

A COMPARATIVE STUDY OF HIGH SCHOOL GRADES OF GRADED AND  
RURAL SCHOOL GRADUATES IN SOME CENTRAL KANSAS SCHOOLS

by

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## INTRODUCTION

Experimentation has been carried on in several different localities to compare the relative achievements of rural and graded school graduates by means of standardized tests. In most if not in all cases, the graded school graduate has an advantage over the rural student. The city and town children enjoy privileges which cause that advantage to be more or less expected.

In asking the opinions of various educators as to whether or not such an advantage continues through the secondary school, and if so, just how it is shown, various answers and differences of opinion are given. A number of factors must be considered in making any attempt to determine the comparative progress made by each group during a course in the secondary school.

Like many others of the teaching profession, the writer has encountered individual cases in which the high school freshman enrolled with excellent records, and yet could not master the fundamentals of ninth grade work.

In treating material to solve such problems, there are many chances for errors. However, if care is taken

definite trends should be indicated.

#### PURPOSE

The purposes of this study are to determine, as far as is possible, the answers to the following questions:

1. Is there an appreciable difference between the high school grades made by grade and rural school graduates, and if so, which group has the advantage?
2. How do the grades of the two groups compare from year to year over a period of ten years?
3. What differences in the comparative results are shown among the four grades of the small secondary school?
4. What significant tendencies are shown by the grade and rural groups in certain subjects?
5. Is high school scholarship in general, a true indication of the quality of elementary school training?
6. What other factors can be found which influence high school scholarship?
7. What inferences, if any, can be set up with re-

gard to the value of our traditional grading systems?

#### METHODS AND MATERIALS

All of the grades of the students who enrolled from 1921 to 1930, inclusive, in the Glen Elder, Simpson, Asherville, and Beloit High Schools were recorded. The grades from the Harper High School records from 1924 to 1929, inclusive, were used. The proper records for the remaining four years were not available. Each of the above named high schools is in Kansas. The first four are in Mitchell County, while Harper is in Harper County.

There are several reasons for including Harper in the study, instead of remaining entirely within Mitchell County. There are five graded schools in Mitchell County with three or more teachers. The records in one of those five schools included five types of grading systems. There being no key to translating some of these systems, the grades were quite useless. Since the writer wished to use a wider number of samples, Harper was chosen. The records there were readily accessible, and the study was then divided into a group of three small third class cities and one of two small second class cities.

Glen Elder, Asherville and Simpson, each has either three or four teachers in the elementary school. There is at least one teacher for each grade in the elementary schools of Beloit and Harper.

The graded school group which is mentioned frequently in this study, is composed of the students enrolled in the five high schools mentioned above, who graduated from the city elementary schools. The rural group is composed of the students who enrolled in the five high schools and who graduated from the rural schools surrounding those cities.

Each of the three smaller high schools has an annual enrollment of one hundred or less. The Beloit and Harper High Schools each has an annual enrollment of between two hundred and three hundred students.

The city populations of the five cities are as follows: Beloit 3600, Harper 1700, Glen Elder 650, Simpson and Asherville approximately 200 to 300 each.

The yearly grades were entered in the records of three of the schools in percentage. The other two used a five point system which the author translated into per cent grades. Each of the schools has maintained an equivalent percentage grading basis.

Undoubtedly, the standards of marking vary, somewhat, in the different schools. However, for the most part, even though two of the schools vary rather widely in this respect, there will be little difference of the effect on the two groups.

The results have more importance due to the fact that none of the high schools used in the study was so large, but that all students, both rural and graded graduates, had the same teachers.

As the grades for each student were listed, designation was made as to whether the student entered high school from the rural or graded school. Most of this information was available in the high school records. That which was not in those records, was obtained from the County Superintendent's office.

The material was treated from various view points. First, the grades for each group, rural and graded, were arranged for each year, 1921 to 1930, inclusive. The arithmetic mean was found for each group for each year in order to compare the relative trends over the entire period from beginning to end.

The second grouping was made for each year in the senior high school. There are four years in each high

school from which the material was taken. From this the means of grades nine, ten, eleven, and twelve were found, separately. These groups were also divided into male and female groups.

The third division of the study shows the results of grouping males and females under each group according to certain subjects. The means were found in first year English, second year English, third year English, elementary algebra, plane geometry, and vocational agriculture. The male and female groups were combined to find the means for the entire rural and graded groups.

The means for the total grades to make a comparison over the ten year period as a whole were finally found.

Results of research which has been done and is being done by others were used to compare the achievement of the rural and graded graduates upon entering the secondary school.

An attempt was made to determine something of the relative percentage of rural and graded graduates who attended the secondary schools. The following questionnaire was presented to fifty County Superintendents of Public Instruction in the central part of the state of Kansas:

What do your records show as to whether a larger



percentage of graded or rural school graduates have attended high school five years ago? Ten years ago? Twenty years ago?

If your records do not indicate this, please estimate the trend and indicate whether or not your answer is from record or estimate.

The effect of students dropping out during the four years of high school, was studied by using the high school records of those who had dropped out.

A questionnaire was filled out by the principals of the Beloit, Kingman, Attica, Caldwell, Medicine Lodge, and Harper High Schools. The purpose of it was to find the number of each group of students that participated in major extra-curricular activities. The information concerning athletics of Glen Elder High School was also used.

