A COMPARATIVE STUDY OF THE ACHIEVEMENT AND INTELLIGENCE OF THE MIGRATORY AND NON-MIGRATORY STUDENTS IN FOUR KANSAS HIGH SCHOOLS

A THESIS

SUBMITTED TO THE DEPARTMENT OF EDUCATION AND THE GRADUATE COUNCIL OF THE KANSAS STATE TEACHERS COLLEGE OF EMPORIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE

BY

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INTRODUCTION

The Problem

> Every great social movement is an experiment in human adaptation .... We, like every generation before us, are experimenting with life, and the degree of perfection which we attain will depend quite as much on our courage to make progressive changes as on our critical insight with regard to our defects.[1]

One of the major changes in the mode of life brought about by the late economic stress in the United States is that a large per cent of the population has of necessity become more mobile. This, in connection with the usual mobility of people employed in industries in the developmental stage, has brought about a shifting enrollment in schools. Such a condition has caused both school officials and parents to wonder what the resulting influence has been upon the status of the school children affected by the changes. Every year many parents are faced with the question: What will be the effect of this move upon the schooling of my child?

Related Studies

A number of studies have been made in different parts of the United States which have had for their purpose a

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[1] C. H. Judd, "Unique character of American secondary education," School Review, 36:99, February, 1928.

comparison of migratory and non-migratory students. Many of the studies, however, have dealt with students who lived for only a short season of the year in one place, or with students who were the children of foreigners and who suffered a language handicap. Very few of the studies have given any consideration to the part that the migratory students take in the extra-curricular activities of the school.

Harold H. Punke's[2] study from the United States census shows there has been a constant migration from the eastern states to the western states with less migration from the western states to the eastern states. There also was an exchanging of migrants with the North and South, the greater per cent going from the South to the North. His study did not include migration within the state.

In Corbally's[3] study of migratory children in the public schools in Washington, an attempt was made to determine whether or not mobility was a factor in retardation or failure. In this study average ages of the eighth grade pupils and high school seniors were determined for each group making a specified number of moves. In the eighth

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[2] Harold H. Punke, "Educational implication of a mobile population," Elementary School Journal, 33:514-526, March, 1933.

[3] John E. Corbally, Pupil Mobility in the Public Schools of Washington. University of Washington Publications in Social Sciences, 5:136, July, 1930.

grade the youngest pupils were those who had made no moves. The group that had made four moves averaged six months older per child than the group that had made no moves. However, in the high school group the number of moves did not seem to bear any definite relation to the average age of each group. The pupils who had been in four different schools averaged only one month more than those pupils who had been in but one different school, while they averaged one month less than the pupils who had made two moves.

In a study[4] concerned chiefly with migratory children of Mexican walnut pickers in Ventura County, California, Cobb found this group to be greatly retarded. The chief problems of school officials in dealing with this yearly influx of students were school housing facilities and enforcement of school attendance laws. Some schools for whites prohibited their attendance and it was necessary to establish migratory school rooms. The migratory parents made a camping out holiday of nut-picking season and one of the large Mexican schools declared a "crop-holiday."

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[4] Wilbur Kirkpatrick Cobb, Retardation in Elementary Schools of Children of Migratory Laborers in Ventura County California. Unpublished Master's Thesis, University of California, Los Angeles, 1933, p. 4.

Sackett,[5] in a study of the children of the Panama Canal Zone, found that the transient children in grades VII and VIII excelled the other children in all subjects measured except in arithmetic computation. The study brought out the fact that only the dull transient children were handicapped. The results of the study led the author to inquire:

> Was the home environment of these transient children more conducive to scholarship than was the home environment of the native children? Has the coming into the new environment stimulated the transient children to greater effort? Had the variety of the school experiences of the transient children proved more effective than the orderly continuous education of the native children?

In Brown's[6] study of the junior and senior high school students of the coal-mining town of Carbon Hill, Alabama, a comparison of the achievement and intelligence of migratory and non-migratory children was made. The students were divided into three groups: Those that had attended from one to two schools, inclusive, before entering the Carbon Hill School, those students who had attended from

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[5] Everett B. Sackett, "The effect of moving on educational status of children." Elementary School Journal, 35:526, March, 1935.

[6] James S. Brown, A Comparative Study of the Achievement and Intelligence of the Migratory and Non-migratory Pupils in the Junior and Senior High School of Carbon Hill, Alabama. Unpublished Master's Thesis, University of Alabama, University, 1935, p. 22.

three to twelve schools, inclusive, before entering the Carbon Hill School, and those students who had spent all of their time in the Carbon Hill School.

The results of the study[7] brought out the fact that the migratory groups had higher average percentile ranks with slightly lower average intelligence quotients when compared with the average percentile rank and the average intelligence quotient of the non-migratory group of the senior high school. However, the difference was not significant.

In no way do the facts indicate that migration retarded the achievement of the students.

Scope of Study

This study is based primarily on the average grades, the intelligence quotient distribution, and the participation in extra-curricular activities of four hundred and seventy-four high school students in the oil field districts of Butler and Greenwood counties in Kansas. No attempt has been made to include all oil field students in the two counties in this study. The schools used in the study are located in the more recent oil development and are of a comparable size.

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[7] Ibid., p. 29

Sources of Data

The data for this study were secured by means of a questionnaire filled in by the students with the aid of their parents when necessary. On this questionnaire the pupils were asked to give their school enrollment for each year from the first grade to their grade classification at the time the study was made. They were asked also to give the date of their birth, their sex, number of states in which they had attended school, number of counties in which they had attended school, and the educational level of each of their parents.

The intelligence quotient and grade record of each student were obtained from school records.

Purpose of the Study

The purpose of the study was to determine if possible whether students who had no language handicap, who were not truant cases, and who were of average intelligence were affected by moving from school to school. How do they compare with students who have not moved? Do their school marks compare favorably with the others, and to what extent do they take part in the various school activities?

Method of Procedure

The grades of the students in all subjects were copied from the permanent records and averaged. A grade of A was given one point; a grade of B, two points; a grade of C, three points; a grade of D, four points, and a failing grade was given five points. The formula $M = \frac{\Sigma f}{N}$ was then used in obtaining the mean or average grade. In the school where figures were used instead of letters the figures were given the following values: 95 - 100 = A, 88 - 94 = B, 80 - 87 = C, 75 - 79 = D, and below 75 = F.

For the purpose of comparison the students were divided into various intelligence quotient levels. The intelligence quotient of each student was determined by his score on the Terman Group Test of Mentality Ability. The intelligence quotient groupings used were 120+, 110 - 119, 90 - 109, 80 - 89, and 70 - 79.

The students of the four schools were then divided into four groups, according to the number of enrollments that each had made. Those students who had made one enrollment only in their progress through school were called Group I; those who had made two and three enrollments were called Group II; those who had made four and five enrollments were called Group III; and those who had made more than five enrollments were called Group IV.

Organization of Succeeding Chapters

In Chapter II some data concerning the number of migratory students included in the study and a comparison of the intelligence quotients of migratory and non-migratory groups are given. In Chapter III a comparison of the scholastic success of the four groups is made. Chapter IV deals with special comparisons and in Chapter V the results of the study are summarized.

CHAPTER II

THE EXTENT OF MOBILITY AND THE I. Q. DISTRIBUTION OF THE FOUR GROUPS

Mobility of the Students of this Study Compared with the Mobility of Students in Other Sections.

In a study by A. G. Capps and W. W. Carpenter[1] the fact is revealed that the population of three Missouri towns, representing 4218 pupils enrolled, had attended schools in thirty-nine states, and in 85 of the 114 Missouri counties. It also revealed the fact that 31.2 per cent of the students had made at least one move. To the extent that Missouri is a typical state, Capps and Carpenter estimate that nearly eight million of the twenty-five million school children of the United States have moved at least once.

Table I shows that 45.15 per cent of the students in the survey under discussion have made two or three moves; 19.83 per cent have made four and five moves; and that 10.76 per cent have made more than five moves.

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[1] W. W. Carpenter and A. G. Capps, "Uncle Sam and his children." School Executives Magazine, 54:70-71, November, 1934.

TABLE I

NUMBER OF STUDENTS BY SCHOOLS AND GROUPS

	Madison	Hamilton	Leon	Lamont	Total	Per Cent
Group I	46	23	33	13	115	24.25
Group II	89	57	45	23	214	45.15
Group III	31	31	27	5	94	19.83
Group IV	24	11	13	3	51	10.76

Read table thus: There were 46 students in Group I from the Madison schools; 23 from Hamilton; 33 from Leon. Read in like manner for other groups.

Table I indicates that the students used in this study were more of a migratory group than those in the study by Capps and Carpenter.

In Table II the students are divided into groups, schools, and grade in school. In each town the greatest number of students is in Group II, that group of students who have made two and three moves. The greater size of the group is probably due to the fact that it contains all of the eighth grade graduates from the rural schools who for the most part have made few changes.

Table II shows that the Freshmen class and the Senior class have in most cases the greatest number of students in Group IV, the group in which the students have made more than five changes. It is shown that there are a great many more students who have moved than there are students who have made no moves.

TABLE II

NUMBER OF STUDENTS BY GROUPS, SCHOOLS, AND GRADE IN SCHOOL

School and Grade	I	II	III	IV
Madison				
Freshmen	8	23	11	7
Sophomore	12	27	9	4
Junior	14	21	6	5
Senior	12	19	5	7
Hamilton				
Freshmen	5	20	13	3
Sophomore	9	15	5	2
Junior	7	12	10	3
Senior	2	9	3	4
Leon				
Freshmen	6	21	8	3
Sophmore	10	7	9	3
Junior	10	10	3	2
Senior	7	7	7	5
Lamont				
Freshmen	4	12	1	0
Sophmmore	6	6	3	3
Junior	3	4	0	0
Senior	0	1	1	0
Total	115	214	94	51

Read table thus: At Madison there were eight freshmen in Group I, twenty-three in Group II. Read in like manner for other towns.

I. Q. Distribution of the Four Groups

For the purpose of comparison the students were divided into various I. Q. levels. Table III shows the I. Q. distribution of the students in the study.

