkeeping, music, art, or health. Thus, they were found to be equally divided between the traditional collegepreparatory subjects and the subjects more recently added to the curriculum.

Considering the entire group of 250 , some relationship between intelligence and favorite subject was found. For example, one and one half pupils with I. Q. of 100 or above named mathematios as their favorite subject for every one pupil with I. Q. below 100. Approximately the seme relationship existed for social studies. On the other hand, a pupil with I. Q. below 100 was found to be two and one half times as likely to choose home economics, industrial arts, or art as his favorite subject as one with an I. Q. of 100 or above.

In general, the results for the study of this one school indicated that there is only a slight relationship between the favorite subject of a pupil and his intelligence. Table XII, page 37, Figure 3 , page 38 , and Table XIII, page 39, illustrate the findings of this portion of the survey.

TABLE XII
FAVORITE SUBJECTS AS NAMED BY PUPILS OF CONCANNON HIGH SCHOOL

| Subjects | NUMBER OF EACH CLASS CHOOSING: |  |  |  | TOTALS |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Seniars | Juniors | Sophomores | Freshmen | Number | Per Cent |
| English | 6 | 6 | 15 | 14 | 41 | 16.4 |
| Typing | 6 | 28 | 0* | 0* | 34 | 13.6 |
| Physical Education | 0 | 1 | 10 | 19 | 30 | 12.0 |
| Science | 3 | 0 | 1 | 23 | 27 | 10.8 |
| Mathematics | 3 | 2 | 10 | 11 | 26 | 10.4 |
| Social Studies | 4 | 6 | 9 | 0* | 19 | 7.6 |
| Home Economics | 2 | 4 | 5 | 4 | 15 | 6.0 |
| Industrial Arts | 1 | 1 | 4 | 8 | 14 | 5.6 |
| Bookkeeping | 5 | 6 | 0* | 0* | 11 | 4.4 |
| Music | 2 | 4 | 4 | 1 | 11 | 4.4 |
| Art | 2 | 7 | 0* | 0* | 9 | 3.6 |
| Health | 0 | 0 | 0 | 7 | 7 | 2.8 |
| Latin | 2 | 2 | 2 | 0* | 6 | 2.4 |
| Total | 36 | 67 | 60 | 87 | 250 | 100.0 |

*Not offered in this grade.


FIGURE 3

TABLE XIII
FAVORITE SUBJECTS OF THE 250 PUPILS OF CONCANNON HIGH SCHOOL ACCORDING TO I. Q.

| HIGH SCHOOL SUBJECTS | Number of Pupils With I. Q. 100 or Above Choosing | Number of Pupils With I. Q. Below 100 Choosing |
| :---: | :---: | :---: |
| A. Older |  |  |
| English | 14 | 27 |
| Mathematics | 13 | 17 |
| Science | 10 | 13 |
| Social Studies | 9 | 10 |
| Latin | 3 | 3 |
| Total | $\begin{aligned} & 49 \\ & \text { or } 50 \text { per cent } \end{aligned}$ | $70$ <br> or 46.1 per cent |
| B. Newer |  |  |
| Typing | 13 | 21 |
| Physical Education | 12 | 18 |
| Music | 6 | 12 |
| Bookkeeping | 5 | 11 |
| Health | 5 | 7 |
| Home Economics | 3 | 6 |
| Industrial Arts | 3 | 5 |
| Art | 2 | 2 |
| Total | $\text { or } 50 \begin{aligned} & 49 \\ & \text { per cent } \end{aligned}$ | 82 or 53.9 per cent |

Table XIII indicates that the $I$. Q. does not enter prominently into the choice of favorite subjects by pupils.

## V. THE PER CENT OF THESE PUPILS WHO <br> INTEND TO ENTER COLLEGR

Everyone is fully aware of the tremendous increase in the high-school enrallment during the past few years. There is a similar increase in college enrollment. It seems that many high-school graduates have not found the financial or social success which has been promised them by commencement speakers and professional educators. The present-day educators are changing their philosophies of education from economic and social values and are speaking a great deal more about education in terms of the wellrounded personality, of useful citizenship, of enricheđ experience of living. However, the school children of today and their parents are still thinking of education in terms of the goals of twenty-five years ago. They believe that they have not attained marked success merely because they have not had quite enough education in the form of years of training. Consequently, they have become "college consciaus" and are going to higher institutions of learning in flocks. They are doing this at great sacrifice of money,
time, and nervous energy. Most of them are doomed to disw 16 illusionment because their goals are wrong.