Following is a copy of the questionnaire which was used:

I am trying to find out how many graded school graduates and how many rural school graduates are taking part in some of our high school activities. Your cooperation in filling in the following blanks will be very much appreciated. Please fill in the numbers of students in these activities so far this year.

Number of girls in vocal groups: Rural \_\_\_\_ City \_\_\_\_

Number of boys in vocal groups: Rural \_\_\_\_ City \_\_\_\_

Girls in band: Rural \_\_\_\_ City \_\_\_\_

Girls in orchestra: Rural \_\_\_\_ City \_\_\_\_

Boys in band: Rural \_\_\_\_ City \_\_\_\_

Boys in orchestra: Rural \_\_\_\_ City \_\_\_\_

Boys in football: Rural \_\_\_\_ City \_\_\_\_

Boys in basketball: Rural \_\_\_\_ City \_\_\_\_

Play and operetta casts:

Boys: Rural \_\_\_\_ City \_\_\_\_

Girls: Rural \_\_\_\_ City \_\_\_\_

Debate teams:

Boys: Rural \_\_\_\_ City \_\_\_\_

Girls: Rural \_\_\_\_ City \_\_\_\_

Student assistants:

Boys: Rural \_\_\_\_ City \_\_\_\_

Girls: Rural \_\_\_\_ City \_\_\_\_

Individual representatives in Speech Arts:

Boys: Rural \_\_\_\_ City \_\_\_\_

Girls: Rural \_\_\_\_ City \_\_\_\_

Individual representatives in Music contests:

Boys: Rural \_\_\_\_ City \_\_\_\_

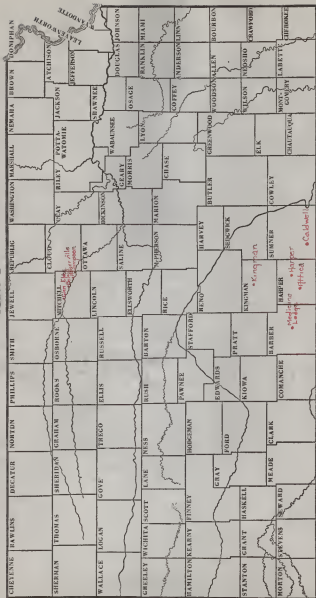
Girls: Rural \_\_\_\_ City \_\_\_\_

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Plate I

A Map of Kansas, Showing  
in Red, the Location of  
Towns and Cities Concern-  
ed in This Study.

# Plato I



Students active on school publications:

Boys: Rural \_\_\_\_ City \_\_\_\_

Girls: Rural \_\_\_\_ City \_\_\_\_

These so-called extra-curricular activities have been, for the most part, ignored in the grading systems of the public schools. Therefore, they are considered separately in this problem.

Some research has been carried on in the field of the effect of athletics on school marks and achievement. The reports of all such work, which could be found in the college library, are considered in this study, in connection with the effect of athletics and other activities on the grades of the rural and graded groups.

### FINDINGS

#### Comparison of Grades by Years

Table 1 shows the number of cases, and the means of the grades of the rural and graded graduates for each year from 1921 to 1930, inclusive. There are three parts to the table. The first part deals with the third class city group; the second with the second class city group; and the third with all schools considered as one unit.

Figure 1 shows a broken line graph, illustrating the course of the mean for each of the two groups through the

Table 1  
Grade Means of Rural and Graded Groups by Years

Year	Third Class City Schools			Second Class City Schools			All Schools		
	Rural No.	Graded Mean	No.	Rural No.	Graded Mean	No.	Rural No.	Graded Mean	No.
1921	41	84.00	30	88.20	20	89.60	32	89.34	61
1922	28	83.50	31	88.50	16	89.88	41	87.54	38
1923	40	85.40	6	86.40	18	87.00	40	87.95	58
1924	27	86.00	27	89.30	49	87.20	45	87.80	76
1925	36	85.80	28	85.90	38	87.00	46	87.40	74
1926	24	86.10	21	88.10	33	86.00	40	86.70	57
1927	21	84.50	17	87.20	49	86.50	42	85.00	70
1928	22	87.70	19	85.80	45	85.50	47	87.10	67
1929	25	86.10	15	86.70	51	85.80	47	86.50	76
1930	33	87.50	18	85.30	20	85.45	30	86.23	53

**Figure 1**

**Showing the Trends of the Grade Means of Rural  
and Graded School Graduates During the Ten-Year  
Period in Three Small Third Class Cities.**

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69

68

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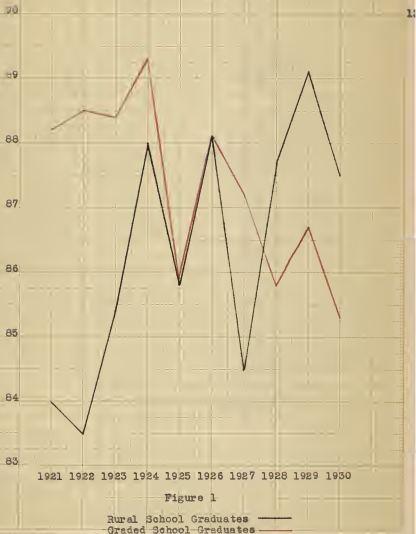
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1921 1922 1923 1924 1925 1926 1927 1928 1929 1930