TABLE III

I. Q. DISTRIBUTION OF THE ENTIRE NUMBER OF STUDENTS STUDIED

120+ I. Q.		110-119 I. Q.		90-109 I. Q.		80-89 I. Q.		70-79 I. Q.	
Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
51	10.76	131	27.63	259	54.64	26	5.49	7	1.48

Read table thus: Of the students in the study, there were 51 with I. Q's. above 120; 131 with I. Q's. of 110-119; 259 with I. Q's. of 90-109; etc.

It is shown in Table III that more than ten per cent of the students in the study had I. Q's. of the highest level, while less than two per cent were of the lowest I. Q. level. Over fifty per cent had I. Q's. in the average grouping, or the 90 - 109 level.

It is probable that the high intelligence rating of the students in the four schools might be accounted for by the fact that the group was a very migratory one. It is very likely that many of the students with low mental ability drop school each year. A survey of the attendance records of the schools revealed the fact that school enrollment at two of

the schools, Madison and Leon, dropped considerably toward the end of the school year.

In order to compare the mental ability of the four groups the number and percentages of each of the four groups who were found in each I. Q. level are given in Table IV.

TABLE IV

I. Q. DISTRIBUTION OF EACH GROUP AND THE PERCENTAGES OF EACH

	120+ I. Q.		110-119 I. Q.		90-109 I. Q.		80-89 I. Q.		70-79 I. Q.	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Group I	15	13.04	31	26.96	59	51.30	7	6.09	3	2.61
Group II	19	8.68	60	28.04	117	54.67	16	7.48	2	.93
Group III	15	15.96	29	30.85	46	48.94	3	3.19	1	1.06
Group IV	2	3.92	11	21.57	37	72.55	--	----	1	1.96

Read table thus: In Group I there were 15 students with I. Q's. above 120; 31 with I. Q's. of 110-119; 59 with I. Q's of 90-109; etc.

Table IV shows that only 3.92 per cent of those students who had moved more than five times had I. Q's. above 120, while 13.04 per cent of the non-migratory students had I. Q's. above 120. Group III had the greatest percentage with I. Q's. above 120, and Group II ranked third. Group III ranked first on the next I. Q. level with 28.04; with Group II, second; Group I, third; and Group IV still in last place. On the 90 - 110 I. Q. level, Group IV ranks first; Group II, second; Group I, third; and Group III, fourth. Group II has

the greatest percentage with I. Q's. of 80 - 89, while Group I ranks second; and Group III, third. There are no students in Group IV with I. Q's. of 80 - 89. On the lowest I. Q. level, Group I has the greatest percentage of weak students. Group IV has the next greatest number. Group III is third. Group II has the smallest percentage of students who are in the lowest group mentally.

In Table V, a comparison of the I. Q's. of the groups in the different schools is given. In this table the number and percentage of students in each group of the different I. Q. levels are shown.

In Table V the fact is brought out that there is a small percentage of Group IV with I. Q's above 120. In Madison there is 4.17 per cent of Group IV with I. Q's. above 120. In Lamont where there were only three students in Group IV, one has an I. Q. above 120, which gave Group IV a percentage of 33.33. In Hamilton and in Leon there were no students in Group IV with I. Q's. above 120. The I. Q's. of those students who had moved many times had a tendency to group more around the average I. Q. level than do any of the other groups.

TABLE V

I. Q. DISTRIBUTION OF THE GROUPS IN THE FOUR SCHOOLS

	120+		110-119		90-109		80-89		70-79	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Madison										
Group I	9	19.57	12	26.09	22	47.83	3	6.53	--	-----
Group II	11	12.37	24	26.96	47	52.80	6	6.75	1	1.12
Group III	9	29.03	6	19.35	15	48.35	1	3.23	--	-----
Group IV	1	4.17	4	16.66	18	75.00	-	-----	1	4.17
Hamilton										
Group I	2	8.70	9	39.13	11	47.82	1	4.35	--	-----
Group II	6	10.53	18	31.58	30	52.63	3	5.26	--	-----
Group III	2	6.45	14	45.16	13	41.94	2	6.45	--	-----
Group IV	--	-----	1	9.10	10	90.90	-	-----	--	-----
Leon										
Group I	2	6.06	7	21.21	19	57.58	2	6.06	3	9.09
Group II	2	4.44	8	17.78	28	62.23	5	11.11	2	4.44
Group III	4	14.81	7	25.93	16	59.26	-	-----	--	-----
Group IV	--	-----	6	46.15	7	53.85	-	-----	--	-----
Lamont										
Group I	2	15.38	3	23.08	7	53.85	1	7.69	--	-----
Group II	--	-----	10	43.38	11	47.82	2	8.70	--	-----
Group III	--	-----	2	40.00	3	60.00	-	-----	--	-----
Group IV	1	33.33	--	-----	2	66.67	-	-----	--	-----

----- There was no student in the group.

Read table thus: In Madison there were nine students, or 19.57 per cent of the group with I. Q's. above one hundred and twenty. In Hamilton there were 8.70 per cent of Group I with I. Q's. above 120. Read in like manner for other towns.

CHAPTER III

THE SCHOLASTIC WORK DONE BY THE FOUR GROUPS OF HIGH SCHOOL STUDENTS

One of the major aims of this study has been to find out whether there was any difference between the scholastic achievement of the four groups of high school students. Group I consists of those students who have been enrolled in one school only; Group II consists of the ones who have been enrolled in two and three schools; Group III consists of those who have been enrolled in four and five different schools; and Group IV consists of those who have been enrolled in more than five different schools.

Many families face the problem each year as to whether their children are affected by moving from one place to another. It is to be hoped that the results of this study will indicate whether there is any deleterious effect resulting from the moves.

The grades used in this study were all converted into numerical values. A grade of A was given a numerical value of 1.00; B, 2.00; C, 3.00; D, 4.00; and F, 5.00.

Comparisons were made on five I. Q. levels, namely, 120+, 110- 119, 90 - 109, 80 - 89, and 70 - 79.

The Scholastic Work Done in Madison, Hamilton, Leon, and Lamont

The schools from which the data were obtained for this study did not use the same system of marking. Leon used the percentage system; Lamont used both the percentage and letter systems; and Madison and Hamilton each used the letter system.

Table VI shows the marks received by the students in Madison, Hamilton, Leon, and Lamont for the five I. Q. levels.

TABLE VI

COMPARISON OF THE SCHOLASTIC WORK DONE IN MADISON, HAMILTON, LEON, AND LAMONT

I. Q.	Madison	Hamilton	Leon	Lamont
120+	2.02	2.65	2.08	1.38
110-119	2.41	2.37	2.71	2.45
90-109	2.91	3.12	3.11	2.81
80- 89	3.42	3.59	3.71	3.44
70- 79	3.50	----	3.64	----

Read table thus: The students at Madison with I. Q's. of 120 or above made an average grade of 2.02; those at Hamilton averaged 2.65; those at Leon averaged 2.08; etc.

The students at Lamont on the highest I. Q. level made a much higher average grade than those of the same level at the three other schools. On the second I. Q. level,

the students at Hamilton received the best average grades with Madison second and Lamont and Leon third and fourth. On the average I. Q. level the Lamont students again received the highest average. Madison students received second and Leon and Hamilton third and fourth respectively. On the below average I. Q. level, Madison ranked first; Lamont, second; Hamilton, third; and Leon, fourth. Lamont and Hamilton had no students ranking in the lowest I. Q. level. The Madison students ranked above those from Leon on the 70 - 79 I. Q. level.

It can be seen that the Lamont students had somewhat better average grades than the students from the other schools. This was probably due to the fact that the school is a great deal smaller than any of the other schools, thus making it possible for the students to receive more personal help from the teachers. Another factor which may have caused the Lamont grades to run higher was that there were fewer grades to average on each I. Q. level. However, the grades given to the students of the four schools seemed as a whole to compare very well.

Scholastic Work Done by Groups in Madison, Hamilton, Leon, and Lamont

Table VII shows the distribution of scholastic marks by sex and by groups for the students enrolled in Madison,

Hamilton, Leon, and Lamont. Many interesting facts are presented in this table. It shows that Group II, those who had been enrolled in two and three different schools, had students who made lower grades than were made by any one in any of the other groups. This was probably due to the fact that this group contained the freshmen from the rural schools who at times find it difficult to adapt themselves to the new conditions. It can be seen that Group IV, those who had been enrolled in more than five schools, had no students who made grades below a 3.99 average. This might possibly have occurred because the very weak ones were unable to cope with the new conditions which they met in their moving about, and had dropped out of school before the time of this study. Both Group III and Group I had five students who made average grades below 3.99, or the equivalent of a grade of D. At the other end of the grade range, Group II had more students with an average in the A grade class than did any of the other groups. Groups I and III had students with higher average grades than any occurring in Groups II and IV. It is interesting to note that in Group IV there was no girl with an average below a C grade, and that there was but one boy with an average grade above a B. In Group IV there were four females with average grades above B, which tends to show that girls who move about a great deal do better work than boys who move many times.

TABLE VII

DISTRIBUTION OF SCHOLASTIC MARKS BY SEX AND GROUPS IN MADISON, HAMILTON, LEON, AND LAMONT

Interval	Group I			Group II			Group III			Group IV		
	M	F	T	M	F	T	M	F	T	M	F	T
4.40-4.59				1	1	2						
4.20-4.39	2		2	1		1						
4.00-4.19	2	1	3	5	2	7	3	2	5			
3.80-3.99	1	1	2	6	4	10	3		3	3		3
3.60-3.79	2	1	3	11	4	15	6	1	7	1		1
3.40-3.59	6	3	9	16	5	21	4	4	8	2		2
3.20-3.39	6	4	10	16	10	26	7	2	9	2	5	7
3.00-3.19	6	3	9	11	9	20	7	6	13	8	4	12
2.80-2.99	5	6	11	6	5	11	2	5	7		2	2
2.60-2.79	6	7	13	2	15	17	2	8	10	2	2	4
2.40-2.59	8	5	13	7	8	15	3	3	6	4	4	8
2.20-2.39	4	6	10	8	14	22	2	3	5		1	1
2.00-2.19	1	8	9	6	10	16	3	6	9	1	5	6
1.80-1.99		4	4	1	7	8	1	1	2		1	1
1.60-1.79	2	3	5	2	7	9	2	4	6		1	1
1.40-1.59		5	5	2	6	8					2	2
1.20-1.39	3	1	4	4	2	6		3	3			1
1.00-1.19	1	2	3					1	1			
No. of cases	55	60	115	105	109	214	45	49	94	24	27	51

M - Males; F- Females; T - Totals.