A survey of the pupils of Concannon High School gave conclusive proar that these boys and girls are noticeably "college conscious." of the entire group of 250 pupils, one hundred ten, or 44 per cent, replied that they intended to enter college upon graduation from high school. There were sixty-one girls, or 51.2 per cent of them, and fortynine boys, or 37.4 per cent, who answered that they will attend college. Although all of them will not be able to carry out their intentions, their stand was indicative of the present trend toward the necessity of acquiring a college education. Incidentally, it may also indicate that school life is more intereating, entertaining, and satisfying than it was in the days of The Hoosier Schoolmaster, or it may mean that there is nothing else for them to do.

In the preceding paragraph, the sex difference in connection with college entrance was brought out-one of every two girls and approximately one boy of every three stated intentions of entering college. There was also a definite relationship between intention of entering college and $I$. $Q$. This study disclosed the fact that 57.2

## 16

Dean Lobaugh, "Educating for Mediocrity," The American School Board Journal, October, 1937, p. 18.
per cent of the ninety-eight with I. Q. of 100 or above answered that they will enter college; however, only 35.5 per cent of the one hundred fifty-two with I. Q. below 100 stated that they will enter college.

A third comparison was made to find the effect of education of parents upon pupils' intentions of going to college. The result of this work was that twenty-four of the thirty-one pupils, or 77.4 per cent, who have at least one parent who is at least a high-school graduate, intend to enter college as compared with 44 per cent of all the pupils. It is obvious, that so far as this study is concerned, parents with at least a high-school education are also eager for their children to continue in school.

These results are summarized in Table XIV, which is given below, Table XV, page 43 , and Table XVI, page 44.

TABLE XIV
PER CENT INTENDING TO ATTEND COLLEGE

| Class standing | GIRLS |  |  | BOYS |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
|  | Yes | NoPer Cent <br> Going | Yes | NoPer Cent <br> Going |  |  |
| Senior | 9 | 8 | 52.9 | 10 | 9 | 52.6 |
| Junior | 22 | 14 | 61.1 | 6 | 25 | 19.4 |
| Sophomore | 13 | 18 | 41.9 | 16 | 13 | 55.2 |
| Freshman | 17 | 18 | 48.6 | 17 | 35 | 32.7 |
| Combined | 61 | 58 | 51.2 | 49 | 82 | 37.4 |

TABLE XV
PUPILS INTENDING TO ATMEND COLLEGE ACCORDING TO I. Q.

| I. Q. | Seniors | Juniors | Sophomores | Freshmen | Combined |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Girls with I. Q. of 100 or above | 7 out of 13 | 5 out of 10 | 8 out of 9 | 6 out of 10 | 26 out of 42 |
| Boys with I. Q. of 100 or above | 9 out of l2 | 1 out of 8 | 11 out of 14 | 9 out of 22 | 30 out of 56 |
| Totel | 16 out of 25 | 6 out of 18 | 19 out of 23 | 15 out of 32 | $\begin{aligned} & 56 \text { out of } 98 \\ & 57.2 \text { or per cent } \end{aligned}$ |
| $\begin{aligned} & \text { Girls below } \\ & 100 \mathrm{I} \text {. Q. } \end{aligned}$ | 2 out of 4 | 17 out of 26 | 5 out of 22 | 11 out of 25 | 35 out of 77 |
| $\begin{aligned} & \text { Boys below } \\ & 100 \mathrm{I} . \text { Q. } \end{aligned}$ | 1 out of 7 | 5 out of 23 | 5 out of 15 | 8 out of 30 | 19 out of 75 |
| Total | 3 out of 11 | 22 out of 49 | 10 out of 37 | 19 out of 55 | 54 out of 152 or 35.5 per cent |

TABLE XVI
PUPILS INTENDING TO ATTEND COLLEGE ACCORDING TO EDUCATION OF PARENTS

| Concannon High Schaol <br> Pupils | Total Number | To Attend College | Per Cent to Attend <br> College |
| :--- | :---: | :---: | :---: |
| All pupils <br> Pupilswith at least <br> one parent at least <br> a high-school graduate$\quad 250$ | 110 | 44 |  |