Figure 1

Rural School Graduates ———  
Graded School Graduates ———





ten-year study. It is quite interesting to note that for the first four years, the graded students were noticeably superior to the rural students. There was practically no difference during the fifth and sixth years. The seventh year shows the graded student, again, to have an advantage. The rural student group had the advantage during the last three years. The general tendency is for the average grade of the graded student to become lower during that period of time, while the opposite is true for that of the rural student. For the entire period, the graded group averaged 1.06% above the rural group. The mean of the former was 87.48%, compared to 86.42% for the latter. Two hundred twelve graded and 291 rural graduate samples are included in the study of the three smaller schools.

Figure 2 is a broken line graph showing the ten-year trend of the rural and graded groups of the two small second class cities. Like Figure 1, Figure 2 is also taken from the data of Table 1.

The most outstanding situation shown by the graph of Figure 2, is the tendency for the average grades of all students to become lower from year to year. That is, undoubtedly, a result of a change in standards of grading through the ten years. From 1927 to 1930, the mean grades

**Figure 2**

**Showing the Trends of the Grade Means of Rural  
and Graded School Graduates During the Ten-Year  
Period in Two Small Second Class Cities.**

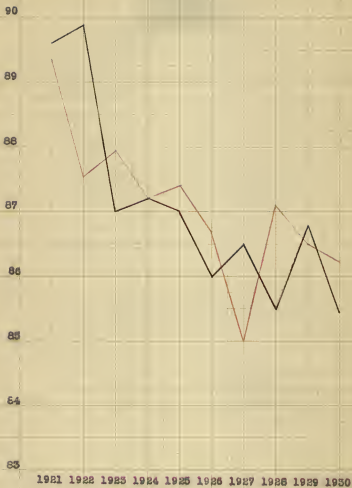


Figure 2

Rural School Graduates —  
Graded School Graduates —

tended to fluctuate about a more constant point.

Neither group was noticeably superior to the other for any considerable period of years. The graded group was, in general, slightly superior from 1928 to 1930, an opposite condition which existed for the smaller schools.

The mean of the second class city graded group for the entire ten year period, is 0.25% higher than the mean of the rural group. The former is 87.05%, while that for the latter is 86.80%. The grades of 410 graded and 339 rural graduates are included for that study.

Figure 3 illustrates the trends of the means of the two entire groups, through the period 1921 to 1930. The grades of 630 rural graduates and 622 graded graduates make up the study, similar to that above, for all five schools.

From 1922 to 1926, inclusive, the graded graduates maintained an advantage of from 0.50% to over 2.00% over the rural graduates. The rural graduates had a higher average for the last three years in the third class city study. They maintain a part of that advantage in the study of the entire group. The difference is a little less than 1.00%.

The mean of the entire rural group, for all years, is 86.52%, and that of the graded group is 87.18%. The difference is 0.66%, in favor of the graded graduates.

Figure 3

Showing the Trends of the Grade Means of Rural  
and Graded School Graduates During the Ten-Year  
Period in All Five Schools.

90

89

88

87

86

85

84

83

1921 1922 1923 1924 1925 1926 1927 1928 1929 1930

Figure 3

Rural School Graduates  
Graded School Graduates



### Comparison of Grades By Classes

Tables 2 and 3 show the means of the grades of the two groups, rural and graded, in each of the ninth, tenth, eleventh, and twelfth classes. Table 2 shows those means for each sex, and for each school.

Table 3 is a summary study for all schools as a unit. Graphs of these means, Figures 4 and 5, show the same general tendency for all the groups. The mean grades of the rural and graded groups, both male and female, drop after the ninth grade. The tenth and eleventh grades remain on a constant, low level for rural male and female graduates, and for graded male graduates. The grades of the graded female graduates show a rise, which causes their eleventh grade mean to be approximately on the same level with the ninth grade mean. The twelfth grade means show a rise for all groups. The female students from the graded schools made their best average grades in the twelfth grade. The graded boys and rural girls, each made about the same grades in the twelfth as they did in the ninth. The rural male students made a slight increase in their twelfth year grades; however, the highest mean for them was in the ninth grade.

The difference between the means of all rural and all

Table 2

Means of High School Grades of Rural and  
Graded Graduates Shown by Grades and by Schools

Simpson	Grade 9	Grade 10	Grade 11	Grade 12
Rural Male	86.35	85.46	83.30	85.92
Rural Female	88.05	89.26	87.04	89.73
Graded Male	86.04	85.76	84.08	86.47
Graded Female	89.51	88.86	89.38	90.07
Asherville				
Rural Male	87.85	87.60	85.85	87.33
Rural Female	87.60	86.20	87.00	87.80
Graded Male	86.90	86.40	86.19	86.44
Graded Female	88.59	87.50	87.83	88.18
Glen Elder				
Rural Male	85.76	84.73	85.47	84.21
Rural Female	88.69	88.97	88.79	88.28
Graded Male	86.27	85.36	85.83	86.16
Graded Female	89.80	89.74	90.12	90.33
Harper				
Rural Male	84.00	83.53	83.71	84.96
Rural Female	87.65	85.83	87.46	87.53
Graded Male	86.80	84.62	84.61	84.34
Graded Female	86.47	85.84	86.66	87.42
Beloit				
Rural Male	87.02	85.62	85.32	86.22
Rural Female	88.36	87.22	87.22	87.42
Graded Male	86.77	85.92	85.92	86.97
Graded Female	88.07	87.27	86.23	88.57