Read table thus: Of the students covered in this study who had a scholastic mark of 1.60 to 1.79, five were in Group I, 3 being females and 2 males; nine were in Group II, 7 females and 2 males; six were in Group III, 4 females and 2 males; one, a female, was in Group IV. Of the 115 students in Group I, three had a mark of from 1.00 to 1.19; eleven had grades between 2.80 and 2.99, and two had scholastic marks of 4.20 or lower. Each row and column may be interpreted in a similar manner.

Table VIII, which gives a comparison of the average marks for each group and the standard deviation, shows that Group I, those students who had been enrolled in but one school, had a better average grade than any of the other groups. Group IV, those students who had been enrolled in more than five schools ranked second; Group II, the ones who had been enrolled in two and three schools, ranked third; and Group III, those who had been enrolled in four and five schools, had the poorest grade average.

TABLE VIII

THE AVERAGE AND STANDARD DEVIATION OF THE SCHOLASTIC MARKS OF EACH OF THE FOUR GROUPS

Group	Average ± σ_{Av}	Standard Deviation ± σ	N
I	2.65 ± .07	.74 ± .05	115
II	2.62 ± .05	.75 ± .04	214
III	2.63 ± .08	.73 ± .05	94
IV	2.76 ± .09	.62 ± .06	51

Read table thus: The average grade index of the 115 students in Group I was 2.65, and the chances are 68 in 100 that the obtained average of all students who might be considered under the conditions of Group I would not deviate from the true average by more than ± .07. Of the scores 68.27 per cent were within a range of ± .74 grade points from obtained average.

In Table VIII it is shown that the average grade index of the 115 scholastic marks of Group I was 2.65, and that 68.27 per cent of these scores were within a range of ± .74 grade points from this average, or within the range of 1.91 - 3.39. The table also shows that the obtained average of 2.65 will, in 68 chances in 100, not deviate from the true average of all students who might be considered under the conditions of Group I by more than ± .07, or the chances are 68 in 100 that the true average will lie within a range of 2.58 - 2.72. The chances are 68 in 100 that the true standard deviation will lie within a distance of ± .05 from the obtained standard deviation or .74, or within the range .69 - .79.

Table IX gives a comparison showing the chances of a true difference between the average scholastic marks of any two of the four groups.

The difference between the average scholastic marks of Groups I and II was -.17 grade points in favor of Group I. The difference is minus because, although the average of Group I is 2.65, and that of Group II is 2.82, a larger numerical index is a lower or less valued grade mark since a mark of 1.00 is an A grade. Therefore, Group I was .17 grade points better than Group II. The table shows that the difference between the average of Group I and Group II will in 97.6 chances in 100 be a difference in favor of

TABLE IX

THE DIFFERENCE BETWEEN THE AVERAGE SCHOLASTIC MARKS OF THE FOUR GROUPS

Groups		*Difference	σ(Diff)	Critical	Chances in 100	
a	b	Av.(b)-Av.(a)		Ratio	a > b	b > a
I	II	- .17	.086	-1.98	97.6	
I	III	- .18	.102	-1.76	96.1	
I	IV	- .11	.111	- .99	83.2	
II	III	- .01	.091	- .11	54.4	
II	IV	+ .06	.101	+ .59		72.2
III	IV	+ .07	.115	+ .61		72.9

*A minus difference means that the average mark of Group (a) is intrinsically higher than that of Group (b).

Read table thus: The difference between the average scholastic marks of Groups I and II was .17 grade points in favor of Group I. The critical ratio was 1.98 which means that there are 97.6 chances in 100 that Group I will make better grades than Group II; etc.

Group I. This is a very significant difference. There are 96.1 chances in 100 that Group I will make better grades than Group III. There are 83.9 chances in 100 that there is a true difference between Groups I and IV with the difference in favor of Group I. The table shows that it would not be reliable to say that Group II is better than Group III because, although there are .01 grade points difference in favor of Group II, there are only 54.4 chances in 100 that Group II would exceed Group III. It can be seen that Group IV ranked second to Group I, because the chances were 72 in 100 that Group IV will exceed both Groups II and III.

Scholastic Work of the Groups by Intelligence Divisions

The fact that the students of the four groups would differ in mental ability had to be taken into account. Group I as a whole proved to be the best group scholastically. Perhaps its average I. Q. was the highest and it should have made the highest average grade. Therefore, the groups had to be compared by I. Q. divisions.

In Table X, the groups are divided into five I. Q. divisions or levels. The highest level includes those students with I. Q's. of 120 or above; the second highest level includes those students with I. Q's. of 110 - 119; the third level, 90 - 109; the fourth level, 80 - 89; and the fifth, 70 - 79.

TABLE X

AVERAGE SCHOLASTIC MARKS AND THE STANDARD DEVIATION OF THE MARKS BY INTELLIGENCE DIVISIONS WITHIN EACH OF THE FOUR GROUPS

I. Q. Division	Group I			Group II			Group III			Group IV		
	Average ± σ(Av)	σ	N	Average ± σ(Av)	σ	N	Average ± σ(Av)	σ	N	Average ± σ(Av)	σ	N
120 +	1.83 ± .14	.55	15	2.08 ± .15	.67	19	2.09 ± .14	.51	15	1.68 ---	---	2
110-119	2.51 ± .11	.59	31	2.47 ± .09	.67	60	2.56 ± .09	.49	29	2.38 ± .16	.52	11
90-109	2.82 ± .09	.70	59	3.03 ± .06	.62	116	3.19 ± .09	.61	47	2.96 ± .09	.55	37
80- 89	3.34 ± .14	.36	7	3.61 ± .15	.60	16	3.65 -----	---	3	----------	---	--
70- 79	3.37 -----	---	3	3.61 -----	---	3	----------	---	--	3.98 -----	---	--

Read table thus: In the I. Q. division of 120 or above the 15 students in Group I made an average grade of 1.83. Of this group 68 per cent of the grades were within a range of ± .55 grade points from the average. The chances are 68 in 100 that the true average will not deviate from the obtained average by more than ± .14 grade points; etc.

The material given in Table X shows that the average mark of the 15 students of Group I having an I. Q. of 120 or higher was 1.83 and that 68 per cent of the marks were within a range of ± .55 grade points from the average. The chances are 68 in 100 that the students having an I. Q. of 120 or higher will not deviate from the obtained average of 1.83 by more than ± .14 or within the range of 1.69 - 1.97. In this table it is shown that there are but two students in Group IV who have I. Q's. of 120 or higher. However, these two students have a higher grade average than any of the other groups on this I. Q. level. There is very little difference between Groups II and III on this I. Q. level. Group IV, those students who had moved more than five times, also had the best grade average on the I. Q. level of 109 - 119. On this level Group II was second; Group I, third; and Group III, fourth. On the I. Q. level of 90 - 109, which is considered the average level, Group I had a better grade average than Group IV. Group II was again better than Group III. On the two lower I. Q. levels there were not enough cases to be treated statistically, and it is, therefore, difficult to make comparisons.

In Table XI a comparison is made, showing the chances of a true difference in the grade average of the four groups in the various I. Q. divisions. Some divisions within the groups had too few cases to be treated statistically and are not considered in this table.

TABLE XI

THE DIFFERENCE BETWEEN THE MARKS OF THE GROUPS BY I. Q. DIVISIONS

Division	Groups a	Groups b	*Difference Av. (b)-Av.(a)	σ(Diff)	Critical Ratio	Chances in 100 a > b	Chances in 100 b > a
120 +	I	II	- .25	.31	-1.22	89	
	I	III	- .26	.20	-1.31	91	
	II	III	- .01	.21	- .05	52	
110-119	I	II	+ .04	.14	+ .28		61
	I	III	- .05	.14	-..35	64	
	I	IV	+ .13	.19	+ .67		75
	II	III	- .09	.13	- .71	76	
	II	IV	+ .09	.18	+ .49		69
	III	IV	+ .18	.16	+ .98		84
90-109	I	II	- .21	.11	-1.94	97	
	I	III	- .37	.13	-2.91	99	
	I	IV	- .14	.13	-1.10	86	
	II	III	- .16	.11	-1.48	93	
	II	IV	+ .07	.11	+ .65		74
	III	IV	+ .23	.13	+1.81		97
80- 89	I	II	- .27	.21	-1.32	91	

*A minus difference means that the average mark of Group (a) is higher than that of Group (b).

Read table thus: The difference in the average grade of Groups I and II on the I. Q. level of 120 or above is .25 grade points in favor of Group I. The difference between the average of Groups I and II on this I. Q. level will in 89 chances in 100 be in favor of Group I.

Table XI shows that on the average I. Q. level the chances are 97 in 100 that there will be a true difference between the average grades of Groups I and II in favor of Group I. There are 99 chances in 100 that Group I will be better than Group III, and 86 chances in 100 that Group I will be better than Group IV. The difference between Groups II and III will in 93 chances in 100 be in favor of Group II. On this I. Q. level it is shown by Table XI that Group IV is better than either Groups II or III.

In a comparison of Groups I and II on the I. Q. level of 120 and above, it is shown in Table XI that in 89 times in 100 there will be a true difference in favor of Group I. The chances are 91 in 100 that Group I will also exceed Group II. The chances that Group II will be better than Group III are only 52 in 100 which is not a reliable difference. Group IV did not have enough cases on this I. Q. level to be treated statistically.

On the I. Q. level of 110 - 119 there were 61 chances in 100 that Group II will make better grades than Group I. This, however, is not a reliable difference. On this I. Q. level there are 64 chances in 100 that Group III will be better than Group I. The chances of a true difference between these two groups are very little above 50 in 100 and therefore are not significant. There are 75 chances in 100 that Group IV will exceed Group I on this I. Q. level, 76

chances in 100 that Group II will be better than Group III, 84 chances in 100 that there will be a true difference between Groups IV and III, and 69 chances in 100 that Group IV will be better than Group II. Due to the lack of a sufficient number of cases on the I. Q. level of 80 -89 there is only one comparison made. It is shown that on this level there are 91 chances in 100 that there will be a true difference between Groups I and II which will be in favor of Group I.