## CHAPTER III

# RHPORT OF THE FINDINGS CONCERNING ADJUSTMENT OF CONCANNON HIGH SCHOOL PUPILS 

# I. TEACHER SELECTION OF WELL ADJUSTED <br> AND MALADJUSTED PUPILS VERSUS 

SELECTION BY THE ADJUSTMENT
QUESTIONNAIRE

In order to understand the whale child, more must be known about him than his I. Q., important as that is. Among other things, something must be known concerning his adjustment to the world about him. Concerning this point, Lloyd says:

In order to interpret test findings as accurately as passible, it is necessary to know as much as can be learned about the home and community backgrounds. Unless we know how his home and community have modified his emotional life, norms tell us little; they become only dogmas to clag rather than clear our perception of the child's needs and potentialities. 1

The second major division of this thesis was an attempt to make a study of the personality adjustment of the pupils of Concannon High School. This furnished an excellent supplement for the I. Q.- study.

1
MIIma Lloyd, "Can Mental Tests Contribute to Mental Health?" Pragressive Education, 11:473-7, December, 1934.

Data for this study were obtained from two sources: (1) Eleven teachers who were well acquainted with the student body in general were asked to list the ten pupils whom they considered the best adjusted and the ten pupils who were in their opinion the most poorly adjusted members of the high school. (2) The Adjustment Questionnaire by Symonds was given.

This questionnaire was divided into seven parts as follows:
Section
Number of Items
I. Curriculum ..... 22
II. Social Life of the School ..... 12
III. Administration ..... 9
IV. Teachers ..... 35
V. Pupils ..... 33
VI. Home Life ..... 19
VII. Personal ..... 20Total 150
Each question was answered by underlining the word "Yes" or "No" as printed in the right-hand column of the questionnaire blank. The questions are so arranged that the answers occur in random order, "Yes" appearing fiftyfive times and "No" ninety-five times. The questions were also framed so that about half suggest the positive and
about half the negative.
There were now only 240 pupils in the high school. Three juniors, one sophomore, and six freshmen had dropped out. The eleven teachers who cooperated in this experiment used the entire 240 pupils as a group from which to make their selection on the basis of adjustment. When a summary of the names Iisted as the ten best adjusted and the ten most poorly adjusted had been made, the following results were obtained: (I) Sixty different pupils, 29 boys and 31 girls, had been mentioned at least once as being among the "ten" best adjusted members of the high school-14 seniors, 19 juniors, 13 sophomores, and 14 freshmen had been named; (2) Sixty-six different pupils, 34 boys and 32 girls, had been named as being among the "ten" most poorly adjusted--11 seniors, 17 juniors, 18 sophomores, and 20 freshmen made up this group. In the best adjusted group, 1 pupil had been listed by six teachers; 1 by five teachers; 15 by two teachers; and 33 by one teacher. In the group designated as the ten most poorly adjusted pupils, 2 pupils had been listed by seven teachers; 10 by three teachers; 12 by two teachers; and 42 by one teacher.

The findings listed in the preceding paragraph indicate definitely a lack of agreement on the part of teachers
in the selection of well-adjusted and maladjusted pupils. This study bears out the contention that pupils often conduct themselves very differently in the presence of different teachers.

When the Adjustment Questionnaires had been checked and compared with teacher selection of well and poorly adjusted pupils, there was only one duplication of names in each group. In other words, only one pupil making one of ten highest scores on Adjustment Questionnaire was found among the ten receiving the highest number of teacher votes as one of ten best adjusted. Exactly the same thing proved to be true at the other end of the scale.

The almost total disagreement between teacher sem lection and the findings of the questionnaire needs some explanation. Dr. Symonds, maker of the questionnaire, may have a partial answer for this lack of agreement. He says, "The Adjustment Questionnaire gives a measure of those who have good or poor mental hygiene rather than of those 2 who are likely to be recognized by others as problems." According to Howard and Patry, "The teacher selects children Who are problems; the mentel hygienist selects children

2
Percival M. Symonds, Measurement of Personality Adjustment of High School Pupils, "Teachers College Record, 37:232-3, December, 1935.
with problems." Other than these attempted explanations, nothing could be found to prove which was the more valid test for pupil adjustment. However, since the Adjustment Questionnaire was given to all and has been standardized, it will be used as the basis of comparison for the other findings. Of a possible 150 points, the scores ranged from 34 to 139 points with a median score of 105.8 points.