Table 3

Means from Table 2 Concentrated for All Five Schools

All Schools	Grade 9	Grade 10	Grade 11	Grade 12
Rural Boys	85.89	84.95	84.91	85.32
Rural Girls	88.02	87.39	87.46	88.02
Graded Boys	86.66	85.61	85.46	86.61
Graded Girls	88.30	87.39	88.15	88.48

## Means of Total

Rural Graduates	87.03	86.26	86.28	86.72
Graded Graduates	87.54	86.55	86.91	87.62

graded graduates was quite small, and remained practically constant during the ninth and tenth grades. However, the margin widened, somewhat, in the eleventh and twelfth grades.

## Comparison in Some Subjects

In each of the high schools from which the grades were taken, three units of English, and one of elementary algebra were required. Plane geometry was required in all but Beloit and Asherville. In the latter two schools, plane geometry was elected by the majority of students. A summary of the means of the grades of rural and graded graduates in these five subjects is shown in Table 4. The

**Figure 4**

**Showing the Trends, By Sex, of the Grade Means  
of Rural and Graded School Graduates During the  
Four Years of High School.**

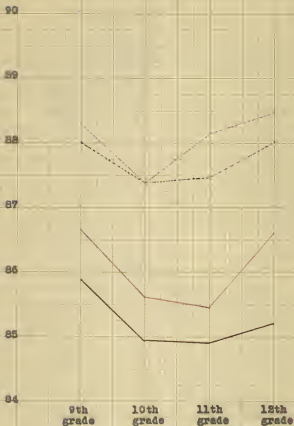


Figure 4

Male Rural School Graduates  
 Female Rural School Graduates  
 Male Graded School Graduates  
 Female Graded School Graduates

**Figure 5**

**Showing the Trends of the Grade Means of the  
Total Rural and Graded School Graduates During  
the Four Years in High School.**

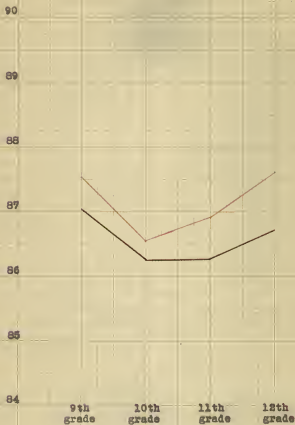


Figure 5

Rural School Graduates  
Graded School Graduates



Table 4

Means of English and Mathematics Grades of  
Rural and Graded Groups

Third Class Cities

	1st Year English	2nd Year English	3rd Year English	1st Year Plane Algebra	Plane Geom.
Graded Male	85.03	85.63	84.29	84.29	83.29
Graded Female	90.26	90.31	90.05	87.42	87.59
Rural Male	85.57	84.86	83.59	85.10	82.57
Rural Female	89.28	89.67	89.54	86.26	86.40

Second Class Cities

Graded Male	85.64	84.36	83.67	84.18	85.10
Graded Female	89.21	87.68	87.56	87.66	85.89
Rural Male	85.71	83.95	82.90	85.21	83.78
Rural Female	86.53	87.29	87.17	86.47	83.48

All Cities

Graded Male	85.41	84.83	83.90	84.23	84.40
Graded Female	89.58	88.45	88.29	87.58	86.40
Rural Male	85.64	84.39	83.22	85.07	83.17
Rural Female	88.87	88.36	87.66	86.38	84.82

Total Graded	87.60	86.73	86.21	85.98	85.42
Total Rural	87.34	86.50	85.60	85.79	84.04

table shows the means for male and female students of each group. The means are shown for the second and third class city groups separately, and also for the entire group as a whole.

Here, again, the graded school graduates have a small amount of advantage in grades over the rural graduates.

The male students of each group show a tendency to get poorer grades in English in each successive year. The tendency is greater on the part of the rural boys. The latter also get noticeably lower grades in plane geometry, than in algebra. The graded male graduate gets slightly better grades in geometry than in algebra. The English grades of both rural and graded female graduates have a much more limited tendency to become lower during successive years, than do the English grades of the male students. Averages of English grades are very close to the class averages. Therefore, they do not have a very great effect upon the average grades of the students.

The algebra grades are a little below the average. The ninth grade average for all graded graduates is 87.54. The mean of their algebra grades, which were received in that grade, is 85.98, or 1.56% lower than the mean for the grade. The ninth grade mean for all rural graduates is 87.03, while the mean of their algebra grades is 85.79, making a difference of 1.24. Even though the graded graduates received slightly better algebra grades than did the rural students, algebra had a greater reducing effect upon the mean of the former.

Geometry grades have a noticeable effect upon the tenth grade averages. The tenth grade mean for the entire graded group is 86.55. Their plane geometry mean is 85.42. In the rural student group, the tenth grade mean is 86.26, and the plane geometry mean is 84.04. The difference for the graded graduates is 1.13%, and 2.22% for the rural graduates. Plane geometry apparently has a lowering effect upon tenth grade marks and especially upon those made by rural students. Undoubtedly, that subject is a factor which helps to cause a general lowering of scholarship in the tenth grade.