Sex Differences in the Four Groups of High School Students

This section of Chapter III is for the purpose of comparing the scholastic work done by the sexes in the four groups of high school students, and to compare the marks of the boys with the marks of the girls within each of the four groups.

Table XII shows the average and standard deviation of the scholastic marks of each of the four groups by sex.

The average grade index for the 55 males in Group I was 2.86, and the standard deviation was .74. The true average will, in 68 chances in 100, lie within a range of 2.76 - 2.96, and the true standard deviation within a range of .67 - .81. The average grade index of the 60 females in Group I was 2.46, and the standard deviation was .70. The

TABLE XII

AVERAGE GRADE AND STANDARD DEVIATION OF THE SCHOLASTIC MARKS OF EACH OF THE FOUR GROUPS BY SEX

Group	Average ± $\sigma_{(Av)}$	Standard Deviation ± σ	No.
I--Male	2.86 ± .10	.74 ± .07	55
I--Female	2.46 ± .09	.70 ± .06	60
II--Male	3.03 ± .07	.74 ± .05	105
II--Female	2.61 ± .07	.71 ± .05	109
III--Male	3.10 ± .10	.65 ± .07	45
III--Female	2.58 ± .10	.71 ± .07	49
IV--Male	3.00 ± .12	.60 ± .09	24
IV--Female	2.55 ± .11	.57 ± .08	27

Read table thus: The average grade of the 55 males in Group I was 2.86, with 68.29 per cent of the scores within a range of ± .74 grade points from this average. The obtained average will, 68 chances in 100, not deviate from the true average by more than .10 grade points; etc.

The true average will, 68 chances in 100, lie within the range of 2.37 - 2.55, and the true standard deviation within a range of .64 - .76. The number of males and females in each group, the grade index, the range of the true average, the standard deviation, and the range of the true standard deviation may be determined by reading through Table XII.

In Tables XIII and XIV the chances of a true difference in the scholastic marks of the males of each of the four groups, and the chances of a true difference in the scholastic marks of the females of the four groups are shown.

TABLE XIII

THE DIFFERENCE BETWEEN THE AVERAGE SCHOLASTIC MARKS OF THE MALES OF EACH OF THE FOUR GROUPS

Groups		*Difference	σ (Diff)	Critical	Chances in 100	
a	b	Av.(b)-Av.(a)		Ratio	a > b	b > a
I	II	- .17	.122	-1.39	91.8	
I	III	- .24	.139	-1.73	95.8	
I	IV	- .14	.157	- .89	81.5	
II	III	- .07	.121	- .58	71.9	
II	IV	+ .03	.142	+ .21		58.3
III	IV	+ .10	.156	+ .64		73.9

*A minus difference means that the mark of Group (a) is intrinsically higher than that of Group (b).

Read table thus: The males of Group I exceed the males of Group II by .17 grade points or by a critical ratio of 1.39; the chances in 100 of a true difference are 91.8; etc.

Table XIII shows that the true difference between the average grade of the males in Groups I and II will 91.8 chances in 100 be in favor of Group I. The difference between the average grade of the males of Groups I and III will 95.8 chances in 100 be in favor of Group I. It is reliable also that the males of Group I will exceed the males of Group IV. There is very little difference in the males of Groups II and III, but there is some reliability that the males of Group IV will be better than the males of either Group II or Group III.

In Table XIV it can be seen that the females in Group I do better work than the females of any of the other groups.

TABLE XIV

THE DIFFERENCE BETWEEN THE AVERAGE SCHOLASTIC MARKS OF THE FEMALES OF EACH OF THE FOUR GROUPS

Groups a	Groups b	*Difference Av.(b)-Av.(a)	$\sqrt{(Diff)}$	Critical Ratio	Chances in 100 a > b	Chances in 100 b > a
I	II	- .15	.113	-1.33	90.8	
I	III	- .12	.156	- .88	81.1	
I	IV	- .09	.141	- .64	73.9	
II	III	+ .03	.123	+ .24		59.5
II	IV	+ .06	.129	+ .47		68.1
III	IV	+ .03	.142	+ .20		57.9

*A minus difference means that the average mark of Group (a) is intrinsically higher than that of Group (b).

Read table thus: The females of Group I exceed the females of Group II by .15 grade points, or by a critical ratio of 1.33; the chances in 100 of a true difference are 90.8; etc.

The chances are 90.8 in 100 that there will be a true difference between the average grades of the females of Groups I and II which will be in favor of Group I. Table XIV shows also that there is considerable reliability that the females of Group I will make better grades than the females of either Group III or Group IV. The table shows that there are scarcely more than fifty chances in 100 that there will be a true difference in the grades of the females of Groups II, III, and IV. Therefore, it cannot be said with any degree of certainty that the females of any one of these groups will do better work than those of any other group.

In Hayden's study[1] it is shown that all the differences between the school marks earned by the males and females were in favor of the females.

Table XV of this study makes a comparison of the grades of the males and females in each of the four groups.

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[1] Murle M. Hayden, A Comparative Study of Urban Resident, Rural Resident, and Rural Non-resident Pupils in Three Kansas High Schools (Unpublished Master's Thesis, Kansas State Teachers College, Emporia, 1935), p. 40.

TABLE XV

THE DIFFERENCE BETWEEN THE AVERAGE SCHOLASTIC MARKS OF THE MALES AND FEMALES WITHIN EACH OF THE FOUR GROUPS

Groups a	Groups b	*Difference Av.(b)-Av.(a)	σ(Diff)	Critical Ratio	Chances in 100 a > b	Chances in 100 b > a
I--M	I--F	- .40	.134	-2.99	99.9	
II--M	II--F	- .42	.099	-4.24	100.	
III--M	III--F	- .52	.141	-3.69	100.	
IV--M	IV--F	- .45	.164	-2.74	99.7	

*A minus difference means that the average mark of Group (a) is intrinsically better than Group (b).

Read table thus: The females of Group I exceed the males of Group I by .40 grade points; the critical ratio is 2.99, and the chances in 100 of a true difference between the average of the sexes are 99.9.

It is evident that the results of the comparison of the scholastic marks of the males and females agree with the results obtained by Hayden.[2] Table XV shows that in every group the females had a better grade average than the males. In Groups II and III the chances are 100 in 100 that there will be a true difference in the averages which will be in favor of the females. In Group I the chances are 99.9 in 100 in favor of the females, and in Group IV in 99.7 chances in 100 there will be a true difference in favor of the

[2] Ibid., p. 40.

females. The differences in averages are from .40 - .52 grade points which might mean the difference between a grade of B and a grade of C, or the difference between a grade of A and a grade of B, etc.

Summary and Conclusions

The students in Group I, those who had been enrolled in but one school, made the highest average grades. Group IV, those students who had been enrolled in more than five schools, made the second highest grades; Group II, those students who had been enrolled in two and three schools ranked third; and Group III, those students who had been enrolled in four and five different schools, had the poorest grade average.

That Group I ranked first is probably due to the fact that since the students had been in the same school system during their entire school life they did not have to adjust themselves to new conditions as did those in Groups II, III, and IV. In many cases those in Group I had known their grade school and high school teachers since the student first entered school. The fact that the high school teachers had known the history of the pupil, and had perhaps known the parents of the child very well, in many cases, probably caused the student to receive better marks than he deserved. It might be expected that Group IV would be more of a selected

group than any of the others because in the moving from school to school the weaker students would tend to be eliminated.

When the students are compared by the various I. Q. levels, it is seen that Group I excels Group IV only on the average and below average I. Q. divisions. This tends to show that students of a high mental ability are not affected by being moved from school to school, but that those of average intelligence or below average intelligence do not do as well as those who have not moved at all. There were not enough students in Group IV on the highest I. Q. level to be treated statistically, but those in Group IV that were on this level made higher grades than the other groups. On the 110 - 119 I. Q. level, Group I^V made better grades than the other groups. Group IV probably made better grades than Groups II and III on all levels, because as Table VII shows, it was more of a selected group than either Group II or Group III. There is very little difference in the average grades of Groups II and III, although what difference there might be is in favor of Group II.

In the comparison of the sexes of the four groups, Group I is shown to have done the best school work. However, Table XIV shows that the females in Group I do not show as much superiority over Group IV as was shown in Table IX where all of the students in the groups were compared.

This would tend to show that the girls who move a great deal adapt themselves to the new conditions better than do the boys.

Table XIV brings out the fact that there was more difference between the average grade of the boys who had not moved and the average grade of those who had moved than there was difference between the average of the groups as a whole or of the girls in the different groups. This would indicate that the boys are helped more by staying in one school than are the girls.

The girls of all groups made better grades than the boys. This may be due to: (1) the influence of disciplinary problems on the teachers' marks, (2) interest of the boys in out-door sports and games, (3) earlier physiological development of girls, or, (4) outside work done by the boys.

CHAPTER IV

SPECIAL COMPARISONS, INCLUDING PARTICIPATION IN EXTRA-CURRICULAR, PARENTAL EDUCATION, AND SCHOLASTIC MARKS RECEIVED IN ENGLISH IX

The Participation of the Four Groups in Extra-Curricular Activities

It is the purpose of this section of Chapter IV to deal with the participation of the students of the four groups in the extra-curricular activities of the schools. Do those who move and attend many schools take part to a greater extent than those who attend only one school? Do those students who come in from the rural schools take as much part in activities as those who have always gone to the city schools? These are the questions under discussion in this section of the chapter.

The extra-curricular activities used in this discussion are athletics, music, dramatics, clubs, and debate. The data used in the comparison of the participation of the four groups in extra-curricular activities are presented in Figures 1, 2, 3, 4, 5, and 6.