The average per cent of possible points scored for each of the seven divisions of the questionnaire is given in Table XVII, page 50. The best adjustment was in relation to home; the poorest in relation to self. The relatively high adjustment in relation to their homes seems to indicate that the pupils, having spent more time in them than anywhere else, have made a fairly good adjustment to them. The very low degree of personal adjustment indicates that adolescents encounter many perplexing problems in trying to bridge the gap between childhood and adult life. For example, l2l of the 240 pupils stated that they wished there was someone who could tell them the things about sex which they would like to know. These l2l pupils were practically evenly divided according to school classification and sex.

3
Frank E. Howard and Frederick L. Patry, Mental Health (New York: Harper and Brothers, 1935), p. 300.

TABLE XVII
PER CENT OF TOTAL POSSIBLE POINTS SCORED FOR EACH DIVISION OF THE ADJUSTMENT QUESTIONNAIRE

| Class | I <br> Curriculum | Sacial Life <br> of School | III <br> Administration | IV <br> Teachers | V <br> Pupils | VI <br> Home | VII <br> Personal | Combined <br> Total |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Senior | 65.8 | 72.0 | 71.4 | 72.0 | 79.6 | 80.3 | 56.8 | 71.7 |
| Junior | 64.5 | 78.5 | 67.7 | 66.3 | 69.3 | 75.3 | 52.3 | 67.0 |
| Sophomore | 64.9 | 76.6 | 68.7 | 68.2 | 72.0 | 79.8 | 53.1 | 68.7 |
| Freshman | 64.6 | 75.5 | 66.9 | 73.8 | 66.9 | 76.4 | 56.2 | 68.6 |
| Combined | 65.0 | 75.7 | 68.7 | 70.1 | 70.0 | 78.0 | 54.6 | 69.0 |

II. THE EFFECT OF NUMBER OF CHILDREN IN FAMILY, OF BROKEN HOMES, OF I. Q.'S, OF SEX, AND OF EDUCATION OF PARENTS UPON PERSONALITY ADJUSTMENT

1. Number of children in family. A summary of the effect of number of children in family upon personality adjustment disclosed the lowest average number of points scored by children who are the only child in the family, and the highest average by those who are one of either two or four children. Table XVIII gives these findings in full. These findings are in keeping with the somewhat general opinion that an only child is often a poorly adjusted child.

TABLE XVIII

> EFFECT OF NUMBER OF CHILDREN IN FAMILY UPON THEIR PERSONALITY ADJUSTMENT

| Number of Children <br> in Family | Number of Cases | Average Number <br> of Points Scored |
| :---: | :---: | :---: |
| 1 | 12 | 95.3 |
| 2 | 31 | 104.9 |
| 3 | 50 | 100.9 |
| 4 | 51 | 104.7 |
| 5 | 27 | 102.3 |
| 6,7, or 8 | 49 | 102.4 |
| 9 or more | 20 | 103.3 |

2. I. Q.'s. Are the intelligent people the happy, contented people, or does intelligence cause dissatisfaction and unrest? In order to throw some light upon this long-debated question, the ranked scores of the Adjustment Questionnaires were correlated with the renked intelligence scores. A low but positive correlation was found. The coefficient of correlation for all classes combined was .149, which was a little lower than the 26 found by Symonds in a composite finding for six different studies. The relationship between intelligence and adjustment is, therefore, too low to be significant. Complete findings are given in Table XIX.

TABLE XIX
CORRELATION OF ADJUSTMENT SCORES
AND I. Q.'S

| Classes | Coefficient of Correlation |
| :--- | :---: |
| Seniors | .167 |
| Jumiors | .000 |
| Sophomores | .199 |
| Freshmen | .230 |
| Combined | .149 |

3. Health. The only measure of the health of Concannon pupils available was the pupils' own answers to the question in the Adjustment Questionnaire, "Are you in good health?" Of the one hundred twenty-five boys in the study, only eleven of them, or 8.8 per cent, answered "No." However, nineteen, or 16.5 per cent, of the one hundred fifteen girls answered "No." The eleven boys who said that they were not in good health scored an average of 96.9 points on the Adjustment Questionnaire, and the eighteen girls Who admitted poor health scored an average of 97.2 points In comparison with an average of 103.0 paints for the entire group of two hundred forty pupils. This finding indicated a positive relationship between health and adjustment. This may not have a great deal of significance, however, as the measure of health was not an accurate one. Table XX summarizes the relationship between health and adjustment.