Two of the high schools used in the study, Beloit and Harper, have vocational agriculture departments. This course is designed for the farm boy, and is of a practical nature. His home training has set a natural background for it. It is not surprising, then, to find that the grades made in that course will be higher than the average for the rural boys. In this study, there were grades of 120 vocational agriculture students. Thirty-four were graded school graduates, and 86 were rural graduates. The former had an average grade of 87.82%, and the latter 86.14%. The entire course includes four units, or approximately one-fourth of the high school course.

The difference between the average ninth grade marks for all graded graduates, and the average of the vocational



agriculture grades of the same group is 0.28%. The difference in the tenth grade is 1.27%. Since only 34 graded school boys took the course, it has no important effect upon the graded group mean. Approximately 30% of the rural boys were studying that course during the period concerned, and the percentage has increased since then. The difference between the ninth year average of all rural students, and that of the vocational agriculture grades of rural boys is 1.11%. The difference in the tenth grade is 1.85%. The grades made by rural graduates in vocational agriculture, therefore, cause the means of the grades made by rural graduates in the ninth and tenth grades to be somewhat higher. The difference is not significant in itself, since it is only from 0.1 to 0.2%. However, it tends to widen the margin between the rural and graded graduates.

#### Other Factors Affecting the Comparative High School Scholarship of Graded and Rural School Graduates

There are a number of factors which influence the grades of high school students. The following paragraphs contain the results of the study of those factors.

A study of the students who dropped out of high school before graduation shows approximately the same number of rural and graded school graduates. The samples used in this

study included all of the students who dropped out of the high schools of Asherville, Simpson, Glen Elder, and Harper during the ten-year period according to their records. There is no way of finding out whether or not most of these students left school entirely or were transferred to other schools.

A separate study of those who dropped from Harper High School during the ten-year period was made. The four classifications used were: failing, poor, medium, and above medium. Those classifications indicate the average of the grades of the student at the time of dropping out. Of the graded graduates, 9 were failing; 28 were poor; 14 were medium; and 10 were above medium. Of the rural graduates, 10 were failing; 24 were poor; 15 were medium; and 11 were above medium.

Of 100 graded graduates who dropped from the four schools, 51 were below medium students; 25 were medium; and 24 were above medium. Of 115 rural graduates who dropped out of the four schools, 56 were below medium students; 35 were medium; and 24 were above medium. Those classified as below medium had average grades below 81%. Medium students had averages of from 81% to 86%. Above medium students had averages above 86%.

The achievement factor is an important one to be considered.

Clem and Hovey (1933) in a study of village and rural pupils in the state of New York, found that the village pupile excelled in each subject. In testing the comparative achievements of the two groups they found that in arithmetic; the village pupils averaged 86.28, compared to 83.83 for the rural pupile. The average scores in English were 81.7 for village pupile, and 79.99 for rural pupils. The results in other subjects were similar to those for arithmetic and English.

The importance of such studies, as to their significance for Kansas schools, is questionable. However, similar research is being carried on in Kansas.

Quantic (1936) tested students for achievement at the beginning of high school. His study included those students who enrolled in the rural high schools of Riley County in September, 1935. These students were tested in nine seventh and eighth grade subjects, by the use of Metropolitan Achievement Tests. Quantic compared the scores made by rural and graded school graduates. The latter were superior in every respect. The rural school graduates were found to be from two to six months behind the graded school graduates in each subject. The average for all subjects was four months.

Cameron (1936) carried out a survey similar to that of Quantic. He measured the achievement of graded and rural school graduates of Pottawatomie County. The ninth grade pupils of the high schools of the county were tested shortly after enrollment in September, 1935. Modern School Achievement Tests were used in the measurements. The graded school graduate was found to be seven months ahead of the rural school graduate in reading comprehension; one year and three months in reading speed; three months in arithmetic computation; eight months in spelling; five months in health knowledge; four months in language usage; one year in history and civics; and five months in geography. There was no difference between the two groups in arithmetic reasoning and elementary science.

Riley and Pottawatomie Counties adjoin each other. Riley County is within one hundred miles of Mitchell County in which four of the high schools concerned in this study are located.

It is rather to be expected that students who obtain their elementary education in graded schools, other factors being equal, will be superior to those who attend the one teacher rural schools.

Sheffer (1934) in summarizing an extensive study of comparative opportunities of schools of various sizes in

Kansas, said "A number of reports of investigations conducted to determine the relative efficiency of one-teacher and graded schools afford evidence which tends to support the belief that if pupils were transferred from one-teacher schools to graded schools, their educational opportunities would be improved."

Some of the pupils who finish the elementary school do not enter the secondary school. Consequently, the relative abilities of the graded and rural school graduate groups, at the time of leaving the elementary school, might be different than it will be after they enter high school.

In order to determine the percentages of each group, rural and graded which enter high school, a research problem in itself is presented. To make the results applicable, the average grades of both groups who did and who did not enter high school would need to be known. The records for finding such information are not complete in the offices of county superintendents. The problem is worthy of being worked out in the future.