Figure 1 gives a comparison of the participation of the students in athletics. This figure divides the students into towns and groups. It may be seen that in Madison, Groups III and IV far outranked Groups I and II in participation in athletics. That is to say, those students who had

gone only to the Madison Grade School and those had moved only two or three times did not take part in athletics to the extent that did those who had moved more than four or five times. In Hamilton 87 per cent of the students in Group I took part in athletics. Group IV was second; Group II, third; and Group III, last. In Leon Group IV ranked first; Group III, second; Group II, third; and Group I, last. The number of students in each group at Lamont was so small that the results were hardly reliable. Group III was first at Lamont; Group II, second; Group I, third; and Group IV, last.

Figure 2 shows the participation of the schools and groups in music. In Madison High School the students of Group I took the most active part in the musical organizations of the school. Group II ranked second; Group IV, third; and Group III, fourth. In the Hamilton High School Group I again ranked first in participation in the musical organizations of the school; Group III was second; Group II was third; and Group IV was last. Group I was in first place at Leon with the other groups ranking Group IV, Group III, and Group II. Groups III and IV ranked above Groups I and II in the Lamont High School.

Figure 3 shows that in every school a greater percentage of the students in Groups I and IV took part in dramatics than did those students in Groups II and III.

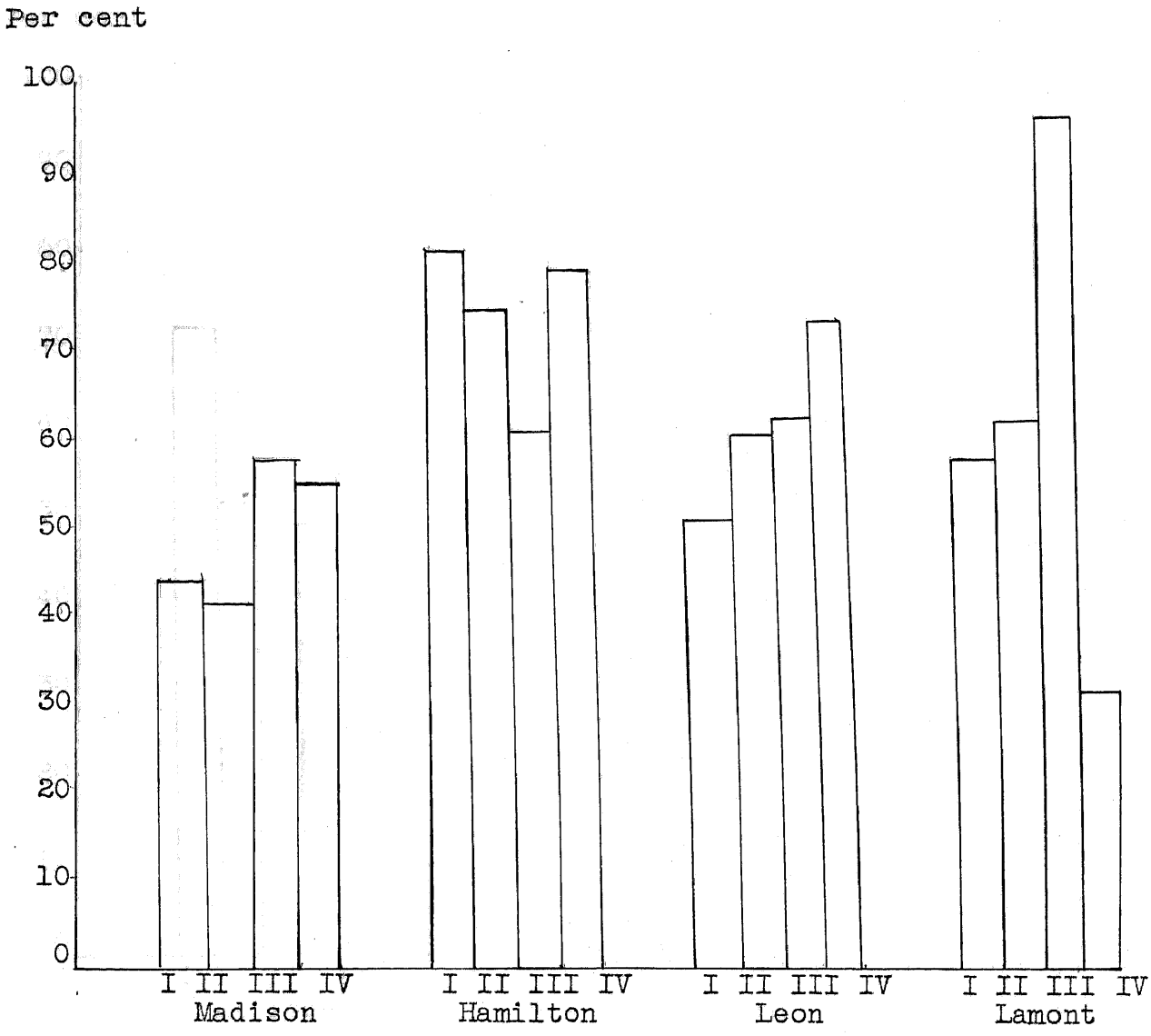

FIGURE 1

PARTICIPATION OF THE FOUR GROUPS IN ATHLETICS

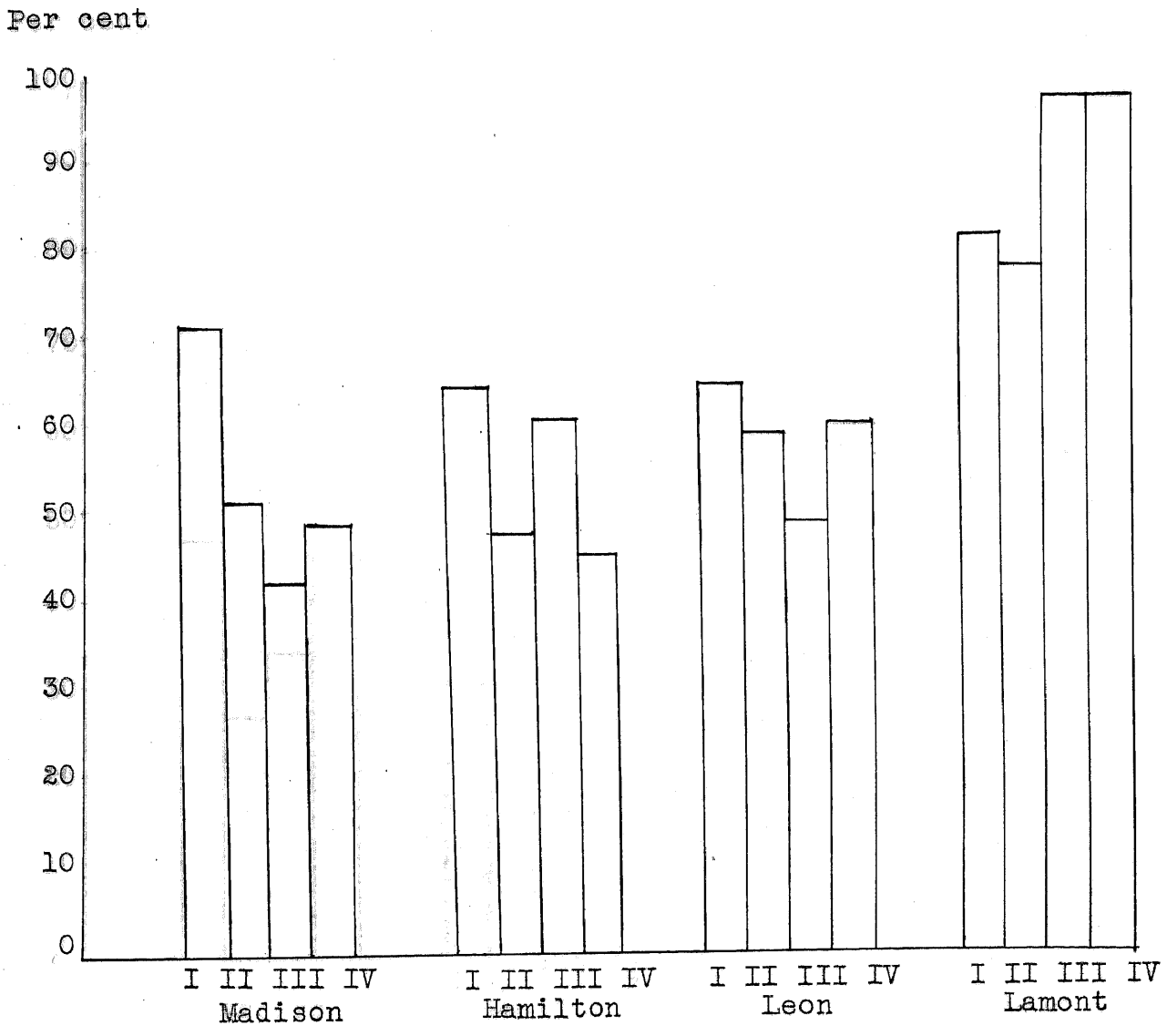

FIGURE 2

PARTICIPATION OF THE FOUR GROUPS IN MUSIC

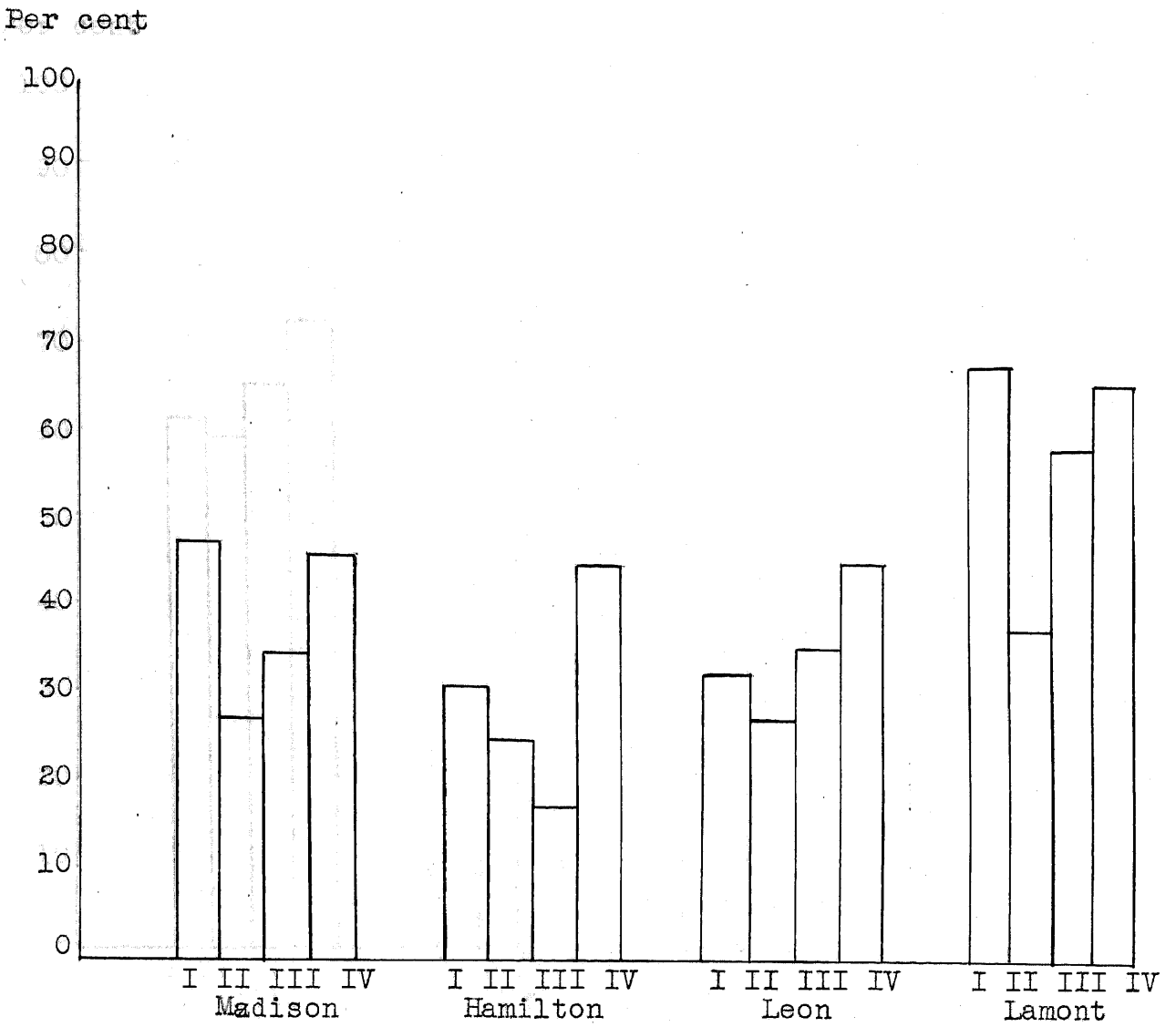

FIGURE 3

PARTICIPATION OF THE FOUR GROUPS IN DRAMATICS

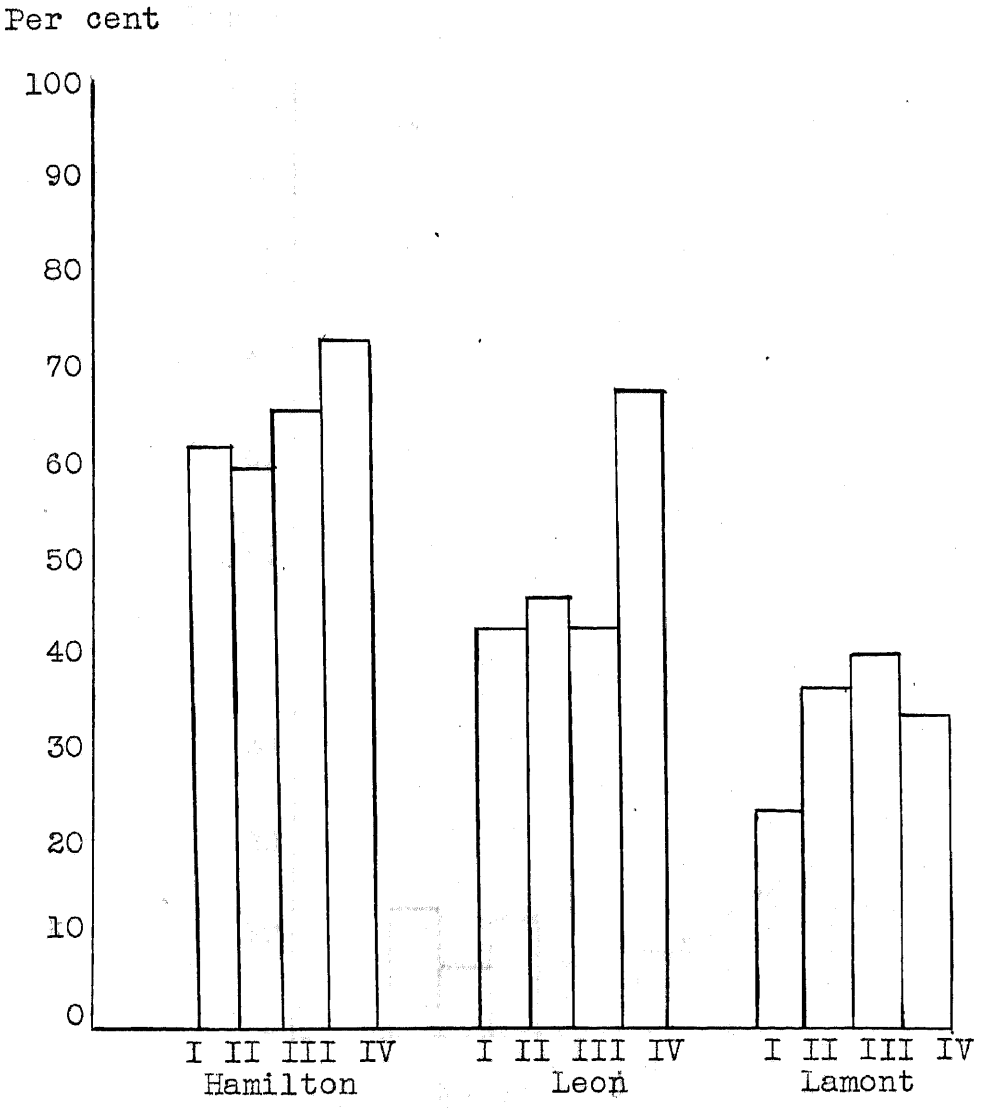

FIGURE 4

PARTICIPATION OF THE FOUR GROUPS IN CLUB WORK

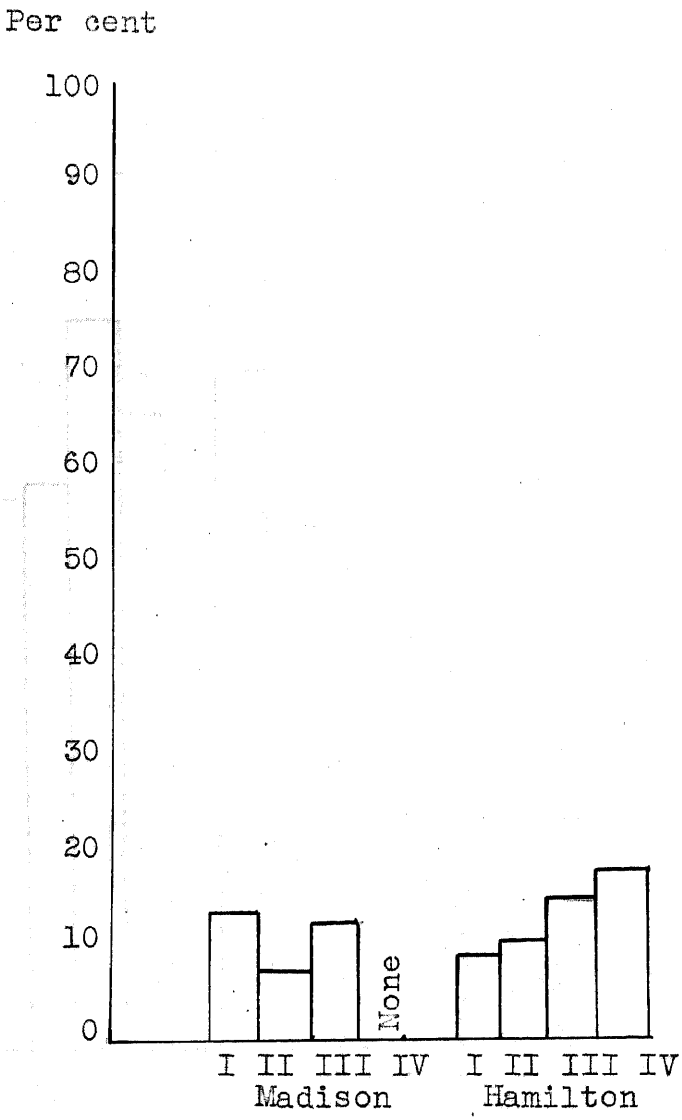

FIGURE 5

PARTICIPATION OF THE FOUR GROUPS IN DEBATE

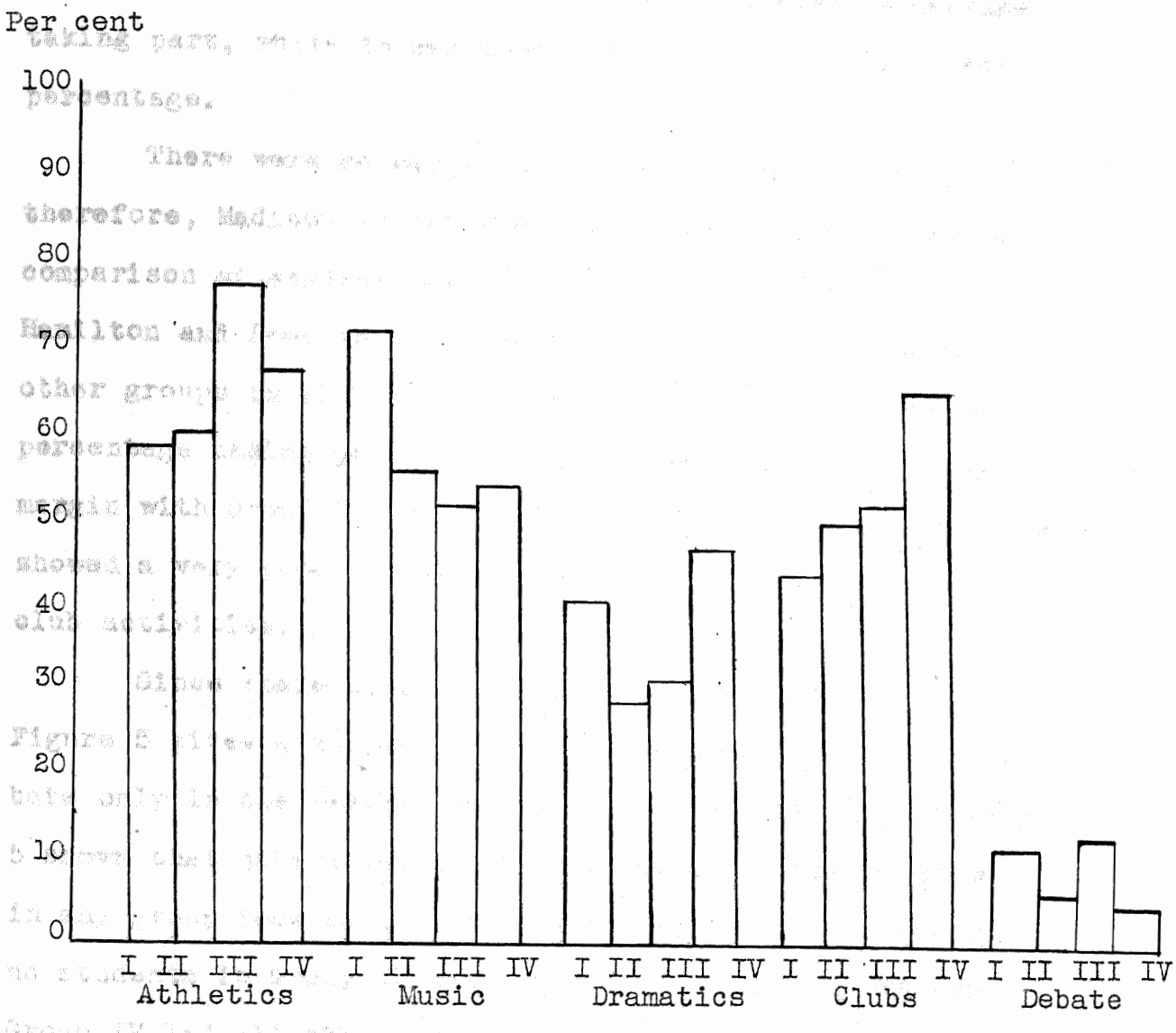

FIGURE 6

PARTICIPATION OF THE FOUR GROUPS IN ALL ACTIVITIES
IN ALL OF THE SCHOOLS COMBINED

In three of the schools Group II had the lowest percentage taking part, while in one school Group III had the lowest percentage.

There were no clubs in the Madison High School; therefore, Madison is omitted from Figure 4 which gives a comparison of student participation in club work. In the Hamilton and Leon schools, Group IV ranked above the three other groups in club activities. Group I had the lowest percentage taking part at Lamont. Group III led by a small margin with Group II second and Group IV third. All schools showed a very good percentage of the students taking part in club activities.

Since there were no debate teams at Leon and Lamont, Figure 5 gives a comparison of student participation in debate only in the Madison and Hamilton High Schools. Figure 5 shows that only a very small percentage of the students in any group took part in debating activities. In Madison no students in Group IV were in debate, while in Hamilton Group IV led all other groups. Group I led in Madison, but in Hamilton Group I was last. Group III was second in both schools.

In Figure 6 all of the schools are combined and a comparison is made of the participation of the four groups in the various extra-curricular activities. The figure shows that in athletics the migratory students, Groups III