TABLE XX
RELATIONSHIP BETWEFHN HEALTH AND ADJUSTMENT

| Concannon High <br> School Pupils | In Poor Health | Per Cent | Average Score <br> on <br> Adjustment Test |
| :--- | :---: | :---: | :---: |
| Boys | 11 | 8.8 | 96.9 |
| Girls | 18 | -16.5 | 97.2 |
| Combined | 29 | 12.1 | 97.1 |
| Of All Pupils |  | 103.0 |  |

4. Sex. The girls of this school were slightly better adjusted than the boys on a percentile basis. They scored higher on each percentile division than did the boys. The median scare for the boys was 103.8 , and the median score for the girls was 109.1. This finding agreed with the general opinion that girls are more willing to conform and are less inclined to rebel against the "status quo" than are boys. Percentile scores for the Adjustment Questionnaire findings are given by sexes in Table XXI, page 56.
5. Broken homes. The scores of the fifty-five pupils from broken homes compared favorably with the scores of the entire school; the median score for the entire school was 105.8 , and the median score for those from broken homes vas 102.5. Thus it seems that despite the emotional and mental stress undergone by those in broken homes, they for the most part do adjust themselves to new situations. Percentile scares are given for pupils from broken homes in Table XXI, page 56.
III. PERSONALITY ADJUSTMENT IN CONCANNON HIGH SCHOOL COMPARED WITH THAT

IN OTHER SGHOOLS

Owing to the fact that the study of personality is a
recent development, studies corresponding to this one were difficult to find. The manual accompanying the Adjustment Questionnaire gave the percentile norms based on the results as obtained from a study of 248 tenth-grade boys. From the 30 th percentile up, the Concannon pupils showed higher norms than did the 248 tenth-grade boys. However, for percentiles 5,10 , and 20 , the norms for this study were lower than those for the tenth-grade boys. This indicates that although in general the Concannon pupils are well adjusted, they present more problem cases or near problem cases than the other school. Table XXI, page 56, gives a sumary of adjustment by percentiles for the study by Symonds, for the 240 pupils of Concannon as a group, by sexes, and for the fifty-five pupils who are from broken homes. Figure 4, page 57, gives the adjustment of Concannon pupils compared with the results from Symonds's study.

TABLE XXI

## SUMMARY OF FINDINGS OF ADJUSTMENT QUESTIONNAIRE

| Percentiles | ```I Symonds's Study of 248 Tenth- Grade Boys``` | III <br> 240 Pupils of Concannon High School | III <br> 125 Boys of Concannon High School | 115 Girls of Concannon High School | V <br> 55 Pupils of Concannon High School From Broken Homes |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 95 | 127.3 | 133.2 | 132.8 | 133.5 | 132.2 |
| 90 | 122.1 | 128.7 | 128.4 | 129.1 | 129.3 |
| 80 | 115.3 | 122.5 | 120.8 | 123.2 | 120.0 |
| 70 | 110.6 | 117.0 | 114.4 | 119.0 | 115.4 |
| 60 | 105.9 | 112.6 | 109.2 | 114.2 | 110.0 |
| 50 | 101.7 | 105.8 | 103.8 | 109.1 | 102.5 |
| 40 | 97.6 | 100.2 | 98.0 | 103.1 | 97.0 |
| 30 | 92.8 | 93.2 | 92.0 | 95.8 | 85.6 |
| 20 | 87.0 | 86.2 | 84.2 | 87.5 | 81.7 |
| 10 | 80.3 | 75.7 | 70.4 | 77.2 | 70.6 |
| 5 | 72.9 | 68.0 | 65.6 | 69.8 | 65.4 |



## CHAPTER IV

## SUMMARY OF FINDINGS AND RECOMMENDATIONS

## I. SUMMARY OF FINDINGS

1. Concerning I. Q.'s. The general level of intelligence for Concannon High School pupils as pictured by the Henmon-Nelson Test was below that for the United States in general. The Concannon classes fell below the norms established for this test as follows: (I) seniors, five points; (2) juniors, twelve points; (3) sophomores, six points; and (4) freshmen, four points. This was substantiated (1) by the large percentage of fathers who were day laborers; (2) by the large number of ohildren per fam-ily-about 2.5 in excess of the number of children per family In the United States; and (3) by the limited education of parents--proved by this and other studies to have a relationship to intelligence of children. However, the large percentage of broken homes was not faund to be closely related to intelligence of children.