The general trend of opinion of 28 county superintendents of public instruction was, that a larger proportion of graded school graduates attend high school than do rural school graduates. The most satisfactory answers to questionnaires were received from eight superintendents hav-

ing a supervision over a total of 13,000 pupils. They were quite definite in the following conclusions: Twenty years ago (1915), a much larger proportion of graded school graduates attended high school than did rural school graduates; that there is still a difference, although the margin has gradually grown smaller; and that a larger percentage of both groups of elementary school graduates now attend high school, than did from ten to twenty years ago. It is logical to assume that the greater proportion of rural students who fail to enter high school, do so largely because of lack of interest and uncertain financial conditions. It would, therefore, be likely that the poorer type of students would, for the most part, make up the group which does not enter high school.

The information outlined above, as has been stated, is based on estimates, and is, therefore, only partially reliable.

A great deal of training of the students in the secondary school comes through the use of so-called extra-curricular activities. A large amount of time is used by students in participating in such activities.

In the following report, a season of football or basket ball will be considered an activity. Thus, in case a student competes in both sports, the same weight is given

as if two students competed in one activity. The same is true in the reports on other activities.

The aggregate enrollment of the high schools of Beloit, Glen Elder and Harper is approximately 625 students each year. Fifty-two per cent of the students of the three schools are of the one-room rural school. During the school year 1935-1936, thirty-nine of the latter group participated in football, as compared to 59 graded school graduates. There were 13 rural and 42 graded graduates who played basket ball.

The same situation exists in other schools, according to reports from Caldwell, Attica, Medicine Lodge, and Kingman High Schools. The annual combined enrollment of the four schools is approximately 1,000. During the school year 1935-1936, there were 35 rural and 70 graded graduates who participated in football. There were 31 rural and 67 graded graduates who played basket ball. In all seven high schools, the equivalent of 118 boys from the rural schools, and 238 from the graded schools participated in one season of football or basket ball.

Just how athletics affect the scholarship of those who take part is best shown by the reports of those who have studied the problem.

Cook and Thompson (1928) compared 91 boys who made

letters in athletics with 100 non-letter boys in Hughes High School, Cincinnati. They found that the athletes were somewhat lower in scholarship and made poorer records during participation than did the non-letter boys. The athletes were more likely to graduate, remain longer in school, and were more likely to enter college than the non-athletes.

Indication that the high school athlete continues to make below average grades in college, was shown by Eton and Shannon (1934). They found that college students who had been high school athletes made significantly lower marks than did those who had not been athletes.

Finch (1932) collected data from 174 boys who were graduated from University High School, University of Minnesota, over a period of seven years which ended in 1931. Athletes were paired with non-athletes according to intelligence quotients. Achievement was measured in terms of honor points derived from teachers' marks. A thorough statistical treatment of the data indicated no significant difference in academic achievement.

Germany (1935) found that in four small high schools and one larger high school in Raleigh County, West Virginia, the trend favored the athlete in achievement. He made use of standardized achievement tests. When those of highest mental ability were tested, it was found that the non-



athlete had a slight advantage.

In general, the reports cited indicate that athletics tend to lower teachers' marks received by those who participate, despite the tendency, in some cases, for teachers to purposely raise low grades in order to keep athletes eligible for competition. However, the achievement of the athletes appears to be at least on a par with non-athletes.

The following survey of participation in extra-curricular activities is the result of a questionnaire report by the principals of Attica, Harper, Kingman, Medicine Lodge, Caldwell and Beloit High Schools.

Approximately 50% of the students enrolled in the six schools came from one-teacher rural schools, and the other 50% from the graded schools of the six cities. The activities included in the questionnaire were selected on the basis of time required of the participating students. They are classed as major activities.

Table 5 shows the numbers of both male and female graduates of rural and graded schools who participated in major activities in the six high schools. In the rural graduate group, 248 girls and 226 boys or a total of 474 rural students participated in a major activity. In the graded graduate group, 442 girls and 539 boys or a total of 981 students engaged in a major activity.

Table 5

Showing the Numbers of Rural and Graded School  
 Graduates Participating in Extra-Curricular  
 Activities in Six High Schools

	Rural		Female	
	Male	Female	Male	Female
Vocal Music Groups	43	93	90	134
Band and Orchestra	29	42	120	98
Play and Operetta Casts	26	43	69	77
Debate Teams	8	5	15	18
Student Assistants (Office and Library)	9	28	15	42
Individual Representatives in Speech Arts and Music Contests	9	17	24	42
Students Active in School Publications	15	20	25	31
Athletics	57	0	181	0
Totals	224	248	539	442

A vast majority of teachers, in years past, have used grades or marks as a means of stimulation for the efforts of pupils. If high marks are set up as ideals for pupils, as has been the case in the past, and the teacher causes those high marks to be relatively easy to attain; those pupils soon become satisfied to cease putting forth their best efforts.