and IV, took part to a greater extent than did Groups I and II. In music the order of ranking was reversed with Groups I and II participating more than Groups III and IV. Group IV led the other groups in dramatics. Group I was second with Groups III and II ranking third and fourth. Group IV had the smallest per cent of students taking part in debate. Group II was next to the last; Group I was second and Group III ranked first.

Educational Status of the Parents Represented in the Four Groups

It is not the purpose of this discussion to prove that a correlation exists between the scholastic attainment of the students in the groups and the educational status of their parents. This section of Chapter IV is merely for the purpose of giving a comparison of the educational attainments of the parents within the various groups.

Table XVI gives a comparison of the educational level reached by the parents in each of the four groups. This table presents the fact that Group IV, those parents who had moved the greatest number of times, had the greatest percentage of people who failed to go to school beyond the fifth grade. Of this group, 8.34 per cent did not reach the sixth grade level. However, fewer parents in this group than in any other left school after completing the eighth grade.

TABLE XVI

EDUCATIONAL ATTAINMENTS OF THE PARENTS BY GROUPS

Grade	Group I	Group II	Group III	Group IV
Below 5	2.65%	2.97%	5.5 %	8.34%
5	.53	1.08	.55	4.17
6	3.18	4.86	4.4	6.25
7	4.24	5.13	4.95	6.25
8	50.35	44.28	49.5	38.55
9	7.42	12.15	9.38	8.33
10	11.39	4.86	4.92	5.2
11	2.65	4.86	1.65	4.16
12	6.36	11.88	12.65	13.55
1 yr. College	4.77	2.7	1.1	-----
2 yrs. College	3.18	1.89	1.1	3.12
3 yrs. College	-----	.54	1.00	-----
4 yrs. College	3.18	2.7	3.30	2.08

Read table thus: In Group I, 2.65% of the parents did not reach the 5th grade. .53% of the parents completed the 5th grade. Read in like manner for the other groups.

The comparison here ranges from 38.55 per cent in Group IV to 50.35 per cent in Group I. This is a variation of 11.50 per cent, which is a greater difference in the level of parental education of the groups than is shown at any other point. Group IV also exceeds all others in per cent of high school graduates. The second greatest degree of variation among the groups exists at this point. This is the difference between 6.36 per cent for Group I and 13.55 per cent for Group IV, or 11.8 per cent difference. College graduates showed a variation of only 1.22 per cent in the table, this ranging from the lowest, 2.08 per cent, found in Group IV to the highest, 3.30 per cent, in Group III.

In this survey the educational attainment of the parents of Group IV is of greatest interest to the reader since the subject under discussion is pupil mobility. This group contained the greatest percentage of parents who left school below the fifth grade; in contrast it contained the smallest percentage who left school at the eighth grade, and the greatest percentage who had completed high school. This may be explained in part, at least, by the fact that the majority of them are employees of various oil companies. Employment with these companies covers a great variety of tasks demanding varying degrees of skill, ranging from ordinary unskilled day labor commonly known as "pipe-lining" to engineers of plants, bookkeeping, and executive positions.