In general, the teacher rankings of intelligence correlated positively (.64) with I. Q. rankings, but differences were very pronounced in many individual cases which could easily lead to misunderstanding of the child and poor
mental health on the part of both teacher and pupil. The correlation between scholarship indexes and I. Q.'s was reasonably high (.59), but still low enough to be far short of the ideal, which would be perfect correlation.

A survey of favorite subjects of pupils showed a wide choice. The five subjects named most frequently were English (41), typing (34), physical education (30), science (27), and mathematics (26). The fact that one hundred nineteen pupils, or 47.6 per cent of them, chose one of the traditional high-school subjects indicated that those subjects must still make an appeal to young people. The relationship between intelligence and choice of subject was not pronounced. Other factors, such as teachers of certain subjects, or friends taking certain subjects seemed to enter prominently into the making of the decision.

The pupils of this high school are rapidly becoming "college conscious," as indicated by 44 per cent stating that they intend to enter a college upon graduation from high school. More girls than boys said that they will enter college. There was a positive relationship between intelligence and intention of entering college. The education of parents was directly related to intention of entering college.
2. Concerning personality adjustment. There was
almost a total disagreement between those selected by the Adjustment Questionnaire and by eleven teachers as the ten best adjusted and the ten most poorly adjusted pupils of the high school.

An only child was found to be the most unfavorable condition for good personality adjustment. Any number of children per family was better than one, and those who were one of two or of four children made the highest average scores.

Those from broken homes scored only slightly lower than all pupils taken together. In other words, children from broken homes seemed approximately as well adjusted as those from unbroken homes.

There was a very law positive correlation (.149) between intelligence and adjustment. This indicates that adjustment is more a matter of emotion than of intellect.

The girls scored higher than the boys, indicating possibly that the educational system is better suited to girls than to bays.

The relationship between adjustment and health was very definite. The low average score made by those who said they were not in good health was evidence that illness reflects upon attitudes and dispositions of pupils.

## II. RECOMMENDATIONS

The findings of this thesis are important only as they are used to fit the school to the pupils. One very important use which this study can serve is to aid in Iocating children who are unusually gifted. These pupils cannot always be selected from a group by their appearance nor by their regular classroom work. The writer's grandfather stoutly maintained that many a race horse had been plowed to death. In the present freshman class of Concannon High School, a boy appeared last fall with hair well down over his shirt collar, the heaviest of shoes, and the coarsest of clothing. He was found to be a poor writer, only an average speller, and very curt and abrupt in manner. This boy was ranked fifty-sixth in a class of eighty-seven by one of his teachers. When the intelligent tests were cheoked, he was found to have an I. Q. of 130 , the second highest of the two hundred fifty pupils. Needless to say, this lad will receive more attention than he would have otherwise. This is only one of many examples of discrepancies between teacher rating and I. Q. as found by the test. Pupils of this type, capable of making contributions to the world, should be located and given an opportunity for training worthy of their intellect.

Another way to utilize this material is by using it to promote good mental hygiene in teachers and pupils. The results of one group intelligence test should not be taken as final; however, having verified its findings, in the words of Howard and Patry, "Teachers should be at all times human, natural, reasonable, tolerant, and respoctful of pupil performance on his own level of ability." ${ }^{1}$

The knowledge of the I. Q. certainly should be a great help in directing pupils into the right occupational level and away from occupations for which they are obviously unsuited. On this subject, Freeman says, "Besides preventing failures, the intelligence test may also point the individual to higher realms of achievement than he or 2
his associates contemplated."
Although this survey did not go into a detailed personality study, it furnished material which is basic in making such studies. The personality Adjustment questionnaire is especially useful in throwing the spotlight on those pupils who need individual attention to prevent their becoming pronounced problem cases.

1
Frank E. Howard and Frederick L. Patry, Mental Health (New York: Harper and Brothers, 1935), p. 350.

2
Frank N. Freeman, Mental Tests (New York: Houghton Miffin Company, 1926), p. 409.

In conclusion, this survey should be considered anything other than an exhaustive or final testing program. Although basic, no such claims are made for this study. To be effective, testing must be a continuous process with the results used to adapt the school to the optimal development and welfare of the pupils. In the words of Dr . Symonds:

Records need to be cumulated yearly in order to show development. We lose in trying to interpret a boy or girl by a mere cross-section; $g_{\text {g }}$ longitudinal record of development is needed as well.

3
Percival M. Symonds, "Testing Program for the High School," School Review, 40:97-108, February, 1932.

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