Martin (1931) cast an interesting light on the

grades given by rural and graded school teachers. His study included the eighth grade pupils of Dickinson County, Kansas. In the year 1928-1929, the average grade of the eight grade pupils in the rural one-teacher schools was 88.9, compared to an average of 88.25 for those of the graded schools of the county. In 1929-30, the rural average was 88.01, and the graded average 86.8. In 1930-31, the rural average was 87.5, and the graded average was 87.07. The average for the three years was 88.13 for rural students, and 87.4 for graded students. The above grades were teachers' marks. After the county and diploma examination grades were averaged with the teachers' marks, the grades were as follows: 1928-30, rural 87.17, graded 87.94; 1929-30, rural 85.34, graded 86.57; 1930-31, rural 85.4, graded 87.34. The average for three-year period was 85.97 for the rural graduates, and 87.28 for the graded graduates. The above averages show that the teachers' marks received by the rural eighth grade students were higher than those received by the eighth grade students of the graded schools. However, the scores received by the graded school students on county and diploma examinations were considerably higher than those received by the rural students. After the averages of teachers' marks and examination scores were taken, the grades of the graded students remained practically the

same as the teachers' marks alone. The average of the grades of the rural students dropped a great deal below that of the graded students.

### SUMMARY

A brief summary of the findings of the study are as follows:

1. The means of the grades of rural and graded school graduates in the five schools studied show the graded students to be superior in the first half of the decade. The rural students had slightly better grades in the last two years covered by the study. The mean of the graded graduates for the entire period is 0.66% higher than that for the rural graduates. The mean grades of both groups decreased from the beginning to the end of the ten-year period.

2. The means of all groups were lower in the tenth grade than they were in the ninth. The means of the marks of rural graduates and male graded graduates remained practically the same in the eleventh grade as in the tenth. The mean for the female graded graduate became higher in the junior year. All means increased in the senior year. The means of all graded graduates were slightly higher than those for the rural graduates in the ninth and tenth grades.

The margin widened in the eleventh and twelfth grades.

3. In the study of the grades made in some subjects, it was found that the average English grade for both rural and graded school graduates was very close to the average for the class in all subjects. The male students, especially those from rural schools, tended to get lower grades in English in each successive year. Elementary algebra had a reducing effect upon all grades, but to a little greater extent upon those of graded graduates; although, their mean was a trifle higher than that of the rural school graduates. The plane geometry grades had a lowering effect upon the means of both groups, the effect being about twice as great on the mean of rural graduates, as upon that of graded school graduates. The marks in vocational agriculture were higher than the average for other subjects. Such marks raised the means for the rural group in the ninth and tenth grades.

4. In studying the various factors which probably affect the high school scholarship of either graded or rural school graduates, several interesting points are brought out: The graded and rural school graduates who drop out of high school are practically equal in number and ability.

Graded school graduates who enter high school are

superior in achievement to those who enter from the rural schools.

According to the estimate of county superintendents, there is probably a smaller proportion of rural school graduates who attend high schools than there is of the graded school graduates.

Approximately twice as many graded school graduates participate in major extra-curricular activities as do rural graduates. High school athletics probably lower the marks made by those who participate.

According to Martin's study, rural school teachers give higher marks for a lower quality of work, than do graded school teachers.

#### CONCLUSION

The significance of the superiority of the graded school graduates over the rural school graduates, as found in this study, is questionable. The fact that the marks as used in this study are, to a great extent, judgment measurements of teachers, limits the reliability of such marks. There is a great chance for error. All that can be said of such results is that they indicate a trend.

In considering the comparison for each year, very little significance can be given to the relative standing of the two

groups in any one year. One of the most important facts shown, is, that the mean of the graded group was greater than that for the rural group for five consecutive years, 1922 to 1926, inclusive. With the wide fluctuations of the mean grades from year to year, the higher means of the rural students for the two final years, 1929 and 1930, mean very little.

The rural school graduates who attended the three smaller high schools tended to be inferior to the graded school graduate at the beginning of the ten-year study. However, the opposite was true at the end of the period. In the study of the two larger schools, the reverse condition existed with smaller differences in most cases. Since the graded students who had the advantage of an eight-teacher elementary school, and since there are more cases in that study, it is probable that the results from the two small second class cities are more significant than are those from the study of the smaller schools.

The comparison of the two groups in the four classes, ninth to twelfth grades, inclusive, shows the graded graduates to have a higher mean grade in each class. The difference is slight, however. Again, only a trend is indicated toward slightly higher scholarship for graded school graduates.

The tendency for average marks of all students to become lower during the tenth and eleventh grades is, in some respects, surprising. However, on second thought it is not so surprising. Students are not occupied so greatly with activities and social affairs in the freshman year as they are later. They are confronted with new environments. Upper classmen point them out as "green". The natural human response is a determination to overcome these disadvantages, hence, the relatively high scholarship of freshmen. The development of confidence and self satisfaction after a successful freshman year might quite possibly help to explain the lower marks in the tenth and eleventh grades. The widening of the margin between rural and graded graduates toward the end of high school might or might not be significant. Perhaps it is a further indication of better elementary training.

According to the results of the comparison of the two groups in English and mathematics, it appears that rural school graduates enter high school more nearly on a par with graded school graduates in English background than in mathematics. However, Cameron's study of achievement does not indicate this to be true.

Vocational agriculture is a study which is mechanical in nature. It is practical for the farm boy. His previous



training is less important for it than for other courses. It is a small factor in narrowing the margin between the scholarship of the rural boy and the boy from the town school.

There are several other factors which influence the high school scholarship of the two groups of students.