The financial condition of the parents is on the whole secure, and they make a practice of keeping their children in school until they have finished high school. The parents in this group would be considered as young to middle aged, since the oil companies have strict age requirements. This comparative youth of the parents probably also had a bearing on the fact that a greater per cent have finished high school. It is the custom of the men in Group IV to secure positions with their companies for their children as they are graduated from high school. The fact that they are able to secure good paying jobs with only a high school education is very likely the dominant reason that so few of them go to college.

Group I would naturally consist largely of the business and professional people of the towns, the steady laborers, and a certain number who in late years are coming to be designated as "on relief." This group would be a much older group of parents on the whole, and a perusal of the questionnaires used in collecting the data for this survey shows that finishing the eighth grade completed the education of 50.35 per cent of this group, and that only 6.36 per cent completed a high school course. This may be explained in part by the lack of high school facilities when they were of high school age. Many parents in this group list a few months in schools for special training, such as undertaking schools, and business colleges. Doctors, dentists, and

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mothers who have been teachers raised the percentage of college graduates in this group to 3.18 or the second highest of all the groups.

The greatest number of parents in Group II were farmers, the parents of children having made one move in school, from rural school to high school. Of these the questionnaires showed many cases in which the mother's education was superior to that of the father. For example, the father had completed the eighth grade, and the mother had completed from one to four years of high school work. This would seem to indicate that it has been the custom for rural parents to send the daughters on to high school and to put the sons to work. There were also a good many instances in which the father had completed only the fourth or fifth grade and the mother had an eighth grade education.

Group III cannot be classed as people of mainly any one type of occupation. It contained some of those listed in each of the other groups. The only outstanding thing about the parental education of this group was that it had a larger percentage of college graduates than any other group. There seems to be no logical explanation for this, as those parents who had finished college included one construction engineer, one salesman, three wives of farmers, and one wife of an oil field pumper who had but a fifth grade education.

Figure 7 shows the results of Table XVI graphically. Since the curves of the four groups for the most part follow each other very closely, it would seem that there was not sufficient variation in the parental educational attainments to exert very much influence on the scholastic attainments of the students within the groups.

Parental education above the eighth grade places Group II first with 41.58 per cent; Group I second with 38.95 per cent; Group IV third with 36.44 per cent; and Group III fourth with 35.10 per cent. Since, however, the greatest difference is 6.48 per cent, this would not seem sufficient to indicate an appreciable difference in the educational attainments of the parents in the various groups.

The Scholastic Marks Received by Urban and Rural Students in English IX

The purpose of this section of the survey under discussion is to make a comparison of the freshman English grades of those students who took their elementary school English in the rural schools with those students who took their elementary school English in the city schools.

The students of the Madison, Hamilton, Leon, and Lamont High Schools who have, in previous discussions, been divided into four groups are now to be studied intwo groups. The groups are to be known as the urban group and the rural group. Table XVII shows that of the 474 students in the

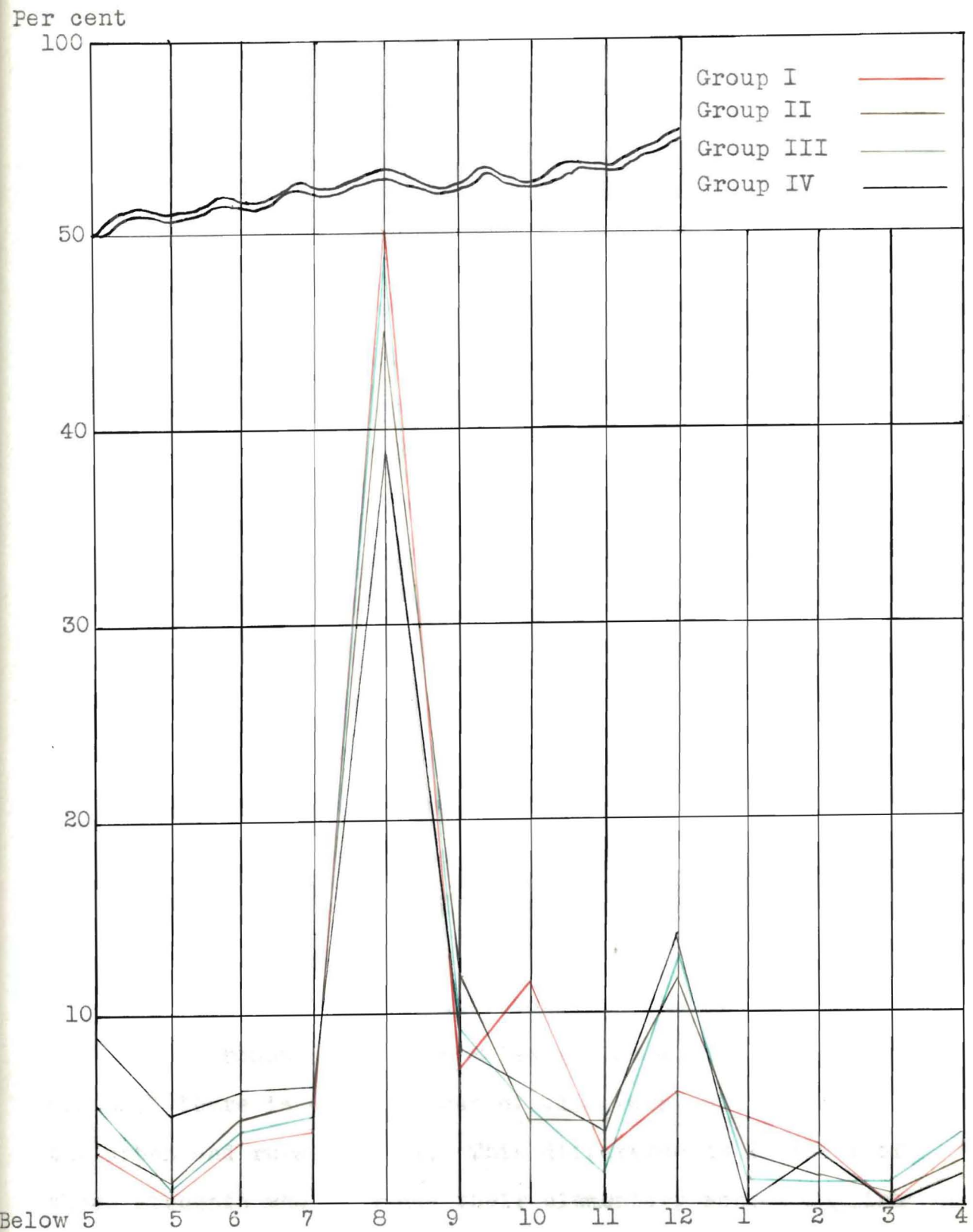

FIGURE 7

EDUCATIONAL ATTAINMENT OF THE PARENTS BY GROUPS

The figures on the base line represent the years of schooling completed by the parents. The percentages are on the Y-axis.

survey, 233 were boys and 241 were girls. In the urban group there were 241 students, and in the rural group there were 233. The two groups were very evenly divided, and the males and females within the groups also showed an even division. It can be seen in Table XVIII that there were many more boys who had English grades in the low grade intervals than there were girls, and that many more girls than boys had grades in the high grade intervals. There were 22 urban students who had a freshman English grade average above 1.75, while there were only 10 students in the rural group that had a grade average in that interval.

In Table XVIII, which gives the grade average and the standard deviation for the males and females within the two groups, it can be seen that urban females received better grades than did the urban males. It is also shown that the rural females received better grades than those received by the rural males. Table XVIII shows also that the total urban group received better grades than the total rural group.

Table XIX gives the difference in the average grades of the two groups and of the males and females within the groups. There is a difference of .31 grade points between the urban and rural groups. This difference is in favor of those students who have had their elementary school English in the town school. Table XIX shows that there are 100 chances in 100 or absolute reliability that the urban

TABLE XVII

DISTRIBUTION OF SCHOLASTIC MARKS OF THE URBAN AND RURAL STUDENTS IN ENGLISH IX

	Urban		Rural	
Interval	Male	Female	Male	Female
5.00-5.24	4	1	5	1
4.75-4.99		1		
4.50-4.74	3		6	3
4.25-4.49				
4.00-4.24	23	10	31	19
3.75-3.99				
3.50-3.74	5	4	8	2
3.25-3.49				
3.00-3.24	37	33	43	30
2.75-2.99				
2.50-2.74	5	10	6	11
2.25-2.49				
2.00-2.24	28	55	21	37
1.75-1.99				
1.50-1.74		3		4
1.25-1.49				
1.00-1.24	7	12	1	5
Total	112	129	121	112

Read table thus: In the urban group there were 4 males and 1 female whose grade average was in the interval 5.00-5.24; in the rural group there were 4 males and 1 female with grade averages in the same interval. The total number of males in the urban group was 112; etc.

TABLE XVIII

AVERAGE GRADE AND STANDARD DEVIATION OF THE SCHOLASTIC MARKS OF THE URBAN AND RURAL STUDENTS IN ENGLISH IX

Group	Average ± $\sigma_{(Av)}$	Standard Deviation	N
Urban	2.67 ± .06	.928	241
Urban Males	2.94 ± .09	.964	112
Urban Females	2.43 ± .07	.827	129
Rural	2.98 ± .06	.908	233
Rural Males	3.23 ± .08	.846	121
Rural Females	2.71 ± .08	.895	112

Read table thus: The average mark of the students in the urban group was 2.67. The standard error of the average obtained is ± .06 which means that in 68 chances in 100 this obtained average will not deviate from the true average by more than ± .06 grade points. The standard deviation was .928 and there were 241 students in the urban group.

TABLE XIX

THE DIFFERENCE BETWEEN THE AVERAGE SCHOLASTIC MARKS OF THE URBAN AND RURAL STUDENTS IN ENGLISH IX

Groups a	Groups b	*Difference Av.(b)-Av.(a)	σ(Diff)	Critical Ratio	Chances in 100 a > b	Chances in 100 b > a
T. U.	T. R.	- .31	.084	-3.69	100	
M. U.	M. R.	- .29	.119	-2.44	99.3	
F. U.	F. R.	-.28	.111	-2.52	99.4	

T--totals, M--males, F--females, U--urban, R--rural.

*A minus difference means that the intrinsic value of (a) is greater than (b).

Read table thus: The difference between the average grade of the total urban group and the total rural group was .31 grade points; the critical ratio was 3.69, and there were 100 chances in 100 of a true difference in the grades of the urban and rural groups.

students will receive better English IX grades than will those students from the rural schools. In a comparison of the average grade of the urban males and the rural males there was a difference of .29 grade points in favor of the urban males. There will be, in 99.5 chances in 100, a difference greater than zero in the true average grade of the urban males and the rural males. Table XIX shows a difference of .28 grade points between the average grade of the urban females and the rural females. This difference is in favor of the urban females. In 99.4 chances in 100 the urban females will receive a higher average grade than the rural females.

Summary and Conclusions

The answer to the questions raised for discussion at the beginning of the section on extra-curricular activities would seem to be found in Figure 6 which graphically shows the participation of the groups, from the four towns combined, in all the activities mentioned. Analysis of this chart shows that in considering all activities together, Groups III and IV participate equally well and exceed the participation of Groups I and II. This would indicate that those students who move frequently are more versatile and take more part in extra-curricular activities than do those who remain in one school system.

This figure also shows that Group II, which includes those students who have come in from the rural schools, takes less part in extra-curricular activities than does any other group.

In the material in Chapter IV devoted to parental educational attainments, the groups were found to rank in the following order: Group II, Group I, Group IV, and Group III. As shown in Figure 7, the curves are very similar and the difference would not seem great enough to be considered significant.

The students from the urban schools received better grades in English IX than did those students from the rural schools. This is probably due to the fact that seventh and eighth grade teachers in the urban schools are no doubt much better prepared teachers than those of the rural schools and will give their students a better English foundation than will the teachers in the rural schools. Another factor that might affect the grades of the rural students is that when they go to high school they are put in conditions entirely strange to them. The change from the rural to the city school would no doubt affect their grades. Probably their greatest handicap, however, is that they are not well prepared in the fundamentals of English.

CHAPTER V

CONCLUSIONS

In conclusion, it may be stated that the non-migratory students taken as a whole received better average grades than the migratory students. The greatest difference, however, between the two averages of the best and the poorest group was only .18 grade points, which might not be enough to make any appreciable difference in the final grade recorded for the student. On the basis of the comparisons of the four groups one must reach the obvious conclusion that the scholastic achievement of the students did not depend so much upon the number of schools attended as it did upon the intelligence of the student. The survey brought out the fact that those students of Group IV who had I. Q's. above average received higher grades than those of Group I of the same intelligence. The migratory students with average or below average intelligence were affected adversely. The fact that Group IV received better grades than the students of Groups III and II, who for the most part were from the rural schools, may tend to show that many moves from one city school to another were not as detrimental to the achievement of the student as was his attendance in a rural school.

It was found that the migratory students participated in the extra-curricular activities of the schools to a

greater extent than did the non-migratory students. This was probably due to the fact that the contacts which migratory students had made caused them to be more socially minded than those who had been in the same community all of their lives. The fact that the parents of the migratory students were younger than those of the non-migratory group would no doubt have caused the migratory parents to have more interest in extra-curricular activities and to encourage their children to participate in them.

Very little difference was found in the education of the parents of the four groups. The educational curves when shown graphically followed each other very closely. The greatest percentage of the parents of all groups had not been beyond the eighth grade level.

In the comparison of the urban and rural students in English IX it was found that the grades of the urban students exceeded those of the rural students to a very appreciable degree. This difference can probably be accounted for by the fact that the drill in English fundamentals received by the urban group while in the elementary school is no doubt superior to the drill received by the rural group.

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