The students who drop out of high school before graduation, apparently do not cause an advantage in scholarship for either group, since the numbers of poor, medium, and good students from each group are approximately the same.

The superiority in achievement tests shown by the graded graduates would cause a greater difference in scholarship to be expected between the two groups than this study shows. However, McIntosh and Schrammel (1930) found that the greatest difference in achievement between rural and graded eighth grade pupils was in the fundamental subjects, reading, arithmetic, and spelling. Differences in other subjects were slight. The highest 31% of each group in the results of the Kansas State Scholarship Tests were used as a basis of the study. Percentages based on quartile scores were used. McIntosh and Schrammel concluded that the greatest advantage in the graded schools was in the lower grades.

There are, undoubtedly, other factors which tend to

narrow the margin between them.

The efforts of the author to find the number and average ability of students of both rural and graded schools who graduated from the eighth grade, but who did not enter high school, were only partially successful. From the opinions received, it is probable that a greater proportion of rural pupils drop out. It is also logical to believe that those students of each group are lower in ability. The fact that Quantie and Cameron tested the students for achievement after they entered high school, makes the problem of those dropping out of less importance in this study. A worthwhile problem is presented for solution, however.

The reports of work done to determine the effect of athletics on scholarship indicate that to participate in athletics is to do so at the sacrifice of a certain amount of scholarship. If the time taken for athletics and the interest taken in them are the reasons for this lowering of scholarship, other activities will undoubtedly have the same effect. Over two times as many graded graduates take active part in extra-curricular activities as do rural graduates. Perhaps these activities do not lower the scholarship of those who take active part in them. However, the indications are that they do to some extent, in which case the marks of the graded graduates would suffer much more than

those of the rural graduates. This is no reason for a condemnation of athletics or any of the other activities concerned. The writer believes that the training received from such activities is by far more valuable to the students, than any lowering of marks in academic subject matter which might result.

Reference has been made to a report which substantiates the common belief that rural teachers give higher marks than do graded school teachers.

As long as marks are used as a source of pupil stimulation, a great injustice is done to the pupil by setting up such goals, then placing their grade standards at such a level that they can be reached with little effort. The pupil who has gone through the elementary school under such conditions is bound to be found wanting when tested for achievement. He has been able to reach a satisfying level of teacher marks without achieving a proportionate amount of learning. In addition to that, the rural one-room school pupil does not have a great many advantages which are enjoyed by the pupil in the city graded school. He has poorer libraries and equipment, less pleasant surroundings, and a more poorly prepared teacher than does the graded school pupil. After he enrolls in high school he has the same advantages of the graded school graduate. Competition with

other students, whether or not it is desirable, spurs him on. It is not surprising, then, that given the same opportunities as those who have attended the graded schools, he immediately begins to narrow the margin between the two groups.

Conclusions drawn from this study, then, show that the graded school graduates enter high school equipped with a much better background than do the rural school graduates. Due to other influences, however, this difference appears in comparative scholarship only to a slight extent, generally. In certain years of the decade studied, the difference is entirely blotted out. Even if the marks given by high school teachers were results of accurate measurement of the accomplishments of the students, the factors discussed above would prohibit those marks from correlating to any great degree with the quality of training received by the students in the elementary schools.

At the present time, many progressive educators are attacking the traditional grading system. As shown by Martin's study, they do not truly indicate the standing of elementary school pupils. Inasmuch as they are little concerned with extra-curricular activities, they do not indicate the amount of training which a student receives. According to this study, high school marks can hardly be

called a true measurement of the student's abilities, even in the freshman year. It would appear, therefore, that the value of our traditional grading systems is at least questionable.

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## BIBLIOGRAPHY

- Cameron, Roy Raymond.  
A study to determine the advisability of supervised school areas in Pottawatomie county. Unpublished thesis, Kansas State College. 42 p. 1936.
- Clem, Olie M. and Hovey, Chester W.  
Comparative achievement of village school pupils and rural school pupils. Elementary School Jour. 34: 269-272. Dec. 1933.
- Cook, William A. and Thompson, Mabel.  
A comparison of letter boys and non-letter boys in a city high school. School Rev. 36: 350-358. May 1928.
- Cormany, W. J. B.  
High school athletics and scholarship measured by achievement tests. School Rev. 43: 456-461. June 1935.
- Eaton, Dorothy and Shannon, J. R.  
College careers of high school athletes and non-athletes. School Rev. 42: 356-361. May 1936.
- Finch, F. H.  
Athletics and achievement in high school. School and Soc. 35: 299-300. Feb. 27, 1932.
- McIntosh, H. W. and Schrammel, H. E.  
A comparison of the achievement of eighth grade pupils in rural schools and in graded schools. Elementary School Jour. 31: 301-306. Dec. 1930.
- Martin, Claire Arnot.  
Studies in the supervision of the schools in Dickinson county. Unpublished thesis, Kansas State College. 61 p. 1931.
- Quantic, Harry Charles.  
A cooperative school plan for rural high school districts of Riley county. Unpublished thesis, Kansas State College. 67 p. 1936.

Sheffer, W. E.

The cooperative school area in Kansas. Topeka, Kans.,  
State Dept. of Educ. Bul. 121 p. May 2, 1934.